



Evaluation of the Accountable Care Organization Investment Model

AIM Implementation and Impacts over Two Performance Years



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Executive Summary

The Centers for Medicare & Medicaid Services (CMS) has established a range of alternative payment models to help transform the traditional Medicare program from volume-based to value-based payment for medical care. One of these value-based approaches is Accountable Care Organizations (ACOs). ACOs are entities eligible to receive a portion of the savings they generate if they are able to limit the costs, while maintaining or improving quality of care, of the population of fee-for-service (FFS) Medicare beneficiaries who predominantly receive care from the ACO's participating clinicians. Transformation of care through ACOs has been occurring unevenly across the nation. To help accelerate care transformation and establish ACOs in more areas of the country, CMS developed the ACO Investment Model (AIM) as part of the Medicare Shared Savings Program (SSP).

ACOs participating in the Shared Savings Program receive a portion of the earned shared savings they generate relative to a benchmark Medicare spending level. AIM provides up-front payments to participating SSP ACOs, which are paid back to CMS through their earned shared savings from the Shared Savings Program. AIM payments assist SSP ACOs in transforming care by funding infrastructure investments or staffing. Some AIM ACOs participated in the Shared Savings Program prior to AIM and others started their participation in both initiatives simultaneously.

AIM has two main goals: 1) establish new SSP ACOs in geographic areas with few ACOs (known as Test 1 ACOs) and 2) provide existing, smaller ACOs with the resources to sustain participation in the Shared Savings Program and transition to a two-sided financial risk track, wherein they would be at risk of paying CMS for Medicare spending above their benchmark (known as Test 2 ACOs). Four AIM Test 2 ACOs started AIM in April 2015 and 41 AIM Test 1 ACOs and two additional AIM Test 2 ACOs started AIM in January 2016. Since the time they began participating in AIM, only two AIM ACOs have ceased participating in the Shared Savings Program, with most AIM ACOs scheduled to decide whether to renew their participation agreement by mid-year 2019.

CMS contracted with Abt Associates and its partners - L&M Policy Research, Insight Policy Research, and external ACO and rural health care experts - to design and conduct an evaluation of AIM. The evaluation examines how the infusion of capital from AIM payments affects operations and outcomes of SSP ACOs participating in AIM. Specifically, the evaluation addresses three main areas of investigation:

- *ACO formation, risk-taking, and sustainability:* The evaluation determines if AIM was successful in its goals of encouraging new ACOs to form in areas with low ACO penetration as well as sustaining existing smaller-sized SSP ACOs' participation and increasing their willingness to accept two-sided financial risk.
- *Participant experiences:* The evaluation describes who AIM participants are, their reasons for seeking AIM funds, how they use those funds to achieve their care transformation goals, and their perceptions of and experiences from participating in AIM.
- *Impacts on health care:* The evaluation assesses whether AIM impacted the care of beneficiaries attributed to AIM ACOs on a set of health care cost, utilization, and quality measures that address the CMS priorities of better care, healthier people, and smarter spending for Medicare beneficiaries.

An evaluation report covering AIM ACOs' first performance year was publicly released in 2018.¹ This current report addresses components of all three areas of investigation using secondary claims and programmatic data; information collected from ACO leadership and clinician interviews; and ACO

¹ The evaluation report of AIM's first performance year can be found here: <https://innovation.cms.gov/initiatives/ACO-investment-model/>

surveys on implementation, effectiveness, and sustainability. We estimate impacts of AIM on beneficiaries' spending, utilization, and quality measures for two performance years. A final report will include impacts for a third performance year, investigate additional drivers of the impact findings, and reflect upon experiences learned from providing advanced funds to ACOs in the Shared Savings Program through AIM and through a prior model, the Advance Payment ACO Model.²

Key Findings

- ▶ Most AIM ACO representatives stated that they were motivated to participate in AIM to **gain experience in value-based care** and noted that they **would not have participated in the Shared Savings Program without the AIM funding** from CMS. (*Chapter 3*)
- ▶ Using a difference-in-difference (DID) evaluation design, we estimated that **AIM Test 1 ACOs decreased total Medicare spending** during each of their first two AIM performance years compared to non-ACO FFS beneficiaries in the AIM ACOs' markets. (*Chapter 2*)
 - We estimated that AIM ACOs decreased per beneficiary per month total Medicare spending by -\$28.21 in PY1 and -\$36.94 in PY2.
 - Aggregate total Medicare spending reductions were -\$131.0M in PY1 (a reduction of 2.8 percent from base Medicare spending) and -\$187.7M in PY2 (a reduction of 3.5 percent from base Medicare spending).³
 - After accounting for earned shared savings paid by CMS to the ACOs (but not outstanding AIM funds), the estimated net savings to the Medicare program was -\$108.4M in PY1 (a reduction of 2.3 percent from base Medicare spending) and -\$153.4M in PY2 (a reduction of 3.0 percent from base Medicare spending).
 - Consistent with the estimated reductions in total Medicare spending, we found reductions in a variety of spending and utilization measures, such as decreases in spending for costly medical care, including acute hospitalizations, emergency department visits, outpatient hospital visits, and observation stays. However, we did not find decreased physician Medicare spending; instead, there was some evidence of increases in use of physician office-based tests. These findings were consistent between PY1 and PY2.
- ▶ **AIM ACOs commonly worked with management companies.** More than 80 percent of AIM ACOs worked with ACO management companies to assist in setting up and operating the ACO. These management companies were instrumental in ACO formation and day-to-day operations for many AIM ACOs. While ACOs were generally satisfied with the management companies they worked with, some AIM ACOs found elements of the health information technology system and services selected by the management company too costly given the capabilities offered. ACOs spent most of their AIM funds on administrative activities, care management, and information technology. (*Chapter 3*)
 - We found some evidence that **AIM ACOs that worked with management companies decreased total Medicare spending more than independent AIM ACOs.** Although the differences were not statistically significant at the 5 percent level, greater reductions in total

² The final evaluation report of the Advance Payment ACO Model can be found here: <https://innovation.cms.gov/initiatives/advance-payment-aco-model/>

³ Base spending represents total Medicare spending by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

Medicare spending for ACOs affiliated with management companies were estimated in both performance years. (*Chapter 3*)

- ▶ AIM ACOs reported using **AIM funds to ramp up care management**, particularly to pay for additional staff to support greater provision of annual wellness, chronic care management, and transitional care management visits. On average, AIM ACO beneficiaries had more and greater growth over two years in these visits than non-ACO FFS beneficiaries residing in the ACOs' markets. While annual wellness visits were most common among ACO beneficiaries, growth in chronic care management visits was the greatest between 2016 and 2017. (*Chapter 3*)
- ▶ To examine the incremental effect of AIM funds separate from participation in the Shared Savings Program, we compared total Medicare spending and other Medicare spending and utilization measures of AIM ACOs with the effects for similar non-AIM SSP ACOs not receiving AIM funds. Overall, AIM ACOs showed indications of **greater reductions in total Medicare spending in the first and second performance years of up to -\$35.55 per beneficiary per month for AIM Test 1 ACOs and -\$77.69 per beneficiary per month for AIM Test 2 ACOs.** (*Chapter 4*)
- ▶ The **reductions in Medicare spending and utilization were not offset by lower quality.** Overall, we found that AIM ACOs were able to maintain quality of care measured by patient/caregiver experiences and performance on preventive health and for at-risk populations metrics. Moreover, we found some evidence that AIM ACOs estimated to have reduced total Medicare spending performed better on quality measures compared to similar non-AIM SSP ACOs. (*Chapter 5*)
- ▶ **Most AIM ACO leaders plan for their ACO to continue participating in the Shared Savings Program** but expressed reluctance with assuming two-sided financial risk on account of a variety of factors, including organizational capacity and expected organizational changes, regulatory and programmatic uncertainty, and what they view as an insufficient window of time to decide whether to transition from one- to two-sided financial risk. (*Chapter 6*)

1. AIM ACOs and the AIM Evaluation

AIM provided up-front and monthly payments to two types of SSP ACOs: new SSP ACOs to encourage formation in low-ACO penetration areas (Test 1) and existing ACOs to encourage their continued participation and assist them to move to a two-sided risk track where they are financially at risk for the Medicare spending above their benchmark spending level (Test 2). AIM payments were used to fund care transformation activities and investments. The payments were recouped over time from shared savings earned by the ACO while it participated in the Shared Savings Program. In this chapter, we briefly describe the AIM participants and provide an overview of the evaluation design.

1.1. AIM ACO Participation Overview

AIM ACOs must participate in and meet the requirements for the Shared Savings Program.⁴ ACOs participating in AIM were required to be small (serving fewer than 10,000 beneficiaries) or located in rural or underserved areas (designated by a rurality definition).⁵ AIM ACOs also had certain limitations on the types of participating providers: hospital participants needed to be small or be designated as a critical access hospital (CAH). Detailed eligibility criteria are outlined in Chapter 1 of the Report on AIM Impacts in the First Performance Year, 2018.⁶

Forty-seven ACOs began AIM on either April 1, 2015 (4), or January 1, 2016 (43) (see **Exhibit 1-1**). The majority of ACOs (41) participated in AIM Test 1, and the remainder (4) participated in AIM Test 2. Two AIM Test 2 ACOs exited the Shared Savings Program at the end of 2015. As of the end of 2017, 45 AIM ACOs continued to participate in the Shared Savings Program.

Prior to 2019, Shared Savings Program participation agreements lasted for three years, with the option of renewing for additional three-year periods and accepting either one- or two-sided financial risk arrangements. Most AIM Test 1 ACOs (36 of 41) began AIM and the Shared Savings Program at the same time (see **Exhibit 1-1**). Five of the 41 AIM Test 1 ACOs joined the Shared Savings Program in 2015, a year prior to AIM. The AIM Test 2 ACOs joined the Shared Savings Program in 2013 or 2014 (and one of the ACOs that exited the program at the end of 2015 had joined in 2012) and started AIM in 2015 or 2016. In 2019, CMS reformulated the rules associated with the Shared Savings Program, called “Pathways to Success,” which limited the allowed time that an ACO could operate before transitioning to two-sided risk and changed participation agreement periods to five years.⁷

AIM ACOs received funds both up front and on a monthly basis for 24 months from the start of AIM (the 24-month AIM period is depicted in dark blue in **Exhibit 1-1**). AIM Test 1 ACOs received AIM funds for the 24-month period starting January 1, 2016, and ending December 31, 2017, and will need to decide whether to continue Shared Savings Program participation in 2019 (after their third year of Shared Savings Program participation), while the AIM Test 2 ACOs renewed their participation during the AIM funding period because they were already participating in the Shared Savings Program. ACOs will have until July 2019 to decide whether to continue to participate in the Shared Savings Program under “Pathways to Success.”

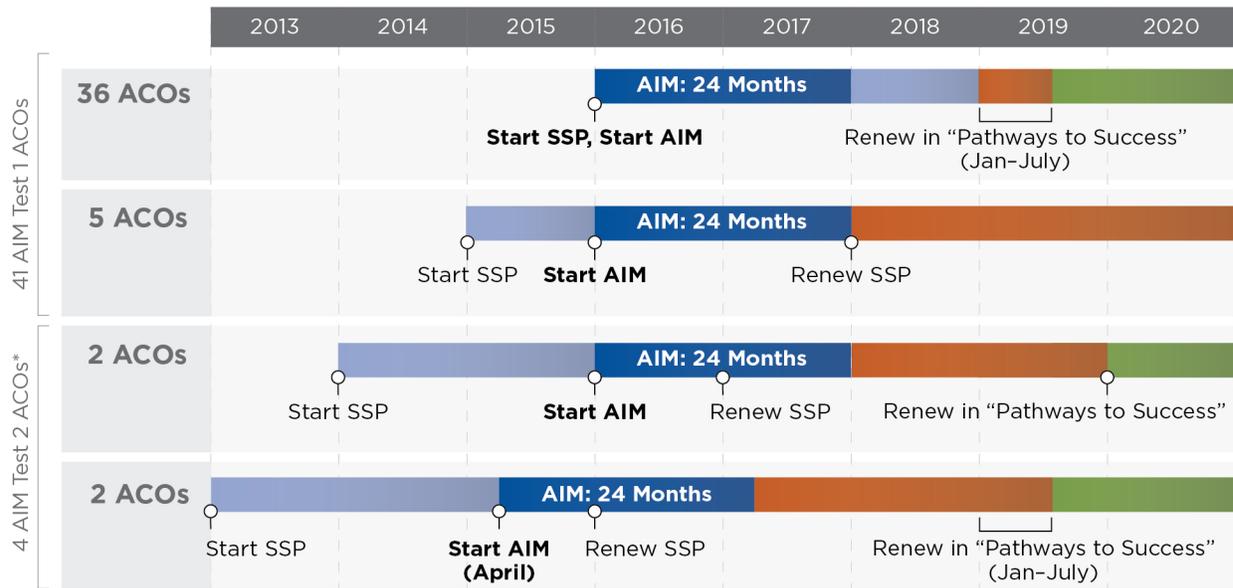
⁴ Accountable Care Organization Investment Model (AIM) Request for Applications (<https://innovation.cms.gov/Files/x/AIM-RFA.pdf>)

⁵ ACOs with providers most located in areas with a Rural-Urban Commuting Area (RUCA) codes ≥ 4 were designated as rural.

⁶ The evaluation report of AIM’s first performance year can be found here: <https://innovation.cms.gov/initiatives/ACO-investment-model/>

⁷ For more information on “Pathways to Success,” see: <https://www.cms.gov/newsroom/press-releases/cms-proposes-pathways-success-overhaul-medicare-aco-program>

Exhibit 1-1. Most AIM ACOs Concurrently Began Shared Savings Program and AIM



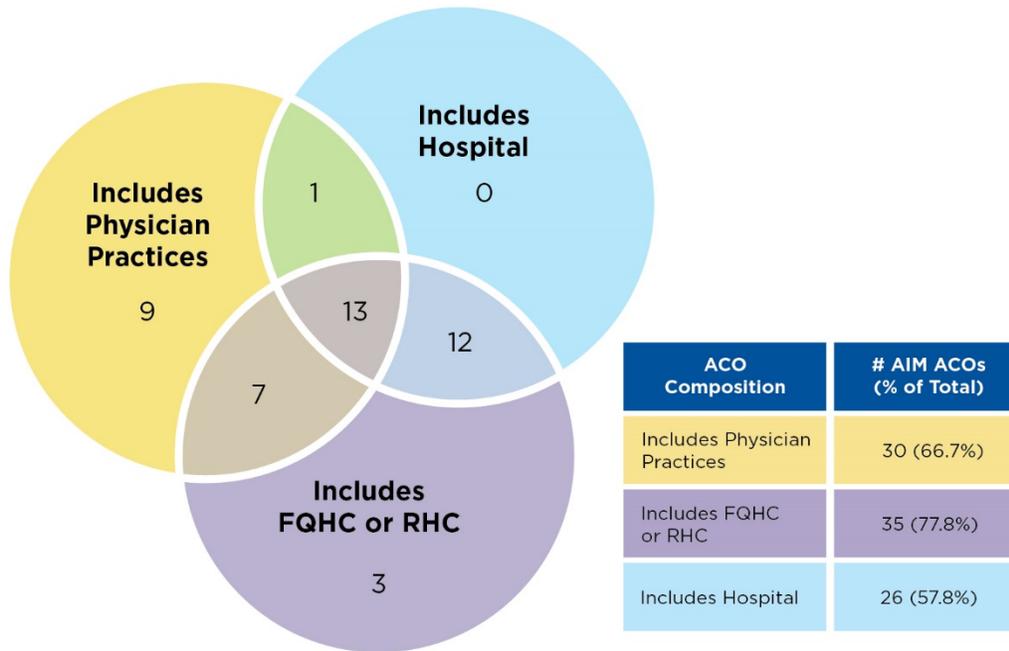
*Six ACOs began AIM Test 2 and two exited the Shared Savings Program at the end of 2015.

Note: The varying colors represent different Shared Savings Program participation periods, which, prior to 2019, lasted three years. The dark blue shading labeled "AIM: 24 months" represents the period for which AIM ACO received per beneficiary per month AIM funds.

ACO participants: AIM ACOs can be composed of physician practices, federally qualified health centers (FQHCs), rural health clinics (RHCs), critical access hospitals (CAHs), or other acute hospitals with no more than 100 beds. As shown in **Exhibit 1-2**, some AIM ACOs were composed of only physician practices or only FQHCs and RHCs, or included all three types of participants. As shown in **Exhibit 1-3**, AIM Test 1 ACOs were composed of, on average, 101.2 practitioners and 16.6 facility-based providers.⁸ As intended, a high proportion of AIM Test 1 ACOs were located in rural areas and more likely formed in health professional shortage areas than AIM Test 2 ACOs. AIM Test 2 ACOs were smaller in terms of number of participants and beneficiaries and did not include any facility-based providers. ACO-level characteristics are shown in **Appendix A1. Chapter 4** provides more information on how AIM ACO characteristics compare to other ACOs in the Shared Savings Program.

⁸ These counts include only participants whose beneficiaries were eligible for assignment to the ACO, as opposed to the full list of participants that the ACO reports to CMS. Beneficiary assignment to SSP ACOs is determined by the presence in Medicare claims data of eligible primary care visits to ACO providers with eligible specialties (<https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V5.pdf>). ACOs list participants in the ACO with whom they have contractual agreements, but not all ACO participants determine beneficiary assignment.

Exhibit 1-2. AIM ACO Composition (Performance Year 2)



Note: AIM performance year 2 (PY2) is 2017 for all AIM Test 1 ACOs and two of the four AIM Test 2 ACOs. PY2 is 2016 for the other two AIM Test 2 ACOs (see **Exhibit 1-1**). We categorized ACOs as composed of only FQHC and RHCs if greater than 75 percent of total allowed charges for primary care visits were incurred at a federally qualified health center (FQHC) or rural health clinic (RHC) as indicated in the Medicare outpatient claims file for the ACO. Less than 75 percent (but more than zero) allowed charges at a FQHC or RHC would indicate that the ACO includes both physician practices and FQHCs/RHCs. Whether the ACO included a hospital (all hospitals were critical access hospitals [CAHs]) was collected through ACO interviews (see **Chapter 3**). **Source:** ACO Provider Research Identifiable File (RIF) and Medicare claims data in 2016 and 2017.

Exhibit 1-3. AIM Test 1 ACOs are Larger and More Rurally Located than AIM Test 2 ACOs (Performance Year 2)

	AIM Test 1 ACOs (N=41)	AIM Test 2 ACOs (N=4)
Average # practitioners	101.2	74.0
% Primary care physicians	48.6%	64.5%
% Non-physician practitioners	37.2%	21.1%
% Specialist physicians	14.2%	14.4%
Average # FQHCs, RHCs, CAHs, or ETA hospitals with <101 beds	16.6	0.0
Average # assigned beneficiaries	10,329	6,204
Average % ACO rurality	72.6%	1.0%
Average % HPSA for primary care	15.4%	0.6%
Average % HPSA for mental health	71.6%	34.3%

Note: FQHC is federally qualified health center; RHC is rural health clinic; CAH is critical access hospital; ETA is electing teaching amendment; HPSA is health professional shortage area. AIM performance year 2 (PY2) is 2017 for all AIM Test 1 ACOs and two of the four AIM Test 2 ACOs. PY2 is 2016 for the other two AIM Test 2 ACOs (see **Exhibit 1-1**). Participant counts include SSP-eligible practitioners who had at least one eligible primary care visit with a beneficiary in the year. Eligible participants are described here: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V5.pdf>. ACO rurality is measured by the percentage of an ACO's assigned beneficiaries living in areas with RUCA codes ≥ 4. ACO HPSA percentage is measured by the percentage of an ACO's assigned beneficiaries living in areas designated as mental health or primary care HPSAs. **Source:** ACO Provider Research Identifiable File (RIF) and Medicare claims data in 2016 and 2017.

Beneficiary assignment: Beneficiary assignment to AIM ACOs is determined by the SSP ACO beneficiary assignment algorithm. Beneficiaries who meet certain Medicare coverage and geographic criteria during the year may be assigned to an ACO depending upon the participant(s) from whom they received primary care services. An eligible beneficiary receiving the plurality of his or her primary care services from an ACO’s participants would be assigned to that ACO for that year. Data sources used in determining assignment are described in **Appendix 1B** and a further description of the Shared Savings Program assignment algorithm and our application of the algorithm are provided in **Appendix 1C**. The Shared Savings Program assignment methodology has changed over time and **Appendix 1C** discusses how the changes affect the characteristics of the beneficiaries assigned and how the evaluation design has accommodated these changes.

AIM funds: AIM Test 1 provided start-up financial support to ACOs that began their first Shared Savings Program agreement period in 2015 or 2016. Participating organizations received an up-front fixed payment of \$250,000, an up-front variable payment of \$36 for each assigned beneficiary, and a monthly payment of \$8 for each assigned beneficiary (up to 10,000 beneficiaries) for 24 months. AIM Test 2 offered financial support to ACOs that began their Shared Savings Program agreement period in April 2012, July 2012, January 2013, or January 2014. Participating organizations received the same up-front variable payment of \$36 for each assigned beneficiary, a smaller monthly payment of \$6 for each assigned beneficiary for 24 months, and no up-front fixed payment. AIM payments for Test 1 and Test 2 ACOs are summarized in **Exhibit 1-4**. Total AIM funds paid by CMS as of the end of 2017 were \$95,615,528. ACO-level total AIM funds are reported in **Appendix 1D**.

Exhibit 1-4. AIM ACOs Receive Up-Front and Ongoing Payments for 24 Months

AIM	Eligibility	Up front	Monthly*
Test 1	New ACOs (2015, 2016)	\$250,000 + \$36 per beneficiary	\$8 per beneficiary per month
Test 2	Existing ACOs (2012, 2013, 2014)	\$36 per beneficiary	\$6 per beneficiary per month

*The monthly per beneficiary payment was capped to 10,000 assigned beneficiaries.

Source: Accountable Care Organization Investment Model (AIM) Request for Applications (<https://innovation.cms.gov/Files/x/AIM-RFA.pdf>).

AIM payments are recouped by CMS from any shared savings earned by AIM ACOs. Although AIM funds are only distributed over 24 months, they are recouped for up to two Shared Savings Program participation agreement periods, if the ACO decides to renew its agreement. AIM Test 2 ACOs are required to repay their AIM payments if they are not recouped before the end of their participation agreement; they must therefore have financial guarantees to participate in AIM. AIM Test 1 ACOs that do not generate enough shared savings for CMS to recoup their AIM payments by the end of their first or second participation agreement have the remaining balance forgiven if the ACO does not renew to start a third participation agreement. Under both Test 1 and 2, ACOs that otherwise terminate participation in the Shared Savings Program are required to repay any remaining AIM payments.

A requirement of AIM participation is the development of quarterly spending plans for how the ACOs will spend their AIM funds. The spending plans must be approved by CMS, and once approved, actual spending is tracked through quarterly expense reports. We analyzed these quarterly expense reports and found that, as of the end of 2017, AIM ACOs had reported using \$68,191,702 in AIM payments, 71.3 percent of total available AIM funds (see **Appendix 1E** for information on analyzing expense reports).⁹ The amount of expenses reported for each ACO is provided in **Appendix 1D**.

⁹ AIM ACOs have an additional year after the 24 months to spend AIM funds. For example, an ACO starting AIM in 2016 can continue to spend the AIM funds through the end of 2018.

Financial results: As of 2017, 20 AIM ACOs (44.4 percent) earned shared savings in at least one year since starting AIM. From these 20 AIM ACOs, CMS recouped \$37,386,893 (39.1 percent) of AIM funds paid (see **Exhibit 1-5**). CMS fully recouped AIM funds from 11 AIM ACOs while 34 AIM ACOs still owe some or all AIM payments. Findings by ACO are reported in **Appendix 1D**.

Exhibit 1-5. CMS Recouped Nearly 40 Percent of AIM Funds through End of 2017

	AIM Test 1 ACOs N=41	AIM Test 2 ACOs N=4	All AIM ACOs N=45
Total AIM funds available	\$91,100,156	\$4,515,372	\$95,615,528
Number ACOs earning shared savings (% of AIM ACOs)	17 (41.5%)	3 (75.0%)	20 (44.4%)
Number ACOs fully repaying AIM funds (% of AIM ACOs)	9 (22.0%)	2 (50.0%)	11 (24.4%)
Amount of AIM funds recouped (% of total AIM funds available)	\$34,545,515 (37.9%)	\$2,841,378 (62.9%)	\$37,386,893 (39.1%)
AIM funds outstanding (% of total AIM funds available)	\$56,554,641 (62.1%)	\$1,673,994 (37.1%)	\$58,228,635 (60.9%)

Note: The figures in the table were based on the Shared Savings Program financial reconciliation occurring in mid-2018 for the 2017 Shared Savings Program participation year.

Source: 2017 Shared Savings Program Public Use File (PUF): <https://www.cms.gov/research-statistics-data-and-systems/downloadable-public-use-files/sspaco/index.html>.

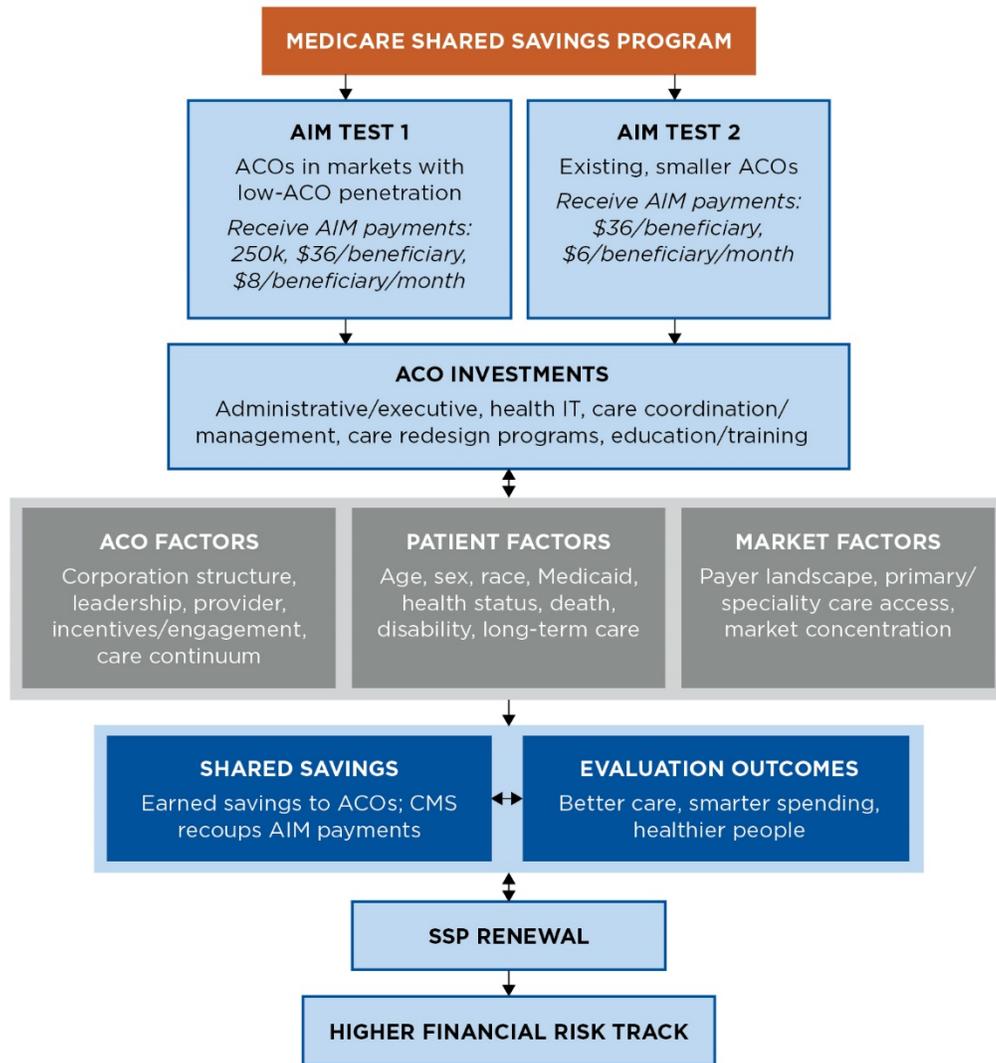
Risk track: All AIM ACOs began AIM in an up-side-risk-only financial track whereby ACOs share in earned savings, but do not need to pay any portion of losses. A goal of AIM is to encourage greater participation in higher financial risk tracks so that ACOs are responsible for a portion of losses (and share in a greater proportion of savings). In 2017, one of two AIM Test 2 ACOs eligible for renewal, Sunshine ACO, did transition to a two-sided financial track, as did one additional AIM Test 2 ACO and one AIM Test 1 ACO in 2018. Through “Pathways to Success,” starting in July 2019, CMS set forth two options for continued Shared Savings Program participation—basic and enhanced tracks—replacing the existing financial tracks.¹⁰

1.2. AIM Evaluation Overview

The AIM evaluation is founded upon a conceptual framework of how AIM funds can be invested by the ACO to reach the goals of shared savings, Shared Savings Program renewal (potentially with a higher financial risk track), and ultimately, better care, healthier people, and smarter spending (**Exhibit 1-6**).

