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MEDICARE SHARED SAVINGS PROGRAM ACCOUNTABLE CARE ORGANIZATIONS HAVE SHOWN POTENTIAL FOR REDUCING SPENDING AND IMPROVING QUALITY

Daniel R. Levinson
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Why OIG Did This Review

Medicare spending is expected to grow to $1.4 trillion by 2027. To control this increase and promote quality and healthy populations, the Centers for Medicare & Medicaid Services (CMS) has implemented and is considering a number of alternative payment models that reward providers for the quality and value of services. The goal is to incentivize providers to keep patients healthy and thus lower costs.

The Medicare Shared Savings Program is one of the largest alternative payment models. As part of this program, health care providers form Accountable Care Organizations (ACOs) to coordinate care to reduce costs and improve quality of care. Information about the extent to which ACOs are able to reduce Medicare spending and improve quality is critical to inform future developments as ACOs and other alternative payment models evolve.

How OIG Did This Review

We analyzed beneficiary and provider data from CMS to describe the characteristics of ACOs. We also analyzed spending and quality data to determine the extent to which ACOs reduced Medicare spending and improved quality in the first 3 years of the program. Lastly, we analyzed spending and utilization data to describe how high-performing ACOs reduced spending and made changes to utilization for key services.

What OIG Found

Over the first 3 years of the program, 428 participating Shared Savings Program ACOs served 9.7 million beneficiaries. During that time, most of these ACOs reduced Medicare spending compared to their benchmarks, achieving a net spending reduction of nearly $1 billion. One-third of ACOs reduced spending enough to receive a portion of the savings. ACOs participating in the program longer were more likely to reduce spending and by greater amounts than other ACOs. This suggests that more established ACOs are learning how to achieve greater cost savings over time.

Key Takeaway

Most Shared Savings Program ACOs were able to reduce Medicare spending and improve quality of care in the first 3 years of the program. A small subset of these ACOs showed substantial reductions in Medicare spending for key services.

As alternative payment models further take shape, these high-performing ACOs are worth a close look to understand the strategies they are employing.

At the same time, ACOs generally improved the quality of care they provided, based on CMS's data on quality measures. In the first 3 years, ACOs improved their performance on most (82 percent) of the individual quality measures. These 33 measures track various aspects of care provided to beneficiaries, such as the percentage of beneficiaries screened for depression. ACOs also outperformed fee-for-service providers on most (81 percent) of the quality measures.

Further, a small subset of ACOs showed substantial reductions in Medicare spending while providing high-quality care. These high-performing ACOs reduced spending by an average of $673 per beneficiary for key Medicare services during the review period. This included significant spending reductions for high-cost services such as inpatient hospital care and skilled nursing facility care. These ACOs also maintained high use of primary care services, which can lower utilization and costs for other care, and reduced the use of costly services such as emergency department visits. In contrast, other Shared Savings Program ACOs and the national average for fee-for-service providers showed an increase in per beneficiary spending for key Medicare services.

With any major payment reform, time may be needed for organizations to make changes to improve quality and lower costs. While policy changes may be warranted, ACOs show promise in reducing spending and improving quality. However, additional information about high-performing ACOs would inform the future direction of the Shared Savings Program as well as other alternative payment models.

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OBJECTIVES

1. To describe Accountable Care Organizations (ACOs) in the Medicare Shared Savings Program.
2. To determine the extent to which ACOs reduced Medicare spending in the first 3 years of the program.
3. To determine the extent to which ACOs improved quality in the first 3 years of the program.
4. To describe the spending and utilization of high-performing ACOs compared to other Shared Savings Program ACOs and the national average.

BACKGROUND

Medicare spending is expected to grow to $1.4 trillion by 2027, more than double the $689 billion in spending in 2016.[1] To help control the expected increase and promote quality and healthy populations, the Centers for Medicare & Medicaid Services (CMS) is implementing a number of alternative payment models that reward providers for the quality and value of services. The goal is to incentivize ACOs to provide higher quality care, fewer unnecessary services, and appropriate preventive services to keep patients healthier and thus lower costs over time.[2]

The Medicare Shared Savings Program (Shared Savings Program) is one of the largest alternative payment models, accounting for $168 billion in Medicare expenditures over the first 3 years of the program.[3] As part of the program, health care providers form ACOs and enter into a 3-year contract with Medicare. Providers in each ACO coordinate to reduce Medicare costs and improve quality of care.[4] If an ACO is successful and meets

[1] Congressional Budget Office, *Medicare – Congressional Budget Office's January 2017 Baseline*. Accessed at https://www.cbo.gov/sites/default/files/recurringdata/51302-2017-01-medicare.pdf on March 20, 2017.

[2] CMS, *First Accountable Care Organizations Under the Medicare Shared Savings Program*, April 10, 2012. Accessed at https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2012-Fact-sheets-items/2012-04-10.html on June 12, 2017.

[3] P.L. No. 111-148 (Mar. 23, 2010), as amended by the Health Care and Education Reconciliation Act of 2010, P.L. No. 111-152 (Mar. 30, 2010). The Medicare Shared Savings Program is established by section 3022, which amended section 1899 of the Social Security Act.

[4] CMS, *Shared Savings Program*. Accessed at https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/index.html?redirect=/SharedSavingsProgram/ on March 8, 2017.

certain Medicare requirements, it is eligible for a portion of the savings it generates for Medicare.

ACOs can vary widely in structure. Some ACOs are made up entirely of physicians, while others include physicians and other entities, such as hospitals, nursing homes, and home health agencies. As with fee-for-service Medicare, beneficiaries assigned to an ACO may choose their own health care providers, even if those providers are not a part of the ACO.

In the first 3 years of the Shared Savings Program, ACOs could enter the program under one of two tracks.[5] In Track 1, ACOs may be eligible for a share of the Medicare savings and are not responsible for paying back any portion of the losses.[6] In Track 2, ACOs may be eligible for a larger share of the savings if they accept downside risk for paying back a certain amount of the losses.[7]

Cost Savings

Each ACO is accountable for the total cost of care for their assigned beneficiaries, even if the care is provided outside of the ACO. At the beginning of the performance year, a beneficiary is assigned preliminarily to a particular ACO if he or she received a plurality of primary care services from providers in the ACO during the previous year. At the end of the performance year, a beneficiary is retrospectively assigned to an ACO if he or she meets the primary care services requirement for the performance year. Each ACO is responsible for a minimum of 5,000 beneficiaries.[8]

For each performance year, CMS compares the ACO's spending against a historical benchmark. CMS calculates this benchmark for each ACO by first determining the average annual spending for each beneficiary who would have been assigned during the 3 years immediately prior to the

[5] CMS recently created a Track 3, which allows ACOs to share a higher percentage of the savings and losses than Track 2. This new track became available in 2016. 81 Fed. Reg. 32692, 32771-81 (June 9, 2015).

[6] CMS established a minimum savings rate and minimum loss rate to account for normal variation in spending based on the number of assigned beneficiaries. To receive a portion of the savings, an ACO must meet this minimum savings rate and meet quality performance standards set by CMS. See CMS, *Medicare Shared Savings Program: Shared Savings and Losses and Assignment Methodology*. Accessed at https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/Shared-Savings-Losses-Assignment-Spec.pdf on March 8, 2017.

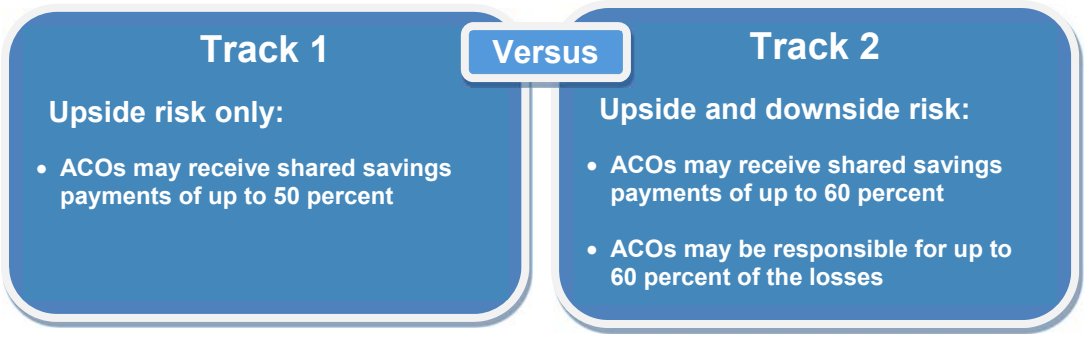
[7] Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), P.L. No. 114-10 (April 16, 2015) provides incentives for ACOs to accept downside risk and participate in Tracks 2 and 3. Under the Quality Payment Program, physicians and other clinicians who participate in ACOs in those tracks are eligible to receive bonus payments starting in 2019.

[8] 42 CFR § 425.110.

ACO's contract period (hereafter referred to as benchmark years).[9] CMS then adjusts this amount for factors such as beneficiary characteristics and the projected growth in Medicare fee-for-service spending.[10]

If an ACO's spending for the performance year is below the benchmark, then the ACO may be eligible to share in the cost savings. ACOs in Track 1 may receive shared savings payments of up to 50 percent of the cost savings, while ACOs in Track 2 may receive up to 60 percent of the cost savings.[11] See Exhibit 1. In Track 2, if an ACO's spending for the year exceeds the benchmark, it may be responsible for up to 60 percent of the losses.[12] In the first 3 years of the program, only five ACOs participated in Track 2.[13]

Exhibit 1: Differences Between Track 1 and Track 2 ACOs



[9] For ACOs that renewed their contracts for a second or subsequent agreement period starting in 2017, their benchmarks also incorporates trends in regional spending. See 81 Fed. Reg. 37950, 37954-69 (June 10, 2016).