¹⁰ Calendar Year 2019 Physician Fee Schedule final rule, 83 FR 59452, November 2018. See also <https://www.cms.gov/newsroom/fact-sheets/final-rule-creates-pathways-success-medicare-shared-savings-program>.

Exhibit 1-6. AIM Conceptual Framework for Achieving Better Care, Smarter Spending, and Healthier People



Source: Developed by the AIM evaluation team.

1.2.1 Data Collection and Model Implementation

Understanding AIM ACOs’ operations, decision-making, and responses to their experiences is key to the AIM evaluation. To gather information on the use of AIM funds, perspectives on the model, and plans for renewing their Shared Savings Program participation and moving to two-sided financial risk, we conducted two rounds of interviews with ACO representatives, interviews with physicians from a subset of AIM ACOs, Web surveys with ACO representatives, and an interview with the CMS AIM model leads (Exhibit 1-7). In addition, we analyzed information from quarterly expense reports submitted by the AIM ACOs on their spending of AIM funds. More detailed description of the data collection and expense reports are located in Appendix 1B and Chapter 3.

Exhibit 1-7. Primary Data Collection for Understanding AIM Implementation

	2016 April- June	2016 July- December	2017 January- June	2017 July- December	2018 January- June	2018 July- December
Telephone Interviews						
ACO leadership		■	■	■		
Practitioners			■			
AIM model team						■
Web Surveys						
ACO leadership		■				■

1.2.2 Impact Evaluation Key Design Features

Comparison groups

The construction of robust comparison groups is essential to the quasi-experimental research design we used to evaluate AIM impacts. By comparing changes in outcomes from before AIM began to after AIM began among AIM ACOs to changes in outcomes over the same period for the ACOs’ comparison groups, we measured which changes were from AIM rather than external factors, producing the best estimate of the change in outcomes that would have occurred in the absence of AIM. We used two main types of comparison groups to address different AIM impacts:

- **Non-ACO FFS market comparison group:** Beneficiaries who were eligible for assignment to an SSP ACO but not attributed to any Medicare ACO composed a comparison group of eligible FFS Medicare beneficiaries located within each ACO’s market.¹¹ This group is relevant for 41 AIM Test 1 ACOs that may not have joined the Shared Savings Program in the absence of AIM. Impacts estimated with this group measure the overall effect of AIM ACOs in relation to a hypothetical world with no Medicare ACOs. The use of market-delineated comparison groups ensures that comparison beneficiaries face the same market forces as beneficiaries assigned to AIM ACOs, such as the availability of different types of care (e.g., post-acute care or hospice care), availability of other payers, participant characteristics, and the general market environment. Moreover, local comparison groups control for geographic differences in Medicare reimbursement rates and for any changes in unobservable factors causing market-wide changes in spending or quality. **Chapter 2** provides the findings from comparing outcomes between AIM ACO beneficiaries and non-ACO FFS beneficiaries residing in the AIM ACOs’ markets.
- **Non-AIM SSP comparison group:** A second comparison approach involves comparing AIM ACOs to other ACOs in the Shared Savings Program to understand the effect of AIM funds over Shared Savings Program participation. In 2017, there were 427 non-AIM ACOs in the Shared Savings Program. We selected non-AIM ACOs that were similar to AIM ACOs, defined as those ACOs starting the Shared Savings Program in the same cohort year, initially participating in Track 1 (upside-only financial risk), not participating in the AP model, and of similar size in terms of number of

¹¹ We define markets based on Primary Care Service Areas (PCSAs) where each AIM ACO’s assigned beneficiaries reside. PCSAs delineate discrete geographic areas where residents generally seek primary care from the same providers, defined using Medicare claims data. There are 6,542 PCSAs nationwide. These relatively small geographic areas, defined based on the use of primary care resources, are well suited for delineating ACO markets.

assigned beneficiaries. In addition, we applied further weighting and risk adjustment to better balance non-AIM SSP ACOs to AIM ACOs.

Analyses using this comparison group were intended to better understand the effect of AIM payments apart from the effect of participating in the Shared Savings Program. This comparison is appropriate for exploring the effect of AIM Test 2 ACOs that existed prior to joining AIM (see **Chapter 4**) as well as comparisons of Shared Savings Program quality measures that are only available at the ACO-level (**Chapter 5**). We also use this comparison group to contrast AIM Test 1 impacts to those of similar non-AIM SSP ACOs to provide further context for AIM impact findings (**Chapters 4**).

Despite our efforts to enhance the comparability of AIM and non-AIM ACOs, it is important to note that the ACOs differ in ways that cannot be fully observed or accounted for and resulting differences should be interpreted cautiously.

Performance and baseline years

For most AIM ACOs, the first and second performance years (PY1 and PY2) were 2016 and 2017, respectively (see **Exhibit 1-8**). For four AIM Test 2 ACOs, PY1 was 2015 and PY2 was 2016. Thus, unless otherwise noted, performance years PY1 and PY2 in this report refer to the first and second year of AIM participation, regardless of the calendar year. Two AIM ACOs exited the Shared Savings Program at the end of 2015 and did not participate in PY2. They were included in PY1 analyses unless otherwise indicated.

To capture trends pre-dating the beginning of AIM, two or three baseline years were used, depending on participation in AIM Test 1 or 2 (**Exhibit 1-8**). For AIM Test 1 ACOs, the baseline years included FFS beneficiaries who would have been assigned in each of three years preceding the start of AIM to ACO participants from the performance year. This approach is done separately for each performance year—thus, for PY2, the baseline is composed of beneficiaries assigned in PY2 using the ACO participants in PY2 (see **Appendix 1C** for additional discussion on assignment during the baseline). Since AIM Test 2 ACOs existed before AIM began, their two baseline years included FFS beneficiaries actually assigned to each ACO prior to participation in AIM. Comparison groups in baseline years were analogously constructed as in a performance year for each AIM ACO.

Exhibit 1-8. AIM Evaluation Performance and Baseline Years

	Baseline	PY1	PY2
AIM Test 1 ACOs (41 ACOs)	2013-2015	2016	2017
AIM Test 2 ACOs (6 ACOs)			
Physicians Collaborative Trust of Mississippi Gulf Coast*	2013-2014	2015	-
Baroma Healthcare International*	2013-2014	2015	-
The Premier Healthcare Network	2013-2014	2015	2016
Akira Health	2013-2014	2015	2016
Sunshine ACO	2014-2015	2016	2017
PremierMD ACO	2014-2015	2016	2017

*Exited the Shared Savings Program at the end of 2015

1.2.3 Performance Measures

To assess AIM impacts, we examined the measures listed in **Exhibit 1-9**. We drew these measures from the quality measures that SSP ACOs are required to report and key claims-based measures. We grouped measures into Medicare spending, utilization, and quality of care measures. Detailed specifications for each measure are provided in **Appendix 1F**.

Exhibit 1-9. AIM Evaluation Performance Measures

Measure Domains	Measures Description	Data Sources
Medicare spending (per beneficiary per month)	<ul style="list-style-type: none"> Total Acute inpatient Physician services Hospital outpatient + ambulatory surgery centers Skilled nursing facility (SNF) Home health Durable medical equipment (DME) 	<ul style="list-style-type: none"> Medicare claims
Utilization	<u>Inpatient</u> <ul style="list-style-type: none"> Acute inpatient stays Any inpatient hospitalization All-cause 30-day readmission Any ambulatory care sensitive condition (ACSC) admission <u>Emergency department (ED) and observation</u> <ul style="list-style-type: none"> Any ED visits, without hospital admission Any ED visits with hospital admission Outpatient observation stays <u>Post-acute care and hospice</u> <ul style="list-style-type: none"> SNF days Any hospice <u>Physician services</u> <ul style="list-style-type: none"> Office-based evaluation and management (E&M) visits Berenson-Eggers Type of Service (BETOS) imaging BETOS procedures BETOS tests 	<ul style="list-style-type: none"> Medicare claims
Mortality	<ul style="list-style-type: none"> Mortality rate 	<ul style="list-style-type: none"> Medicare enrollment data
Quality measures: patient/caregiver experience	<ul style="list-style-type: none"> Getting Timely Care, Appointments, and Information How Well Your Doctors Communicate Patients' Rating of Doctor Access to Specialists Health Promotion and Education Shared Decision Making 	<ul style="list-style-type: none"> Beneficiary-level ACO and PQRS/MIPS CAHPS data*
Quality measures: preventive health	<ul style="list-style-type: none"> Depression screening Colorectal cancer screening Mammography screening 	<ul style="list-style-type: none"> ACO quality measures from SSP Public Use File
Quality measures: at-risk populations	<ul style="list-style-type: none"> Diabetes poor control Hypertension (blood pressure control) Ischemic vascular disease control 	<ul style="list-style-type: none"> ACO quality measures from SSP Public Use Files

*CAHPS = Consumer Assessment of Healthcare Providers and Systems; PQRS = Physician Quality Reporting System; MIPS = Merit-based Incentive Payment System

We assessed AIM impacts on measures in different ways depending on their availability in populations of interest. Claims-based measures (and mortality) can be calculated for all Medicare beneficiaries during the performance and baseline years and thus were used in beneficiary-level analyses for estimating the impact of AIM ACOs. Patient/caregiver experience measures were available at the beneficiary-level during the performance period and were used for comparing ACO and comparison beneficiaries during the performance years. Preventive health and at-risk population measures were assessed at the ACO level for AIM ACOs in this report and those analyses are more descriptive in nature. Details on data sources are provided in **Appendix 1B**.

1.3. Organization of this Report

The remainder of this report is organized as follows:

- *AIM impacts on spending and utilization:* The impacts of AIM on Medicare spending and utilization measures for AIM Test 1 ACOs in both performance years are reported in **Chapter 2**.
- *How ACOs were implemented:* We describe how AIM participants operated the ACOs, areas in which they invested AIM funds, their reasons for participation, external relationships, and changes over two performance years in **Chapter 3**.
- *How ACOs used AIM funds and the effect of AIM funds separate from Shared Savings Program participation:* We summarize the AIM ACOs' use of AIM funds and compare differences between AIM ACOs and non-AIM SSP ACOs that did not receive AIM funds for spending and utilization performance measures in **Chapter 4**.
- *AIM impacts on patient/caregiver experience and quality of care:* The relationship between AIM and quality metrics, including patient/caregiver experience drawn from CAHPS and ACO-level quality of care measures are reported in **Chapter 5**.
- *ACOs' future plans:* We discuss the AIM ACOs' future plans in the Shared Saving Program and their perceptions of two-sided financial risk **Chapter 6**.
- *AIM evaluation next steps:* We provide the plans for the final AIM evaluation report forthcoming in mid-2020.

2. AIM ACOs Decreased Medicare Spending and Related Utilization in Both Performance Years

This chapter presents our findings on the impacts of AIM Test 1 ACOs on Medicare spending and utilization measures in PY1 and PY2. The goal of this analysis is to assess the performance of these newly formed AIM ACOs relative to trends in their markets. It builds on previously reported results on the first year of AIM performance (AIM Evaluation Report for Performance Year 1, 2018).¹² We also report findings on overall AIM Test 1 ACO performance findings by pooling the 41 AIM Test 1 ACOs for each performance year. We analyze the ACOs' performance relative to similar SSP ACOs in **Chapter 4**.

Key findings on the impacts of AIM Test 1 ACOs include:

- ▶ Across all AIM Test 1 ACOs, we estimated reduced per beneficiary per month (PBPM) total Medicare spending by -\$28.21 in PY1 and -\$36.94 in PY2 compared to beneficiaries in the AIM ACOs' non-ACO FFS market comparison group.
 - These estimates translated to an aggregate Medicare spending reduction of -\$131.0M in PY1 (a reduction of 2.8 percent from base Medicare spending) and of -\$187.7M in PY2 (a reduction of 3.5 percent from base Medicare spending).¹³
 - After accounting for earned shared savings paid by CMS, the estimated net savings to the Medicare program was -\$108.4M in PY1 (a reduction of 2.3 percent from base Medicare spending) and -\$153.4M in PY2 (a reduction of 3.0 percent from base Medicare spending).
- ▶ Of the 41 AIM Test 1 ACOs, 33 ACOs (80.1 percent) had point estimates indicating reductions in Medicare spending in PY2. Twelve of these ACOs had statistically significant reductions in total Medicare spending at the 5 percent level. Eight AIM ACOs had point estimates indicating increases in Medicare spending, only one of which was statistically significant.
- ▶ Estimated reductions in total Medicare spending were supported by findings for other spending and utilization measures, such as decreases in spending for costly medical care including acute hospitalizations, emergency department visits, outpatient hospital visits, and observation stays. We did not find decreased physician spending; instead, there was some evidence of increases in use of physician office-based tests. These findings were consistent between PY1 and PY2.

2.1. Data and Methods

We used a difference-in-differences (DID) framework to estimate AIM impacts. DID is a quasi-experimental method that can be used to identify the average effect of participation in an intervention when random assignment is not possible. The DID method controls for time-invariant differences between ACO and non-ACO populations by subtracting outcomes in the populations across time. This section describes the components of the ACO and comparison group, baseline period, performance measures, and analytic approach to applying the DID methodology.

ACO group: Beneficiaries assigned to each ACO served as the group of beneficiaries exposed to the ACO. We applied the Shared Savings Program retrospective assignment algorithm to claims data to identify beneficiaries assigned to the 41 AIM Test 1 ACOs in PY1 and PY2 (see **Appendix 1C** for a

¹² <https://innovation.cms.gov/files/reports/aim-firstannrpt.pdf>

¹³ Base spending represents total Medicare spending by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

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description of assignment). The assignment algorithm changed between 2016 and 2017, and for each performance year, we used the appropriate assignment algorithm (see **Appendix 1C** for more detail).¹⁴

Comparison group: We drew the comparison group of FFS beneficiaries from each ACO's market. An ACO's market consisted of the PCSAs where the ACO's assigned beneficiaries resided.¹⁵ We selected beneficiaries within the ACO's market who met the eligibility requirements for assignment, excluding those assigned to another Medicare ACO (including Next Generation ACOs and other SSP ACOs).¹⁶ We found overlap between beneficiaries in the AIM markets and other CMMI initiatives to be low and generally similar to the AIM ACO group; thus, these beneficiaries were not excluded (see **Appendix 2A**). The size of each ACO's comparison group in the second performance year is reported in **Appendix 2B**.¹⁷

Baseline and performance time periods: The 41 AIM Test 1 ACOs began AIM on January 1, 2016, and 2016 is their first AIM performance year. The second AIM performance year is 2017, and the three years preceding the start of AIM (2013-2015) served as their baseline period.¹⁸ With the ACO participants in each performance year, we constructed the baseline by hypothetically assigning beneficiaries to them in each year of the baseline period (see **Appendix 1C** for additional detail).¹⁹ We identified a comparison group of beneficiaries in each ACO's market for each year of the baseline period using the same methodology for each performance year.

Performance measures and statistical specifications: We examined the 21 claims- or enrollment-based measures listed in **Chapter 1** and described in **Appendix 1F**. The statistical specification of the regression models differed for certain performance measures depending on the measure's data distribution.²⁰ **Appendix 2C** describes the statistical specification that was used for each measure.

Risk adjustment and covariate balancing: Despite careful construction of each ACO's market comparison group for each AIM ACO, the relative mix of beneficiary characteristics between the ACO and comparison group still may change over time for reasons external to the model (e.g., random chance or regulatory changes). If beneficiary characteristics are correlated with the outcome measures, then failure to control for changes in these beneficiary characteristics may bias the estimated impact of AIM.

¹⁴ Due to the SSP assignment methodology changing between PY1 and PY2, the analytic population had fewer beneficiaries living in long-term institutions in PY2 compared to PY1; thus, PY1 and PY2 are not perfectly comparable to each other.

¹⁵ PCSAs delineate discrete geographic areas where residents generally seek primary care from the same providers, defined using Medicare claims data. There are 6,542 PCSAs nationwide. These relatively small geographic areas, defined based on the use of primary care resources, are well suited for delineating ACO markets. We did not draw comparison beneficiaries from PCSAs with less than 0.5 percent of the ACO's total assigned beneficiaries.

¹⁶ <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec-V4.pdf>

¹⁷ Sample sizes for PY1 were reported in the Report on AIM Impacts in the First Performance Year, 2018.

¹⁸ Five AIM ACOs started the Shared Savings Program in 2015, one year prior to AIM. For these ACOs, their first Shared Savings Program year is part of their baseline period.

¹⁹ We found that the large majority of performance year ACO TINs and CCNs were present and identifiable in at least one of the baseline years. We also observed high rates of the same individual practitioners present in both the performance and baseline periods.

²⁰ Although a linear, ordinary least squares model may still have retrieved consistent impact estimates in some cases, such results would be less precise than those obtained from a better fitting model that accounts for the non-normal distribution of the performance measures.

AIM ACOs Decreased Medicare Spending and Related Utilization in Both Performance Years

To address this possibility, the preferred model accounted for a rich set of observable characteristics carefully selected by reviewing prior literature related to ACO evaluations as well as incorporating additional factors based on theoretical considerations and rigorous empirical testing.²¹ We provide the list of, and rationale for, the risk adjustment factors chosen for the analysis in **Appendix 2D**. We additionally applied econometric methods to further improve the similarity of comparison to ACO beneficiaries. We balanced risk factors (or covariates) using a weighting technique called entropy balancing (EB) that balances distributions, not simply means, across ACO and comparison groups (see **Appendix 2D** for further description of this method).

Analysis: The DID evaluation design compares changes in outcomes among ACO beneficiaries to changes in outcomes among comparison beneficiaries. Under DID, the change in an outcome is the difference between the average outcome in the performance period (after the start of AIM) and the average outcome in the baseline period (before the start of AIM). This approach accounts for time-invariant differences between the ACO and comparison groups. We ran separate regressions for estimating the impacts on the performance measures for each ACO as well as pooled across all AIM Test 1 ACOs. In the pooled regression models, we included additional geographic controls, as described in **Appendix 2D**.

Parallel trends testing: The key assumption of the DID design is the parallel trends assumption, which requires similar trajectories in the outcomes between AIM ACOs and their comparison groups prior to the start of the intervention. The parallel trends assumption was tested both for the main impact regression as well as for each subgroup regression. Generally, the pooled models passed parallel trends testing for all outcomes, but not all individual ACO models passed. The methodology and summary of results are described in **Appendix 2E**.

2.2. Results

Below, we first present the estimated impacts of AIM Test 1 ACOs on total Medicare spending. We then show estimated AIM impacts on other performance measures and examine how the findings differed between the two performance years and discuss the limitations of our approach.

2.2.1 AIM Reduced Total Medicare Spending in Both Performance Years

The estimated impacts of AIM on total Medicare spending by AIM ACO for each performance year are depicted in **Exhibit 2-1**. Solid bars indicate statistically significant findings at the 5 percent level while patterned bars indicate estimates that were not statistically significant at the 5 percent level. In PY2, we estimated decreased total Medicare spending for the majority of AIM Test 1 ACOs (33 ACOs), with 12

²¹ McWilliams JM, LA Hatfield, ME Chernew, BE Landon, and AL Schwartz. (2016). “Early Performance of Accountable Care Organizations in Medicare.” *The New England Journal of Medicine*, Vol. 374. Pp.2357-2366.

McWilliams JM, ME Chernew, BE Landon, and AL Schwartz. (2015) “Performance Differences in Year 1 of Pioneer Accountable Care Organizations.” *The New England Journal of Medicine*, Vol. 372. Pp.1927-1936.

McWilliams, JM, BE Landon, ME Chernew, and AM Zaslavsky. (2014) “Changes in Patients’ Experience in Medicare Accountable Care Organizations.” *The New England Journal of Medicine*, Vol. 371. Pp.1715-1724.

Nyweide DJ, W Lee, TT Cuerdon, HH Pham, M Cox, R Rajkumar, and PH Conway. (2015). “Association of Pioneer Accountable Care Organizations vs. Traditional Medicare Fee for Service with Spending, Utilization, and Patient Experience.” *JAMA*, Vol. 313(21). Pp.2152-2161.

Schwartz, AL, ME Chernew, BE Landon, and JM McWilliams. (2015). “Changes in Low-Value Services in Year 1 of the Medicare Pioneer Accountable Care Organization Program.” *JAMA Internal Medicine*, Vol. 175(11). Pp.1815-1825.

AIM ACOs Decreased Medicare Spending and Related Utilization in Both Performance Years

ACOs having statistically significantly decreased spending (p-value < 0.05). Only one of the AIM ACOs with impact estimates that indicated increased spending was statistically significant. Akira Health of Los Angeles had the largest spending reductions, estimated to be -\$315.84 PBPM in total Medicare spending (p-value < 0.01), or 15.2 percent of base Medicare spending for this ACO.²² However, this ACO did not pass a key assumption for using this type of statistical model: that there were parallel trends in spending between the ACO and comparison group in the baseline period. Because their spending trajectories were not parallel, we cannot conclude that the decrease observed for this ACO was related to the effects of AIM participation on spending.²³ **Appendix 2F** lists the Medicare spending results by AIM ACO in PY2. The equivalent PY1 findings can be found in the Report on AIM Impacts in the First Performance Year, 2018.

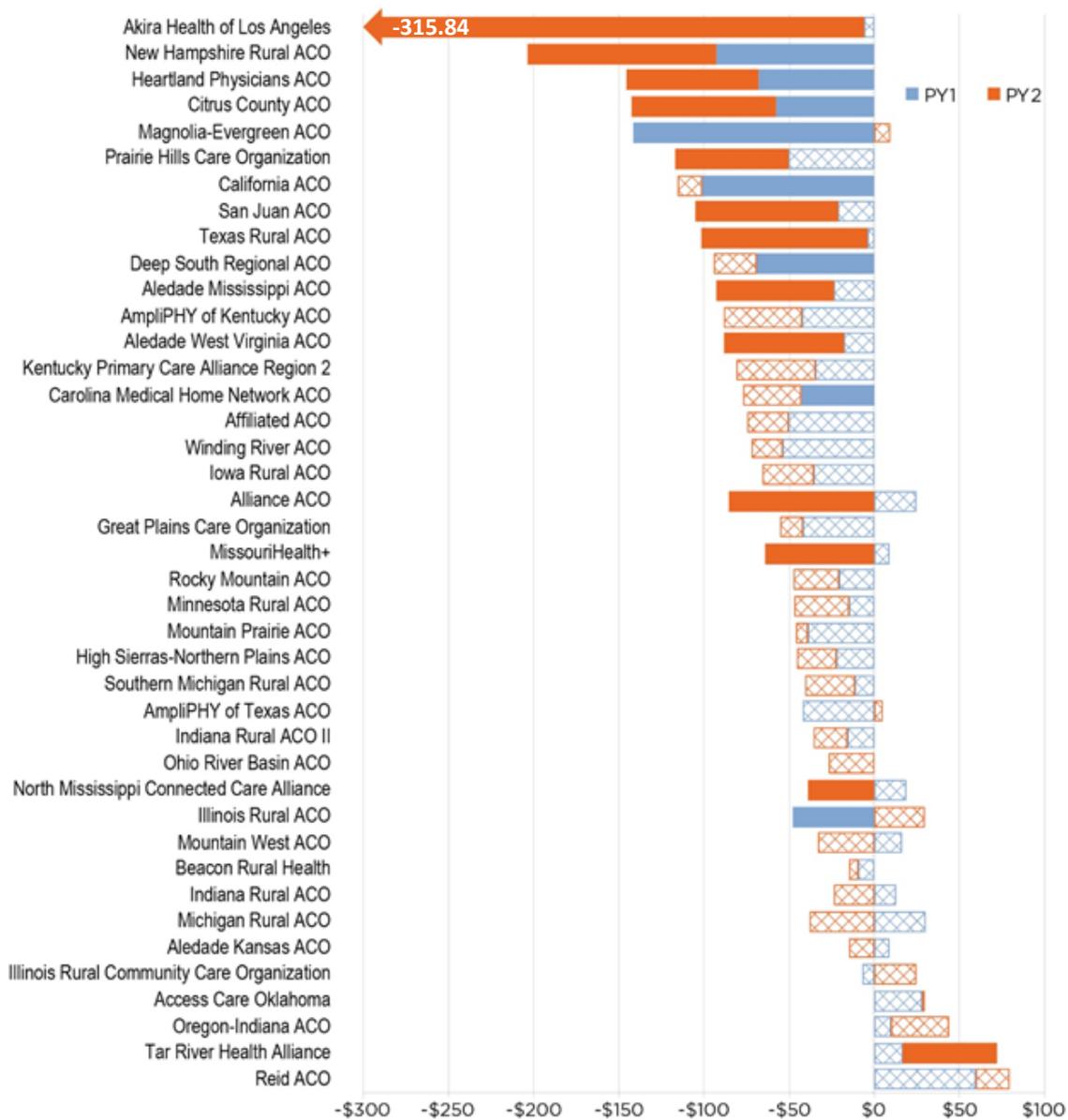
As shown in **Exhibit 2-1**, many ACOs achieving spending reductions relative in the first performance year continued to do so in the second performance year, although the magnitude of the reductions varied from year to year. Of the 41 AIM Test 1 ACOs, 26 ACOs had point estimates indicating decreases in spending in both performance years.

²² Base spending represents total Medicare spending by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

²³ The estimated Medicare spending reduction was so large for this ACO because it experienced both decreases in Medicare spending by ACO-assigned beneficiaries and increases in spending by its comparison group between the baseline and PY2. Baseline spending for the comparison group was substantially lower than baseline spending for the ACO-assigned beneficiaries (\$1,589.74 PBPM versus \$1,965.20 PBPM) while spending during the performance year was similar between the two groups (\$1,702.23 PBPM for the comparison group and \$1,761.84 for ACO-assigned beneficiaries). The differential baseline spending is consistent with the fact that the ACO did not pass the parallel trends assumption for this measure. We note that through ACO interviews, this ACO reported adding a substantial number of primary care practitioners between PY1 and PY2 and shifting focus away from higher risk patients. We will continue to investigate how these changes impacted this ACO's findings.

AIM ACOs Decreased Medicare Spending and Related Utilization in Both Performance Years

Exhibit 2-1. Many AIM Test 1 AIM ACOs Showed Decreases in per Beneficiary per Month Total Medicare Spending in both Performance Years



Note: Solid bars denote statistically significant findings at the 5 percent level. Results were estimated from applying a DID approach comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. Performance year 1 and 2 are 2016 and 2017, respectively. The baseline period is 2013 to 2015. Source: ACO Provider RIF for 2016 and 2017 and 2013-2017 Medicare claims data.

We estimated the change in total Medicare spending pooled across all AIM Test 1 ACOs for each performance year (**Exhibit 2-2**). As shown in **Exhibit 2-2**, average PBPM total Medicare spending for AIM ACO assigned beneficiaries was \$965.15 during the second performance year and \$1,037.31 during the baseline, resulting in a decrease in PBPM Medicare spending of -\$72.16 between the two time periods. Comparison group beneficiaries decreased PBPM total Medicare spending by -\$35.21 on average

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between the second performance year and the baseline period. The DID result across all AIM Test 1 ACOs was therefore, on average, -\$36.94 (95 percent confidence interval [CI] of -\$49.33 to -\$24.56). That is, we estimated that AIM reduced PBPM total Medicare spending by -\$36.94 in PY2. In PY1, ACO and comparison beneficiaries also decreased total Medicare spending, on average, and we estimated that AIM ACOs decreased PBPM total Medicare spending by -\$28.21 (95 percent CI of -\$41.53 to -\$14.90) compared to comparison beneficiaries in the ACOs' markets.

Exhibit 2-2. AIM ACO and Comparison Group Reduced Spending between Baseline and Performance Years

	AIM			Comparison			Difference-in-Differences
	Performance	Baseline	Difference (Perf – Base)	Performance	Baseline	Difference (Perf – Base)	
PY1	\$985.34	\$1,031.28	-\$45.94 (-62.86, -29.02)	\$997.84	\$1,015.56	-\$17.73 (-28.37, -7.08)	-\$28.21 (-41.53, -14.90)
PY2	\$965.15	\$1,037.31	-\$72.16 (-91.9, -52.4)	\$997.38	\$1,032.60	-\$35.21 (-51.3, -19.2)	-\$36.94 (-49.33, -24.56)

Note: Findings are for 41 AIM Test 1 ACOs. DID impact findings estimated from comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. Performance year 1 and 2 are 2016 and 2017, respectively. The baseline period is 2013 to 2015. 95% confidence intervals are shown in parentheses.

Source: ACO Provider RIF for 2016 and 2017 and 2013-2017 Medicare claims data.

When aggregating across all AIM beneficiaries for the year, the total reduction in Medicare spending was -\$187.7 million, or a reduction of 3.5 percent (95 percent CI: 4.0 percent to 2.5 percent) from base Medicare spending in PY2 (**Exhibit 2-3**). In contrast, in PY1, we estimated aggregate spending reductions of -\$131.0 million, or a reduction of 2.8 percent from base spending (95 percent CI: 4.1 percent to 1.5 percent). Twelve AIM Test 1 ACOs earned shared savings in 2017, totaling \$34.4 million (see **Appendix 1D** for ACO-specific earned shared savings). Subtracting the earned shared savings from aggregate spending reductions yielded savings to the Medicare program of -\$153.4 million in PY2 (95 percent CI: -\$216.2M to -\$90.6M), as shown in **Exhibit 2-3**. These savings represented a reduction of 3.0 percent (95 percent CI: 4.0 percent to 1.8 percent) from base spending among beneficiaries assigned to AIM ACOs. In PY1, net savings to Medicare was estimated to be -\$108.4M (95 percent CI: -\$170.2M to -\$46.6M) or a reduction of 2.3 percent from base spending (95 percent CI: 3.6 percent to 0.1 percent).²⁴

²⁴ AIM funds were recouped from shared savings, but outstanding AIM funds were not included in the calculations because most AIM ACOs had not completely spent their AIM funds.

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Exhibit 2-3. AIM Test 1 ACOs Reduced Total Medicare Spending in Both Performance Years

Performance Year (PY)	Aggregate Spending (Millions) [b]	Percent Savings of Base Spending [c]	Net Savings to Medicare Program (Millions) [d]	Percent Net Savings to Medicare Program
PY1 ^[a]	-\$131.0 (-192.7 to -69.2)	2.8% (4.1 to 1.5)	-\$108.4 (-170.2 to -46.6)	2.3% (0.1 to 3.6)
PY2	-\$187.7 (-250.5 to -125.0)	3.5% (4.0 to 2.5)	-\$153.4 (-216.2 to -90.6)	3.0% (1.8 to 4.0)

Note: Findings are for 41 AIM Test 1 ACOs. DID impact findings estimated from comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. Performance year 1 and 2 are 2016 and 2017, respectively. The baseline period is 2013 to 2015. 95% confidence intervals are shown in parentheses.

[a] Pooled estimates for PY1 differ slightly from those reported in the Report on AIM Impact in the First Performance Year (2018) because they were estimated from a pooled model rather than calculated as the weighted average of ACO-level estimates, as was done in that report.

[b] Aggregate = total reductions over all beneficiaries and months.

[c] Base spending represents total Medicare spending by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

[d] Net savings to Medicare program is calculated by subtracting earned shared savings from reductions in aggregate spending. Outstanding AIM funds not included in calculations.

Source: ACO Provider RIF for 2016 and 2017 and 2013-2017 Medicare claims data.

2.2.2 Impacts on other Medicare Performance Measures Support Reduction in Total Spending by AIM ACOs in PY2

We estimated decreases in Medicare spending and use of the most costly medical care, such as inpatient hospitalizations, emergency department visits, and post-acute skilled nursing facility care (**Exhibit 2-4**). We found that overall physician spending remained unchanged, though components of physician services, particularly the number of tests, increased. **Exhibit 2-4** presents the average impact of AIM Test 1 ACOs from the pooled model in PY2. Since large ACOs can dominate pooled estimates, the exhibit also provides the number of ACOs (out of 41) with negative estimates, the number with positive estimates, and the number of ACOs that were statistically significant at the 5 percent level in the corresponding direction. Relatively consistent patterns in the direction of impacts across the AIM ACOs provide important insights on the true impact of AIM. We show estimates for each Test 1 ACO in **Appendix 2F**.

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Exhibit 2-4. AIM Test 1 ACOs Reduced Hospitalizations, SNF Use, and Emergency Department Visits in PY2

Outcome (Scale)	Average Point Estimate [a]	Percentage Change from Baseline [b]	# ACOs with Negative Point Estimates [c]	# ACOs with Positive Point Estimates [c]
Medicare payments (\$ PBPM)				
Total	-\$36.94***	-3.5%	33 (12)	8 (1)
Acute inpatient	-\$11.92**	-3.4%	30 (11)	11 (0)
Physician services	-\$0.47	-0.2%	21 (6)	20 (6)
Hospital outpatient and ambulatory surgery centers	-\$8.88***	-4.4%	26 (14)	15 (0)
Skilled nursing facility	-\$6.19***	-6.6%	30 (12)	11 (2)
Home health	-\$2.07***	-3.7%	28 (12)	13 (3)
Durable medical equipment	-\$0.18	-0.9%	27 (9)	14 (2)
Inpatient utilization				
Any acute hospitalization (% points)	-0.4**	-1.9%	29 (10)	12 (0)
# Acute hospitalizations	-0.01***	-2.9%	28 (10)	13 (0)
All-cause 30-day readmission (% points)	-0.1***	-4.1%	30 (7)	11 (0)
Any ambulatory sensitive condition admission (% points)	-0.1	-2.4%	22 (7)	19 (2)
Emergency department and observation utilization				
Any ED visit not resulting in hospital admission (% points)	-0.5***	-1.9%	29 (13)	12 (1)
Any ED visit resulting in hospital admission (% points)	-0.3***	-2.3%	23 (8)	18 (4)
Any observation stays (inpatient or outpatient) (% points)	-0.6***	-3.1%	32 (13)	9 (1)
Skilled nursing facility and hospice utilization				
# SNF days	-0.1***	-5.3%	33 (10)	8 (2)
Any hospice use (% points)	-0.1	-6.0%	26 (5)	15 (1)
Physician services utilization				
# Office-based E&M visits	0.0	0.2%	18 (12)	23 (15)
# Imaging events	0.1	-1.0%	26 (16)	15 (7)
# Procedures	0.0	2.0%	17 (8)	24 (10)
# Tests	0.8***	6.0%	16 (9)	25 (20)
Mortality (% points)	0.0	-0.2%	20 (2)	21 (1)

Note: Findings are for 41 AIM Test 1 ACOs. DID impact findings estimated by comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. PY2 is 2017 and the baseline period is 2013 to 2015. PBPM is per beneficiary per month; ED is emergency department; SNF is skilled nursing facility; E&M is evaluation and management.

[a] For non-payment measures denoted by (%), point estimates represent percentage points. Negative point estimates represent decreases in the performance measure when comparing AIM ACOs to their market comparison groups. Positive point estimates represent increases in the performance measure when comparing AIM ACOs to their market comparison groups.

[b] Base values represents total Medicare spending or use by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

[c] Count of negative or positive point estimates. The number of ACOs with statistically significant results at the 5 percent level is shown in parentheses. *, **, *** Indicates statistical significance at the 10, 5, and 1 percent level, respectively.

Source: ACO Provider RIF for 2017 and Medicare claims data from 2013-2015 and 2017.

Overall, we found that the direction, magnitude, and significance of the impact estimates were consistent with AIM reducing spending and utilization among assigned beneficiaries in PY2. As discussed above, on average, PBPM Medicare spending on beneficiaries assigned to AIM ACOs decreased -\$36.94 relative to comparison beneficiaries in the ACOs' markets. We estimated negative changes in spending for 33 of 41

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AIM ACOs, and 12 of these differences were significant at the 5 percent significance level or lower. Among the eight positive point estimates, only one was statistically significant.

With the exception of Medicare physician and durable medical equipment spending, we estimated decreases in the Medicare spending measures. The impact findings for the individual ACOs supported the pooled estimates such that the number of statistically significant negative estimates was greater than the number of statistically significant positive estimates, and well over half of all point estimates were negative in magnitude. For example, we estimated that 30 AIM Test 1 ACOs had decreased Medicare spending on acute inpatient stays, and 11 of these AIM ACOs' estimates were statistically significant at the 5 percent level. This pattern contrasts with 11 AIM ACOs estimated to spend more on acute inpatient stays, with no statistically significant estimates for this performance measure. For Medicare physician spending, the point estimate was a PBPM decrease in Medicare spending of $-\$0.47$, not statistically significant at the 10 percent level. The individual ACO estimates were split with half estimated to have reduced physician spending and half estimated to have increased physician spending.

Impact estimates on the utilization measures corroborated the Medicare spending results. We found that AIM appeared to reduce the number of inpatient stays (including observational stays), ED visits, and days spent in SNF care, relative to the comparison group. We did not find evidence of reduced physician office-based E&M visits, imaging events, or procedures. However, we did estimate a statistically significant increase in the number of tests on average, relative to the comparison group. Generally, for the utilization of physician services measure, we found a mix of positive and negative ACO-level estimates. Lastly, we generally did not find any statistically significant impacts on mortality.

2.2.3 Consistent Findings of Decreased Medicare Spending and Utilization over Two Performance Years

The consistency of impact estimates across the two performance years is shown in **Exhibit 2-5**. For nearly every performance measure, the direction and statistical significance of the impact estimate was the same in both years. Exceptions included Medicare physician spending, ACSC admissions, and mortality—for these measures, we estimated statistically significant impacts at the 5 or 10 percent level in PY1, but not in PY2.

The magnitudes of the impact estimates as a percent of baseline values were similar in both years. We estimated greater total Medicare payment reductions in PY2, driven by larger decreases in Medicare spending on acute inpatient hospitalizations, but other estimates were generally similarly sized. We note that AIM ACOs significantly increased the use of tests in both years, with a larger increase in PY1 (8.9 percent versus 6.0 percent). Medicare spending on tests is the largest component of Medicare spending on physician services, and AIM participation appears to be associated with even more growth for testing. In future investigations, we will determine whether a particular type of test is driving this increase. Finally, we calculated the correlation in point estimates between PY1 and P2 and found a correlation of 0.99 for each of the performance measures.

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Exhibit 2-5. Consistency of ACO-level Impacts in Both Performance Years

Outcome (Scale)	Performance Year 1		Performance Year 2	
	Average Point Estimate [a]	Percentage Change from Baseline [b]	Average Point Estimate [a]	Percentage Change from Baseline [b]
Medicare payments (\$ PBPM)				
Total	-\$28.21***	-2.8%	-\$36.94***	-3.5%
Acute inpatient	-\$7.98***	-2.4%	-\$11.92**	-3.4%
Physician services	\$1.50*	0.9%	-\$0.47	-0.2%
Hospital outpatient and ambulatory surgery centers	-\$9.18***	-4.3%	-\$8.88***	-4.4%
Skilled nursing facility	-\$6.24***	-7.2%	-\$6.19***	-6.6%
Home health	-\$1.86***	-3.7%	-\$2.07***	-3.7%
Durable medical equipment	-\$0.24	-1.4%	-\$0.18	-0.9%
Inpatient utilization				
Any acute hospitalization (% points)	-0.5***	-2.6%	-0.4**	-1.9%
# Acute hospitalizations	-0.0***	-2.8%	-0.0***	-2.9%
All-cause 30-day readmission (% points)	-0.1**	-4.0%	-0.1***	-4.1%
Any ambulatory care sensitive condition admission (% points)	-0.2**	-3.5%	-0.1	-2.4%
Emergency department and observation utilization				
Any ED visit not resulting in hospital admission (% points)	-0.4***	-1.5%	-0.5***	-1.9%
Any ED visit resulting in hospital admission (% points)	-0.1**	-0.9%	-0.3***	-2.3%
Any observation stays (inpatient or outpatient) (% points)	-0.2	2.5%	-0.6***	-3.1%
Skilled nursing facility and hospice utilization				
# SNF days	-0.1**	-5.8%	-0.1***	-5.3%
Any hospice use (% points)	-0.1**	-5.1%	-0.5***	-1.9%
Physician services utilization				
# Office-based E&M visits	0.1	1.4%	0.0	0.2%
# Imaging events	0.0	-1.1%	0.1	-1.0%
# Procedures	0.0	0.0%	0.0	2.0%
# Tests	0.7***	8.9%	0.8***	6.0%
Mortality (%)	-0.1*	-2.9%	0.0	-0.2%

Note: Findings are for 41 AIM Test 1 ACOs. DID impact findings estimated by comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. PY1=2016, PY2=2017, and the baseline period is 2013 to 2015. PBPM is per beneficiary per month; ED is emergency department; SNF is skilled nursing facility; E&M is evaluation and management.

[a] For non-payment measures denoted by (%), point estimates represent percentage points. Negative point estimates represent decreases in the performance measure when comparing AIM ACOs to their market comparison groups. Positive point estimates represent increases in the performance measure when comparing AIM ACOs to their market comparison groups.

[b] Base values represents total Medicare spending or use by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of non-ACO FFS beneficiaries between baseline and performance years in ACO markets.

Source: ACO Provider RIF for 2017 and 2013-2017 Medicare claims data.

2.2.4 Limitations

We consider the analyses presented in this chapter to be robust. However, as with any research project, there are a variety of considerations and limitations that are important to keep in mind when drawing conclusions and weighing the evidence. For this analysis these factors include:

- There was substantial variation in the findings across the AIM Test 1 ACOs, and the patterns discussed here may not hold for a particular ACO.

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- As with any quasi-experimental evaluation design, the rigor of the comparison group plays a critical role in determining the impacts. Our design rests on the assumption of parallel trends between the ACO and comparison groups in the absence of the intervention. Although all key findings passed parallel trends testing when pooling across all AIM ACOs, not all individual ACOs passed – we found that eight of the 41 AIM Test 1 ACOs did not pass parallel trends at the 5 percent significance level for the total Medicare spending performance outcome. Although this failure rate was higher than what we would have expected due to chance alone, the pooled parallel trends tests indicate that, on average, discrepancies at the market level average out. Moreover, for the eight ACOs not passing parallel trends, the average of the difference in linear trends was just \$2.10. Thus, while ACO-level estimates must be interpreted with some caution, the estimated reductions in Medicare spending at the pooled model level are not invalidated by potential differences in underlying baseline trends (see **Appendix 2E**).
- The Shared Savings Program assignment methodology changed slightly between PY1 and PY2 in that E&M visits occurring in a nursing home no longer counted in assignment. As a result, the analytic population had fewer beneficiaries living in long-term institutions in PY2 compared to PY1. In our impact analyses for each year, we used the assignment rules in effect during that year to identify assignment-eligible beneficiaries for both the ACO and comparison groups. Thus, the results in each performance year reflects the estimated impacts conditional on the rules and population at the time, and as a result, PY1 and PY2 are not perfectly comparable to each other.

3. AIM ACO Goals and Implementation

This chapter focuses on the implementation of AIM, ACOs' reasons for participating in AIM, the investments ACOs made with AIM funds to achieve their goals, and the perceptions and experiences of ACO representatives from participating in AIM. Identifying the facilitators and barriers to successful model implementation is particularly important given that AIM relies upon voluntary participation and financial incentives to induce behavior and care delivery transformation. We also examine potential drivers of the impacts described in **Chapter 2** through analyses of the differential impact on total Medicare spending by ACO characteristics.

Key takeaways on AIM ACO implementation:

- ▶ Most AIM ACOs were motivated to participate in AIM to gain experience in value-based care and noted that they would not have participated in the Shared Savings Program without AIM funding from CMS.
- ▶ While most ACOs reported modifications to their participating provider networks over the course of AIM, the presence of hospitals in these networks did not change between the first and second round interviews. In addition to the hospitals that are part of AIM ACO networks, many ACOs reported cultivating informal relationships with non-ACO hospitals.
- ▶ More than 80 percent of AIM ACOs worked with ACO management companies that specialize in ACO management to help them set up and operate their ACO. ACOs expressed general satisfaction with management company services, but emphasized the need for more due diligence in making larger investments in management company offerings.
 - AIM ACOs using management companies were associated with greater reductions in Medicare spending than independent AIM ACOs during both performance years, though the differences were not statistically significant at the 5 percent level.
- ▶ AIM ACO beneficiaries received more care management services than comparison beneficiaries in the same market. The use of these services increased meaningfully over both populations between the pre-performance and later years, with greater growth among ACO beneficiaries.
 - These findings are consistent with evaluation findings showing reductions from AIM in most Medicare spending and utilization categories with the exception of Medicare spending on physician services.
- ▶ AIM ACO leadership reported ramping up care management services during AIM by leveraging data to identify appropriate beneficiaries and continuing to refine their care management programs. ACOs reported plans to sustain these care management activities even after AIM funds expire.

3.1. Data and Methods

We draw upon qualitative information collected from two rounds of telephone interviews with ACO representatives of AIM Test 1 and Test 2 ACOs:

- **First round interviews**, which took place in the fall of 2016, captured ACOs' reasons and goals for participating in AIM, how they used their AIM funds, and the structure and activities endeavored as a result of participating in AIM.
- **Second round interviews**, which occurred in late 2017 and early 2018, revisited topics explored in the first round, including how participants used AIM funds and changes they made to care delivery and operations as a result of participating in AIM. Second round interviews also explored interviewees' reflections on their participation in AIM and the effect that it had on their decision to continue participating in the Shared Savings Program and assuming two-sided financial risk.

An example interview guide is provided in **Appendix 3A**, and methods for conducting and analyzing the interview information are located in **Appendix 3B**. Other data sources used included interviews conducted with a subset of ACO practitioners and CMS model team leads, and a Web survey of AIM ACOs (see **Appendix 3C** for the Web survey instrument).

In **Chapter 3.4**, we draw from Medicare claims, administrative, and AIM programmatic data to examine whether ACO attributes such as affiliation with a management company or hospital participation were related to the estimated Medicare spending reductions described in **Chapter 2**. Lastly, in **Chapter 3.5**, we use Medicare claims data to investigate the AIM ACOs’ provision of certain care management services frequently discussed by the ACOs during interviews.

Appendix 1B provides the details of all data collection and data sources used in this report.

3.2. AIM was an Opportunity to Gain Experience with Value-based Care and for Physicians to Remain Independent

The most commonly cited goal of AIM participants was to gain experience in delivering value-based care. Several interviewees explained that participating in AIM allowed them to 1) prepare for the changing reimbursement systems and new delivery models that encourage value-based care and population health management, and 2) learn better techniques for delivering care management services or standardizing care across practices.

Nearly all AIM ACOs responding to the ACO Web survey said they were motivated to participate in the Shared Savings Program to prepare for value-based contracting (**Exhibit 3-1**).

Exhibit 3-1. AIM ACOs’ Original Motivations for Participating in the Shared Savings Program (Number of ACOs from a Total of 38 Respondents)



Source: “Mark all that apply” responses to ACO Web survey question #9 (see **Appendix 3C** for the instrument).

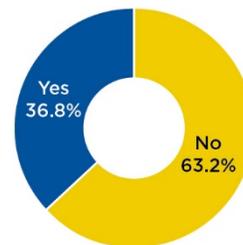
To a lesser extent, some interviewees said that they were motivated to participate in AIM and the Shared Savings Program because the funding would help practices remain independent from being acquired by large hospital systems in their markets.²⁵

Our primary goal . . . is to show that the independent physician models will still work in the evolving health care industries. In our experience, those kinds of doctors are becoming dinosaurs because a lot of doctors are scared about health care reform and they're becoming employees of these larger organizations, but there are still some doctors that want to be their own boss. They have their own private office and want to keep it going. We are trying to help them move into the new health care industry while still being able to do that. We feel that's a model that exists in other parts of the country, so we wanted to show that you can be part of an integrated system and still be independent. If we can show that this works, we can translate it to other parts of the country where they don't have a big health care system that can employ all of these docs and make their decisions for them.

What we were seeing here is that our physicians were going out of business in record numbers, and we did not want to see a situation in our community where every doctor is employed by a hospital. We were hoping to give them another option to stay an independent practice. So, a lot of motivation [was] to try to do that, and the good news is that the Medicare Shared Savings Program potentially provided that opportunity if we could be successful at it. And so, having been successful so far has really been a positive experience for our doctors in that they feel now that at least there's another plausible choice.

Most AIM ACOs would not have participated without AIM funding: More than half of the ACOs that began the Shared Savings Program and AIM in 2016 said that without AIM funding, they would not have been able to meet the Shared Savings Program participation requirements, nor would they have had resources to build necessary ACO infrastructure. AIM funding as a key part of ACOs' Shared Savings Program participation was confirmed in responses to the AIM ACO Web survey (**Exhibit 3-2**).

Exhibit 3-2. Would You Have Participated in the Shared Savings Program without AIM?



Source: AIM ACO responses to ACO Web survey #15 (see **Appendix 2C**), N=38.

²⁵ This theme echoed one of the common rationales expressed by ACOs that participated in the AP model, which viewed the ACO as a way to maintain independence in an increasingly consolidated health care delivery environment. <https://www.lmpolicyresearch.com/documents/Advance-Payment-ACO-Evaluation-Final%20Report.pdf>

Other AIM ACOs indicated that they would have made fewer investments or would not have been able to hire care coordination staff without the AIM funds, noting that funding was a key inducement and facilitated investments that ACOs would not have otherwise made.

To be very honest, we wouldn't have had the resources to do what you need to do in order to implement and have a successful ACO [without AIM funding]. We would've been stuck going with some national firm [for a management company] and losing input and learning and everything else that you lose based on what we saw with these larger organizations that don't have their hands wrapped around the communities they serve.

We looked into that [Shared Savings Program] prior to the AIM opportunity and we decided we couldn't afford it. We didn't have the infrastructure. So the answer is without the AIM funding we would not have participated even though we wanted to.

I want to say that would it not be for CMS bringing forward the AIM initiative, I think there are facilities that, like ours and the participants in our ACO, that would be slower to engage in the entire ACO process. I think it's been critical to have those funds available to us and of course, to have an organization like Caravan that can help guide us in the right direction as we try to implement as well.²⁶

3.3. AIM ACO Composition, Internal Networks, and External Relationships Evolved and Remained in Flux

AIM ACOs select their network of participating providers before each performance year. The majority of AIM ACOs indicated that their participants had pre-ACO relationships.²⁷ Below, we discuss key features of AIM ACO composition, external provider relationships, and changes over time. A summary of each ACO's participant composition is included in **Appendix 3E**. Of the ten AIM ACOs reporting that ACO participants were not familiar with each other prior to AIM, all but one was affiliated with a management company. Many AIM ACOs used management companies to assist in ACO start-up and operations; in fact, management companies convened interested parties and launched some of the AIM ACOs. Use of management companies is discussed further in **Chapter 3.4**.

3.3.1 Evolving Participant Networks: Two-thirds of ACOs Experienced Changes during AIM, with Most Adding Participants

Of the 30 AIM ACOs that discussed changes in their participant network since the first round interview in 2016, more than three-quarters reported adding participants. More than half said that inclusion of additional participants increased the geographic range of the ACO. These reports were supported by the

²⁶ Caravan Health is a management company that assisted some of the AIM ACOs with ACO start-up and operations, as discussed further in **Chapter 3.4**.

²⁷ For three AIM ACOs, we did not have adequate information from interviewees in the first round interviews to characterize providers' pre-ACO relationships.

growth in the total number of ACO practitioners and assigned beneficiaries between PY1 and PY2 (Exhibit 3-3).

Exhibit 3-3. AIM ACOs Added Participants in PY2

PY1	PY2	
47	45	AIM ACOs
3,446	3,727	ACO primary care practitioners
618	700	ACO specialist practitioners
568	680	FQHC, RHC, CAH facilities
419,237	470,129	Beneficiaries

Note: The counts of practitioners and providers only include those who contributed to beneficiary assignment (had qualifying visits with assignment-eligible beneficiaries). FQHC = Federally Qualified Health Center; RHC = Rural Health Clinic; CAH = Critical Access Hospital.

Source: ACO Provider RIFs and Medicare claims data for 2015-2017.

The remaining one-quarter of AIM ACOs that reported changes to their participant network said participating practitioners declined. Four of these ACOs added new practitioners to remain above the minimum number of assigned beneficiaries required by the Shared Savings Program (5,000), but still had overall net reductions in practitioners. Three ACOs attributed the loss of some of their participants to participation in other payment models, such as the Comprehensive Primary Care Plus model or non-SSP accountable care arrangements. One AIM ACO excluded practitioners who seemed to be disengaged from the ACO to prevent them from receiving any future shared savings that the ACO might accrue. Representatives from

another ACO discussed a desire to similarly reduce the number of participants, citing future plans to use performance data to determine which practitioners are disengaged and thus should be excluded from the ACO. A disproportionate number of AIM ACOs with net reductions in practitioners were affiliated with the Caravan Health management company and most had participants located across multiple states.

We examined the number of practitioners and facilities that contributed to assignment in PY1 and PY2 and found that only a little more than half (56.1 percent) were consistently affiliated with the ACO across the two years, on average. We found that an average of 22.8 percent of practitioners and about 17.4 percent of facilities were new participants in 2017, as shown in Exhibit 3-4. There was wide variation in these numbers across the ACOs, with some ACOs retaining almost all participants across the two years or not adding any new ones in 2017.

Exhibit 3-4. AIM ACOs Added New Participants in PY2

	# Practitioners		# Facilities (CAH, FQHC, RHC)	
	PY1 & PY2	New in PY2	PY1 & PY2	New in PY2
Mean	56.1%	22.8%	75.2%	17.4%
Minimum	12.5%	0.0%	0.0%	0.0%
Median	55.8%	16.9%	81.9%	9.4%
Maximum	94.7%	65.8%	100.0%	100.0%

Note: Figures were based on counts of practitioners (tax identification number-national provider identifier [TIN-NPI] combinations) and facilities (CMS certification number [CCNs]) that contribute to beneficiary assignment. Percentages represent averages across the 45 AIM ACOs in PY2.

Source: ACO Provider RIFs for 2015–2017 combined with Medicare claims data.

3.3.2 Hospitals Were a Common and Consistent Feature of AIM ACO Networks

The structural composition of the AIM ACOs was diverse, ranging from those made up entirely of independent primary care practices or FQHCs, to those comprising multiple health systems, hospitals, and clinics. Nearly 60 percent of the AIM ACOs reported having a hospital as part of their ACO. All but one of the 21 AIM ACOs associated with the management company Caravan Health reported having at least one hospital as part of the ACO. Among the non-Caravan Health AIM ACOs, six of 24 ACOs had a hospital as part of their ACO network. While most ACOs confirmed modifications to their provider

networks over the course of AIM, the presence of hospitals in these networks did not change between the first and second round interviews, as shown in **Exhibit 3-5**.

Exhibit 3-5. AIM ACOs Affiliated with Caravan Health Tended to Include Hospitals

	Non-Caravan AIM ACO	Caravan AIM ACO	Total
ACO participant network includes hospital	6	20	26
ACO participant network does not include hospital	18	1	19
Total	24	21	45

Source: First and second round interviews. Counts at first and second round interviews were identical.

3.3.3 Most AIM ACOs Established Relationships with Hospitals External to Their ACO Network

Relationships between ambulatory care clinicians and hospitals can help to improve patient transitions between settings and ensure that hospitalized patients receive appropriate care to avoid complications and readmissions.²⁸ In addition to the hospitals that are part of formal AIM ACO networks, many ACO representatives described their organizations’ relationships with external hospitals during the first round interviews. Nearly three-quarters of the AIM ACOs interviewed during the first round reported a relationship with at least one area hospital that is not an ACO participant. As of the second round interview, the majority of these organizations continued to have a relationship with an external hospital.

The nature of relationships with hospitals that were not part of the ACO varied, from informal referral affiliations to contractual arrangements that specified the terms of clinical information sharing. Among the AIM ACOs that reported relationships with non-ACO hospitals, most were described as cooperative. That is, the hospitals allowed AIM ACO staff to access EHR, census, and admission, discharge and transfer (ADT) information. They also permitted ACO staff access to patients (e.g., in the ED) to coordinate discharge activity for ACO-assigned beneficiaries. The majority of ACOs with this type of information-sharing relationship reported receiving proactive communication about ADT data either from the hospitals or an HIE. Some AIM ACOs acknowledged that the frequency of notification was irregular. For example, one ACO that received ADT information from a hospital described limitations on the usefulness of this information, as it was not yet integrated into the providers’ EHR system and therefore was not real-time. A few AIM ACOs relied on their own staff to manually extract ADT or census information by accessing hospital EHR systems or census lists to identify ACO beneficiaries. One of the AIM ACOs that used manual extraction stated that ACO care coordinators stationed at non-ACO hospitals collected ADT and ED visit information directly at the point of care, meaning that the data collected were neither electronic nor real-time. Ten AIM ACOs reported that they were unable to access ADT or census information for hospitals in their respective service areas.