[10] 42 CFR § 425.602(a).

[11] 42 CFR § 425.604(d); 42 CFR § 425.606(d).

[12] 42 CFR § 425.606(f)(2). For purposes of calculating shared losses for the Shared Savings Program, CMS considers losses to be spending that exceeds the benchmark in any given year, rather than inappropriate Medicare payments for medically unnecessary services.

[13] Two of the ACOs dropped out before 2014, leaving three in 2014 and 2015.

Quality Measures

In the first 3 years of the program, ACOs were required to report to CMS data on 33 quality measures.[14] These measures are organized into four broad domains. See Exhibit 2.

Exhibit 2: ACO Quality Measure Domains

Patient/Caregiver Experience: Contains measures related to patient satisfaction and engagement with their doctors and care providers.

Care Coordination/Patient Safety: Contains measures related to hospital readmissions and unplanned admissions for patients with certain conditions.

Preventive Health: Contains measures related to various types of wellness screenings.

At-Risk Populations: Contains measures related to specific health conditions that beneficiaries may be at risk for, such as diabetes.

In addition to reducing spending, ACOs must meet certain quality performance standards to be eligible to receive shared savings payments. In their first year of participation, ACOs must submit complete and accurate quality data. Beginning in their second year of participation, ACOs must also meet certain performance levels.[15] Further, an ACO's performance on the quality measures determines the portion of savings it may receive.[16] CMS assigns a point value for each measure and aggregates the points to determine an overall score that can range from 0 to 100. Higher quality scores, such as 90 or above, mean that an ACO performed well on the majority of the individual measures and that the ACO will receive a higher proportion of the savings.

[14] In 2013 and 2014, the 33 measures included 26 individual measures and 7 measures that contributed to 2 composite measures. For a description of all measures, see CMS, *Accountable Care Organization 2015 Program Analysis Quality Performance Standards Narrative Measure Specifications*, January 9, 2015. Accessed at https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/Downloads/ACO-NarrativeMeasures-Specs.pdf on March 8, 2017.

[15] CMS does not assess ACOs on their performance on the measures in their first year. Instead, it gives ACOs an overall quality score of 100 if they submit complete and accurate quality data. CMS calculates an overall quality score for the second and third years. In the second and third years, ACOs must also submit complete and accurate data and meet the minimum performance level—30th percentile—for certain measures to be eligible to receive shared savings payments. See 42 CFR § 425.502.

[16] Each ACO is accountable for the quality of care for their assigned beneficiaries based on the selected quality measures, even if some of the care is provided outside of the ACO.

Related OIG Work

OIG is currently conducting a review of beneficiary assignments to Shared Savings Program ACOs.[17] OIG is also reviewing the extent to which ACOs use health information technology to enhance their care coordination goals.[18]

METHODOLOGY

Scope

This study reviews all of the ACOs that participated in the Shared Savings Program in the first 3 years of the program. It determines the extent to which these ACOs reduced spending and improved quality during that period. It also describes spending and utilization of high-performing ACOs compared to other Shared Savings Program ACOs and the national average for fee-for-service providers from 2010 to 2015.

Data Sources and Methods

We based this study on the following data provided by CMS: (1) Shared Savings Program performance year results, by ACO, for each of the 3 years related to cost savings and quality; (2) spending and utilization summary data, by service, for each ACO's performance years and benchmark years; (3) summary data on average spending and utilization for all fee-for-service providers each year; and (4) provider and beneficiary data.

We combined these data files and analyzed these complex sets of data to provide new information on key areas of spending, utilization of services, and quality. Appendix A provides a detailed description of the methodology.

Description of ACOs. We analyzed CMS's beneficiary data from multiple sources to determine the total number of beneficiaries in ACOs and other beneficiary characteristics. We analyzed CMS provider data to determine differences among ACOs in their composition and in their provider-to-beneficiary ratios.

Analysis of spending. We analyzed CMS's performance year results to identify reductions in Medicare Parts A and B spending (hereafter referred to as Medicare spending) for the first 3 years of the program. We determined the number of ACOs that reduced spending—relative to their benchmark—in at least 1 of the 3 years. CMS calculates a risk-adjusted benchmark for each ACO by determining the average annual spending per beneficiary and adjusting for beneficiary health status. CMS further adjusts

[17] OIG, A-09-17-03010, Forthcoming.

[18] OIG, OEI-01-16-00180, Forthcoming.

this amount for factors such as projected growth in Medicare fee-for-service spending. We then determined the number of ACOs that exceeded their benchmarks in all of the years they were in the program. We also determined the extent to which ACOs reduced spending enough to receive a portion of the savings.

Analysis of quality measures. We analyzed CMS's data on the 33 quality measures to determine the extent to which ACOs improved quality in the first 3 years of the program. Data for the quality measures come from patient surveys, Medicare claims, and clinical data that are reported by the ACOs. We determined whether ACOs' overall quality scores and the scores on individual measures improved over time. We also compared ACOs' performance on the quality measures to Medicare fee-for-service providers.

Analysis of Medicare spending and utilization. We analyzed CMS's spending and utilization data to determine the extent to which high-performing ACOs reduced Medicare spending and made changes to utilization for seven key services.[19] We defined high-performing ACOs as ACOs that had both reductions in spending and high quality scores (an overall quality score of 90 or above) in 2014, 2015, or in both years. We determined average spending and utilization rates for key services from 2010 to 2015. These years encompass the 3 years prior to the ACOs' contract period and the 3 performance years. We then compared the results for 58 high-performing ACOs to 122 other Shared Savings Program ACOs and to the national average for Medicare fee-for-service providers.[20]

Limitations

We did not independently verify the original data that CMS provided on spending, utilization, shared savings, and the quality scores that we used in our analyses. For the purposes of this report, we defined high-performing ACOs based on CMS's method for measuring reductions in Medicare spending and quality in the Shared Savings Program. We recognize that other Shared Savings Program ACOs—such as those that had consistently low spending or had efficiencies in utilization prior to becoming an ACO—may also be high-performing ACOs. Additionally, we recognize that changes in spending relative to each ACO's benchmark may not accurately reflect what Medicare would have paid in the absence of the Shared Savings Program.

[19] These services included hospital inpatient care, skilled nursing facility (SNF) care, home health care, durable medical equipment, hospice care, Part B services, and hospital outpatient care.

[20] The 122 other ACOs are those that participated in the Shared Savings Program for all 3 years and did not have both reductions in spending and high-quality scores in 2014, 2015, or in both years.

Lastly, the data on spending and utilization are not risk-adjusted based on beneficiaries' health status. However, we determined that beneficiaries' health status remained relatively similar over time for high-performing ACOs and for other ACOs from 2010 to 2015.[21]

Standards

This study was conducted in accordance with the *Quality Standards for Inspection and Evaluation* issued by the Council of the Inspectors General on Integrity and Efficiency.

[21] We based this analysis on CMS's Hierarchical Condition Categories risk scores for each ACO for each enrollment category (i.e., ESRD, disabled, aged and dually-eligible for Medicare and Medicaid, and aged and Medicare-only). For high-performing ACOs, the median risk scores changed from 1.16 to 1.12 in the disabled category and from 1.07 to 1.06 in the aged and dually-eligible category. There were no changes over time in the median risk scores for the other two categories. For the other ACOs, there were no changes over time in the median risk scores for any of the four categories.

FINDINGS

In the first 3 years of the program, a total of 428 ACOs served 9.7 million beneficiaries

A total of 428 ACOs participated in the Shared Savings Program from 2013 to 2015. The number of ACOs grew over time, with 220 ACOs participating in the first year, increasing to 333 in the second year, and 392 in the third year. A total of 36 ACOs dropped out of the program in the first 3 years.