In both the first and second interview rounds, a small number of AIM ACOs described difficulties establishing information-sharing relationships with hospitals outside of the ACO network.²⁹ While none of the AIM ACOs described the relationship between their organization and area hospitals as adversarial, interviewees discussed challenges of navigating relationships with institutions that have competing priorities. The ACOs expressed interest in developing relationships with hospitals in their service areas and cited barriers in the form of competition and misaligned incentives between their practices and local hospitals. For example, some hospitals in the AIM ACOs’ service area had their own competing ACOs. When the interview team followed up during the second round interview, most ACOs stated that the

²⁸ Kripalani, S., Theobald, C. N., Anctil, B., & Vasilevskis, E. E. (2013). Reducing hospital readmission rates: current strategies and future directions. *Annual Review of Medicine*, 65, 471-85.

²⁹ AIM ACOs that did not report having a relationship with at least one non-ACO hospital may still receive patient-related communications if the AIM ACO is connected to a state HIE that provides ADT data. Three AIM ACOs did not discuss their relationships with hospitals during the first round interviews.

nature of the relationships between their organization and nearby hospitals had not changed notably since the first round interview.

The other thing is all of our [local] hospitals are in ACOs of their own, so we would have to lose our health centers or just give up on that hope because our hospitals won't jump ship on their ACOs.

The hospitals have a CON (Certificate of Need) in the state...and because of that they continue to hire doctors and compete with doctors, and I'm hoping that one day our government will realize things should not be done that way... So [the ACO participants are] all working that out with their groups, but that's still a challenge... The hospital has no threat that a doctor organization might go set up a hospital, so they don't have to cooperate with us. So, we do not have any formal hospital-based relationships.

There's some great participation between [ACO physicians and] hospitals in the state, but other times it's much more of a battle to even know that a patient has been admitted to the hospital or seen in the emergency room, so there's kind of a spectrum.

No hospitals are involved in the ACO at all, but all of the hospitals where we send patients except for one... all could have been in the ACO but they have no interest. The relationship is not what I would say is positive because they're seeing a reduction in admissions. The relationship with the hospital is a little bit skewed, yes...we're trying to educate the hospitals across the [ACO service area] counties.

3.3.4 AIM ACOs Described Informal Relationships with Post-Acute Care (PAC) Providers and Specialists

In addition to highlighting hospitals as potential partners during the first round interviews, AIM ACOs cited skilled nursing facilities (SNFs) as key strategic affiliations they expected to develop or expand as they gained experience in accountable care. In both the first and second round interviews, more than half of the AIM ACOs reported relationships with PAC providers,³⁰ either within or external to their ACO network. While developing alliances with home health agencies was not raised by AIM ACOs as a primary objective during the first round interviews, findings from the second round interviews show that AIM ACOs' relationships with PAC providers tended to center around home health agencies and SNFs.

³⁰ Includes skilled nursing facilities, long-term care facilities, rehabilitation centers, and home health agencies.

[In] our relationship with home health agencies, we are beginning to work with them to have a business agreement so if they are providing care to any of our providers' beneficiaries outside of [city], they notify us. We have shared information so they give us a heads-up that the beneficiary has been discharged.

We have developed a strong and robust network among those 74 providers in [city]... The relationships have been developed in the areas of SNF, home health, cardiology, gastroenterology, ophthalmology, and when it's a facility, it's home health or skilled facility or long-term care hospital.

We started those initial conversations with providers...in 2017...all the providers agreed to hire a post-acute liaison... The doctors were really paying attention and now we are able to hold the home health agencies a little more accountable. We have a specific resource now dedicated to [PAC care coordination] to tackle our biggest spend areas.

Relatedly, some organizations described pursuit of relationships with specialists and hospice agencies. A few AIM ACOs also mentioned relationships with a variety of other providers, including FQHCs, palliative care providers, and urgent care centers. Three ACOs described having broad networks of external affiliates involving providers across multiple settings.

Oftentimes as a physician, we do things that can be done to help the hospital or help our pocket. But when we do things that need to be done, not just the things that can be done, those are the physicians I'll refer to because they don't spend a lot of money for nothing.

There's a large urgent care chain...throughout [the state] and we are working closely with them... It has been great with the ED frequent fliers and with ED reduction in general and some inpatient as well.

Changes in Shared Savings Program assignment affect SNF relationships: In contrast to the AIM ACOs actively seeking to collaborate with SNF providers, representatives from a management company that works with two AIM ACOs discussed the impetus for changing their approach to SNF relationships, spurred by CMS changes to the Shared Savings Program beneficiary attribution methodology in 2017 to exclude visits in SNFs from beneficiary assignment.³¹ According to interviewees, many of the ACO's SNF physicians saw their number of attributed beneficiaries decrease significantly after the methodology changed; subsequently these participants terminated their participation in the ACO. Interviewees noted

³¹ Per Version 5 of the Medicare Shared Savings Program Shared Savings and Losses and Assignment Methodology Specifications (April 2017), CMS ceased considering primary care HCPCS codes with a SNF place of service code for ACO beneficiary assignment as of Performance Year 2017.

that their ACOs have deprioritized relationship development with SNFs due to the change in the attribution methodology.

CMS made a change this year to omit the short-term stay [skilled nursing facility] patients from the assignment [algorithm]. Previously, we were trying to work with and trying to concentrate our patients into a couple facilities to control that short-term stay issue because that was causing a lot of extra cost. Now, because the short-term stay patients are no longer part of ACO, we would still like a place for the long-term patients to go, where we can have more control over the quality of care they receive at the long-term care facility... But it's not as urgent to get more facilities in because now Medicare has recognized that the short-term care patients are not actually the patients of the ACO.

3.3.5 Communication Channels between AIM ACOs and Providers External to ACOs Evolved, Encouraging Increased Collaboration.

Relationships with PAC providers external to the ACO were described as referral-based or information-sharing interactions. Most relationships that AIM ACOs had with external providers are best described as informal and pre-date the formation of the AIM ACO. Only five AIM ACOs indicated that their relationships with external providers had more explicit partnership elements such as preferred referral partners or affiliation agreements. However, a number of AIM ACOs said they were beginning to, or were already using, data sources such as claims, EHR data, or patient satisfaction surveys to evaluate which facilities they should engage in discussions about becoming partners or preferred referral sites. These findings should be interpreted both cautiously and as a conservative estimate, as interviewers did not probe on the formality of the relationships between AIM ACOs and non-ACO providers.

We have become far more intentional in needing to have robust relationships [with hospitals, nursing homes and community organizations] and transitions and [exchange] of information and all those things; we need to have those things as expectations with each other... We are developing those relationships to be more focused and intentional than what they've been in the past.

Eight ACOs described more collaborative relationships with providers since the first interview. Examples include AIM ACOs that established liaisons between primary care and PAC providers or primary care and the ED setting, personalized referral programs for diabetic ophthalmology patients to control downstream costs, and the establishment of population health committees. Three Caravan-managed ACOs participated in population health coalitions with other community providers, two of which focused on quality outcomes in the nursing home setting (at least one of these coalitions predated the ACO's participation in AIM). Two ACOs that received financial support from non-ACO specialists during the first year reported that the relationships continued in the second year.

We also have monthly, actually quarterly, meetings with the nursing homes where we do review quality indicators that would impact the ACO... We do review data with them, but we also give them best practices. We work with them regarding if they're struggling with metrics. [If] there's issues with hypertension and those patients are hitting our attribution, then we work with the physician and the nursing home on how we can assist with that.

We also have a very robust—we call it our 'behavioral health population health committee'—that meets every month, and it has participation from all entities that come to say, 'Okay, these are things we are working on, these are the successes, what else should we do based on what's happening in the community today, how should we change our focus?' And we utilize that team, again, from multiple organizations, to work together on the preventive health measures, on population health, and on how we can all work together better.

Some AIM ACOs are foregoing relationship development with external providers: During the first round interviews, two AIM ACOs stated that they were deliberately not pursuing new relationships with external providers because of internal ACO priorities that were more important in the near term. One AIM ACO said, “*There is enough ‘low-hanging fruit’ to tackle within the ACO itself for the first couple years,*” while another said its first goal is to focus on the primary care workflows and “*incorporate ongoing care management so that all member practices function more like medical homes before focusing on relationships with non-core providers.*” As of the second round interviews, neither of these AIM ACOs had developed new relationships with external providers. The former ACO sought to develop a relationship with an additional hospital but was unsuccessful, and the latter elected to focus on building a patient referral system to track patients going from primary care to specialists and back. Five other AIM ACOs stated during the second round interviews that they did not have any relationships with external providers. Most of these ACOs were in the process of developing relationships or had plans to do so in the future. Notably, none of these ACOs said they had experienced challenges in establishing relationships with external providers. Like the organizations described above, these AIM ACOs seemed to be focusing their efforts on internal processes rather than trying to establish external connections. Four of the five ACOs included FQHCs as participating providers, and one organization entirely comprised FQHCs.³²

Many ACOs’ relationships with external providers were in flux at end of AIM: Nearly a quarter of the ACOs described developing or ending relationships with external providers in the second year of AIM. One-third of the AIM ACOs planned to develop additional relationships in the future to better coordinate care, improve outcomes, and control costs. Just as with the current relationships described above, ACOs’ future plans for relationships with external providers primarily involved hospitals, PAC providers, and specialists. Many of these relationships required culture change on the part of both the ACO and external providers, and therefore required time and effort to develop.

³² Twelve ACOs in the cohort, both Caravan and non-Caravan, include FQHCs as participating providers. Of these 12, two ACOs (both are non-Caravan ACOs) are made up entirely of FQHCs.

We started talking with the home health agencies and making them aware of the data we had that showed they had higher recertification rates than other parts of the country. Within the provider groups, we have helped providers understand why it's important reconsider every time a patient needs to continue on home health or not...We had this great idea and the doctors were really paying attention and now that we are able to hold the home health agencies a little more accountable—well, we are working on it.

It's also us trying to get [ACO participants] to change their narrative and go to a hospital and say, 'I can help reduce your readmissions, which helps you look better if you help me in this other way—if you get me ADT feeds, work on this one initiative, we can both get something out of it.' That has been challenging for our group. There's so much they're trying to face. Part of it is a larger conversation shift that they have to feel comfortable in making.

Similar to the increased use of Medicare data for their care management activities, as the ACOs became more experienced with the data and reporting, they considered how claims data could inform external relationships. At least three AIM ACOs discussed plans to use data analytics to identify external providers for future referral relationship-building. They expected to use the same data to identify external providers that should no longer have a relationship with the ACO. Another three ACOs were already using data to inform their relationships with external providers.

We are in the process of analyzing the data. We have broached the subject with the board members and the physicians in the ACO and talked through some of the opportunities in the local markets especially around SNFs, and there is a large orthopedic specialist group that we want to build relationships with. We started those conversations, but they are still at a very early stage.

3.3.6 Lessons Learned on Engaging Physicians and other Stakeholders

Clinician engagement is fundamental: Many ACOs reflected during the second round interviews that they should have engaged their participating physicians earlier. Learning how to establish an ACO was time-consuming and slow, and they now realize that culture change and financial success of an ACO hinges on physician buy-in. For example, one ACO noted that educating physicians about the ACO program consumed more resources than initially anticipated: “*They [physicians] can come to a meeting and not even know that we are an ACO. It's just so foreign to [them].*” On the other hand, all AIM ACOs responding to the ACO Web survey indicated that physician engagement in quality improvement and care coordination increased since the beginning of the AIM program.

Invest in developing relationships with key stakeholders: AIM ACOs reported that, in retrospect, they wished they had spent more time developing relationships with key stakeholders. For example, one independent ACO acknowledged that networking with other ACOs earlier on would have been beneficial for sharing ACO-related experiences. Another ACO interviewee noted that developing relationships with local hospitalists would have benefited their ACO care coordination efforts. Given that a number of the

ACO’s participating physicians did not conduct hospital rounds and thus lacked the ability to see patients prior to discharge, relationships with hospitalists could have filled a care gap.

3.4. Many AIM ACOs Hired Management Companies to Help with ACO Operations

Most AIM ACOs hired one of several management companies that specialize in ACO operations and provided a suite of services to the ACOs. In this section, we describe management company involvement with AIM ACOs, the ACOs’ perceptions of the services provided by management companies, and explored the differential impact of AIM on total Medicare spending for independent versus managed ACOs.

3.4.1 Management Company Involvement in ACO Operations

Of the 45 AIM ACOs, 37 hired management companies to help with ACO operations, as shown in **Exhibit 3-6**. Twenty-one AIM ACOs hired Caravan Health and 16 ACOs worked with other management companies, including Aledade, Akira Health Management Services Organization, AmpliPHY Physician Services, and Community Care Alliance, each of which managed more than one AIM. Between the first and second interviews, one AIM ACO changed its management company and another started working with a management company. **Appendix 3D** provides ACO-level management company affiliations.

Exhibit 3-6. AIM ACOs’ Management Company Relationships

Management Company Name	# ACOs (from application)	# ACOs (confirmed at second interview)
Caravan	21	21
Other	15	16
No management company	9	8

With just eight participants opting not to work with management companies, a greater share of AIM ACO model participants used management companies than did participants in non-AIM SSP ACO and participants in Medicare’s Advance Payment model. Among respondents of a survey on non-AIM SSP ACOs, 26.1 percent reported working with a management company.³³ Among the 36 ACOs that participated in the AP model, one-third worked with a management company.³⁴

In general, an ACO management company provides a similar bundle of comprehensive ACO-management services to all of the ACOs it manages, with some variation depending on pre-existing infrastructure, such as care-coordination, and individual practice needs and governance. For example, one of the primary services offered by Caravan to its AIM ACOs, and to which a substantial portion of ACOs’ payments are allocated, is Caravan’s data warehouse and analytics tool (known as *Lightbeam*). In addition, Caravan provided:

- In-person and virtual training for care coordinators and patient navigators, including certification programs, webinar trainings, and best practices documentation;
- A 24-hour nurse hotline;

³³ Based on 46 respondents to a survey of 101 non-AIM SSP ACOs, which likely under-represents the use of management companies among the full non-AIM SSP ACO population. See **Appendix 3C** for a description of the non-AIM SSP sampling methodology.

³⁴ <https://www.Impolicyresearch.com/documents/Advance-Payment-ACO-Evaluation-Final%20Report.pdf>

- National Quality Improvement Workshops involving all Caravan ACOs;
- National medical director cohort calls and care coordinator cohort calls involving all Caravan ACOs;
- Training on quality reporting, including using Lightbeam to generate reports and dashboards;
- Legal guidance, including CMS compliance;
- Guidance on financial matters, including AIM expense reports and how to distribute shared savings;
- Access to a project manager; and,
- Guidance on developing new workflows based on best practices.

One interviewee summarized the management company suite of services as a “turn-key” way for the new ACO to get up and running:

The only funds that really flow through the local community is that they get reimbursement for travel for education and some dollars for IT (laptops, education). Some ACOs have a few funds available for care coordinators. One outlay that a local community may have is the care coordinator salary and benefits. But, what [Caravan] really offers is a turn-key system, including coaching, NurseWise (the after-hours nurse line previously mentioned), patient-satisfaction, governance, education, access to data from Lightbeam. These all get bundled up into one set of management fees and that transfers from AIM funds signed off by the ACO secretary and comes back to Caravan.

As described below, managed ACOs described receiving a similar bundle of services from other ACO management companies in the first and second year of the AIM ACO model.

Management company involvement in ACO formation: The origins of AIM ACOs’ relationships with management companies vary across ACOs. In some instances, the management company initiated contact, whereas in other cases, providers were motivated to form an ACO and approached the management company. When a management company reached out to a group of physicians or other providers, they did so through conferences, regional meetings, or presentations provided to hospital leadership. Through these venues, the management company explained the goals of AIM and the benefits of its services and actively recruited organizations to apply to the Shared Savings Program and AIM.

Sometimes management companies created ACOs by grouping interested organizations that independently did not have a sufficient number of covered lives to qualify for the Shared Savings Program. Generally, these pairings were based on geographic proximity, though some AIM ACOs comprise organizations from different parts of the country (e.g., one AIM ACO is in California and North Dakota, and another is in Oregon and Indiana).

AIM ACOs also described management company involvement in completing applications and in multiple aspects of the ACOs’ infrastructure development and operations. Most managed AIM ACOs received significant support from management companies in the application process for the Shared Savings Program and AIM and in the start-up and early planning for AIM ACOs. Management companies also provided tools, templates, and training sessions for staff to comply with AIM requirements. Sometimes a

non-voting management company representative sat on the board of each AIM ACO and would facilitate board meetings as well as any community-specific steering committee meetings.

Management company involvement in ACO operations in the first year of the model: Most managed AIM ACOs reported that the management company handled ACO administration and program compliance, including budgeting, developing expense reports, and coordinating the ACO board and committees. In addition, AIM ACOs reported that the management companies performed quantitative data analysis—typically of Medicare claims data and quality measures—and disseminated results back to their participants. AIM ACOs that worked with management companies also described receiving assistance with care management, including analysis of claims or EHR data with the goal of identifying beneficiaries for care management and hiring care management staff.

We [the management company] are basically the infrastructure of ACO. We hired care coordinators, we have a care coordinator supervisor that oversees their activity, we have a quality person that spends time educating and working with the clinics on quality, and we have a data person that takes the CCLF [claim and claim line feed] files and runs monthly reports for the clinics. We provide all the compliance stuff, produce financial reports, and complete the spend plan. We submit the quarterly reports. We have an executive director that coordinates all the committees and directions and the quality programs that we're going to implement and that are required under the ACO agreement and make sure we fulfill all the requirements for the ACO to be successful.

During the first round of interviews, some AIM ACOs credited their management company with improving accountability and consistency within their ACOs. Many AIM ACOs reported they would not have had the necessary expertise and infrastructure to be successful in AIM without one. By the end of the first year, some AIM ACOs said their need for a management company's support had diminished as they gained experience in the model.

Management company involvement in ACO operations in the second year of the model: Most interviewees indicated that the management company services remained the same through the second year of the model and they continued to value the relationships with the management company. Many managed ACOs indicated that their management firm was instrumental in overseeing the analysis necessary to report on CMS performance measures and to manage the ACOs' health IT. Two interviewees noted that it would be difficult for their ACOs to operate without the assistance of the management firms that helped to develop their organizations' care management programs and data analytics. The ACOs reported that the management companies recruited staff whose roles were critical to the success of the ACO.

A few interviewees expressed frustration with what they saw as slow implementation and time-consuming staff training provided by the management company. One managed ACO, AmpliPHY of Kentucky, changed management companies from AmpliPHY Physician Services to Aledade between the first and second year. But several ACOs reported that the management company improved the overall quality, specificity, and timeliness of management company services in the second year of AIM. Some ACOs credited this improvement to the management company's deepened understanding of AIM requirements and ability to provide more complex services as the ACOs' care management systems

become operational and their analytic capabilities matured. Some ACOs also reported that its management company's services became more tailored to their organizations' needs over time.

They [Company] are realizing every ACO they are trying to help are individual systems and they can't have a cookie cutter approach.

Some interviewees reported that their ACOs had become less dependent on their management company's training and operational services in the second year of AIM, as they gained understanding of the operations needed to support their ACOs, their systems and protocols became fully operational, and their leadership better grasped AIM financial and general CMS governance requirements.

We've altered the agreement in terms of its scope and period [of performance]. Today we are receiving less support and services from them than we did in the initial period, the first year or so. After a year, we took a step back and sat down with them and had a better feel of what we could do versus what we needed them for. So, we reduced their scope.

They've kind of given us the training wheels, and now we're off running on our own.

Evolving relationships between AIM ACOs and other management companies credited with improvements in ACO outcomes: Several ACOs described management company-ACO relationships and services that contributed to successful outcomes (e.g., increase in AWWs). For example, one AIM ACO described how the ACO retained oversight and governance over its ACO board, while the management firm assumed responsibility over ACO operations. In this capacity, the management company expanded the ACO's care management workforce to include staff with a greater scope of practice. The management company also enhanced the ACO's health IT system and assumed responsibility for reporting and compliance processes. Another AIM ACO's management company sought to expand the organization's care management services beyond the ACO's Medicare fee-for-service population, securing contracts with commercial payers for similar services.

3.4.2 ACOs Emphasize the Need for Due Diligence in Selecting Management Companies

To elicit AIM ACOs' reflections on their operational decisions, we asked interviewees during the second round interview if they would do anything differently if they could go back to the inception of AIM. A small percentage of the Caravan-managed interviewees described satisfaction with Caravan-supervised investment decisions; however, most reflected on changes they would make to investment decisions or management company services. ACOs engaged with management companies other than Caravan were generally satisfied with their decision to participate in AIM and with the management company services that enabled their participation. Likewise, physicians interviewed during a set of physician-specific discussions expressed positive experiences with their ACOs' management companies. Some lessons learned regarding AIM participation include:

- **Exercise due diligence in selecting a management company:** Several AIM ACOs wished they had taken the time to investigate other management firms before committing to one. Services provided by management companies were costly, as were the analytical tools the vendors utilized. CMMI model

leads interviewed by the evaluation team in August 2018 suggested that ambiguity about how to implement an ACO and meet CMS requirements may have prompted dependence on management companies for support with operations, governance, and education.

- **Ensure population health management tools fit your budget and operational needs:** Several AIM ACOs found elements of the IT system and services selected by Caravan too costly given their limited utility. Another ACO added that it may have considered population health management analytic tools other than Lightbeam provided by Caravan. Likewise, one non-Caravan AIM ACO reported that it would have explored the purchase of a less-expensive population health management application that would have allowed the ACO quicker insight into the Medicare ACO population.

3.4.3 Reductions in Total Medicare Spending Related to Management Company Involvement

We investigated the relationship between estimated AIM impacts on total Medicare spending and the ACOs’ use of management companies and other characteristics of the ACO. We tested for differential impacts of AIM based on ACO characteristics listed in **Exhibit 3-7**. We selected ACO factors based on their importance to the model, as determined through interviews or investigations of the data. The rationales are provided in **Exhibit 3-7**. We note that there are other factors important to ACO implementation that may be explored in future analyses.

Exhibit 3-7. Selected Potential Drivers of AIM Impacts on Medicare Spending for Test 1 AIM ACOs

Potential Driver of Impacts on Total Medicare Spending by Domain	Rationale for Selection
ACO formation	
ACO uses management company	Many AIM ACOs relied upon the services of a management company to operate the ACO. We explored whether management company affiliation was related to AIM impact on total Medicare spending.
ACO includes hospital as a participant	Inclusion of a hospital partner was a common feature of AIM ACOs. We tested whether AIM ACOs with hospital partners were more or less successful in reducing total Medicare spending than those without a hospital partner.
ACO has fewer than 6,500 assigned beneficiaries	Some AIM ACOs struggled to meet the Shared Savings Program minimum criteria of 5,000 beneficiaries. We tested whether the smallest ACOs, defined as having fewer than 6,500 assigned beneficiaries in the performance year, were less likely to reduce total Medicare spending.
Market geography	
High rurality ACO	AIM ACOs are located in more rural areas, consistent with a goal of the model. We tested whether AIM ACOs in the most rural areas (defined as RUCA greater than 6) were less likely to reduce total Medicare spending.*
Non-contiguous ACO market	Some AIM ACO’s participating clinicians were not centrally located—some were even located across the country. We identified ACOs that comprised non-contiguous counties and examined how total Medicare spending impacts varied for these “non-contiguous” ACOs.
ACO baseline spending	
ACOs for which assigned beneficiaries have higher average baseline spending than the comparison group	Some AIM ACOs described targeting high risk beneficiaries for care management. We tested whether estimated reductions in Medicare spending from AIM were concentrated among ACOs that served beneficiaries with higher spending.

*RUCA = Rural-Urban Commuting Area. RUCA code 6 indicates area that is “Micropolitan low commuting: primary flow 10% to 30% to a large urban cluster.” Note that rural is measured as RUCA > 4 in reporting ACO rurality throughout this report; here we are interested in highly rural ACOs.

For each of the domains listed in **Exhibit 3-7**, we ran additional regressions on total spending separate from the main regression testing for overall AIM impacts in PY1 and PY2. Each regression included indicators for each of the factors in the domain using the analytic sample of ACO and comparison beneficiaries pooled across the 41 AIM Test 1 ACOs (see **Appendix 3E** for information on methods). Using regression models to estimate these subgroup effects allows us to account for more than one factor at a time, enabling us to estimate separate effects. Within a domain, the findings for each factor are conditional on the other factors in the domain. For example, the differential impact of AIM for ACOs using a management company controls for whether that ACO had a hospital partner or fewer than 6,500 assigned beneficiaries but does not control for the factors in the other domains. In sensitivity analyses, we ran unconditional regressions such that a separate regression was run for each factor and the results were very similar (see **Appendix 3E**).

We first show the average DID impact estimate on PBPM total Medicare spending among ACOs with and without a given characteristic in the ACO formation and market geography domains for PY2. As shown in **Exhibit 3-8**, we estimated Medicare spending decreases to varying degrees for ACOs within all categories.

We found that AIM ACOs using a management company had higher estimated reductions than AIM ACOs that did not use a management company, on average, in PY2. Small AIM ACOs and those without a hospital partner had higher average estimated reductions than large ACOs or those with a hospital partner, respectively. High rurality AIM ACOs showed nearly identical reductions in Medicare spending as did those with lower rurality. Lastly, non-contiguous AIM ACOs had greater reductions in Medicare spending than did AIM ACOs operating in contiguous markets.

Exhibit 3-8. Average Reductions in Total Medicare Spending were Greater for AIM ACOs that were Managed, Small, and Did Not Have a Hospital Partner in PY2

	ACOs with Characteristic # ACOs (Avg. DID Estimate)	ACOs Not Having Characteristic # ACOs (Avg. DID Estimate)
ACO formation		
ACO uses a management company	29 (-\$41.48)	12 (-\$26.02)
Small ACO (fewer than 6,500 assigned beneficiaries)	8 (-\$72.61)	33 (-\$28.31)
ACO has hospital partner	26 (-\$27.94)	15 (-\$52.57)
Market geography		
High rurality (mean RUCA > 6)	9 (-\$37.38)	32 (-\$36.83)
Non-contiguous ACO market	29 (-\$40.15)	12 (-\$29.23)
ACO baseline spending		
High cost ACO (ACO spending > comparison spending during the baseline)	19 (-\$40.18)	22 (-\$34.16)

Note: The average DID estimate over the ACOs in each category is weighted by ACO size as measured by the number of assigned beneficiaries and does not account for statistical significance.

Source: Use of management company and hospital partnership obtained through interviews with AIM ACOs (see **Chapter 3**). DID impact findings were obtained from comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets.

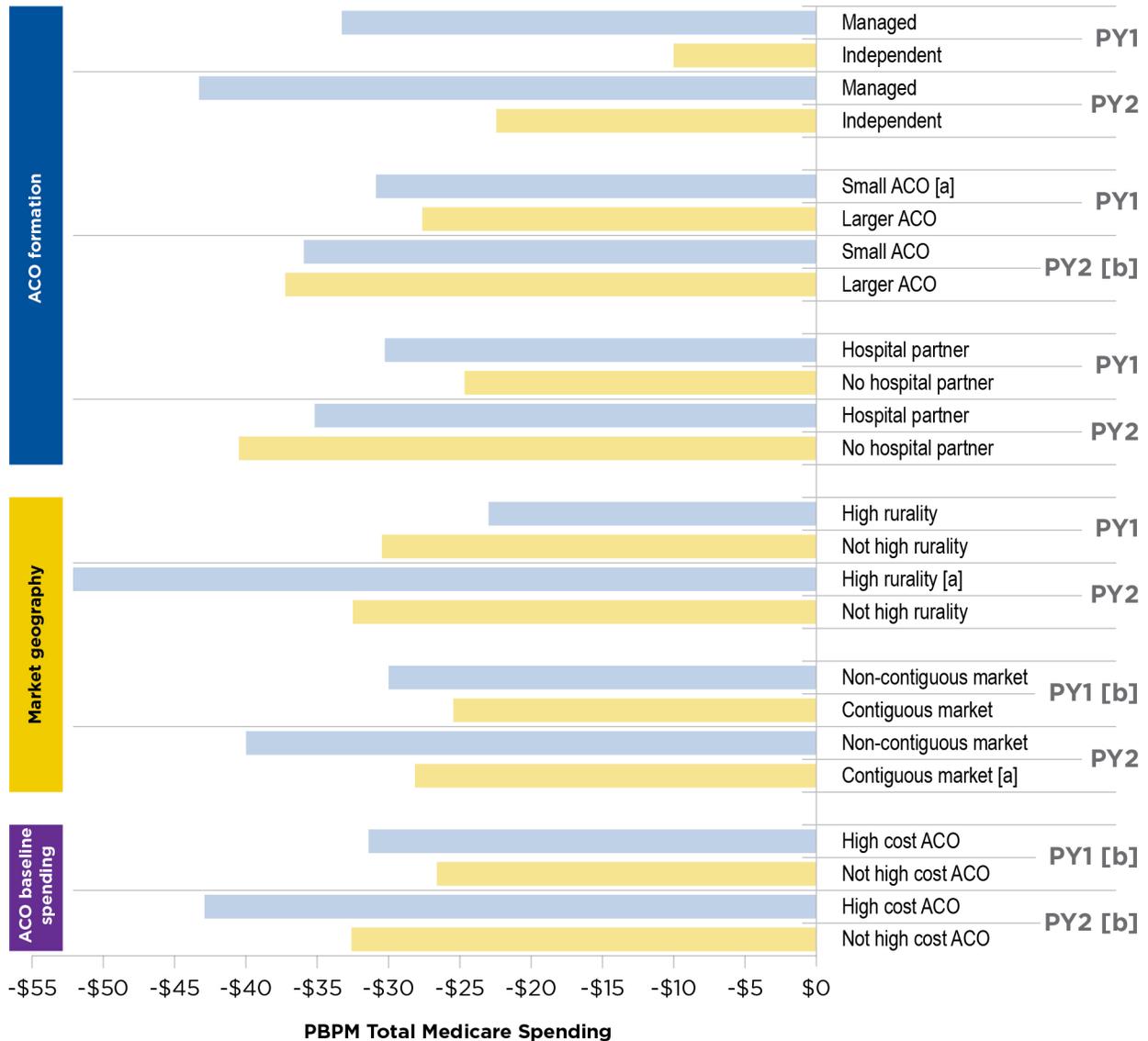
The results shown in **Exhibit 3-8** suggest that some of these factors may be driving the reduced total Medicare spending findings. To determine whether these observed differences were statistically

meaningful, we re-estimated the pooled DID models including indicators for these factors in PY1 and PY2. As shown in **Exhibit 3-9**, the findings differ when using the regression model to test for these differential impacts. Although we did not find any differences in AIM impacts on total Medicare spending that were statistically significant at the 5 percent level, there was a suggestive trend for ACOs using a management company—these ACOs showed substantially greater reductions in Medicare spending relative to independent ACOs in both performance years, on average.

We did not find consistent differential impacts for hospital size or partnership (**Exhibit 3-9**). We found that highly rural AIM ACOs had greater estimated reductions in Medicare spending in PY2, though the opposite was true in PY1, and the differences were not statistically significant for either year. Whether AIM ACOs were non-contiguous or centrally located was not statistically significantly related to differential reductions in Medicare spending. Lastly, the results indicate that AIM ACOs achieved similar reductions in spending whether a given AIM ACO's assigned beneficiaries, on average, had higher or lower total Medicare payments than beneficiaries in the AIM ACO's market during the baseline.

We caution that some of the subgroups did not pass the parallel trends test for the validity of the DID specification, as shown in **Exhibit 3-9**. Thus, while these findings inform future analyses, they are not confirmatory. Moreover, we selected only a subset of potential drivers of interest, and we may incorrectly attribute differential impacts to them if we omitted related factors that also affect Medicare spending impacts.

Exhibit 3-9. Evidence that Managed AIM ACOs May Consistently Be Driving Reductions in Total Medicare Spending



Note: DID impact findings from comparing AIM Test 1 ACO assigned beneficiaries to non-ACO FFS beneficiaries residing in the AIM ACOs' markets. We ran separate impact regressions for each domain and included indicators for each feature to obtain differential impacts on total Medicare spending. No estimates were statistically significant at the 5 percent level.

[a] Parallel trends assumption did not pass for a given subgroup ($p < 0.05$).

[b] The difference in impacts between two subgroups did not pass the parallel trends assumption ($p < 0.05$).

Source: ACO Provider RIF for 2016 and 2017, 2013-2017 Medicare claims data, and interviews with ACO leadership (for categorizing ACOs into managed versus independent and having a hospital partner or not).

3.5. AIM ACOs Increased Care Management Services

Coordinated, high quality care that helps patients avoid unnecessary duplication of services and prevents medical errors is a cornerstone of accountable care. In **Chapter 2**, we found in analyses of AIM ACO performance that ACOs decreased most sources of utilization except physician services. During interviews, AIM ACO representatives described implementing, expanding, or planning care management activities since starting AIM. In this section, we explore the use of Medicare-covered care management services by AIM ACO beneficiaries compared with beneficiaries in the AIM ACOs' non-ACO FFS market comparison group. We also describe the AIM ACOs' provision of care management services, their experiences over time, and challenges faced.

Twenty-nine AIM ACO representatives reported that a focus of their care management efforts was in promoting the use of at least one of three care management services that can be billed to the Medicare program:

- **Annual wellness visits (AWVs)** that can be provided annually to Medicare beneficiaries who have been enrolled in Medicare for at least 12 months.
- **Chronic care management (CCMs) visits** that are intended to help patients manage their chronic illnesses and may be provided to beneficiaries with two or more chronic conditions expected to last more than a year.
- **Transitional care management (TCMs) services** that are intended to help patients with transitions from inpatient to a community setting within seven or 14 days of discharge.

For many of the AIM ACOs with management companies, interviewees described the general focus of their care management programs. Nearly all of the 21 Caravan-managed AIM ACOs described a focus on promoting at least one, but typically all three, of these services as part of care management changes implemented or enhanced since the start of AIM.

We didn't have any workflows when we started this, such as to follow patients once they left our four walls. But we've now worked with case management to set up a workflow so that we're notified so that we can follow them for the next 30 days. So, that was an intervention that we did – doing that transition in care. Once followed through that 30 days, then identifying they do have 2+ diagnoses that put them at higher risk, so let's follow them through CCM, so then we're following them from that standpoint.

Our big focus for 2016 is Medicare wellness visits. We attended the first quarterly conference and there was education and encouragement from Caravan on how to do wellness visits in a systematic fashion. The concept was that we could have RN [Registered Nurse] coordinators perform a large component of wellness visits and double book it over another appointment. That way, the provider only spends a few minutes with patients (versus 1 hour), which was a huge barrier for Medicare wellness visits across the country. We took it on as a challenge and achieved it quite successfully, as one of our RN care coordinators does five Medicare wellness visits a day.

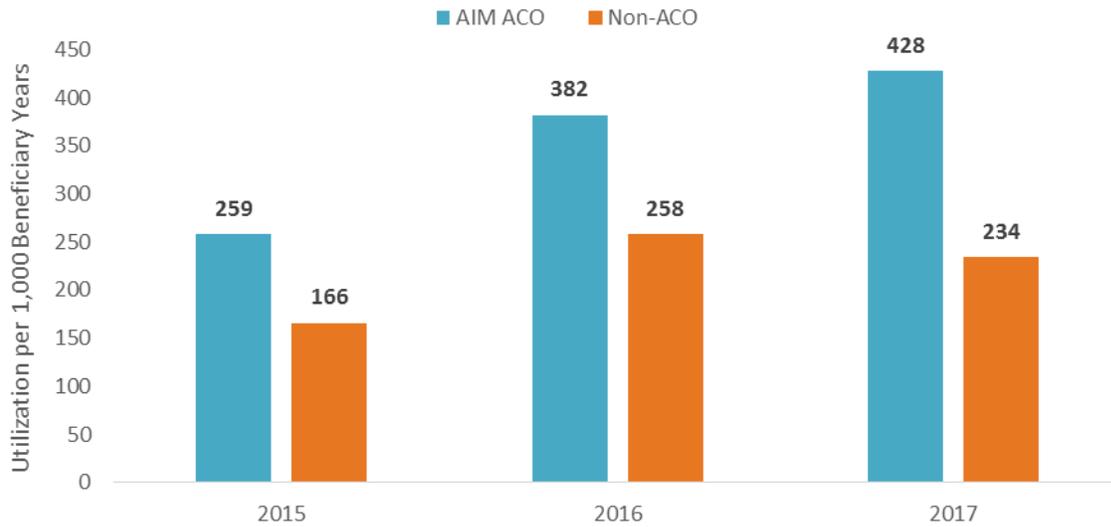
Because of AIM funds, 14 out of 14 practices are doing care management. They wouldn't otherwise be doing it. I am talking about building the CCM, doing the outreach for annual wellness visits, and TCMs. Before the ACO came along, they did not know about TCMs. It really has helped.

To examine if the trends we found in physician services utilization and ACO representatives' reported focus on care management corresponded to an increase in billing the codes for AWV, CCM, and TCM services for AIM-assigned beneficiaries, we analyzed Medicare carrier and outpatient claims (see **Appendix 3D** for the list of codes). We compared the prevalence of AWV, TCM, and CCM services among AIM-assigned and non-ACO FFS comparison beneficiaries in the AIM ACOs' markets (see **Chapter 2** for a description of how comparison beneficiaries were identified). We calculated the change in these services between each of the two performance years (2016 and 2017) and a pre-performance year (2015).³⁵

The numbers of AWV, CCM, and TCM services received per 1,000 beneficiary years for AIM ACO and non-ACO comparison beneficiaries during each performance year and corresponding pre-performance year are shown in **Exhibits 3-10 to 3-12**. Of the three services, AWVs were most commonly received by beneficiaries, followed by CCM services, and then TCM services. While the use of these services grew for all beneficiaries, the utilization of CCM grew most rapidly between 2015 (51 per 1,000 beneficiary years) and 2017 (318 per 1,000 beneficiary years)—a change of more than 400 percent. Use of TCM services grew by more than 100 percent in 2017 (**Exhibit 3-11**). For both CCM and TCM services in 2017, growth was higher for assigned relative to non-ACO comparison beneficiaries.

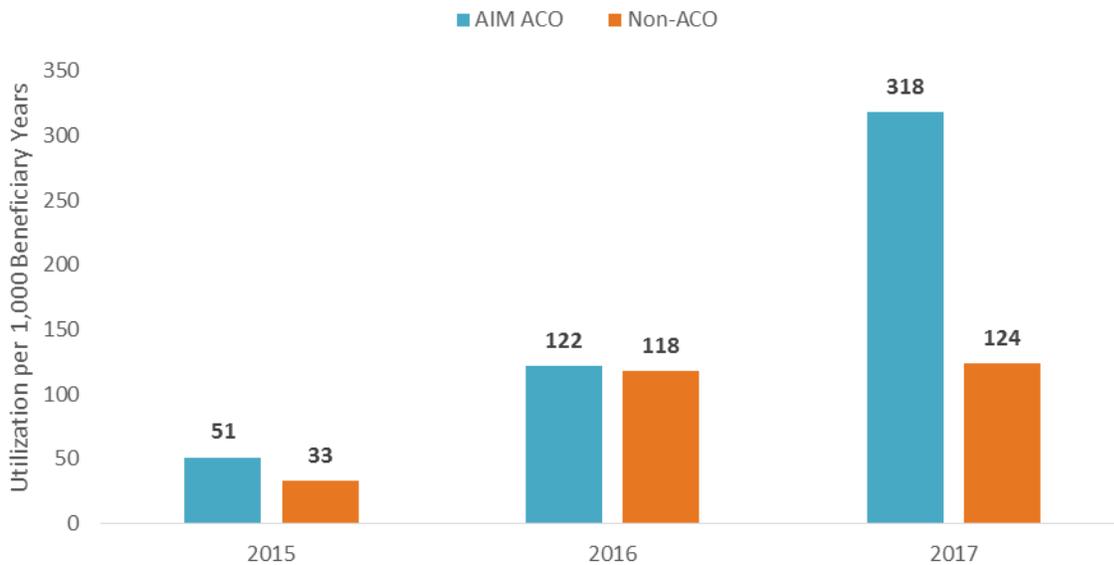
³⁵ For 43 of the 45 AIM ACOs, CY 2016 and CY 2017 are the first and second AIM performance years. For the other two AIM ACOs, 2015 and 2016 are the first and second AIM performance years. However, for these analyses, we compare CY 2016 and CY 2017 to CY 2015 for all AIM ACOs. Given the relatively recent coverage by Medicare of these services (e.g., CCM visits began Medicare coverage in 2015), we elected to use a consistent set of years to examine the changes in these visits over time. Nine of the 45 AIM ACOs were participating in the Shared Savings Program in 2015.

Exhibit 3-10. AIM ACOs Increased Annual Wellness Visits (AWVs)



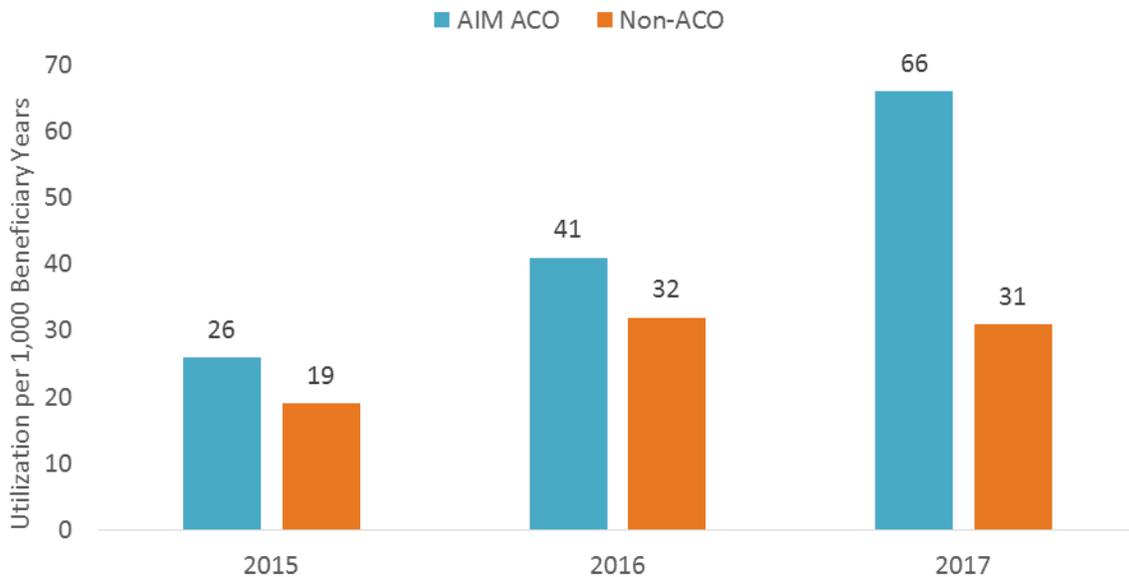
Note: We identified AWVs in the Medicare claims data using codes listed in **Appendix 3D**. The figures in 2015 represent the average 2015 (pre-ACO) value corresponding to performance years 2016 and 2017, which are based on the ACO providers in each performance year.

Exhibit 3-11. AIM ACOs Increased Chronic Care Management (CCM) Visits



Note: We identified CCM services in the Medicare claims data using codes listed in **Appendix 3D**. The figures in 2015 represent the average 2015 (pre-ACO) value corresponding to performance years 2016 and 2017, which are based on the ACO providers in each performance year.

Exhibit 3-12. AIM ACOs Increased Transitional Care Management (TCM) Visits



Note: We identified TCM visits in the Medicare claims data using codes listed in **Appendix 3D**. The figures in 2015 represent the average 2015 (pre-ACO) value corresponding to performance years 2016 and 2017, which are based on the ACO providers in each performance year.

We found that AIM ACO beneficiaries received more AWV and care management services than comparison beneficiaries in both performance years. The difference in use of these services between AIM ACO and non-ACO comparison beneficiaries also increased over time, which may be related to how beneficiary assignment to ACOs is determined: these services affect beneficiary assignment and the increasing provision of these services by an ACO may increase the chance that more beneficiaries will be assigned to the ACO.

Use of AWV and care management services varied across ACOs. For all three types of care management services, variation in the use of services was greater among ACO beneficiaries than comparison beneficiaries—all outliers, in terms of very high rates of services, were among ACO beneficiaries (see **Appendix 3G**).

As discussed in **Chapter 2**, we found AIM to reduce Medicare spending and utilization in all categories with the exception of Medicare spending on physician services. Increased spending on care management services likely contributed to this finding. We will continue to explore these patterns in the next performance year. During the second round of interviews, most AIM ACOs indicated that increasing the volume of care management services remained a goal. Many tied these activities to outcome goals, such as avoidance of inpatient admissions, readmissions, and ED use. Some interviewees also reported looking at process measures, such as counts of outreach calls to patients and the number of AWV services conducted, to assess their progress on implementing care management programs. Most AIM ACOs reported that they routinely monitored their care management by looking at claims-based outcome metrics such as ED use and readmissions. In future work, we will examine attributes and impact findings of the ACOs providing high rates of these services.

3.5.1 Prioritizing Patients to Receive Care Management Services

Many ACO representatives noted that their ACOs have a decentralized approach to determining which patients should receive care management services, with physicians deciding how to implement care management programs in their own practices. For example, during many of the interviews with AIM ACOs working with Caravan as a management company, a representative from Caravan would describe the care management program while a representative from one of the practice sites would describe how those programs were implemented at their practice.

AIM ACO representatives generally said they targeted delivering more care management services toward patients who were eligible to receive these visits: patients who had not received an AWV, those with two or more chronic conditions, and those who had been discharged from an acute care stay. Most AIM ACOs were using or beginning to use claims data to identify patients for education and outreach, but a few described struggles to identify patient populations whose utilization they believe they can affect.

Lightbeam has provided us with an improved line of sight to where costs are occurring and patient outcomes. With Lightbeam I've been able to layer on top an equation for diabetes and vascular disease, which typically correlate with higher cost.

Combining variables to formalize our identification of patients that may be appropriate for coordinated care. Before, that criteria was in place but there wasn't a formal structure to identify and produce those patient lists.

Well, right now our target has been patients that are post-discharge in the hospital and our highest spend patients. In the future, I really believe it's going to be our patients that are the rising risk patients or high potential risk. Finding those is kind of tough right now.

When we followed up on care management activities in the second round of interviews, representatives from nearly all AIM ACOs reported that their care management activities—including program development; identification of populations of interest; patient outreach, education, and coaching; provider education; and implementation and outcomes monitoring—continued to focus on promoting AWVs, CCM, and TCM services.

I think through the knowledge we've gained, we are much more focused on primary care practices, around the wellness visit, around transitional care, and around CCM. I think we are much more focused on where we discharge our patients to make sure it is the right location with the right outcomes... We're trying to fundamentally change how we treat our patients within our system.

Most ACO representatives reported using claims data or reports derived from claims to identify and prioritize patients for care management. For those AIM ACOs working with management companies, patient identification for care management and monitoring of outcome metrics were largely supported by management companies.

Interviewees reported that AIM ACO care managers interacted with patients in a variety of settings. An even mix of care managers conducted patient outreach, scheduling, and education exclusively by phone versus by phone and in the office. A few interviewees reported that care managers conducted home visits. Because the type of patient interaction can vary based on the patient population as well as by practice within the same ACO, the method of outreach at the ACO level was difficult to quantify using the information collected during interviews.

3.5.2 AIM ACOs Refined Care Management Programs Based on Early Experiences

Representatives from several AIM ACOs discussed modifying or refining their care management programs in the second year of AIM based on what they had learned from their experiences in the first year of the model. These included:

- Focus on advance care planning in the second year of AIM;
- Hiring additional care coordinators and increasing existing care coordinators' full-time equivalent status;
- Focusing on additional coordination activities (e.g., CCM or coordinating behavioral health care);
- Prioritizing different patient populations (e.g., switching from a focus on highest severity to low- and medium-severity patients);
- Paring back expectations for providers (e.g., relaxing AWW requirements); and
- Testing the right time to graduate patients from care management.

I would say the activities have changed, especially from when we first became an ACO to current day. It's become more of a true care coordination, case management relationship with the patients. At first, the patients and the providers...used it [care coordination] as a means to maybe help that patient with [the] patient's assistance of medication or maybe they had a transportation issue. So, more of those social issues. Whereas now it's evolved into more of that relationship where there's education, there's ongoing communication...they [patients] know to call the case manager or care coordinator so that they know that they may need to be seen in the office rather than hitting the ER.

We've been trying to get more efficient. Probably the biggest change is, as this was going on, we were finding that people weren't getting discharged out of the [care management] program, as we didn't want this to be a life sentence. We wanted to be intervening, teaching them to take control of their health care and then discharge them into the general population. And that wasn't happening as efficiently, we were becoming more of a crutch for patients. So, we've tried to push our care coordinators to rotate through the patient plan a little more. I think that has been the biggest change in the last year that we have started to make.

3.5.3 AIM ACOs Saw Value in New Care Management Activities, but Noted Challenges to Implementing Them

Representatives from nearly all AIM ACOs saw the value in the care management services they added or modified while participating in AIM. Interviewees generally reported that they thought they had improved the quality of patient care and expressed a desire to continue these care management activities. This impression is consistent with the ACO Web survey results about whether an AIM ACO planned to continue spending in select areas of investment after AIM payments ended (see **Exhibit 3-13**).

I would say that care is definitely more coordinated than it was before we started this initiative. We definitely have worked hard to know where our patients are, know when and where they are discharged to, trying to improve those hand-offs. I do think that there is better communication and coordination than there was before with all sites.

Exhibit 3-13. How AIM ACOs Plan to Continue Spending on Care Management after AIM Funds are Expended

Response	Overall Count	Overall Percentage	What level of investment does your ACO plan to spend in this area after expending all its AIM funds?	
			Lower Investment Count (%)	Same or Higher Investment Count (%)
Care management staff (i.e., hiring, expanding hours of, or training)	32	84.2%	4 (12.5%)	28 (87.5%)
Education & training (includes health provider education, conferences, etc.)	26*	68.4%	3 (12.0%)	22 (84.6%)
Hiring clinical management/leadership staff	14	36.8%	2 (14.3%)	12 (85.7%)
Hiring administrative management/leadership staff	14	36.8%	2 (14.3%)	12 (85.7%)
Risk analysis/claims analysis software	13	34.2%	3 (23.1%)	10 (76.9%)
Total Survey Respondents (Unique Count)	38	N/A	-	-

Source: Analysis of the ACO Web survey. Respondents could select all that apply. *One respondent indicating investment in education & training did not respond to the follow-up question regarding level of investment.

Representatives from a few AIM ACOs discussed barriers or delays to full implementation of their care management programs resulting from difficulty in changing provider and patient behavior at the end of the second year of AIM. In these cases, the ACOs did not abandon their plans to implement care management programs but noted that change was taking longer or required additional provider and patient education than they initially anticipated.

There is a big learning curve. The hospitals like what they have been doing, so they do not always want to change. We have to work with them and teach individual organizations how to do these things. We used money to do a care coordination video, and I think that was well received and was helpful. The hospital staff members that were not directly involved with the ACO could not understand what it was all for, so doing the video helped them understand why they were making these changes.

I guess our physicians weren't as engaged with the programs as we'd hoped. We didn't get as many referrals. And patients had the option, but we didn't get patient participation like we thought. We didn't see the results we thought we would. ...A lot of the people just were not that engaged in their care or engaged in us being engaged in their care.

One thing that has changed [is] the way in which providers are receiving that individual [care manager] today versus when we first introduced them. It took them two to three months to persuade them [physicians] this person is not going to steal their patient away. We are helping to manage the patients who are requiring a lot of attention and time. So, as the trust has evolved, the value as viewed by the providers has increased.

You have to help everyone understand how it [care management services] is beneficial in the long run. It seems kind of obvious, but I think it takes a bit more than expected to get everyone on board... I think we were naïve that we thought everyone will embrace it and love us.

ACOs recognized that care management programs are not one-size-fits-all: Some ACO representatives reported that the care management programs designed and implemented by management companies failed to adequately address patient needs. One AIM ACO reported that it should have refocused its care management activities to pay equal attention to CCM visits and AWVs. This ACO reported that it spent too many resources on patients with chronic conditions who were very ill and less likely to embrace change and not enough on wellness for the general ACO population. Another AIM ACO reported that if it could start over again, the ACO would have implemented care management initiatives earlier by creating a bonus structure for physicians to keep patients out of the ED, and prior to discharge, they would have provided patients and the physician on call with the ACO's contact information.

Relatedly, CMMI model leads questioned the scalability of care management activities implemented by ACOs whose participating physicians practice in non-contiguous states. They cited interest in better understanding care coordination activities and programmatic structure in ACOs whose participant networks are geographically segregated. Underscoring the central role of care management in ACO operations, one CMMI model lead posited that if future Shared Savings Program cohorts were required to demonstrate a well-established care management program as part of the application process, organizations might be better equipped to develop effective ACO infrastructure.

4. Exploring the Impacts of AIM Funds

In this chapter, we describe the AIM ACOs' use of AIM funds obtained through ACO interviews and analyses of expense reports required by AIM. To gain insights on the effect of the availability of these funds separate from the effect of participating in the Shared Savings Program, we compare the impacts on Medicare spending and utilization measures by AIM ACOs and non-AIM ACOs in the Shared Savings Program. In **Chapter 2**, we examined AIM Test 1 ACOs relative to non-ACO assigned beneficiaries in their market. Here, in contrast, we compare the performance of both AIM Test 1 and Test 2 ACOs relative similar non-AIM ACOs. For AIM Test 1 ACOs, we compare the impact estimates reported in **Chapter 2** with analogous impact estimates obtained for a subset of similar non-AIM SSP ACOs. For AIM Test 2 ACOs, which existed in the Shared Savings Program prior to joining AIM, we directly compare AIM-assigned beneficiaries to beneficiaries assigned to similar non-AIM SSP ACOs. Comparing the performance of AIM ACOs with other SSP ACOs that did not participate in AIM is a way to better understand the incremental effect of AIM funds on SSP ACOs' performance in the Shared Savings Program.

Key findings on exploring AIM funds and AIM ACOs' performance relative to similar non-AIM SSP ACOs:

- ▶ AIM ACOs used most of the AIM funds on ACO administration/management, care management, and health IT systems. ACOs spent a large amount of their own internal funds to support activities funded through the AIM payments.
- ▶ Over both performance years, AIM Test 1 ACOs decreased total Medicare spending and related utilization more than similar non-AIM SSP ACOs that did not receive AIM funds.
- ▶ AIM Test 2 ACOs decreased spending and utilization compared to beneficiaries assigned to similar non-AIM SSP ACOs in PY2, though not in PY1. Large reductions among two of the four AIM Test 2 ACOs drove the aggregate reduction in spending.

4.1. Data and Methods

We use qualitative information collected from two rounds of telephone interviews with ACO representatives (see **Chapter 3** and **Appendix 3A** and **3B** for more information on the ACO interviews and methods for analysis) and well as data from AIM expense reports through the end of 2017. AIM ACOs were required to report how AIM funds were spent through these quarterly reports, which were reviewed for approval by CMS (see **Appendix 1E** for further detail on AIM expense reporting). Using the self-reported description of expenses, we categorized spending into broad topics (see **Appendix 1E**). For each expense, AIM ACOs also were required to report the amount of ACO internal resources used to support AIM-funded activities.

To compare AIM ACOs to non-AIM SSP ACOs, we identified similar SSP ACOs by selecting non-AIM SSP ACOs using the following criteria:

- Started the Shared Savings Program in the same year as the AIM ACO
- Participated in Track 1 (no down-side financial risk)
- Did not participate in the AP model
- Were smaller in size:
 - For comparisons to AIM Test 1 ACOs, we selected non-AIM SSP ACOs with fewer than 15,000 assigned beneficiaries in the year of Shared Savings Program participation

- For comparisons to AIM Test 2 ACOs, we selected non-AIM SSP ACOs with fewer than 10,000 assigned beneficiaries in the year of Shared Savings Program participation

Using these criteria we initially selected 89 non-AIM SSP ACOs that started the Shared Savings Program in 2015 and 2016 for comparison with AIM Test 1 ACOs and 71 non-AIM SSP ACOs that started in 2012, 2013 or 2014 for comparison with AIM Test 2 ACOs. Selected non-AIM SSP ACOs remained in the comparison group in PY2 even if they moved to a high financial risk track or grew to be larger in subsequent years. There was attrition over time in the group of selected non-AIM SSP ACOs, as discussed further below. AIM ACOs that began the Shared Savings Program in the same year shared the same set of similar non-AIM SSP ACOs. The list of non-AIM SSP ACOs selected for comparison is shown in **Appendix 4A**.

We applied separate approaches to comparing AIM ACOs to the similar non-AIM ACOs depending on the type of AIM ACO:

- **AIM Test 1 ACO analyses:** Since AIM Test 1 ACOs were newly formed, we compared relative changes in performance of AIM ACOs to their market areas relative to analogous changes in performance of similar newly formed non-AIM SSP ACOs. We applied the same DID framework applied in **Chapter 2** to each similar non-AIM SSP ACO by comparing beneficiaries assigned to the selected non-AIM SSP ACOs to non-ACO FFS beneficiaries located in the ACOs' markets during the performance and baseline periods to account for market-related effects on ACO performance. To better balance the non-AIM SSP ACO characteristics with AIM Test 1 ACOs' characteristics, we applied an entropy balancing technique to weight the non-AIM SSP ACOs based on AIM Test 1 ACO characteristics.³⁶ The resulting impact estimates were aggregated across the non-AIM SSP ACOs in the same start year and compared to the impact estimates of the corresponding AIM Test 1 ACO. Because the comparison is of two DID estimates, we do not calculate confidence intervals around the net point estimate. We provide more detail on this methodology in **Appendix 4B**.
- **AIM Test 2 ACO analyses:** AIM Test 2 ACOs had experience in the Shared Savings Program prior to joining AIM. For these ACOs, we compared relative changes in performance from the time when SSP ACOs started AIM and similar non-AIM ACOs throughout the time both groups were an ACO. We used their prior Shared Savings Program participation as a baseline period for comparing to similar non-AIM SSP ACOs. Thus, we are able to directly apply a DID approach that compares beneficiaries assigned to AIM and beneficiaries assigned to similar non-AIM SSP ACOs in the AIM performance years and a pre-AIM Shared Savings Program baseline period. We describe this methodology, including testing of the validity of the approach in **Appendix 4B**.