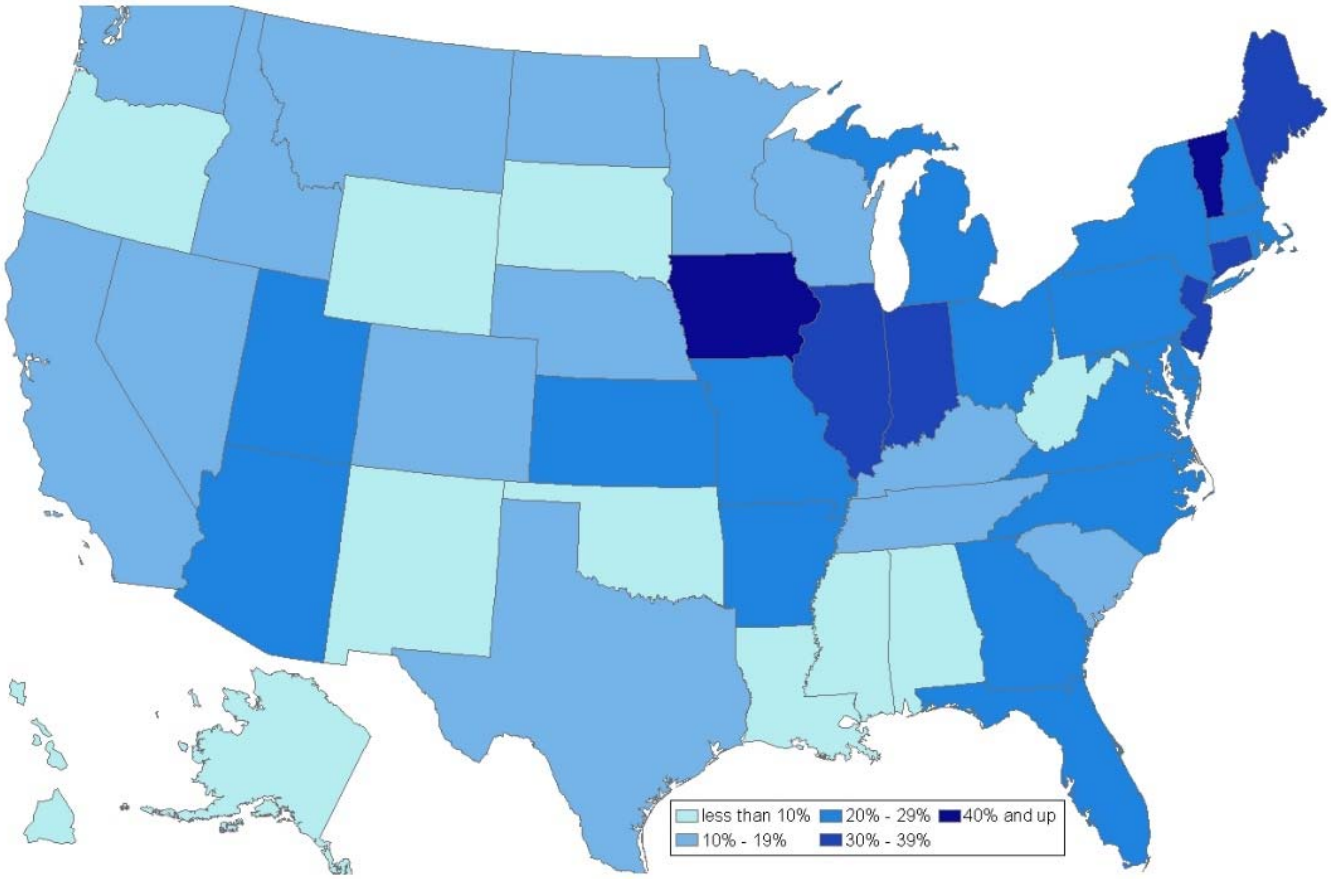
The number of Medicare beneficiaries served by ACOs also grew in the first 3 years of the program. In 2015, ACOs served 7.3 million beneficiaries, up from 3.7 million in 2013.[22] This amounted to 19 percent of all Medicare beneficiaries in 2015, compared to 10 percent in 2013.[23] In total, ACOs served 9.7 million unique beneficiaries over the first 3 years. The average number of beneficiaries that each ACO served also increased over time. Each ACO served an average 18,500 beneficiaries in 2015, compared to 16,700 in 2013.

ACOs were more likely to serve Medicare beneficiaries in certain States more than others. They served as few as less than 1 percent of beneficiaries in Hawaii and as many as 49 percent of beneficiaries in Vermont in 2015. ACOs were more likely to serve beneficiaries in States along the East Coast and in parts of the Midwest. See Exhibit 3.

[22] The number of beneficiaries served by ACOs is the total number of beneficiaries who were assigned to each ACO at the end of the performance year.

[23] This includes all beneficiaries who received Medicare fee-for-service; it does not include beneficiaries enrolled in Medicare Advantage.

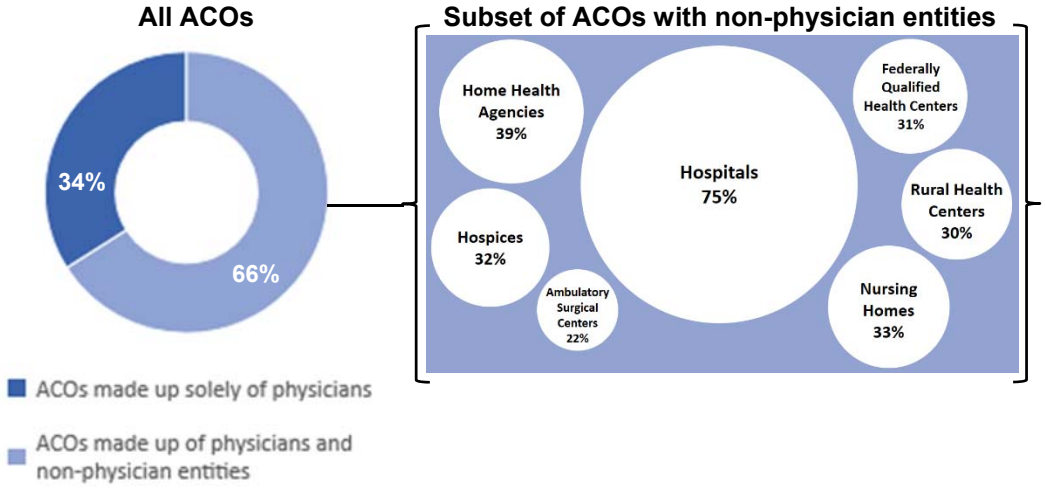
Exhibit 3: Proportion of Medicare Fee-for-Service Beneficiaries Served by ACOs, 2015



Source: OIG analysis of Medicare fee-for-service beneficiary enrollment data, 2017.

The composition of ACOs also changed over the 3 years. The percentage of ACOs that were made up solely of physicians decreased, as more ACOs began including other entities such as hospitals and nursing homes. In 2013, 42 percent of ACOs were made up solely of physicians; this decreased to 34 percent of ACOs in 2015. Of the ACOs that were made of both physicians and other entities, 75 percent included hospitals in 2015. These ACOs also commonly included home health agencies (39 percent), followed by nursing homes (33 percent), and hospices (32 percent). See Exhibit 4.

Exhibit 4: ACO Composition, 2015



Source: OIG analysis of Medicare provider data, 2017.

In addition, ACOs made available more primary care physicians and specialists to their beneficiaries over time. In 2015, ACOs had 1 primary care physician for every 166 beneficiaries, compared to 1 primary care physician for every 178 beneficiaries in 2013. Similarly, ACOs had 1 specialist for every 463 beneficiaries in 2015, compared to 1 specialist for every 611 beneficiaries in 2013.

Most ACOs were able to reduce Medicare spending over the first 3 years of the program; the net reduction in spending across all ACOs was about $1 billion

To determine if an ACO reduced Medicare spending, CMS compares each ACO's spending during the performance year to a benchmark.[24] This benchmark is calculated largely based on historical spending with adjustments for other factors, such as beneficiary health status.[25] During the first 3 years of the program, two-thirds of all ACOs (282 of 428) reduced spending for at least one of the years they participated in the program. The remaining ACOs (146) had spending that exceeded their benchmarks for each of the years they were in the program. These ACOs were not able to reduce spending below their benchmarks.

[24] Throughout this report, we refer to ACO spending for Medicare Parts A and B services as Medicare spending.

[25] CMS's calculations of historical spending are based on claims data.

ACOs that were in the program longer were more likely to reduce spending and by greater amounts.

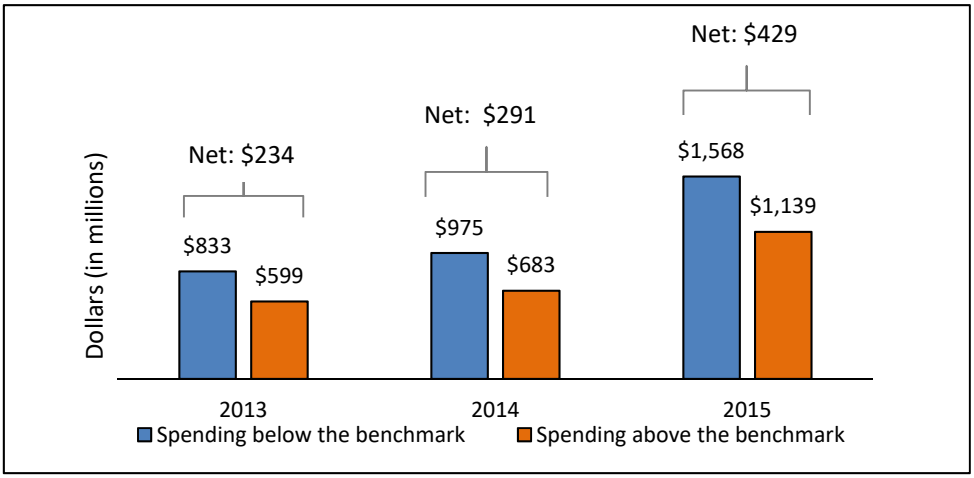
Fifty-seven percent of ACOs that were in the program for 3 years were able to reduce spending in 2015, compared to 46 percent of ACOs that were in the program for 1 year. In addition, ACOs that were in the program for 3 years reduced spending by an average of $10.1 million per ACO in 2015, compared to $5.4 million per ACO for those that were in the program for 1 year. This suggests that more established ACOs are learning how to achieve greater cost savings over time.

In total, ACOs reduced spending by $3.4 billion in the first 3 years of the program. There was significant variation in the reductions achieved by these ACOs. About half of the spending reductions—$1.7 billion—was generated by just 36 ACOs. Three ACOs in that group generated a quarter of that amount.

At the same time, the ACOs that exceeded their benchmarks increased spending by a total of $2.4 billion in the first 3 years of the program. About half of that amount was generated by 38 ACOs.