It is important to note that the comparison with non-AIM SSP ACOs is imperfect in that AIM ACOs are being compared with ACOs that may differ in ways from AIM ACOs that cannot be fully observed or accounted for in the analysis. Thus, results for both analyses should be interpreted with caution.

³⁶ We entropy weight using the following ACO and ACO market characteristics: percent rurality, percent beneficiaries residing in a primary care HPSA, number of beneficiaries, and marketplace favorability score (see **Appendix 4B**).

4.2. Results

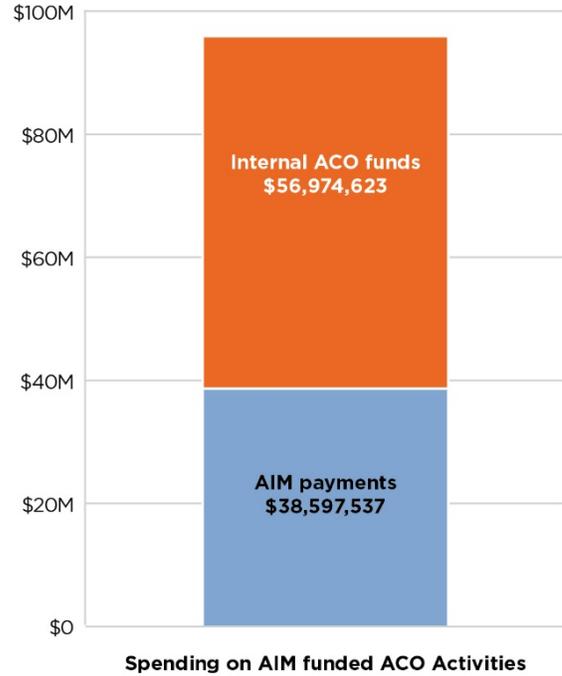
4.2.1 AIM ACOs’ use of AIM payments

AIM ACOs were required to report how AIM funds were spent through quarterly expense reports reviewed for approval by CMS (see **Appendix 1E** for further detail on AIM expense reporting). AIM ACOs also were required to report the amount of ACO internal resources used to support AIM-funded activities. Analyses of the expense report data showed that AIM ACOs used a substantial amount of their own funds to support AIM activities. As shown in **Exhibit 4-1**, self-reported internal ACO funds invested in the ACO exceeded the AIM payments from CMS as of the end of 2017.

As described in **Exhibit 4-2**, resources related to providing care management services and ACO administration were the most significant investment areas of AIM funds. In interviews, AIM ACO representatives most commonly described investments in care management, ACO administration, and data analysis as their most significant areas of investment of AIM funds. From the AIM ACOs’ quarterly expense reports, we also summarized self-reported spending activities by category (**Exhibit 4-3**). While the broad spending categories from the expense reports do not correspond perfectly with data collected through interviews, the relative magnitude of investments by categories of spending generally aligned with what ACOs reported as their most significant areas of investment.³⁷

The practitioner interviews also confirmed that ACOs’ most significant investments using AIM funds were staffing (largely for care management). In the interviews, practitioners also listed infrastructure and IT as other major areas of investments.

Exhibit 4-1. AIM ACOs’ Use of Internal Funds Exceeded AIM Payments



Source: AIM quarterly expense reports from 2015-2017.

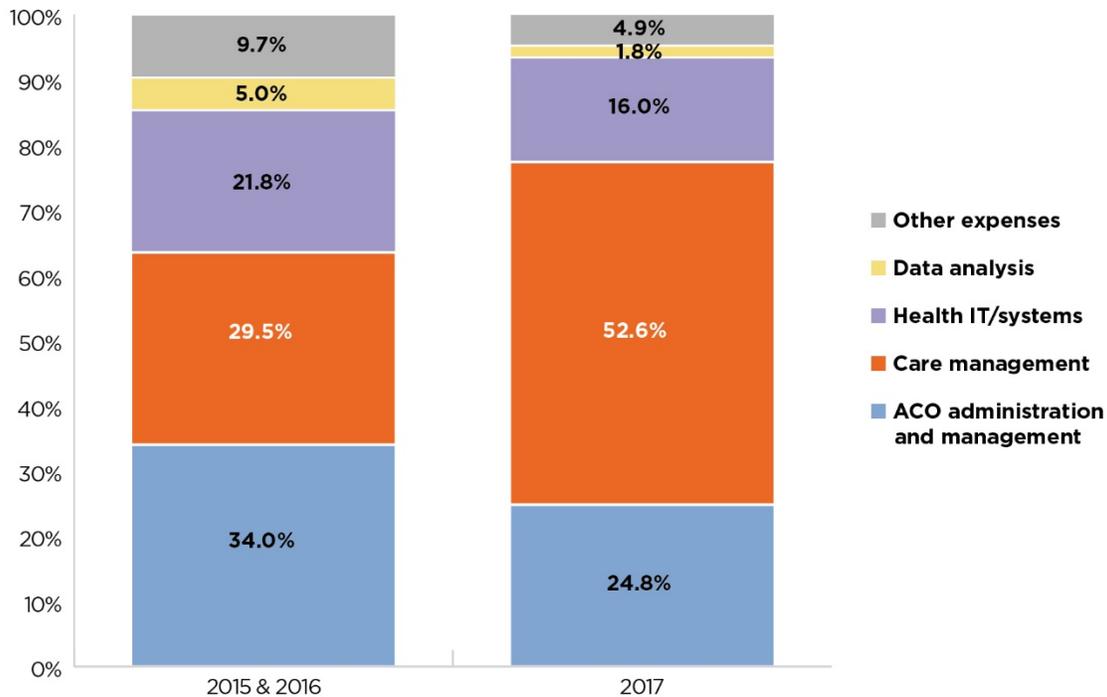
³⁷ Although the AIM ACOs’ anticipated spending plans and expense reports must be approved by CMS, expenses were self-reported and lack of a reported expense does not necessarily indicate lack of ACO internal spending on a particular activity.

Exhibit 4-2. Significant Areas of AIM-Funded Investment

Investment Category	Description
Care Management	Almost all of the AIM ACOs mentioned spending a significant portion of their AIM payments on care management, particularly for care management staff. Most of the AIM ACOs used funds to hire additional care coordinators, while some transitioned existing staff to care management roles or expanded the role of an existing staff member to include care management. Some also reported using AIM payments to support trainings for care managers and/or participating providers on care management. Chapter 3.5 discusses the ACOs' use of care management services.
ACO Administration and Management	Thirty-six ACOs used a portion of AIM payments for ACO administration and management provided by management companies. Some AIM ACOs that did not hire management companies mentioned using AIM funds to hire management-level staff or to support management positions. Chapter 3.4 elaborates on AIM ACOs use of management companies.
Data Analysis and Health IT/systems	Thirty of the AIM ACOs, including all of the 21 ACOs using Caravan as a management company, said they allocated a significant portion of their AIM funds for analysis of claims or electronic health record (EHR) data by either ACO staff or purchased services from a management company. About one-third of the AIM ACOs mentioned allocating a portion of their AIM funds for health information technology (HIT) investments for non-data analysis purposes. These investments include new health information exchanges (HIE), patient health data systems (i.e., patient portals), event notification systems, or EHR interfaces.
Other Staff or Other Expenses	Less than a quarter of the AIM ACOs described using AIM payments to hire staff other than care management or ACO management. Other staff hired included data analytic staff and consultants, such as "practice transformation specialists." More than a fifth of the AIM ACOs mentioned using AIM funds on other expenses, such as training and related travel, laptops/tablets for staff, and mileage expenses for centralized care coordinators as they travel between participating clinics.

Source: Analysis of AIM ACO first and second round interviews.

Exhibit 4-3. AIM ACOs' Increased Spending on Care Management



Note: Allocation of AIM payments according to AIM quarterly expense reports for 45 AIM ACOs, 2015–2017. **Appendix 1E** provides a detailed description how we categorized line item expenses and the limitations of information from the expense reports.

The majority of AIM ACO interviewees said they made no significant changes to how they allocated their AIM payments between the first and second year of AIM. One fifth of AIM ACOs reported changing their allocations in the second year, with most having shifted resources to expand care management activities. Between the first and second round interviews, some of these organizations reported hiring additional care coordinators, increasing existing care coordinators to full-time equivalent status, or (re)allocating funds to support specific programs such as transition management services. The increase in spending on the AIM expense reports appears to reflect this ramping up of care management between the two years. **Chapter 3.5** further discusses the AIM ACOs’ provision of care management services.

4.2.2 Compared to Similar Non-AIM SSP ACOs, AIM ACOs Decreased Medicare Spending and Related Utilization

AIM funds were designed to provide financial support to select SSP ACOs for transforming the care they deliver to their assigned beneficiaries.

In PY1, we selected 89 non-AIM SSP ACOs that were similar to AIM Test 1 ACOs based on the criteria listed above (45 began the Shared Savings program in 2015 and 44 began in 2016), as shown in **Exhibit 4-4**. In PY2, 77 of the 89 ACOs remained in the Shared Savings Program. A total of 172 non-AIM ACOs with 2015 and 2016 Shared Savings Program start years were still participating in the Shared Savings Program in 2017 (see last column of **Exhibit 4-4**).

For AIM Test 2 ACOs, we identified 71 non-AIM SSP ACOs in PY1 and 55 in PY2 (**Exhibit 4-4**).³⁸ The list of non-AIM SSP ACOs used for comparison is reported in **Appendix 4A**.

Exhibit 4-4. Number of Comparison Non-AIM SSP ACOs

AIM	SSP Start Year	AIM ACOs	Similar Non-AIM SSP ACOs PY1 [a]	Similar Non-AIM SSP ACOs PY2 [b]	All Non-AIM SSP ACOs in 2017 [c]
Test 1	2015	5	45	37	76
	2016	36	44	40	96
Test 2 [d]	2012	1	5	0	63
	2013	3	14	13	62
	2014	2	52	42	79

[a] Similar non-AIM SSP ACOs were selected based on Shared Savings Program start year, number of assigned beneficiaries in PY1, initial participation in Track 1, and no prior participation in the AP ACO model.

[b] Similar non-AIM SSP ACOs were selected based on the criteria listed above using PY1 information. Some comparison ACOs exited the Shared Savings Program after PY1.

[c] SSP ACOs active in 2017 according to the 2017 Shared Savings Program PUF.

[d] Two AIM ACOs exited AIM and the Shared Savings Program at the end of 2015; they started the Shared Savings Program in 2012 and 2013. Thus, the selected similar non-AIM SSP ACOs starting the Shared Savings Program in 2012 for AIM ACO Baroma Healthcare International (2012 SSP ACO starter) were excluded in PY2.

We compare ACO and assigned beneficiaries’ characteristics between AIM ACOs and their selected similar SSP ACOs by averaging across ACOs (**Exhibit 4-5** and **4-6**). AIM Test 1 ACOs have fewer practitioners, on average, and a higher percentage of them are primary care practitioners compared to similar non-AIM SSP ACOs. AIM ACOs are also more likely to include facility-based providers (defined as FQHCs, RHCs, CAHs, or ETA hospitals), as shown in **Exhibit 4-5**. The two groups are similar in terms of the number of assigned beneficiaries, percent female beneficiaries, average age, and number of chronic conditions. Non-AIM SSP ACOs were more likely to serve non-white beneficiaries and

³⁸ The decrease in comparison non-AIM SSP ACOs between PY1 and PY2 resulted from exits from the Shared Saving Program as well as excluding SSP ACOs that were similar to Baroma Healthcare International, an AIM ACO that exited at the end of PY1 and the only AIM ACO starting the Shared Savings Program in 2012.

beneficiaries with higher Medicare spending during the baseline period. AIM ACOs had higher rates of disabled and Medicare/Medicaid dual eligible beneficiaries. AIM ACOs were substantially more likely to serve patients located in rural areas or in areas designated as Health Professional Shortage Areas (HPSAs). AIM and non-AIM ACOs were similar in rates of earning shared savings (about one quarter of ACOs). The patterns were similar in PY1 and PY2.

Exhibit 4-5. AIM Test 1 and Selected Non-AIM SSP ACOs Differ in Composition and Location but Serve Similar Beneficiaries

	PY1		PY2	
	AIM ACOs (N=41)	Non-AIM SSP ACOs (N=89)	AIM ACOs (N=41)	Non-AIM SSP ACOs (N=77)
ACO participants [a]				
Number of practitioners	92.9	129.5	101.2	128.8
Percent primary care practitioners	86.7%	82.0%	85.8%	83.4%
Percent specialists	13.3%	18.0%	14.2%	16.6%
Number of facility-based providers	13.9	3.3	16.6	3.6
Beneficiaries [b]				
Number of assigned beneficiaries	9,439	8,925	10,329	9,019
Female	56.7%	57.1%	56.5%	56.9%
Average age	71	72	71	72
White	87.9%	81.4%	87.6%	81.1%
Black	6.1%	10.2%	6.2%	10.6%
Hispanic	2.9%	3.9%	3.0%	3.7%
Other race	3.1%	4.4%	3.2%	4.5%
Disabled	26.0%	23.5%	25.6%	23.3%
End Stage Renal Disease (ESRD) Medicare entitlement	0.9%	1.1%	0.9%	1.0%
Medicare/Medicaid dual eligibility	23.3%	20.3%	22.5%	19.6%
Average HCC risk score	0.99	1.02	1.01	1.05
Number of chronic conditions	2.3	2.5	2.4	2.5
Mean PBPM Medicare payment during baseline	\$916	\$944	\$918	\$956
Geographic [c]				
ACO rurality	75.9%	24.1%	72.6%	25.1%
HPSA primary care	15.1	7.1%	15.4%	7.3%
HPSA mental health	71.3%	33.8%	71.6%	33.8%
Financial results [d]				
# ACOs earned shared savings	10 (24.4%)	19 (21.3%)	12 (29.3%)	20 (26.0%)

Notes: Figures are unweighted averages across the number of ACOs listed in each column header.

[a] Includes only ACO participants eligible for beneficiary assignment.

[b] The baseline period for per beneficiary per month (PBPM) Medicare payment is 2013 to 2015.

[c] ACO rurality is measured by the percentage of an ACO's assigned beneficiaries living in areas with RUCA codes ≥ 4 . ACO HPSA percentage is measured by the percentage of an ACO's assigned beneficiaries living in areas designated as mental health or primary care health professional shortage areas.

[d] Shared Savings Program PUF for 2016 and 2017.

The analogous information for AIM Test 2 ACOs and their selected non-AIM SSP ACOs is shown in **Exhibit 4-6**. AIM Test 2 ACOs had substantially fewer practitioners (66.7 on average in PY1 compared to 112.2 for selected non-AIM SSP ACOs). The percentage of primary care versus specialist practitioners were similar between AIM and non-AIM SSP ACOs in PY1 but greater for AIM ACOs in PY2. AIM

Test 2 ACOs were smaller in terms of assigned beneficiaries and had a lower proportion of white beneficiaries than selected SSP ACOs. AIM Test 2 ACOs had higher rates of Medicaid dual eligible beneficiaries, beneficiaries with high HCC risk scores, and higher baseline spending. AIM Test 2 ACOs tended to serve beneficiaries who were located in less rural areas than comparable SSP ACOs. In PY2, two of the four AIM Test 2 ACOs earned shared savings, while 43.6 percent of the selected non-AIM ACOs earned shared savings.

Exhibit 4-6. AIM Test 2 ACOs are Smaller and Serve More Vulnerable Beneficiaries Compared to Selected Non-AIM SSP ACOs

	PY1		PY2	
	AIM ACOs (N=6)	Non-AIM SSP ACOs (N=71)	AIM ACOs (N=4)	Non-AIM SSP ACOs (N=55)
ACO participants [a]				
Number of practitioners	66.7	112.2	74.0	123.8
Percent primary care practitioners	76.7%	78.9%	85.6%	79.2%
Percent specialists ¹	23.3%	21.1%	14.4%	20.8%
Number of facility-based providers	0.0	6.3	0.0	7.4
Beneficiaries [b]				
Number of assigned beneficiaries	5,753	9,204	6,204	10,041
Female	59.6%	57.8%	58.1%	57.6%
Average age	72	71	72	71
White	49.7%	72.7%	49.4%	72.3%
Black	14.8%	12.8%	16.6%	13.6%
Hispanic	31.1%	8.2%	27.9%	8.5%
Other race	4.4%	6.2%	6.1%	5.6%
Disabled	23.2%	23.7%	23.3%	24.5%
End Stage Renal Disease (ESRD) Medicare entitlement	2.1%	1.3%	2.2%	1.3%
Medicare/Medicaid dual eligibility	36.6%	23.7%	31.8%	23.6%
Average HCC risk score	1.17	1.04	1.14	1.06
Number of chronic conditions	2.8	2.5	2.7	2.5
Mean PBPM Medicare payment during baseline	\$1,322	\$1,044	\$1,107	\$961
Geographic [c]				
ACO rurality	1.0%	12.5%	1.0%	10.5%
HPSA primary care	0.7%	6.1%	0.6%	7.3%
HPSA mental health	39.6%	28.1%	34.3%	29.2%
Financial results [d]				
# ACOs earned shared savings	4 (66.7%)	28 (39.4%)	2 (50.0%)	24 (43.6%)

Notes: Figures are unweighted averages across the number of ACOs listed in each column header.

[a] Includes only ACO participants eligible for beneficiary assignment.

[b] The baseline period for per beneficiary per month (PBPM) Medicare payment is the two years prior to the start of AIM for each ACO.

[c] ACO rurality is measured by the percentage of an ACO's assigned beneficiaries living in areas with RUCA codes ≥ 4 . ACO HPSA percentage is measured by the percentage of an ACO's assigned beneficiaries living in areas designated as mental health or primary care health professional shortage areas.

[d] Shared Savings Program PUF for 2015, 2016, and 2017.

Despite selecting non-AIM SSP ACOs that were more similar to AIM ACOs, there were still substantial differences between the two groups in terms of participant, beneficiary, and geographic composition as well as financial results. Thus, in the findings presented below, we use additional balancing techniques to adjust for these differences in beneficiary and geographic characteristics, as further described in **Appendix 4A**.

Total Medicare Spending

Compared to similar non-AIM SSP ACOs, both AIM Test 1 and 2 ACOs reduced total Medicare spending (**Exhibit 4-7**). Given the nature of the comparison between AIM ACOs and a composite of similar non-AIM SSP ACOs, we do not report confidence intervals around the estimates. Instead, we report the number of AIM Test 1 ACOs estimated to have greater reductions in spending than similar non-AIM SSP ACOs, with the number of ACOs that had substantially greater reductions (at least two standard deviations different) indicated in parentheses. As shown in **Exhibit 4-7**, nearly two thirds of AIM ACOs (27 of 41) were estimated to have greater reductions in Medicare spending than similar non-AIM SSP ACOs in PY1, with the number rising to over 80 percent in PY2 (34 of 41). ACO-level results are provided in **Appendix 4C**.

On average, compared to FFS beneficiaries located in each of the ACOs’ markets, AIM Test 1 ACOs reduced total PBPM Medicare spending by -\$24.85 in PY1 and -\$35.55 in PY2 more than similar non-AIM SSP ACOs compared to their own markets.

Exhibit 4-7. AIM ACOs Reduced per Beneficiary per Month Total Medicare Spending Relative to Similar Non-AIM SSP ACOs

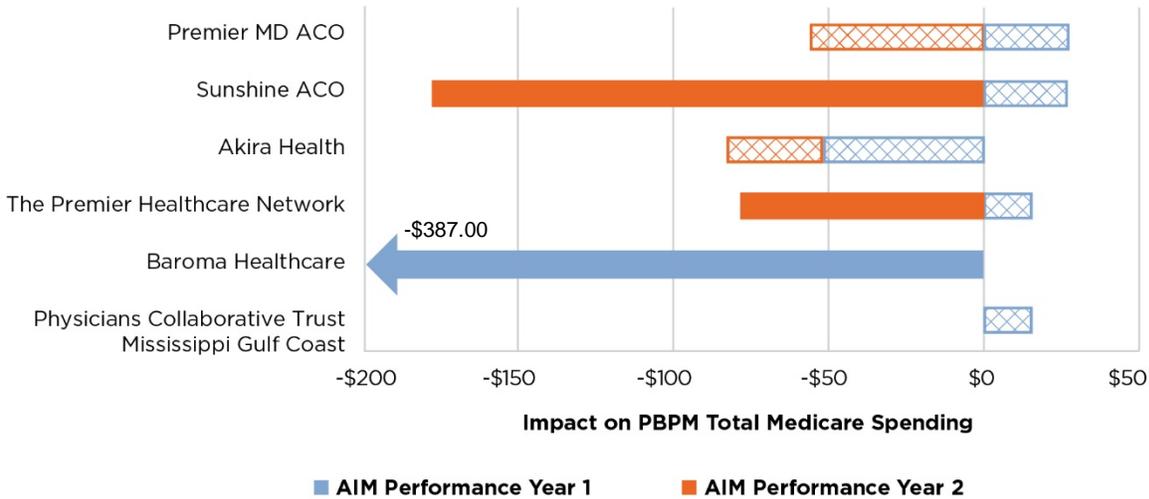
	PY1	PY2
AIM Test 1 ACOs 41 ACOs [a]	-\$24.85 27 (13)	-\$35.55 34 (10)
AIM Test 2 ACOs [b] 6 ACOs in PY1 4 ACOs in PY2	-\$62.31 2 (1)	-\$77.69 4 (2)

[a] For AIM Test 1 ACOs, DID impacts of AIM ACOs were compared to DID impacts of similar non-AIM SSP ACOs (see **Appendix 4B**). The number of AIM ACO with negative estimates (i.e., reduced spending relative to non-AIM SSP ACOs) are shown beneath the estimate; in parentheses are the number of AIM ACOs with estimates that were at least two standard deviations lower than non-AIM SSP ACO impact estimates.

[b] For AIM Test 2 ACOs, we compared beneficiaries assigned to AIM ACOs directly to those assigned to similar non-AIM SSP ACOs in the performance and baseline years using a DID approach (see **Appendix 4B**). The number of AIM ACO with negative estimates (i.e., reduced spending relative to non-AIM SSP ACOs) are shown beneath the estimate; in parentheses are the number of AIM ACOs with estimates that indicated reduced spending and were statistically significant at the 5 percent confidence level.

We compared AIM Test 2 ACOs to similar non-AIM SSP ACOs directly using a DID estimation strategy.³⁹ In PY2, we estimated that, on average, AIM Test 2 ACOs saved -\$77.69 in PBPM total Medicare spending compared to beneficiaries assigned to non-AIM SSP ACOs (**Exhibit 4-7**). Thus, we can state that in PY2, Test 2 ACOs reduced their spending relative to their prior performance more than similar non-AIM SSP ACOs reduced their spending. This reduction was greater than the reduction in spending in PY1 of -\$62.30. In PY1 and PY2, a single ACO drove the majority of the observed reduction in Medicare spending: Baroma Healthcare in PY1 and Sunshine ACO in PY2 (**Exhibit 4-8**).⁴⁰

Exhibit 4-8. Two AIM Test 2 ACOs Drove Observed Reductions in Total Spending



Note: Solid bars denote statistically significant findings at the 5 percent level. Baroma Healthcare and Physicians Collaborative Trust of Mississippi Gulf Coast only participated in AIM during PY1. We compared beneficiaries assigned to AIM ACOs directly to those assigned to similar non-AIM SSP ACOs in the performance and baseline years using a DID approach (see **Appendix 4B**).
Source: ACO Provider RIF for 2015-2017 and 2013-2017 Medicare claims data.

Other Performance Measures

AIM Test 1 ACOs consistently demonstrated greater reductions in key Medicare spending categories and related utilization compared to similar non-AIM SSP ACOs (**Exhibit 4-9**). We observed larger reductions in all components of Medicare spending examined, including acute inpatient hospitalizations, outpatient visits, SNF care, and home health use. AIM reductions in the probability of having one or more hospitalizations or ED visits also were greater than among similar non-AIM SSP ACOs. We found small or no differences for the number of hospitalizations and the use of physician services. The findings for PY1 followed a similar pattern (last column of **Exhibit 4-9**). Impact estimates for AIM and similar non-

³⁹ Because AIM Test 2 ACOs could be directly compared with their peers as ACOs that existed prior to and during AIM, we were able to calculate whether any differences in spending and utilization between them were statistically significant.

⁴⁰ Both of these AIM Test 2 ACOs were outliers in terms of the demographic characteristics of their markets. For example, 70.8 percent of beneficiaries assigned to Baroma Healthcare International in PY1 and 74.7 percent of beneficiaries assigned to Sunshine in PY2 were Hispanic, while most beneficiaries in similar non-AIM ACOs tended to be white (79.4 and 73.3, respectively). Moreover, 69.2 percent of beneficiaries assigned to Baroma and 58.8 percent of percent of beneficiaries assigned to Sunshine were dually eligible for Medicaid, as compared to 19.4 percent and 23.7 percent among their similar non-AIM ACOs. These observations suggest that, although we endeavored to select SSP ACOs that were similar to AIM ACOs (and used weighting to enhance the balance), substantial differences remained for some ACOs. The resulting differences in the impacts should therefore be interpreted with caution.

AIM SSP ACOs in PY1 and PY2 are shown in **Appendix 4D**. ACO-level findings are reported in **Appendix 4C**.

Exhibit 4-9. AIM Test 1 ACOs Had Greater Reductions in Medicare Spending than those Estimated for Similar Non-AIM SSP ACOs

	PY1 Difference in Impact Estimates	PY2 Difference in Impact Estimates
Medicare spending (\$ PBPM)		
Total	-\$24.85	-\$35.55
Acute inpatient	-\$8.04	-\$6.91
Physician services	\$2.22	-\$1.44
Hospital outpatient and ambulatory surgery centers	-\$7.31	-\$5.60
Skilled nursing facility	-\$5.99	-\$6.04
Home health	-\$2.56	-\$2.04
Durable medical equipment	-\$0.65	-\$0.74
Inpatient utilization		
Any acute hospitalization (% points)	-0.3	-0.2
# Acute hospitalizations	0.0	0.0
All-cause 30-day readmission (% points)	-0.2	-0.2
Any ambulatory care sensitive admission (% points)	-0.2	-0.3
Emergency department and observation utilization		
Any ED visit not resulting in hospital admission (% points)	-0.1	-0.4
Any ED visit resulting in hospital admission (% points)	-0.1	-0.2
Any observation stays (inpatient or outpatient) (% points)	0.1	-0.4
Post-acute care and hospice utilization		
# Skilled nursing facility days	-0.1	-0.1
Any hospice use (% points)	-0.2	0.0
Physician services utilization		
# Office-based E&M visits	0.1	0.0
# Imaging events	0.0	0.0
# Procedures	0.0	-0.2
# Tests	0.6	0.9
Mortality (% points)	-0.2	-0.2

Note: Analysis of 41 AIM Test 1 ACOs and their non-AIM SSP ACO comparators. Impact estimates were computed by comparing ACO assigned beneficiaries to non-ACO FFS beneficiaries located in the ACOs' markets, as described in **Chapter 3** and **Appendix 4A**. No tests of statistical significance undertaken in this analysis. PBPM is per beneficiary per month; ED is emergency department; SNF is skilled nursing facility; E&M is evaluation and management.

Source: ACO Provider RIF for 2016-2017 and 2013-2017 Medicare claims data.

While these results lack rigorous testing of statistical significance, we counted the number of AIM ACOs for which estimated impacts were within two standard deviations of estimated impacts for the similar non-AIM SSP ACOs to approximate whether AIM ACOs had a meaningful difference in performance relative to their comparators. As shown in **Exhibit 4-10**, very few AIM ACOs had reductions in Medicare spending that were greater than two standard deviations from the non-AIM SSP ACO impacts in both performance years. However, with the exception of physician service utilization, most AIM ACOs had greater reductions in spending and utilization in both or at least one performance year.