The net reduction in spending across all ACOs was nearly $1 billion in savings in the first 3 years. Over time, the net spending reductions grew. Overall, ACOs reduced spending by a net amount of $234 million the first year, increasing to $429 million by the third year. See Exhibit 5.

Exhibit 5: ACOs' Medicare Spending Above and Below Their Benchmarks, 2013 to 2015 (in millions)



Source: OIG analysis of ACO spending data, 2017.

Note: The net amount for 2014 does not equal the difference between the total reduced spending amount and the total increased spending amount due to rounding.

One-third of ACOs earned $1.3 billion in shared savings payments

ACOs that reduce spending below a certain amount are eligible to receive a portion of the savings.[26] Over the first 3 years of the program, 154 ACOs (one-third of all ACOs) reduced spending enough to receive a portion of the savings in at least 1 year.[27] In total, these ACOs reduced spending by $2.8 billion from 2013 to 2015.[28] Of that amount, the ACOs received $1.3 billion in shared savings payments.

On average, each of these ACOs received a payment of approximately $4.8 million for every year that they earned shared savings. ACOs have flexibility in how they use their portion of the savings. For example, some may opt to make changes to providers' electronic medical records systems, invest in new care programs or interventions, or provide incentives to providers to improve quality.

ACOs that received shared savings payments had higher benchmarks, on average.

For each of the 3 years, ACOs that received payments had higher benchmarks, on average, than ACOs that did not receive payments. Notably, in 2015, the average benchmark for the ACOs that received payments was $11,748 per beneficiary compared to $10,284 per beneficiary for the ACOs that did not receive payments. ACOs with higher benchmarks may have greater opportunities to reduce unnecessary costs than ACOs that have lower benchmarks.

Overall, ACOs improved quality in the first 3 years of the program

Each ACO receives an overall quality score based on its performance on the individual quality measures. ACOs' average overall quality score increased from the second to the third year of the program.[29] In 2014, ACOs had an average overall quality score of 86, which increased to 91 in

[26] As noted earlier, an ACO must meet a minimum savings rate and quality performance standards set by CMS to receive a portion of the savings.

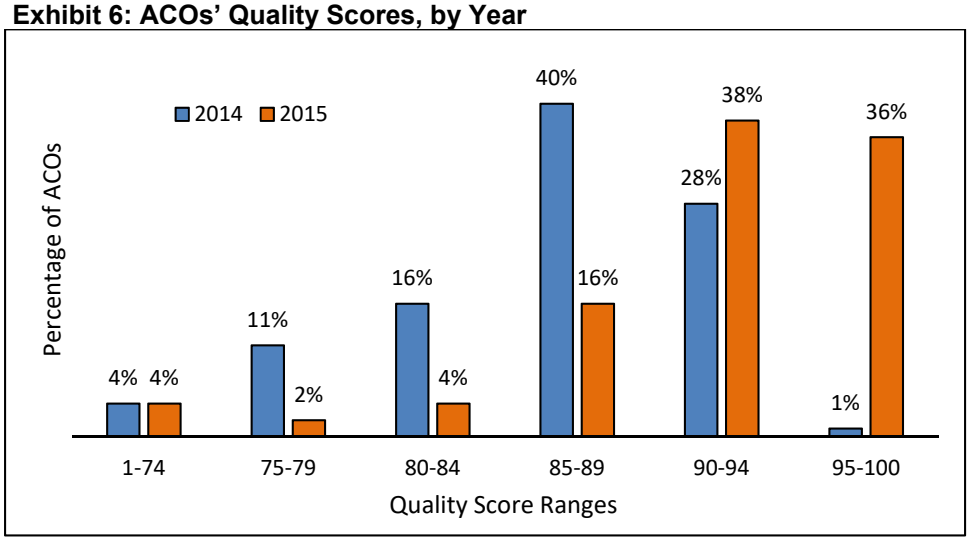
[27] An additional 11 ACOs met the minimum savings rate but did not meet the quality performance standards to receive a portion of the savings.

[28] Only one ACO *increased* its spending above the minimum loss rate and had to pay a portion of its loss to CMS. This ACO was one of the five ACOs that participated in Track 2; it had to pay CMS $4 million in 2013.

[29] CMS reviews an ACO's performance on the individual quality measures in its second and third year of the program to calculate an overall quality score. We therefore based our analysis on only ACOs in their second and third year of the program. In addition, in 2015, ACOs could earn additional points for quality improvement.

2015. As shown in Exhibit 6, the largest shifts in average scores were between 85 and 100. Notably, a much higher percentage of ACOs achieved a score of 90 or above—29 percent in 2014 compared to 74 percent in 2015.

Exhibit 6: ACOs' Quality Scores, by Year



Source: OIG analysis of ACO quality data, 2017.

ACOs' performance on individual quality measures improved over time

In the first 3 years of the program, ACOs improved their performance on 82 percent (23 of 28) of the individual quality measures.[30] ACOs showed the most improvement on two measures. ACOs increased the percentage of beneficiaries who were screened for depression from a median of 26 percent in 2013 to 46 percent in 2015. ACOs also increased the percentage of beneficiaries who were screened for fall risk from a median of 35 percent in 2013 to 59 percent in 2015. As shown in Exhibit 7, ACOs also improved on several other measures. Appendix B provides additional information on individual quality measures.

[30] We based this analysis on 26 individual measures and 2 composite measures that represented the remaining 7 measures. We analyzed the data for the most recent year available for each measure.

Exhibit 7: Most Improved Quality Measures

- Depression Screenings and Followup Plan
- Screenings for Future Fall Risk
- Primary Care Physicians Qualifying for electronic health record (EHR) Incentive Payment
- Pneumococcal Vaccination
- Body Mass Index Screening and Followup

Source: OIG analysis of ACO quality data, 2017.

In contrast, ACOs' performance declined on five measures. They declined slightly on four measures related to patient experiences.[31] ACOs had a larger decrease on a fifth measure; the percentage of beneficiaries who received a blood pressure screening with any necessary followup declined from a median of 86 percent in 2013 to 74 percent in 2015.[32]

ACOs performed better than fee-for-service providers on most quality measures; ACOs also showed improvement over time

On average, ACOs outperformed fee-for-service providers on 81 percent (22 of 27) of the individual quality measures.[33] Notably, ACOs performed better than 90 percent of all fee-for-service providers in terms of low hospital readmissions. ACOs also performed better than 80 percent of fee-for-service providers on three measures. See Exhibit 8 for all these measures. Appendix C provides additional information on individual quality measures relative to fee-for-service providers.

[31] Overall performance on these measures was high, with median scores ranging from 80 percent to 93 percent in 2015.

[32] This decline may be partly explained by a change in the definition for the measure.

[33] We based this analysis on 27 measures that had at least 2 years of data that also had comparable data for fee-for-service providers. We analyzed the data for the most recent year available for each measure. We considered ACOs to outperform fee-for-service providers if the median score for all ACOs exceeded the 50th percentile—the median score—for all fee-for-service providers.

Exhibit 8: Quality Measures in Which ACOs Outperformed at Least 80 Percent of Fee-for-Service Providers

- Hospital Readmissions
- Screenings for Future Fall Risk
- Primary Care Physicians Qualifying for EHR Incentive Payment
- Depression Screenings and Followup Plan

Source: OIG analysis of ACO quality data, 2017.

ACOs also performed better than fee-for-service providers on an increasing number of measures over time. Specifically, ACOs performed better than fee-for-service providers for 73 percent of measures in 2013, 77 percent of measures in 2014, and 86 percent of measures in 2015.[34]

High-performing ACOs reduced Medicare spending for key services and made cost-effective changes in utilization

A small subset of ACOs showed substantial reductions in Medicare spending for key services. These ACOs, which we refer to as high-performing ACOs, had been in the program for all 3 years and had both reductions in spending and high quality scores (an overall quality score of 90 or above) in 2014, 2015, or in both years.[35]

On average, high-performing ACOs reduced Medicare spending per beneficiary, while other Shared Savings Program ACOs and fee-for-service providers nationally (i.e., the national average) increased average per beneficiary spending. From 2010 to 2015, high-performing ACOs reduced spending by an average $673 per beneficiary for key services, while other ACOs *increased* spending by $707 per beneficiary.[36] Nationally, fee-for-service providers also *increased* spending by an average of $673 per beneficiary. In addition, high-performing ACOs reduced spending more than other ACOs that saved but did not score high on quality. For more

[34] We based this analysis on the 22 measures that existed in all 3 years that had comparable data for fee-for-service providers.

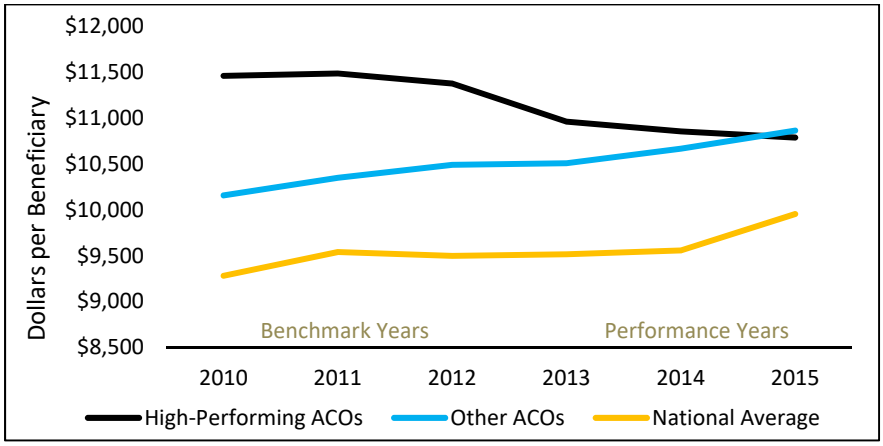
[35] We based this analysis on 58 high-performing ACOs. These ACOs met the minimum savings rate. To determine if ACOs reduced spending, we compared each ACO's performance year spending to its benchmark year spending. CMS calculates a spending benchmark based on the 3 years immediately prior to the contract period.

[36] The data on spending and utilization are not risk-adjusted based on beneficiaries' health status. However, we determined that beneficiaries' health status remained relatively similar over time for high-performing ACOs and for other ACOs from 2010 to 2015.

information on how these ACOs compared to high-performing ACOs, see Appendix D.

As shown in Exhibit 9, high-performing ACOs had higher average spending per beneficiary for 5 of the 6 years compared to other ACOs and to the national average.[37] At the same time, they exhibited greater reductions in overall spending, and in 2015 their spending was lower than other ACOs.

Exhibit 9: Average Total Spending per Beneficiary for Key Services, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

High-performing ACOs reduced spending for five of the seven types of services we reviewed. Their largest average spending reductions were in hospital inpatient care, followed by skilled nursing facility (SNF) care, home health care, durable medical equipment, and hospice care, respectively. Further, they made greater reductions in each of these services than other ACOs and the national average. For the remaining two types of services—hospital outpatient care and Part B services—high-performing ACOs had the lowest increases compared to other ACOs and the national average. See Exhibit 10. See Appendix E for more detailed information about the average spending per beneficiary for each service over time.

[37] The national average includes beneficiaries who did not receive any primary care services, which is a requirement for beneficiary assignment to ACOs. According to CMS, average total per capita spending for ACO "assignable" beneficiaries has historically been about 9 to 10 percent higher than average fee-for-service spending overall.

Exhibit 10: Changes in Average Spending per Beneficiary for Key Services, 2010 to 2015

	Change in Average Spending: High-Performing ACOs	Change in Average Spending: Other ACOs	Change in Average Spending: National Fee-for-Service
Total	**($673)***	**$707***	**$673**
Hospital Inpatient Care	($549)	($76)	($32)
Skilled Nursing Facility Care	($287)	$25	$35
Home Health Care	($198)	($21)	($46)
Durable Medical Equipment	($71)	($50)	($50)
Hospice Care	($44)	$11	$28
Part B Services	$120	$303	$245
Hospital Outpatient Care	$355	$516	$493

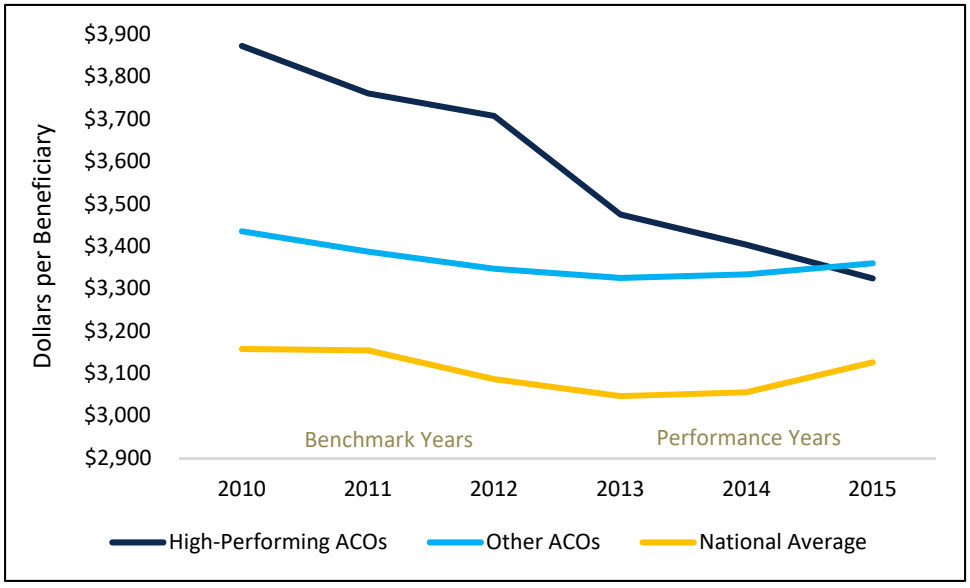
Source: OIG analysis of ACO spending data, 2017.

*Totals do not equal the sum of the rows due to rounding.

High-performing ACOs had the most significant reductions in in-patient hospital care and skilled nursing facility care

High-performing ACOs had the largest spending reductions in hospital inpatient care compared to the other services. In 2010, they spent an average of $3,872 per beneficiary for these services, and by 2015 they reduced spending to $3,324, representing a decrease of $549 per beneficiary. Other ACOs reduced their spending in this area by only a fraction of that amount ($76 per beneficiary), and the national average declined by only $32 per beneficiary. See Exhibit 11.

Exhibit 11: Average Spending per Beneficiary for Hospital Inpatient Care, 2010 to 2015

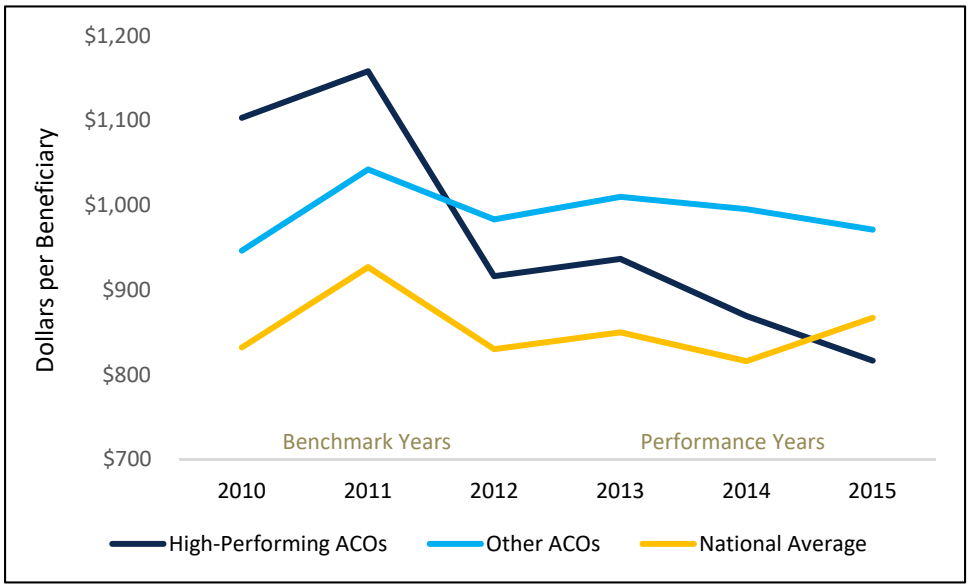


Source: OIG analysis of ACO spending data, 2017.

Both high-performing ACOs and other ACOs had higher hospital admission rates compared to the national average for all 6 years. This is likely because beneficiaries in ACOs are older and have more risk factors than the general fee-for-service population. However, high-performing ACOs had the largest decline in admissions. These ACOs had higher hospital admissions rates than other ACOs for all years until 2015, when they had the same average rate. See Appendices F and G for changes in hospital admission rates and for changes in the utilization of other key services.

In addition, high-performing ACOs were the only group that had reductions in average spending for SNF care. They decreased spending by almost $287 per beneficiary. Other ACOs increased their spending in this area by $25 per beneficiary, and the national average increased by $35 per beneficiary. See Exhibit 12.

Exhibit 12: Average Spending per Beneficiary for Skilled Nursing Facility Care, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

High-performing ACOs also decreased SNF admissions rates by 16 percent between 2013 and 2015, compared to a decrease of 7 percent for other ACOs and a decrease of 4 percent for the national average. This trend resulted in high-performing ACOs having the lowest SNF admissions rates by 2015, compared to the other groups.

High-performing ACOs maintained high use of primary care and reduced the use of costly services

By 2015, high-performing ACOs made more cost-effective changes in service utilization compared to other ACOs and the national average. Adequate primary care can be a cost-effective tool, leading to lower utilization and lower costs of care.[38] High-performing ACOs provided the highest number of primary care visits (10.6 per beneficiary) in 2015 compared to other ACOs (10.1 per beneficiary) and the national average (8.6 per beneficiary). In addition, high-performing ACOs were the only group to reduce the number of emergency department visits per beneficiary (a reduction of 1 percent) and had the highest reduction in the use of costly CT scans (a reduction of 17 percent).

High-performing ACOs had somewhat different characteristics than other ACOs

High-performing ACOs served a larger number of beneficiaries in 2015, averaging 22,000 beneficiaries compared to 19,000 for other ACOs. In addition, they were more likely to include only physicians. In 2015, about 45 percent of high-performing ACOs were made up solely of physicians, compared to 36 percent for other ACOs.

In addition, beneficiaries served by high-performing ACOs typically had more health conditions and other risk factors associated with higher spending compared to other ACOs. Further, beneficiaries served by both high-performing ACOs and other ACOs were generally older and had more health conditions and other risk factors associated with higher spending than the broader Medicare fee-for-service population.[39] This likely contributed to high-performing ACOs having higher average spending per beneficiary compared to other ACOs and the national average.