Exhibit 4-10. Most Test 1 AIM ACOs Had Greater Reductions in Spending and Related Utilization than Similar Non-AIM SSP ACOs in Both Performance Years

	# AIM ACOs with Impacts Lower than Non-AIM ACO Impacts in PY1 and PY2	# AIM ACOs with Impacts Higher than Non-AIM ACO Impacts in PY1 and PY2	# ACOs with Impacts Higher in One Year and Lower in the Other
Medicare payments			
Total	24 (2)	4 (0)	13
Acute inpatient	20 (0)	2 (0)	19
Physician services	12 (0)	12 (1)	17
Hospital outpatient and ambulatory surgery centers	25 (2)	4 (0)	12
Skilled nursing facility	22 (2)	6 (0)	13
Home health	23 (2)	5 (0)	13
Durable medical equipment	24 (1)	9 (0)	8
Inpatient utilization			
Any acute hospitalization	21 (0)	8 (0)	12
# Acute hospitalizations	20 (2)	7 (0)	14
All-cause 30-day readmission	24 (0)	5 (0)	12
Any ambulatory sensitive condition admission	25 (1)	3 (0)	13
Emergency department and observation utilization			
Any ED visit not resulting in hospital admission	17 (2)	9 (0)	15
Any ED visit resulting in hospital admission	20 (2)	9 (0)	12
Any observation stays (inpatient or outpatient)	16 (0)	9 (0)	16
Post-acute care and hospice utilization			
# Skilled nursing facility days	19 (1)	6 (0)	16
Any hospice use	18 (1)	6 (0)	17
Physician services utilization			
# Office-based E&M visits	13 (1)	17 (2)	11
# Imaging events	13 (1)	10 (0)	18
# Procedures	20 (0)	6 (1)	15
# Tests	8 (0)	26 (1)	7
Mortality	20 (0)	4 (0)	17

Note: Analysis of 41 Test 1 AIM ACOs and their non-AIM SSP ACO comparators. Impact estimates were computed by comparing ACO assigned beneficiaries to non-ACO FFS beneficiaries located in the ACOs' markets, as described in **Chapter 3** and **Appendix 4A**. In parentheses is the number of AIM ACOs for which the estimated impacts were more than two standard deviations different than the impact estimate for similar non-AIM SSP ACOs. PBPM is per beneficiary per month; ED is emergency department; SNF is skilled nursing facility; E&M is evaluation and management.

Source: ACO Provider RIFs for 2016-2017 and 2013-2017 Medicare claims data.

For the AIM Test 2 ACOs, the analysis was performed relative to their performance as an ACO prior to receiving AIM funds and a group of similar non-AIM SSP ACOs over the same time period. The findings for AIM Test 2 ACOs also indicated decreased Medicare spending relative to comparable SSP ACOs (see **Exhibit 4-11** for PY2 results). Reductions relative to non-AIM SSP ACOs were largest for Medicare spending on, and utilization of, SNFs. This result may be related to the change in Shared Savings Program assignment methodology, which excluded care in SNFs from contributing to beneficiary assignment to ACOs starting in 2017. Although we consistently applied the exclusion to all ACOs in the analyses in this report, some ACOs may have changed the mix of ACO participants between PY1 and

PY2 in response to the change in assignment methodology, resulting in differential changes in SNF use (see **Chapter 2**). Results by measure for all Test 2 AIM ACOs are shown in **Appendix 4C-7**.

The analogous findings for PY1 are shown in **Appendix 4E**. As discussed in the Report on AIM Impacts in the First Performance Year (2018), Baroma Healthcare International was the only AIM Test 2 ACO to have statistically significant reductions in total Medicare spending and related utilization in PY1. Premier Healthcare and Sunshine ACO were the only two AIM Test 2 ACOs that experienced statistically significant reductions in total Medicare spending and in some of the other performance measures.

Exhibit 4-11. AIM Test 2 ACOs Decreased Medicare Spending and Utilization Relative to Comparable SSP ACOs in PY2

Performance Measure	Estimate [a]	Base Mean [b]	Percent of Base Mean [c]	# ACOs with Significant Estimates [d]
Medicare spending (\$ PBPM)				
Acute inpatient	-\$18.07	\$378.4	4.8%	1
Physician services	-\$5.25	\$302.6	1.7%	0
Hospital outpatient and ambulatory surgery centers	-\$13.43	\$203.4	6.6%	3
Skilled nursing facility	-\$16.13	\$73.5	21.9%	1
Home health	-\$0.73	\$52.6	1.4%	0
Durable medical equipment	\$0.23	\$10.4	2.2%	1
Inpatient utilization				
Any acute hospitalization (% points)	-0.4	18.4	1.9%	1
# Acute hospitalizations	0.0	0.3	1.0%	1
All-cause 30-day readmission (% points)	0.0	2.3	1.0%	1
Any ambulatory sensitive condition admission (% points)	0.0	3.7	1.2%	1
Emergency department and observation utilization				
Any ED visit not resulting in hospital admission (% points)	-0.1	20.6	0.4%	0
Any ED visit resulting in hospital admission (% points)	-0.3	15.1	2.0%	1
Any observation stays (inpatient or outpatient) (% points)	-0.8	9.1	8.6%	1
Post-acute care and hospice utilization				
# SNF days	-0.3	1.4	19.0%	1
Any hospice use (% points)	0.0	2.3	0.1%	1
Physician services utilization				
# Office-based E&M visits	0.0	10.3	0.5%	0
# Imaging events	-0.3	4.8	6.5%	2
# Procedures	-0.2	10.1	2.1%	1
# Tests	1.3	17.7	7.1%	3
Mortality (% points)	0.1	3.4	2.1%	1

[a] Analysis of four Test 2 AIM ACOs and their non-AIM SSP ACO comparators. Estimate from the DID model, showing the marginal increase or decrease in an outcome for beneficiaries assigned to AIM ACOs compared to beneficiaries assigned to comparable non-AIM SSP ACOs in the second AIM performance year. For binary measures (%), the estimate represents the change in an outcome in terms of percentage points.

[b] The base measure value represents total Medicare spending by AIM ACO beneficiaries during the baseline period net of the change in total Medicare spending of beneficiaries assigned to comparable non-AIM SSP ACOs between baseline and performance years.

[c] The percent estimate is computed by dividing the point estimate by the base mean.

[d] Statistical significance is reported at the 5 percent level.

Source: ACO Provider RIFs for 2015-2017 and 2013-2017 Medicare claims data.

Limitations

We strove to analyze the performance of AIM ACOs relative to their non-AIM SSP ACO peers. Since no two ACOs are exactly alike, we tried to select SSP ACOs most similar to AIM Test 1 and AIM Test 2 ACOs in terms of Shared Savings Program start year, size, and other features, but they still differed from AIM ACOs in a variety of dimensions. We also used econometric methods to account for differences in observable characteristics, but since ACOs likely differ in many other unobservable aspects that are likely to affect their ability to reduce Medicare spending and utilization, these analyses showing in several cases that AIM ACOs perform better than their peers on several performance measures are suggestive.

5. AIM ACOs Maintained Patient/Caregiver Satisfaction and Quality of Care

Maintaining or improving the quality of the care provided is an important goal of AIM. In this chapter, we examine the relationship between AIM and quality of care. We applied multiple approaches tailored to the data available to study AIM ACOs' relationships with quality. We sought to determine both the overall effect of AIM ACOs on quality of care as well as investigate whether specific AIM ACOs, found to be successful in reducing Medicare spending and related utilization, were also able to maintain the quality of the care they provided. When possible, we compared AIM ACO assigned beneficiaries to comparison non-ACO FFS beneficiaries located in an AIM ACO's markets. In the case of measures for which data were only available at the ACO level, we compared performance between AIM and similar non-AIM SSP ACOs. We examined two types of quality measures—patient/caregiver experience measures based on survey data and ACO measures reported via the Merit-based Incentive Payment System (MIPS) Web interface addressing the domains of preventive health and at-risk populations.⁴¹

Key findings on the effect of AIM on quality:

- ▶ We generally did not find statistically significant differences in patient/caregiver experience between beneficiaries assigned to AIM ACOs and of non-ACO FFS beneficiaries residing in the AIM ACOs' markets. These findings held when examining beneficiaries in poor health (identified as those in the lowest percentile on self-reported functional status) as well as for beneficiaries assigned to AIM ACOs that were estimated to reduce Medicare spending and certain types of utilization.
- ▶ AIM ACOs performed similarly to comparable non-AIM SSP ACOs on ACO quality measures. We found that AIM ACOs estimated to reduce total Medicare spending, hospitalizations, ED visits, and ambulatory care sensitive hospitalizations performed slightly better on most quality measures compared to similar non-AIM SSP ACOs. Comparisons to non-AIM SSP ACOs were necessarily descriptive in nature given the difficulty in fully accounting for differences among ACOs.

5.1. Data and Methods

We applied differing strategies to examine the relationship between AIM and quality depending on the type of quality measure and data availability.

Patient/caregiver experience: To examine the effect of AIM on patient/caregiver experience, we obtained beneficiary-level CAHPS survey responses for surveyed assigned beneficiaries and non-ACO FFS comparison beneficiaries residing in the ACOs' markets.⁴²

⁴¹ The MIPS Web interface was formerly known as the Group Practice Reporting Option (GPRO). For more information on ACO quality measures, please refer to the Medicare Shared Savings Program Quality Measure Narrative Specifications Document updated each year (<https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-guidance-and-specifications.html>).

⁴² A sample of beneficiaries assigned to each SSP ACO were surveyed using ACO CAHPS, as required by Shared Savings Program participation. Data for those in the non-ACO FFS comparison were drawn from the MIPS CAHPS (formerly PQRS) sample.

We examined the following CAHPS metrics, reflecting the patient/caregivers' experiences in the previous six months:⁴³

- *Getting timely care, appointments, and information* is a composite of five questions related to getting an appointment for urgent or routine care as soon as the patient needed, getting answers to medical questions on the same day within or outside of regular office hours, and seeing the physician within 15 minutes of the appointment time.
- *How well your doctors communicate* is a composite of six questions related to how often physicians explained things in a way that was easy to understand, listened carefully, gave easy to understand information about health questions or concerns, seemed to know important information about the patient's medical history, showed respect, and spent enough time with the patient.
- *Patients' rating of doctor* is the patient's rating of the physician on a scale from 0 to 10, where 0 reflects the worst physician possible, and 10 reflects the best physician possible.
- *Access to specialists* is a composite of two questions related to the ease of getting appointments with specialists and specialists knowing important information about the patients' medical history.
- *Health promotion and education* is a composite of six questions related to members of the health care team talking about prevention, healthy diet and healthy eating habits, exercise or physical activity, specific health goals, and feeling depressed or stressed.
- *Shared decision making* is a composite of six questions related to physicians discussing with patients the reasons for taking a medicine or having a surgery or procedure, reasons for not taking a medicine or having a surgery or procedure, and asking patients what they thought was best for them.

Appendix 5A lists the CAHPS questions that compose the composites for each of these measures.

For AIM Test 1 ACOs, we compared responses to CAHPS patient/caregivers' experiences questions using ordinary least squares regression analyses, as described further in **Appendix 5A**. We also applied the same specification for similar non-AIM SSP ACOs and their FFS comparisons (see **Chapter 4** for how these ACOs were identified), allowing us to determine whether quality performance varied between AIM Test 1 ACOs and similar-non AIM SSP ACOs. Finally, for AIM Test 2 ACOs, we used the same specification but compared AIM assigned beneficiaries to those assigned to similar non-AIM SSP ACOs since Test 2 AIM ACOs were already participating in the Shared Savings Program when they began AIM (see **Appendix 5A**).

We also tested the differential effect of AIM for beneficiaries in poor health (measured by low self-reported functional status) and, separately, for AIM beneficiaries assigned to ACOs that were estimated to reduce selected Medicare spending and utilization. **Appendix 5A** provides more detail on the regression model and specifications of these subgroup analyses.

⁴³ For more information on CAHPS survey for ACOs, please reference the following report: Centers for Medicare & Medicaid Services, *Medicare Shared Savings Program and Next Generation ACO Model CAHPS Survey for Accountable Care Organizations Participating in Medicare Initiatives*, June 2018 Version #6, available at <https://acocahps.cms.gov/globalassets/aco---epi-2-new-site/pdfs-for-aco/quality-assurance-guidelines/2018-aco-gag-v6---final.2.pdf>, last accessed on February 2, 2019.

Preventive health and at-risk population measures: We relied upon publicly available, ACO-level data for examining non-CAHPS quality measures. We examined the ACO measures from two domains: preventive health and at-risk populations. These domains were selected because of their importance to health care provision in rural areas.⁴⁴

We compared these measures for AIM ACOs and similar non-AIM SSP ACOs at the ACO level (see **Chapter 4** for the identification of similar non-AIM ACOs) and applied the same weighting techniques discussed in **Chapter 4** to improve the balance between AIM and non-AIM ACOs. Note that since these are ACO-level measures, comparisons with non-AIM SSP ACOs are necessarily descriptive, and as such, none of the findings include statistical significance testing.

PY1 results for reporting, not performance: It important to note that in the first year of Shared Savings Program participation, ACOs are only required to report quality measure information, not be accountable for measure performance; it is not until the second and subsequent years when eligibility to earn shared savings depends on quality measure performance. As a result, there may be some volatility in the measure during the first participation year as ACOs learn the program. We indeed see lower quality measure performance in the first year of Shared Savings Program participation and observe the same pattern for the similar non-AIM ACOs. Thus, below we focus more heavily on findings from PY2 rather than PY1 for AIM Test 1 ACOs.

5.2. Results

Patient/caregiver experience measures

The number of CAHPS survey responses for each of the analytic populations is shown in **Exhibit 5-1**. Across the 41 AIM Test 1 ACOs, 13,194 (PY1) and 12,404 (PY2) beneficiaries were surveyed using CAHPS and responded. For all groups, the number of survey responses decreased between PY1 and PY2, sometimes dramatically—for non-ACO FFS beneficiaries in AIM markets, there were 26,139 responses in PY1 and 8,240 in PY2. This decrease occurred because CAHPS reporting became optional under MIPS, unlike PQRS.

Exhibit 5-1. Number of CAHPS Survey Responses for each Analytic Population

	PY1	PY2
AIM Test 1 ACOs	13,194	12,404
Non-ACO FFS beneficiaries in AIM Test 1 ACO markets	17,283	8,240
Similar non-AIM SSP ACOs to AIM Test 1 ACOs	26,139	24,741
AIM Test 2 ACOs	1,432	1,062
Similar non-AIM SSP ACOs to AIM Test 2 ACOs	19,783	14,862

Note: Sample sizes include beneficiaries responding to at least one question used to generate the CAHPS measures. Thus, actual sample sizes for each measure could differ.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2015 to 2017.

We found that survey respondents were similar to assigned beneficiaries in terms of demographic and health characteristics, on average (**Exhibit 5-2**). The CAHPS sample had slightly higher rates of female and white beneficiaries and slightly lower rates of beneficiaries who were Medicare/Medicaid dual eligible.

⁴⁴ <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/2018-reporting-year-narrative-specifications.pdf>

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Exhibit 5-2. CAHPS Survey Respondents are Representative of Assigned Beneficiaries, on Average, for AIM Test 1 ACOs in PY1 and PY2

	PY1 (41 ACOs)		PY2 (41 ACOs)	
	All Assigned	CAHPS Sample	All Assigned	CAHPS Sample
Total assigned beneficiaries	387,017	13,194	423,499	12,404
Mean number of assigned beneficiaries per ACO	9,439	322	10,329	303
Female	56.7%	60.7%	56.5%	60.1%
Mean age	71.3	72.9	71.4	72.8
White	87.9%	89.9%	87.6%	88.7%
Black	6.1%	5.5%	6.2%	5.9%
Hispanic	2.9%	2.1%	3.0%	2.5%
Other race	3.1%	2.5%	3.2%	2.9%
End Stage Renal Disease (ESRD) Medicare entitlement	0.9%	0.7%	0.9%	0.7%
Medicare/Medicaid dual eligibility	23.3%	20.6%	22.5%	20.2%
Disabled Medicare entitlement	26.0%	24.6%	25.6%	23.5%
Mean HCC risk score	0.99	1.04	1.01	1.07
Mean number of chronic conditions	2.3	2.8	2.4	2.7

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2015 to 2017 combined with Medicare claims data.

We found greater differences between beneficiaries assigned to AIM Test 2 ACOs and the subset respondent beneficiaries (**Exhibit 5-3**). Some of this difference may be attributable to the fact that the composition of beneficiaries' characteristics can vary more with fewer ACOs. For instance, while 2.1 percent of assigned beneficiaries had ESRD entitlement in PY1, among respondents it was only 0.84 percent. Though controlling for these characteristics in the analyses below helps to mitigate these differences, we note that unobserved differences may persist.

Exhibit 5-3. Beneficiaries Responding to the CAHPS Survey Are Generally Similar to All Beneficiaries Assigned to AIM Test 2 ACOs in PY1 and PY2

	PY1 (6 ACOs)		PY2 (4 ACOs)	
	All Assigned	CAHPS Sample	All Assigned	CAHPS Sample
Total assigned beneficiaries	34,514	1,432	24,020	1,062
Mean number of assigned beneficiaries per ACO	5,753	239	6,204	270
Female	56.6%	62.5%	58.1%	58.8%
Mean age	72.0	73.1	71.8	73.6
White	49.7%	52.5%	49.4%	55.1%
Black	14.8%	15.2%	16.6%	14.7%
Hispanic	31.1%	29.3%	27.9%	25.8%
Other race	4.4%	3.0%	6.1%	4.4%
End Stage Renal Disease (ESRD) Medicare entitlement	2.1%	0.8%	2.2%	1.0%
Medicare/Medicaid dual eligibility	36.6%	32.0%	31.8%	28.5%
Disabled Medicare entitlement	23.2%	21.4%	23.3%	20.9%
Mean HCC risk score	1.17	1.22	1.14	1.15
Mean number of chronic conditions	2.8	3.2	2.7	3.1

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2015 to 2017 combined with Medicare claims data.

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We report the results of applying the beneficiary-level regression analysis, controlling for demographic characteristics, in **Exhibit 5-4**. We found negligible differences in performance on patient/caregiver experience measures for AIM Test 1 ACO-assigned beneficiaries and non-ACO FFS beneficiaries residing in the ACOs' markets. In PY1, AIM beneficiaries had slightly lower rates of Getting Timely Care, Appointments, and Information and Patient's Rating of Doctor, both statistically significant at the 5 percent level. However, these differences did not persist in PY2.

Exhibit 5-4. Few Differences in Performance on Patient/Caregiver Experience between AIM Test 1 ACOs and non-ACO FFS Beneficiaries

	PY1			PY2		
	Adjusted Mean, AIM ACOs	Adjusted Mean, non-ACO FFS Beneficiaries	Estimate	Adjusted Mean, AIM ACOs	Adjusted Mean, non-ACO FFS Beneficiaries	Estimate
Getting Timely Care, Appointments, and Information	75.7%	78.2%	-2.6%**	76.2%	77.2%	-1.1%
How Well Your Doctors Communicate	91.6%	91.7%	-0.2%	91.8%	91.4%	0.3%
Patient's Rating of Doctor	91.2%	91.8%	-0.7%**	91.5%	91.0%	0.5%
Access to Specialists	83.0%	82.7%	0.3%	83.0%	81.5%	1.5%
Health Promotion and Education	59.1%	59.5%	-0.4%	60.9%	60.7%	0.3%
Shared Decision Making	63.6%	64.4%	-0.8%	64.2%	64.5%	-0.3%

Note: **Indicates statistical significance at the 5% level. Sample includes assigned beneficiaries and non-ACO FFS beneficiaries in the ACOs' markets with available CAHPS data.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2016 to 2017.

We also compared the performance of the similar non-AIM SSP ACOs to their local market comparison beneficiaries on the patient/caregiver experience measures. If the similar non-AIM ACOs showed improved performance relative to their comparison groups, we might be concerned about the performance of AIM ACOs. However, non-AIM ACOs performed similarly, as reported in **Appendix 5B**.

We also did not find persistent differences between AIM Test 2 ACOs compared to similar non-AIM SSP ACOs, as shown in **Exhibit 5-5**.

Exhibit 5-5. Few Differences in Performance on Patient/Caregiver Experience between AIM Test 2 ACOs and Similar non-AIM SSP ACOs

	PY1			PY2		
	Adjusted Mean, AIM ACOs	Adjusted Mean, SSP ACOs	Estimate	Adjusted Mean, AIM ACOs	Adjusted Mean, SSP ACOs	Estimate
Getting Timely Care, Appointments, and Information	74.0%	74.1%	-0.1%	76.9%	74.5%	2.5%
How Well Your Doctors Communicate	92.2%	91.5%	0.7%	93.6%	92.1%	1.4%
Patient's Rating of Doctor	92.7%	91.6%	1.1%	92.4%	92.1%	0.3%
Access to Specialists	84.2%	83.0%	1.2%	85.5%	82.4%	3.1%**
Health Promotion and Education	63.9%	62.5%	1.4%	67.3%	63.8%	3.4%
Shared Decision Making	63.7%	64.2%	-0.5%	63.7%	63.9%	-0.2%

Note: **Indicates statistical significance at the 5% level. Sample includes beneficiaries assigned to AIM Test 2 ACO and similar non-AIM SSP ACOs with available CAHPS data.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2015 to 2017.

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Next, we explored whether there were differences in performance on these measures for beneficiaries in poor health, as indicated by the lowest 25th percentile in self-reported functional status (**Exhibit 5-6**).⁴⁵ We found that beneficiaries in poor health had lower performance on most of the patient/caregiver experience measures. For example, among PY1 AIM beneficiaries in poor health, 74.0 percent reported Getting Timely Care, Appointments, and Information compared to 76.2 percent of beneficiaries not in poor health. Not all measure performance was lower for patients in poor health—for example, 65.0 percent of beneficiaries in poor health reported receiving Health Promotion and Education compared to 57.3 percent for beneficiaries not in poor health among AIM beneficiaries. The patterns were similar in both years and among non-ACO FFS comparison beneficiaries.

We computed differences in the last column of **Exhibit 5-6** to assess whether AIM had a larger effect on patient/caregiver experience for beneficiaries in poor health compared with non-ACO FFS beneficiaries in poor health. In PY1, we estimated statistically significant (at the 5 percent level) effects for Getting Timely Care, Appointments, and Information among AIM beneficiaries in poor health. However, this higher rate did not persist into PY2, and we did not find any other statistically significant differences. The findings were similar for AIM Test 2 ACOs (results shown in **Appendix 5B**).

Exhibit 5-6. No Evidence of Differential Effects of AIM Test 1 for Beneficiaries in Poor Health

	AIM Adjusted Means		Non-ACO FFS Comparison Adjusted Means		Estimate
	Poor Health	Not Poor Health	Poor Health	Not Poor Health	
Performance Year 1					
Getting Timely Care, Appointments, and Information	74.0%	76.2%	74.7%	79.3%	2.4%**
How Well Your Doctors Communicate	89.3%	92.3%	89.1%	92.6%	0.5%
Patient's Rating of Doctor	89.0%	91.9%	89.3%	92.6%	0.5%
Access to Specialists	79.4%	84.3%	79.4%	83.9%	-0.4%
Health Promotion and Education	65.0%	57.3%	66.3%	57.5%	-1.2%
Shared Decision Making	66.7%	62.6%	67.1%	63.5%	0.5%
Performance Year 2					
Getting Timely Care, Appointments, and Information	74.3%	76.7%	76.8%	77.3%	-1.9%
How Well Your Doctors Communicate	89.6%	92.5%	89.9%	91.9%	-0.9%
Patient's Rating of Doctor	89.9%	92.1%	89.3%	91.6%	0.1%
Access to Specialists	79.3%	84.3%	78.8%	82.4%	-1.4%
Health Promotion and Education	66.7%	59.1%	66.4%	58.8%	0.0%
Shared Decision Making	67.9%	63.0%	67.5%	63.5%	0.9%

Note: **Indicates statistical significance at the 5% level. Sample includes AIM Test 1 ACO assigned beneficiaries and non-ACO FFS beneficiaries in the ACOs' markets with available CAHPS data. Poor health is defined as being in the 25th percentile for self-reported functional status.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2016 to 2017, ACO Provider RIF for 2016-2017, and 2013-2017 Medicare claims data.

While we did not find any decreases in patient/caregiver experience for AIM ACOs, it is important to determine whether AIM ACOs that reduced spending or certain types of utilization were also associated with similar or higher quality than remaining AIM ACOs. We examined AIM Test 1 ACOs with reductions in spending or hospitalizations, emergency department use, or ambulatory care sensitive

⁴⁵ Functional status was determined from CAHPS items related to self-rated general and mental health, cognitive functioning, chronic conditions, and limitations in social activities, walking or climbing stairs, dressing or bathing, or running errands.

hospitalizations and their relationship with certain patient/caregiver experience measures. These claims-based performance measures were selected based on their overall importance and relevance to quality (see **Exhibit 5-7**).

The impacts of AIM on these spending and utilization measures were described in **Chapter 2**, and the number of AIM ACOs with estimated reductions is shown in **Exhibit 5-7**. Note that for this analysis we only use information from the DID impacts point estimate without accounting for statistical significance.

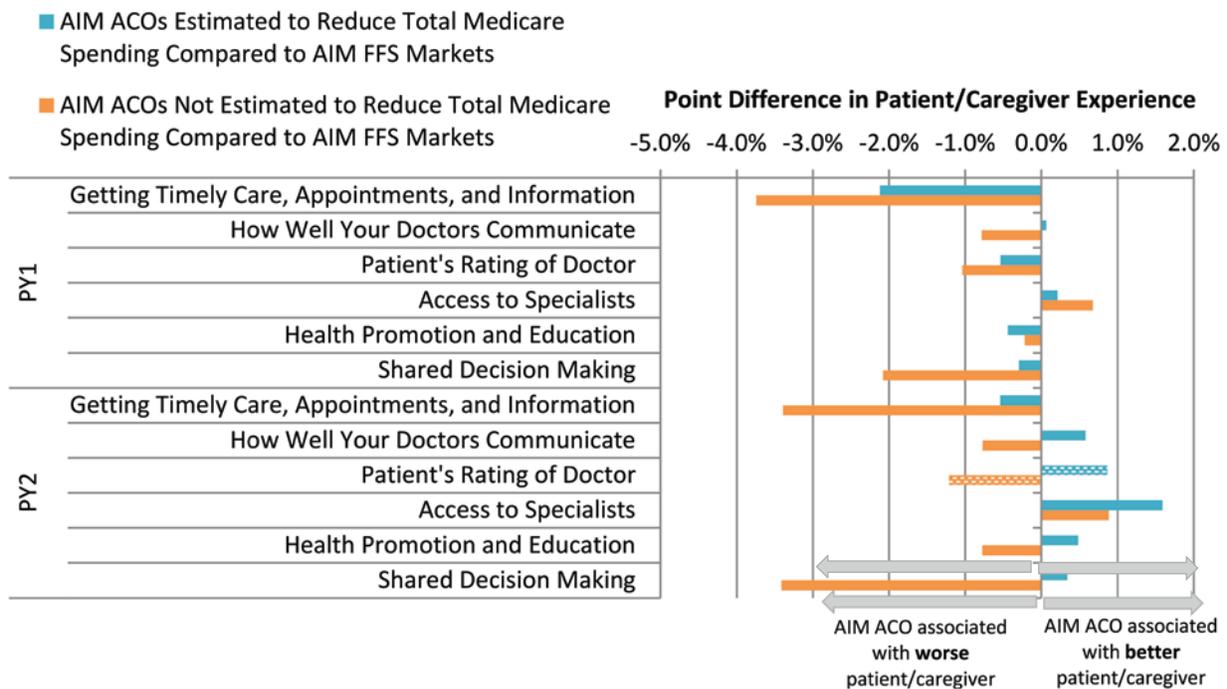
Exhibit 5-7. Number of AIM Test 1 ACOs Reducing Total Medicare Spending and other Claim-Based Performance Measures in PY1 and PY2

Spending/Utilization Measure and Rationale for Selection	# of ACOs in PY1	# ACOs in PY2	# ACOs both PY1 & PY2
Reduced total Medicare spending <i>Did ACOs that decreased overall spending experienced any declines in patient/caregiver experiences?</i>	30	33	26
Reduced hospitalizations <i>Hospitalizations are such important drivers of total spending that it is of interest to investigate whether decreases were associated with changes in access, communication, education, and shared decision making.</i>	30	29	23
Reduced emergency department visits <i>It is important that beneficiaries still reported having access to care, especially if their use of ED visits decreased.</i>	28	29	22
Reduced ambulatory care sensitive hospitalizations <i>Did these ACOs also have better patient-reported experiences in access to care, communication and health promotion and education? An association may provide insights in the mechanism in which these hospitalizations were decreased.</i>	25	22	17

Note: Point estimates on total Medicare spending were derived from a DID model comparing beneficiaries assigned to AIM Test 1 ACOs to non-ACO FFS comparison beneficiaries (see **Chapter 2**).