[38] Mark W. Friedberg, Peter S. Hussey, and Eric C. Schneider, "Primary Care: A Critical Review of the Evidence on Quality and Costs of Health Care," *Health Affairs*, May 2010. Accessed at http://content.healthaffairs.org/content/29/5/766.full on March 20, 2017.

[39] Note that the broader Medicare fee-for-service population includes beneficiaries who did not receive primary care services, which is a requirement for beneficiary assignment to ACOs.

CONCLUSION

The Shared Savings Program is one of the largest alternative payment models in Medicare. The program rewards providers for improving care and reducing growth in costs. In the first 3 years of the program, ACOs in the Shared Savings Program have shown potential for reducing spending and improving quality of care.

Over the first 3 years of the program, 428 ACOs participated in the program and served 9.7 million beneficiaries. During that time, most of these ACOs reduced Medicare spending, with a net spending reduction of nearly $1 billion. One-third of ACOs reduced spending enough to receive a portion of the savings. ACOs participating in the program longer were more likely than other ACOs to reduce spending and by greater amounts. This suggests that more established ACOs are learning how to achieve greater cost savings over time.

At the same time, ACOs generally improved the quality of care they provided. In the first 3 years, ACOs improved their performance on most (82 percent) of the individual quality measures. ACOs also outperformed fee-for-service providers on most (81 percent) of the quality measures.

Further, a small subset of ACOs showed substantial reductions in Medicare spending while providing high-quality care. These high-performing ACOs reduced spending by an average of $673 per beneficiary for key Medicare services during the review period. This included significant spending reductions for high-cost services such as inpatient hospital care and SNF care. These ACOs also maintained high use of primary care services, which can lower utilization and costs for other care, and reduced the use of costly services such as emergency department visits. In contrast, other Shared Savings Program ACOs and the national average showed an increase in per beneficiary spending for key Medicare services.

With any major payment reform, time may be needed for organizations to make changes to improve quality and lower costs. While policy changes may be warranted, ACOs show promise in reducing spending and improving quality. High-performing ACOs produced substantial spending reductions for high-cost services while providing high-quality care. Additional information about high-performing ACOs and their specific strategies is needed. To help in this effort, OIG is conducting an additional evaluation of high-performing ACOs and the different strategies they employ to achieve Medicare spending reductions and quality improvements. Understanding the success of such ACOs can inform not only the future direction of the Shared Savings Program, but also other

alternative payment models that seek to achieve high-quality care for lower costs.

APPENDIX A

Detailed Data Sources and Analysis

We based this study on CMS data for ACOs in the Shared Savings Program for the first 3 years of the program. We analyzed several data sources to describe ACOs that participated in the program for the first 3 years of the program. We also analyzed several data sources from CMS to determine ACOs' savings and quality in the first 3 years of the program as well as their spending on and utilization of key services.

Description of ACOs. We analyzed CMS's data to describe key characteristics of ACOs in the Shared Savings Program. We first determined the number of ACOs that participated in each of the first 3 years of the Shared Savings Program.[40]

Next, we analyzed data from CMS's Shared Savings Program ACO beneficiary-level research identifiable files (beneficiary RIF) to determine the unique number of final-assigned beneficiaries that ACOs served in the first 3 years of the program. Using CMS's Shared Savings Program ACO Performance Year Results files, we determined the number of final-assigned beneficiaries served by ACOs in each of the 3 years.

Using the Performance Year Results files, we calculated the proportion of the Medicare fee-for-service population that beneficiaries served by ACOs represented in each of the 3 years.[41] Using the beneficiary RIF, we determined the proportion of the fee-for-service population that beneficiaries served by ACOs represented in each State. To do this, we matched each final-assigned beneficiary's Health Insurance Claim Number (HICN) from the beneficiary RIF to the HICN from CMS's Integrated Data Repository (IDR) to identify each beneficiary's State of residence in 2015.

Next, we analyzed the composition of ACOs. We first analyzed data from CMS's Shared Savings Program ACO provider-level research identifiable files (provider RIF) to determine the proportion of ACOs that were made up solely of physicians and the proportion that were made up of physicians and other entities in each year. We then matched the Tax Identification Numbers (TIN) of the providers in the provider RIFs to the TINs in the

[40] The number of participating ACOs is based on ACOs that had at least 1 year of performance data.

[41] The Medicare fee-for-service beneficiary data are from the Medicare Enrollment Dashboard, available at: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Dashboard/Medicare-Enrollment/Enrollment%20Dashboard.html. Accessed on March 9, 2017.

IDR to identify the other types of entities they included, such as hospitals, SNFs, and home health agencies.

Lastly, we analyzed the ratios of primary care physicians and specialists to beneficiaries. We based this analysis on the provider data in CMS's Shared Savings Program ACO Public Use Files (PUF) and beneficiary totals in the Shared Savings Program ACO Performance Year Results files. We conducted this analysis for each ACO for each of the 3 years.

Analysis of spending. We determined the extent to which ACOs reduced Medicare spending based on data from the Shared Savings Program ACO Performance Year Results files for the first 3 years of the program.

We determined the number of ACOs that reduced spending—relative to their benchmark—in at least 1 of the 3 years.[42] We then determined the number of ACOs that exceeded their benchmarks in all of the years they were in the program. To determine whether ACOs that had been in the program longer were more likely to reduce spending and by larger amounts, we grouped ACOs by their start year and calculated the proportion that spent below their benchmark in 2015 for each group.[43]

In addition, we determined the total amount that ACOs spent below their benchmark by year and for all 3 years, as well as the total amount that ACOs spent above their benchmark by year and for all 3 years. We then calculated the net difference between these two amounts by year and for all 3 years. We also determined the extent to which certain ACOs generated a large proportion of the spending reductions.

Next, we determined the extent to which ACOs reduced spending enough to receive a portion of the savings. To do this, we calculated the number of ACOs that had both reduced spending enough to meet the minimum savings rate and the quality performance standards in any of the 3 years. We then calculated the portion of savings that these ACOs received. We determined the average amount of shared savings payments that these ACOs received per year. We also determined the number of ACOs in each year that participated in Track 2 that incurred shared losses and the amount of the shared losses.

Lastly, we determined whether ACOs that received shared savings payments were more likely to have higher benchmarks compared to ACOs that did not receive these payments. To do this, we calculated the average benchmark for ACOs that received shared savings payments and the

[42] CMS calculates this benchmark for each ACO by determining the average annual spending per beneficiary over the 3 years immediately prior to the ACO's contract period.

[43] The ACOs that started in 2012 or 2013 had their first performance year in 2013, so we grouped these ACOs together.

average benchmark for ACOs that did not receive shared savings payments for each year.

Analysis of quality measures. We determined the extent to which ACOs improved quality over the first 3 years of the program. We based this analysis on CMS's data on the 33 quality measures from the Shared Savings Program Performance Year Results files.[44]

We first determined whether their overall scores improved over time.[45] We analyzed the overall quality scores for a total of 206 ACOs in 2014 and 303 ACOs in 2015.[46] For each of the years, we calculated the average overall score and the proportion of ACOs that that had an overall score of 90 or above in each year.

In addition, we determined whether ACOs' scores on the individual measures improved over time and which measures improved the most.[47] We calculated the median scores for 28 measures. In total, 23 of the measures existed for all 3 years, and 5 of the measures existed in 2013 and 2014 only. We calculated the percent change between 2013 and the most recent year available for the median scores for each measure.

Lastly, we compared ACOs' performance on the quality measures to Medicare fee-for-service providers. First, we determined the proportion of measures for which ACOs outperformed fee-for-service providers. To do this, we converted the median scores for each measure to the corresponding percentiles for all Medicare fee-for-service providers.[48] We analyzed the most recent year of data available for each measure and included

[44] Data for the quality measures come from patient surveys, Medicare claims, and clinical data that are reported by the ACOs.

[45] CMS assigns points to each measure based on an ACO's performance on the measure. These points are then used to calculate an overall quality score.

[46] CMS does not assess ACOs on their performance on individual measures in their first year of the program. ACOs receive an overall quality score of 100 during that time if they submit complete and accurate quality data. We did not include these ACOs in our analysis. Nor did we include ACOs that had a score of 0 in the overall quality score. These ACOs did not provide CMS with complete and accurate quality data.

[47] We analyzed 26 individual measures and 2 composite measures representing the 7 remaining measures. We chose to analyze the composite measures rather than the individual measures that comprise the composite measures because the composite measures are used in the calculation of the overall quality score and they allow for comparison to fee-for-service providers.

[48] CMS provided fee-for-service percentiles for each of the measures. It uses these percentiles to compare ACOs to fee-for-service providers when it calculates ACOs' overall quality scores. CMS provided the fee-or-service data as deciles between the 30th and 90th percentile. For some of the measures in each year, CMS recalculated the percentile so that the scoring reflects the same number as the percentile (i.e., the 30th percentile represented a score of 30). Rather than using these, we used the actual percentiles that CMS provided to us for these measures.

27 measures in this analysis.[49] We considered ACOs to have outperformed fee-for-service providers in a measure if the median for all ACOs exceeded the 50th percentile—the median score—for all fee-for-service providers. We also identified the measures for which the median for all ACOs exceeded the 80th or 90th percentiles for fee-for-service providers. Next, we calculated the proportion of measures for which ACOs outperformed fee-for-service providers in each year. We based this analysis on the 22 measures that existed in all 3 years that had comparable data for fee-for-service providers.

Analysis of spending and utilization for key services. We analyzed CMS summary data from the IDR to determine the extent to which high-performing ACOs reduced spending and made changes to utilization for key services compared to other Shared Savings Program ACOs and the national average for all Medicare fee-for-service providers.

We defined high-performing ACOs as those that participated in the program for all 3 years and had both reductions in spending and high quality scores (an overall quality score of 90 or above) in 2014, 2015, or in both years. Other ACOs included those that participated in the program for all 3 years and did not meet this high-performance criteria.

We determined the extent to which ACOs in each group reduced spending for key services. To do this, we calculated ACOs' average spending per beneficiary in their benchmark and performance years. Each ACO starts with one set of data for their benchmark years, which represents the 3 years prior to becoming an ACO in the Shared Savings Program. If an ACO has any provider changes, CMS calculates an additional set of data for the benchmark years for that ACO. This additional set of data for the benchmark years reflects the spending and utilization of services for final-assigned beneficiaries with the new group of providers. For each ACO that had provider changes, we analyzed changes in spending and utilization among the different sets of data for its benchmark years. We excluded from our analysis any ACOs with provider changes resulting in a 15 percent difference or more in the different sets of data for the benchmark years. We performed this step so that any change in spending and utilization that we identified is more likely due to directed efforts by the ACOs and less likely due to changes in their providers. In total, we analyzed 58 high-performing ACOs and 122 other Shared Savings Program ACOs.

To determine change in spending and utilization over time, we defined the benchmark years from 2010 to 2012 and the performance years from 2013

[49] These 27 measures all had comparable data for fee-for-service providers.

to 2015.[50] We focused our analysis on total spending for seven services and spending for the individual services.[51] These services included hospital inpatient care, SNF care, home health care, durable medical equipment, hospice care, Part B services, and hospital outpatient services. We analyzed utilization rates for the following categories: hospital inpatient care, SNF care, emergency department visits, primary care, CT scans, and MRI scans.[52]

For each ACO and each type of service, we averaged the multiple sets of data for the benchmark years for each of the 3 years. We then determined an average for each of the benchmark years and each of the performance years for high-performing ACOs and for other ACOs.[53] We determined the difference in average spending for each group from 2010 to 2015. We compared these results to the national average for fee-for-service providers.[54]

We conducted a similar analysis on utilization rates for certain services. For each service, we calculated the average rates for each of the benchmark years and each of the performance years for high-performing and other ACOs. We determined the difference in average utilization for each group from 2010 to 2015. We compared the results to the national average.

Further, to determine if quality was a possible factor in changes to spending, we identified a subset of the 122 other ACOs that saved but scored below 90 on quality in a given year (31 ACOs). We analyzed

[50] Benchmark years differ by ACO, depending on when the ACO started its contract period. The ACOs that had their first performance year in 2013 started in April 2012, July 2012, or January 2013. The benchmark years for the ACOs that started in April or July of 2012 are 2009, 2010, and 2011, whereas, the benchmark years for the ACOs that started in January of 2013 are 2010, 2011, and 2012. For this study, our starting point for the benchmark years is 2010 rather than 2009 because all ACOs in our analysis share 2010 as a benchmark year. In addition, some ACOs had 2012 as a benchmark year, while others had it as a performance year. We chose to analyze 2012 as a benchmark year because there were more ACOs with 2012 benchmark year data than ACOs with 2012 performance year data.

[51] The data on spending and utilization are not risk-adjusted based on beneficiaries' health status. However, we determined that beneficiaries' health status remained relatively similar over time for high-performing ACOs and for other ACOs from 2010 to 2015.

[52] CMS reports the utilization for all services per 1,000 person years. We converted the rates to utilization per beneficiary per year.

[53] The SNF utilization data for benchmark years 2010 through 2012 were incomplete; therefore, those years are not included in the analysis.

[54] CMS provided data on national averages for fee-for-service providers. It also noted that there are a number of reasons why Shared Savings Program per capita spending may differ from per capita spending reported for the wider national Medicare fee-for-service population. The most pronounced difference is related to the way the program assigns beneficiaries to an ACO. Since primary care utilization is necessary for assignment, average total per capita spending for "assignable" beneficiaries has historically been about 9 to 10 percent higher than average fee-for-service spending overall.

spending changes by the types of services for this group following the same method described above. We compared the results for these ACOs—that saved but did not score high on quality—to the results for the ACOs that saved and scored high on quality. See Appendix D.

Lastly, we analyzed the extent to which differences existed between high-performing ACOs and other ACOs in the average number of beneficiaries served per ACO and their composition. In addition, we analyzed beneficiary age and CMS's Hierarchical Condition Categories (HCC) risk score data to determine the extent to which differences existed among high-performing ACOs, other ACOs, and the national average. We analyzed the risk scores for the following enrollment categories: end-stage renal disease, disabled, aged with Medicare only, and aged with Medicare and Medicaid.[55] We also determined any differences in median risk scores over time within these categories between high-performing ACOs and other ACOs.

[55] The Medicare fee-for-service beneficiary data on age comes from the following CMS website: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/CMS-Statistics-Reference-Booklet/Downloads/2015CMSStatistics.pdf#page=16. Accessed on March 9, 2017. The Medicare fee-for-service beneficiary data on health is represented by the CMS Hierarchical Condition Categories (CMS-HCC) risk score. A CMS-HCC risk score of 1 indicates risk associated with expenditures for the average beneficiary nation-wide. A beneficiary risk score greater than 1 indicates above-average risk, and a risk score less than 1 indicates below-average risk. For more information on risk scores, see https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2014-MIF-TPCC.pdf. Accessed on March 9, 2017.

APPENDIX B

Exhibit B-1: ACO's Performance on Individual Quality Measures, 2013 to 2015

Description (quality measure)	Median Score 2013	Median Score 2014	Median Score 2015	Percent Change	Performance
Patient/Caregiver Experience					
Patients' rating on getting timely care, appointments, and information (measure 1)	81.6	80.6	80.3	(1.6%)	Worsened
Patients' rating on how well doctors communicate (measure 2)	93.1	92.7	92.7	(0.5%)	Worsened
Patients' rating of doctor (measure 3)	92.2	91.9	92.1	(0.1%)	Worsened
Patients' rating on access to specialists (measure 4)	85.3	84.1	83.7	(1.9%)	Worsened
Patients' rating on doctors' promotion and education about patients' health (measure 5)	58.1	58.2	59.0	1.7%	Improved
Patients' rating of shared decision-making with doctors (measure 6)	74.5	74.7	75.0	0.7%	Improved
Patients' self-rating on physical and mental health (measure 7)	71.1	71.3	72.2	1.6%	Improved
Care Coordination/Patient Safety					
Percent of patients readmitted to a hospital within 30 days (reverse scored) (measure 8)	14.9	15.1	14.8	(0.3%)	Improved
Rate of hospital admissions for patients with chronic obstructive pulmonary disease or asthma in older adults (reverse scored) (measure 9)	1.1	1.0	1.1	(3.1%)	Improved
Rate of hospital admissions for patients with heart failure (reverse scored) (measure 10)	1.2	1.2	1.0	(14.2%)	Improved
Percent of primary care physicians who qualified for electronic health record incentive payment (measure 11)	69.0	80.5	85.3	23.5%	Improved
Percent of discharged patients who reconciled their discharge medications with their current medication list within 30 days of discharge (measure 12)*	87.0	91.7	N/A	5.4%	Improved
Percent of patients screened for future fall risk (measure 13)	35.1	44.7	58.8	67.5%	Improved
Preventive Health					
Percent of patients who received an influenza immunization (measure 14)	58.0	58.2	63.2	9.0%	Improved
Percent of patients who have ever received a pneumococcal vaccination (measure 15)	54.2	56.8	66.1	22.1%	Improved
Percent of patients who received a body mass index screening and followup (measure 16)	63.3	67.9	71.9	13.5%	Improved
Percent of patients screened for tobacco use and who received cessation intervention (when appropriate) (measure 17)	89.3	91.3	92.7	3.8%	Improved

* CMS discontinued the quality measure in 2015.

Note: The quality measures introduced in 2015 are not included.