We subgrouped the sample by whether a beneficiary was assigned to an AIM ACO (or belonged to the ACO’s FFS comparison market) with estimated reductions in each performance measure shown in **Exhibit 5-7**. We then calculated the differential effect of AIM on patient/caregiver experience for beneficiaries assigned to ACOs with estimated reductions. The results for total Medicare spending are shown in **Exhibit 5-8** for ACO beneficiaries assigned to AIM ACOs that reduced total Medicare spending compared to the ACOs’ FFS comparison markets (blue bars) and AIM ACOs that did not reduce total Medicare spending compared to the ACOs’ FFS comparison markets (orange bars). We did not find evidence that ACOs estimated to reduce total Medicare spending had worse patient/caregiver experiences than ACOs that did not reduce total Medicare spending. We found one statistically significant finding for Patient’s Rating of Doctor in PY2 in that AIM beneficiaries assigned to ACOs that reduced Medicare spending rated their doctors more highly than beneficiaries assigned to ACOs that did not reduce Medicare spending, accounting for the difference in the ACOs’ FFS comparison markets..

Exhibit 5-8. No Evidence of Changes in Patient/Caregiver Experience for AIM Test 1 ACOs Estimated to Reduce Total Medicare Spending



Note: Each bar represents the difference in the average patient/caregiver experience measure for AIM ACOs that reduced total Medicare spending compared to the ACO's FFS comparison markets (blue bars) and AIM ACOs that did not reduce total Medicare spending compared to the ACOs' FFS comparison markets (orange bars). Positive percentages represent better patient/caregiver experience associated with the AIM ACOs compared to the AIM FFS markets. Negative percentages represent worse patient/caregiver experience associated with the AIM ACOs compared to the AIM FFS markets. In PY2, we found statistically significant higher Patient's Rating of Doctor at the 5 percent significance level (indicated by the patterned bars) between ACOs that reduced total Medicare spending and AIM ACOs that did not reduce total Medicare spending, accounting for the ACOs' FFS markets. Solid bars were not statistically significantly different at the 5 percent level.

The sample includes 41 AIM Test 1 ACO assigned beneficiaries and non-ACO FFS beneficiaries in the ACOs' markets with available CAHPS data. Of the 41 ACOs, 30 and 33 reduced total Medicare spending in PY1 and PY2, respectively (see Exhibit 5-7). The methodology for estimating impacts of AIM ACOs on total Medicare spending is described in Chapter 2.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2016 to 2017.

Findings for subgroups based on estimated reductions in Medicare spending and the other utilization measures are summarized below (Exhibit 5-9). Detailed figures for each of the subgroups are provided in Appendix 5B. Positive values indicate that ACOs that reduced the total spending or utilization metric were associated with greater performance on patient/caregiver experience measures. Negative values indicate the opposite in that beneficiaries assigned to AIM Test 1 ACOs that reduced the specific utilization were associated with lower quality compared to the FFS comparison group. We found a negative association between reductions in ACSC hospitalizations and three of the patient/caregiver experience measures in PY2: How Well Your Doctors Communicate, Patient's Ratings of Doctor, and Shared Decision Making. We note, however, that the performance on these three patient/caregiver measures was similar for beneficiaries assigned to ACOs with and without estimated reductions in ACSC hospitalizations, implying that changes in the comparison groups drove the observed association between the quality measure and ASC hospitalizations. We will continue to track these results in the next performance year.

Exhibit 5-9. Patient/Caregiver Experience Generally Remained the Same for AIM Test 1 ACOs Estimated to Reduce Total Medicare Spending and other Medicare Utilization

Measure	Reduce Total Medicare Spending		Reduce Any Hospitalizations		Reduce Any ED without Admission		Reduce Any ASC Hospitalization	
	PY1	PY2	PY1	PY2	PY1	PY2	PY1	PY2
Getting Timely Care, Appointments, and Information					+			
How Well Your Doctors Communicate								-
Patient's Rating of Doctor		+			+			-
Access to Specialists								
Health Promotion and Education								
Shared Decision Making								-

Note: Statistical significance at the 5% level is indicated by shaded cells. Positive signs indicate that AIM ACOs estimated to reduce the Medicare spending or utilization were associated with greater performance on the CAHPS measure. Negative signs indicate that AIM ACOs estimated to reduce Medicare spending or utilization were associated with lower performance on the CAHPS measure. Sample includes AIM Test 1 ACO-assigned beneficiaries and non-ACO FFS beneficiaries in the ACOs' markets with available CAHPS data. The methodology for estimating impacts of AIM ACOs on total Medicare spending is described in **Chapter 2**. Counts of AIM ACOs reducing or not reducing Medicare spending is shown in **Exhibit 5-7**. ED is emergency department; ASC is ambulatory care sensitive conditions.

Source: ACO, PQRS, and MIPS CAHPS beneficiary-level responses for 2016 to 2017, ACO Provider RIF for 2016-2017, and 2013-2017 Medicare claims data.

Preventive health and at-risk population measures

We explored the relationship between AIM participation and quality measures related to preventive health and at-risk populations, which ACOs are required to report under the Shared Savings Program. Data for these measures were not at the beneficiary level; instead, we compared ACO-level performance on these measures for AIM Test 1 versus similar non-AIM SSP ACOs (see **Chapter 4** for the selection of similar non-AIM SSP ACOs). We found few differences between AIM and similar non-AIM SSP ACOs' averages in PY2 (**Exhibit 5-10**). We found larger differences in PY1, but we attribute some of these differences to the PY1 reporting-only requirements. In the second and later years of participation, ACOs must achieve a particular quality score to be eligible to share in savings. We report ACO-level results in **Appendix 5C**.

Exhibit 5-10. Small Differences in ACO Quality Measures between AIM Test 1 and Similar Non-AIM SSP ACOs in PY2; Larger Differences in PY1 Likely from Measure Reporting-Only Requirements

ACO Name	PY1			PY2		
	AIM ACO Mean	Non-AIM ACO Mean	Difference	AIM ACO Mean	Non-AIM ACO Mean	Difference
Preventive Health						
Depression screening	41.3	48.7	-7.4	63.8	61.6	2.2
Colorectal cancer screening	59.9	58.2	1.7	65.6	63.6	2.1
Mammography screening	64.2	71.6	-7.4	68.9	71.4	-2.5
At-Risk Population						
No diabetes poor control	81.5	82.0	-0.5	84.5	83.1	1.4
Hypertension (blood pressure control)	68.9	65.0	3.9	69.1	68.2	0.9
Ischemic vascular disease control	87.3	83.1	4.3	91.2	89.0	2.1

Note: Comparison of performance on ACO quality measures for AIM Test 1 ACOs and similar non-AIM SSP ACOs (see **Chapter 4** for selection of non-AIM SSP ACOs). We report average values across ACOs. Higher values indicate better performance. We reversed the Diabetes Poor Control measure so that higher performance is better. In PY1 and PY2, there were 41 AIM ACOs. There were 89 similar non-AIM SSP ACOs in PY1 and 77 non-AIM SSP ACOs in PY2. Negative differences represent AIM ACOs performing worse on a particular measure compared to non-AIM SSP ACOs, and positive differences represent AIM ACOs performing better on a particular measure compared to non-AIM SSP ACOs.

Source: 2016 and 2017 Shared Savings Program PUFs.

AIM Test 2 ACOs appeared to outperform similar non-AIM SSP ACOs on measures of preventive health in both PY1 and PY2 (**Exhibit 5-11**). AIM Test 2 ACOs also received higher scores on all three at-risk population measures in PY1, though non-AIM ACOs caught up in PY2.

Exhibit 5-11. AIM Test 2 ACOs Perform Better in Depression Screening and Blood Pressure Control Relative to Similar Non-AIM SSP ACOs

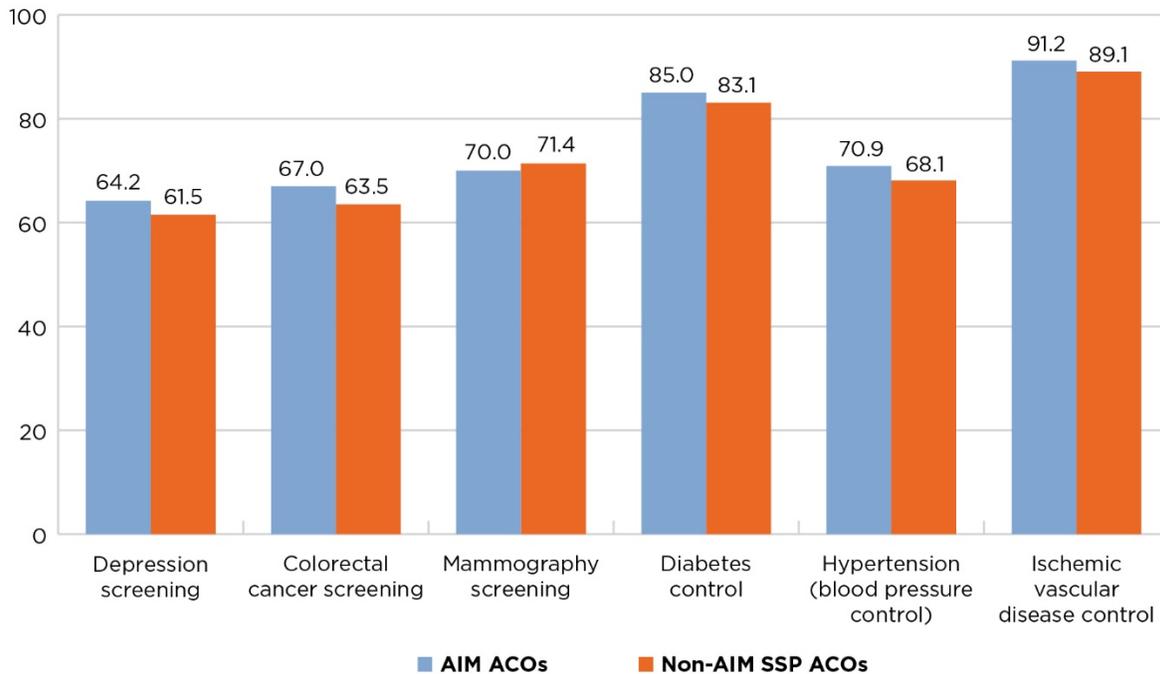
ACO Name	PY1			PY2		
	AIM ACO Mean	Non-AIM ACO Mean	Difference	AIM ACO Mean	Non-AIM ACO Mean	Difference
Preventive Health						
Depression screening	55.48	41.95	13.53	61.53	55.03	6.50
Colorectal cancer screening	53.94	50.15	3.79	61.41	59.54	1.87
Mammography screening	63.34	57.18	6.16	66.16	67.39	-1.23
At-Risk Population						
No diabetes poor control	79.97	72.09	7.88	80.70	80.94	-0.24
Hypertension (blood pressure control)	68.92	67.73	1.19	75.48	70.38	5.11
Ischemic vascular disease control	76.81	73.62	3.19	82.78	85.09	-2.31

Note: Comparison of performance on ACO quality measures for AIM Test 2 ACOs and similar non-AIM SSP ACOs (see **Chapter 4** for selection of non-AIM SSP ACOs). We report average values across ACOs. Higher values indicate better performance. We reversed the Diabetes Poor Control measure so that higher performance is better. In PY1, there were 6 AIM ACOs and 71 similar non-AIM SSP ACOs. In PY2, there were 4 AIM ACOs and 55 non-AIM SSP ACOs. Negative differences represent AIM ACOs performing worse on a particular measure compared to non-AIM SSP ACOs, and positive differences represent AIM ACOs performing better on a particular measure compared to non-AIM SSP ACOs.

Source: 2016 and 2017 Shared Savings Program PUFs.

Next, we focused on the 26 AIM Test 1 ACOs that were estimated to decrease total Medicare spending in both PY1 and PY2 (see **Exhibit 5-7**). We compared performance on the preventive and at-risk population ACO measures for these AIM ACOs and their similar non-AIM SSP ACOs. As shown in **Exhibit 5-12**, in PY2, AIM ACOs estimated to reduce total Medicare spending performed slightly better than similar non-AIM SSP ACOs. For example, AIM ACOs that were estimated to reduce total Medicare spending (based on a negative point estimate without consideration of statistical significance) scored 64.2 percent on depression screening while similar non-AIM SSP ACOs scored 61.5 percent.

Exhibit 5-12. AIM Test 1 ACOs that Decreased Total Medicare Spending Outperform Similar Non-AIM SSP ACOs on Preventive Health and At-Risk Population Measures in PY2



Note: Comparison of performance on ACO quality measures for AIM Test 1 ACOs and similar non-AIM SSP ACOs (see **Chapter 4** for selection of non-AIM SSP ACOs) for those ACOs estimated to reduce total Medicare spending (see **Chapter 2** and **Exhibit 5-7**). We reversed the Diabetes Poor Control measure so that higher performance is better. In PY2, there were 33 AIM ACOs estimated to reduce total Medicare spending.

Source: 2017 Shared Savings Program PUFs, ACO Provider RIF for 2017, and Medicare claims data from 2013-2015 and 2017.

These subgroup findings are summarized for total Medicare spending reductions and for impacts on several types of utilization that are most related to quality (**Exhibit 5-13**). This table reports the average percent difference for AIM Test 1 ACOs that reduced spending or selected utilization compared to non-AIM SSP ACOs on each quality measure in PY2. We subtracted the non-AIM SSP ACO measure value from the AIM ACO measure value and converted it to a percent for comparability. For example, AIM ACOs that reduced Medicare spending performed 4.3 percent better than non-AIM SSP ACOs on depression screening. Positive values indicate AIM performance exceeding similar non-AIM SSP ACO performance for the ACOs that reduced spending or utilization listed in each column. Negative values indicate that AIM performance was lagging behind similar non-AIM SSP ACO performance for ACOs that reduced spending or utilization. Mammography screening is the only measure for which AIM ACO performance lags behind non-AIM SSP ACO performance.

Exhibit 5-13. AIM ACOs Reducing Medicare Spending and Certain Utilization Mostly Outperform Similar Non-AIM SSP ACOs on Preventive Health and At-Risk Population Measures in PY2

	Percent Difference between AIM and Similar Non-AIM SSP ACO Performance for AIM ACOs Found to Reduce:			
	Total Medicare Spending (N=26)	Any Hospitalization (N=23)	Any ED Not Resulting in Admission (N=22)	Any ASC (N=17)
Depression screening	4.3%	10.1%	12.8%	8.8%
Colorectal cancer screening	5.4%	3.3%	9.2%	6.0%
Mammography screening	-2.0%	-3.9%	1.7%	-0.5%
Diabetes control	2.2%	0.7%	3.6%	1.6%
Hypertension (blood pressure control)	4.0%	1.5%	5.3%	4.1%
Ischemic vascular disease control	2.4%	2.2%	3.1%	3.7%

Note: Comparison of performance on ACO quality measures for AIM Test 1 ACOs and similar non-AIM SSP ACOs (see **Chapter 4** for selection of non-AIM SSP ACOs) for those ACOs estimated to reduce total Medicare spending or utilization, as noted (see **Chapter 2** and **Exhibit 5-7**). We reversed the Diabetes Poor Control measure so that higher performance is better. Negative differences represent AIM ACOs performing worse on a particular measure compared to non-AIM SSP ACOs, and positive differences represent AIM ACOs performing better on a particular measure compared to non-AIM SSP ACOs.

Source: 2017 Shared Savings Program PUFs, ACO Provider RIF for 2017, and Medicare claims data from 2013-2015 and 2017.

6. AIM ACOs' Future Plans in the Shared Savings Program

This chapter presents common themes and supporting details about the lessons AIM ACOs learned during their participation in AIM. In addition, we highlight ACOs' perspectives on renewing participation as an SSP ACO and transitioning to two-sided financial risk.

Key takeaway from AIM ACOs on lessons learned and future plans:

- ▶ Most AIM ACOs plan to continue participating in the Shared Savings Program, but interviewees expressed reluctance to take on two-sided risk due to a variety of factors including organizational capacity and expected organizational changes, regulatory and programmatic uncertainty, and what they see as a limited window for decision making as a participant.

6.1. Data and Methods

The findings reported in this chapter were drawn primarily from qualitative information collected in two rounds of telephone interviews with ACO representatives in 2016 and 2017, an ACO Web survey administered in mid-2018,⁴⁶ an interview with CMS current and former AIM model leads in 2018, and ACO physician interviews in 2017.⁴⁷ These data sources are further described in **Appendix 1B**. Methods for analyzing the data from primary data collection are discussed in **Appendix 2B**.

6.2. Results

6.2.1 Most ACOs Will Continue in the Shared Savings Program without Taking Two-Sided Financial Risk

AIM enabled physicians with smaller practices to pursue their goal of gaining experience with payment and delivery models that encourage value-based care and population health management. Absent supplemental start-up funds provided by AIM, core elements of AIM ACOs' operating structures—and some of the ACOs themselves—may not have existed. ACO representatives consistently underscored this point during the first and second round of interviews.

We really got into [the ACO] knowing that health care was transitioning from fee-for-service to value and quality. Obviously, the AIM grant allows us to dig into it and continue to increase our focus on quality, but that is the way medicine is going. I don't think [our goals] have changed; [participating in AIM] has allowed us to hone in on [them].

During second round interviews, all 45 AIM ACOs were asked about their post-AIM plans. Based on their experience in AIM, the majority of AIM ACOs reported that they had already, or planned to, continue in the Shared Savings Program. Only one organization indicated that it did not intend to remain a Medicare ACO. However, it is unclear whether this intention reflected just one of the AIM ACO's participating health systems or that of multiple participant organizations.

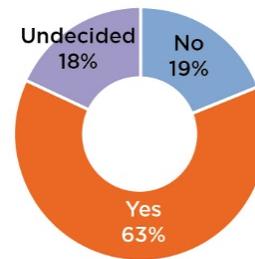
When the question of renewing Shared Savings Program participation was raised during the ACO Web survey, the majority of respondents affirmed an intent to renew their Shared Savings Program

⁴⁶ Of the 45 AIM ACOs, 38 responded to the Web Survey.

⁴⁷ Provider interviews were conducted in May–June 2017. Interviewees included 21 physicians representing eight AIM ACOs.

participation agreement, as shown in **Exhibit 6-1**. About one-quarter of AIM ACOs were unsure at the time of the second round interview whether they would continue with the Shared Savings Program. Most said their decision to renew participation was contingent upon the ACO's financial performance in the final year of AIM. More than half of those that said they were unsure about their future as a Medicare ACO were Caravan ACOs, while the remainder were a mix of ACOs managed by other companies and independent AIM ACOs. According to the ACO Web survey results, less than 20 percent of AIM ACOs said they were undecided about continuing with the Shared Savings Program; the same proportion said they did not plan to renew their participation agreement.

Exhibit 6-1. Does Your ACO Plan to Renew Its Participation Agreement?



Source: AIM ACO responses to ACO Web survey question #7 in mid-2018 (see **Appendix 3C**), N=38.

Of the seven ACO Web survey respondents that were disinclined to renew their participation agreement, three cited cost as a driving factor. One noted that the expense of operating the ACO coupled with the possibility that shared savings would decrease over time made it difficult to sustain the investment; another said the cost of continuing would be too great; and, the third pointed to lack of AIM funding as a barrier to future participation. Two other AIM ACOs replied that their organizations are not continuing in their current form; one AIM ACO will join a different ACO in 2019 and the other AIM ACO will dissolve and many of the physicians will join other ACOs.

6.2.2 Few AIM ACOs Were Receptive to Taking Risk/Reward Financial Tracks

AIM ACO perspectives on moving to a two-sided financial risk varied. During second round interviews, only four AIM ACOs in Track 1 at the time planned to move to a risk/reward financial risk track. One AIM ACO began a risk/reward financial track in 2018, and the other three applied to transition to one. More than half of the AIM ACOs' responses during these interviews indicated that staff were unsure whether their organization would accept risk/reward financial arrangements but were considering the option. About one-third of AIM ACOs said that they did not intend to take on two-sided financial risk.

The ACO Web survey responses generally supported these findings—of the 24 ACOs that confirmed plans to renew Shared Savings Program participation, 42 percent (10 ACOs) did not intend to move to a two-sided financial risk track.⁴⁸ The remainder indicated that they did plan to move to a two-sided financial risk track. We note that ACOs were asked to consider their plans for renewal and financial risk track in the absence of CMS's then proposal of Pathways to Success, which may have induced more ACOs to indicate consideration of two-sided financial risk.

Below, we discuss the internal and external factors that contributed to AIM ACOs' concerns about moving to a two-sided financial risk track.

Internal factors for rejecting two-sided risk

A number of AIM ACOs described considerations about their participant network, operational capacity to handle the analytics they believe would be necessary to manage risk-taking, or other organizational factors as important facets in their decision-making process about assuming two-sided financial risk.

⁴⁸ Among the 38 AIM ACO respondents, 24 ACOs expected to renew SSP participation, ten of which did not expect to move to a two-sided financial risk track.

Participant network and relationships: One AIM ACO believed its small participant network was not well-equipped to provide the full spectrum of care, which made the prospect of being accountable for all assigned patients' total cost of care daunting. Similarly, another AIM ACO cited its small size as the reason it was unable to absorb down-side financial risk. Compounding the limitations of size, the organization said the other hospitals in its AIM ACO were disinclined to take financial risk. Considering its expansion prospects, one AIM ACO said it would have to extend its care continuum beyond the current composition of participating hospitals and affiliated provider partners before it could handle two-sided financial risk. Another organization said that it was looking to engage other hospitals of similar size and ACO experience to join its network before it considered taking two-sided financial risk.

At least two AIM ACOs described resistance among participants to taking two-sided financial risk. One organization said it needed more time to demonstrate an ability to reduce total cost of care before the participants would support the transition to a two-sided financial risk track, while the second organization said its participating practices were hesitant to continue forward if they had to use their own funds to pay back losses. Another AIM ACO said that it would have to alter its physician compensation structure to offer incentives for participation if the ACO were to take down-side financial risk. Leaders from a different organization stated that greater engagement and commitment from ACO participants to using consistent clinical and operational processes (e.g., discharge planning processes) was necessary before the organization could consider taking risk.

Internal capacity constraints: AIM ACOs described the role of internal organizational and operational factors on their uncertainty around sharing risk with CMS. One organization said it was not inclined to take two-sided financial risk until its organization improved how it tracked patients following hospital discharge. This organization intended to focus on improved patient tracking in the near future, as its goal is to apply to a two-sided financial risk track within the next two years. Several AIM ACOs believed they needed more time as an ACO to hone their care management activities before they could comfortably accept risk. Numerous AIM ACOs said they expected to take advantage of the opportunity to renew Shared Savings Program participation for another three years with an upside-only financial arrangement. One of these organizations stated that its decision to continue in Track 1 reflects its concern that taking two-sided risk could jeopardize the opportunity to do well under the Medicare Access and CHIP Reauthorization Act of 2015 and the Merit Based Incentive Payments System.

AIM ACOs' perspectives about taking two-sides risk in the future did not appear to be associated with their financial results in the first performance year. However, some AIM ACOs stated that taking two-sided risk was contingent upon their organizations' performance in 2018. Responses indicated that if the organizations did not earn shared savings in the second performance year, they would likely stay in the upside-only track, if they remained in the Shared Savings Program at all. Another organization's hesitation around taking two-sided risk stemmed from underperforming in the first performance year. Notably, all of these AIM ACOs either earned shared savings or generated savings relative to their benchmark (but did not qualify for shared savings) in the first year.

Organization in flux: During the second round interviews, a few organizations discussed potential changes to their ACOs' operating structures in the coming year that affected their perspectives on taking two-sided financial risk. Specifically, one AIM ACO was considering splitting into two organizations where one of the future organizations would take two-sided risk while the other continued in Track 1. Another organization had the opportunity to join its parent company's Next Generation ACO where it would assume two-sided risk, and a third AIM ACO was considering merging with a regional health system, leaving its future status as a Medicare ACO uncertain.

External factors for rejecting down-side risk

A handful of organizations attributed their hesitation about taking two-sided financial risk to CMS actions. AIM ACOs specifically cited concerns around CMS regulatory and programmatic factors.

Regulatory and programmatic uncertainty: Interviewees from two AIM ACOs said that while they would consider taking two-sided financial risk in the future, their experience in the Shared Savings Program was that CMS changed the rules frequently, resulting in uncertainty for participant organizations. Representatives from AIM ACOs said the implications of mid-stream changes to methodology meant they would not be able to predict losses or save as needed. Therefore, these AIM ACOs expected to remain in Track 1.

[It's like] betting on a horse in a horse race only to find that motorcycles have been allowed to enter the race so that betting on the horse [is] no longer likely to lead to a win.

Interviewees from other AIM ACOs cited ambiguity about future changes to reimbursement methodologies for rural and critical access hospitals (CAHs) as a key reason for avoiding two-sided risk. While 28 of the 45 AIM ACOs included at least one, if not several, inpatient prospective payment system hospitals or CAHs with 100 or fewer beds, not all such interviewees mentioned this concern.

Still other organizations pointed to CMS internal delays distributing reports and funding as influential on their decision to avoid two-sided risk. Interviewees from AIM ACOs gave examples of backlogged distribution of reimbursement and ongoing lags in receiving Medicare reports and data beyond the six weeks after the start of a new quarter that organizations were told to expect.

Limited window for decision-making around risk-taking: Interviewees from numerous AIM ACOs asserted that they had insufficient time to thoroughly evaluate the risks and rewards associated with transitioning away from Track 1. Some AIM ACO interviewees said that remaining in Track 1 when they renew their next participation agreement with the Shared Savings Program would allow their organization the flexibility to explore other reimbursement models that are expected to emerge from CMMI over the next three years. It appears several AIM ACOs are, or will be, monitoring future CMMI opportunities. The ACO Web survey included a question asking whether the ACO was interested in considering participation in other innovative payment models in the future: nearly 60 percent of the 32 AIM ACO respondents to that survey question answered affirmatively.

Factors that AIM ACOs said would compel them to consider two-sided financial risk

To provide additional context about AIM ACOs' decision process for renewing Shared Savings Program participation and assuming two-sided risk, we asked ACO representatives to discuss what their organizations would need to transition to two-sided financial risk. The following are key responses:

- **Insight on development of CMMI models for rural hospitals:** Many expressed a desire for enhanced clarity on what the financial future will look like for rural hospitals. Specifically, interviewees from some AIM ACOs whose participating providers included rural hospitals or CAHs suggested that they were waiting for a CMMI model that is better aligned with the CAH reimbursement methodology.
- **Additional financial inducements from CMS:** Representatives from one AIM ACO asserted that an additional financial incentive from CMS, beyond the potential to earn shared savings, would have encouraged and motivated the organization's participants to consider a model with two-sided financial risk.
- **Clarity on CMS reimbursement methodology:** Another organization said that less uncertainty in CMS reimbursement methodology would compel its organization to re-examine taking two-sided financial risk. AIM ACO representatives were not yet confident that their organizations could predict

attribution or execute the necessary data modeling to project spending. In short, the ACO needed to better understand how its physicians would be reimbursed under the two-sided financial risk model to transition away from Track 1. Representatives from other AIM ACOs concurred that receiving more information from CMS up front about beneficiary assignment, expenses, and the methodology for calculating spending benchmarks and savings was a necessary step toward transitioning to two-sided financial risk.

In mid-2019, ACOs will need to apply to remain in the Shared Savings Program through Pathways to Success. In future analyses, we will cross-tabulate ACOs' renewal and financial risk decisions with three years of financial and evaluation findings.

7. AIM Evaluation Next Steps

In this report, we presented the estimated impacts of AIM based on two performance years and discussed key features of the AIM ACOs' organization and implementation strategies based on data collected through interviews and surveys. We also explored the use of AIM funds and their impact on top of Shared Savings Program participation, assessed the effect of AIM on patient/caregiver and other quality metrics, and discussed plans for continuing in the Shared Savings Program and accepting two-sided financial risk among AIM ACO leadership.

The final AIM evaluation report, forthcoming in mid-2020, will present estimated impacts on Medicare spending and utilization over three performance years. As shown in this report, AIM ACOs sustained reductions in Medicare spending over two years, with greater reductions in the second year. We will determine whether this trend continues into a third performance year, during which AIM funds are no longer distributed but can still be spent by AIM ACOs. This report will be a cumulative summary of evaluation findings, with a particular focus on identifying the drivers of estimated reductions in Medicare spending and utilization. The final report will also investigate patterns in AIM ACOs selecting to continue in the Shared Savings Program and those accepting two-sided financial risk. These findings, combined with lessons learned from both AIM and its predecessor, the Advance Payment ACO Model, will provide insights on the overall success and replicability of models that provide up-front payments funded through potential future shared savings to encourage ACO growth, especially in areas with less access to accountable care.



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