Exhibit B-1: ACOs' Performance on Individual Quality Measures, 2013 to 2015

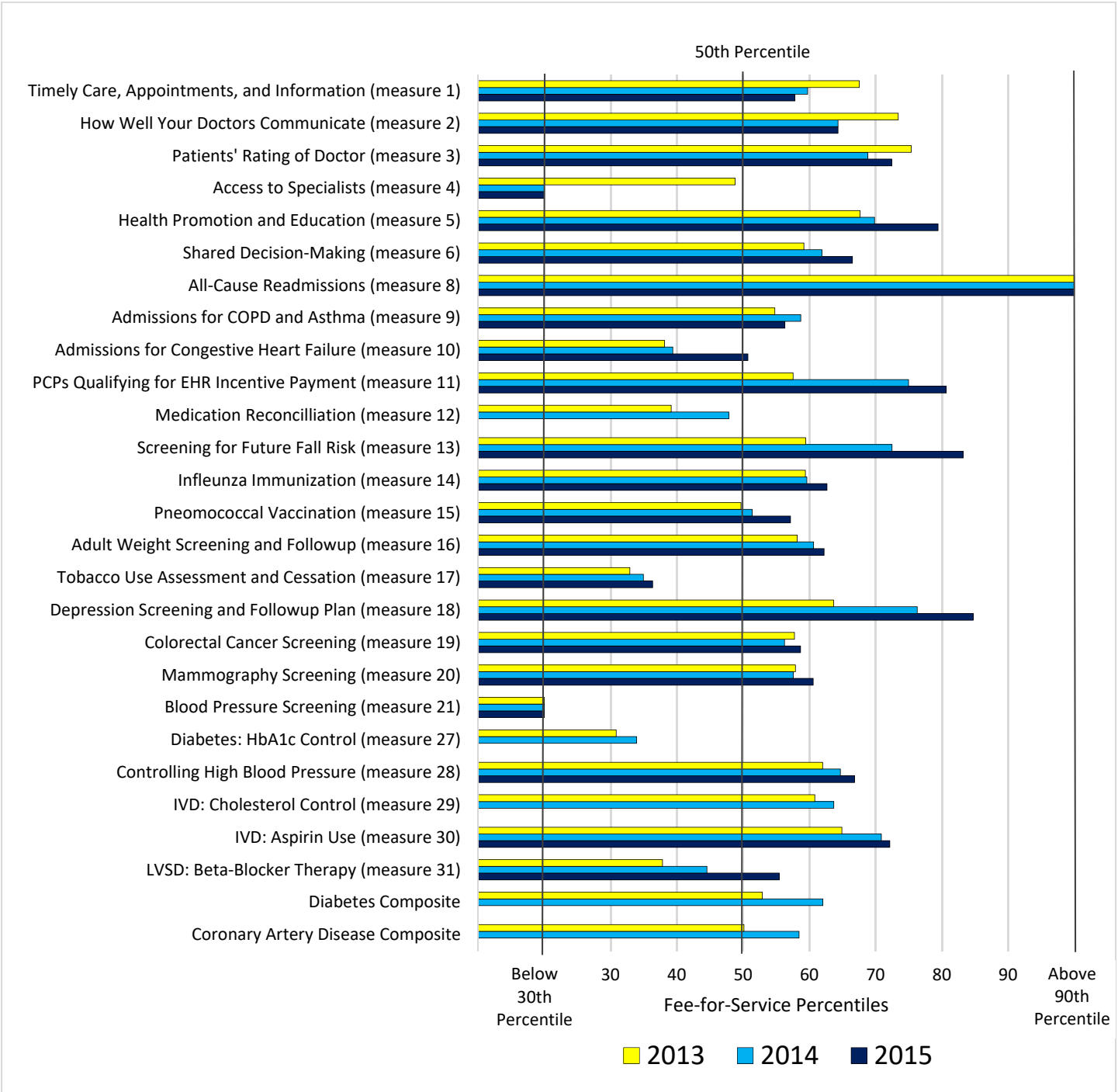
Description (quality measure)	Median Score 2013	Median Score 2014	Median Score 2015	Percent Change	Performance
Preventive Health (continued)					
Percent of patients screened for depression and a followup plan was created (when appropriate) (measure 18)	26.1	36.8	45.6	74.4%	Improved
Percent of patients screened for colorectal cancer (measure 19)	60.0	57.7	61.3	2.3%	Improved
Percent of age-appropriate women screened for breast cancer (measure 20)	63.3	63.0	66.3	4.7%	Improved
Percent of patients screened for high blood pressure and a followup plan was created (when appropriate) (measure 21)	86.1	59.3	74.1	(13.8%)	Worsened
At-Risk Populations					
Percent of diabetes patients with poorly controlled blood glucose level (reverse scored) (measure 27)*	19.2	17.8	N/A	(7.1%)	Improved
Percent of patients with hypertension who have adequately controlled blood pressure (measure 28)	68.6	69.4	70.0	2.0%	Improved
Percent of patients with ischemic vascular disease who have adequately controlled cholesterol level (measure 29)*	57.5	58.8	N/A	2.2%	Improved
Percent of patients with ischemic vascular disease taking aspirin or other antithrombotic (measure 30)	81.8	85.6	86.4	5.6%	Improved
Percent of patients with heart failure and ventricular dysfunction who were prescribed beta-blocker therapy (measure 31)	86.0	87.9	90.1	4.9%	Improved
Diabetes Composite*	24.2	26.3	N/A	8.8%	Improved
Coronary Artery Disease Composite*	66.2	69.4	N/A	4.8%	Improved

* CMS discontinued the quality measure in 2015.

Note: The quality measures introduced in 2015 are not included.

APPENDIX C

Exhibit C-1: ACOs' Performance on Quality Measures Compared to Fee-for-Service Providers, 2013 to 2015



Note: This exhibit shows the extent to which ACOs outperformed fee-for-service providers. We considered ACOs to outperform fee-for-service providers if the median score for all ACOs exceeded the 50th percentile for that measure. For this chart, we used a technique called linear interpolation to approximate the data points for median scores that fall between two deciles. We did not include measure 7 because it did not have comparable data for fee-for-service providers. The diabetes composite score includes measures 22 to 26, and the coronary artery disease composite score includes measures 32 and 33.

APPENDIX D

Exhibit D-1: Changes in Average Medicare Spending per Beneficiary for ACOs, 2010 to 2015

	Change in Average Spending: ACOs That Saved and Did Not Score High on Quality*	Change in Average Spending: High-Performing ACOs**
Overall Spending	↑ **$28**	↓ **($673)**
Hospital Inpatient Care	($238)	($549)
Skilled Nursing Facility Care	($134)	($287)
Home Health Care	($131)	($198)
Durable Medical Equipment	($62)	($71)
Hospice Care	($3)	($44)
Part B Services	$200	$120
Hospital Outpatient Care	$395	$355

Source: OIG analysis of ACO spending data, 2017.

* Includes ACOs that met CMS's minimum savings rate but had an overall quality score below 90.

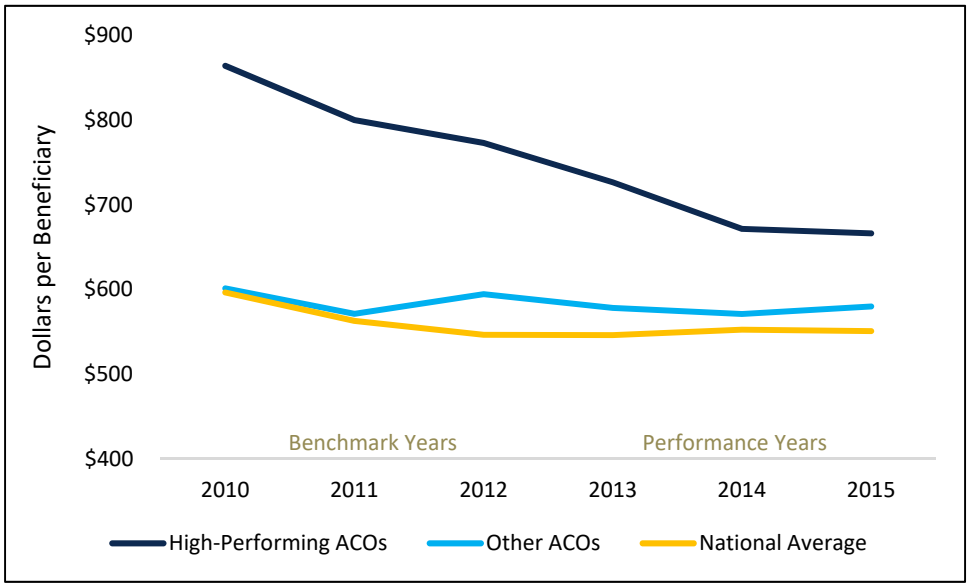
** Includes ACOs that met CMS's minimum savings rate and had an overall quality score of 90 or above.

Note: Totals do not equal the sum of the rows due to rounding.

APPENDIX E

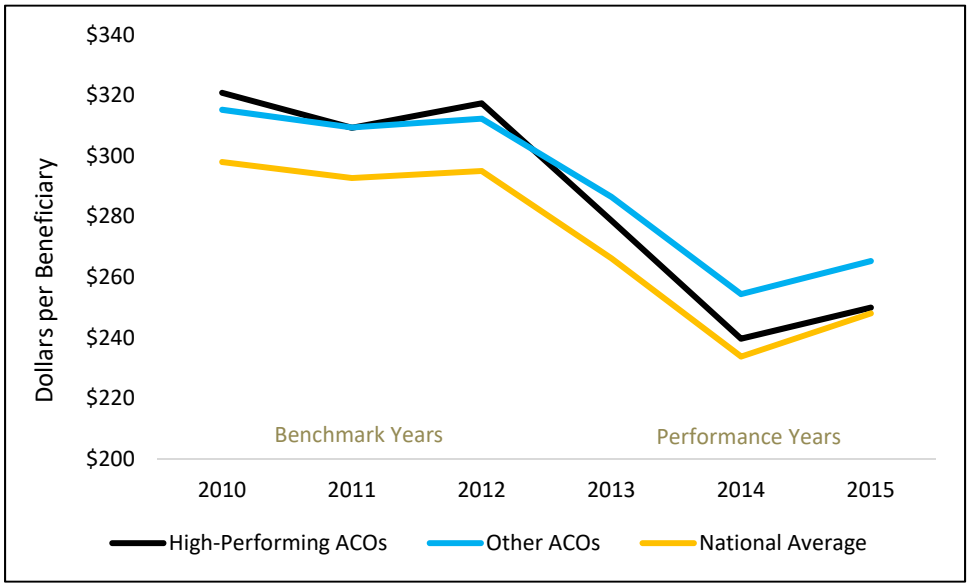
Average Medicare Spending per Beneficiary for Key Services, 2010 to 2015

Exhibit E-1: Average Spending per Beneficiary for Home Health Care, 2010 to 2015



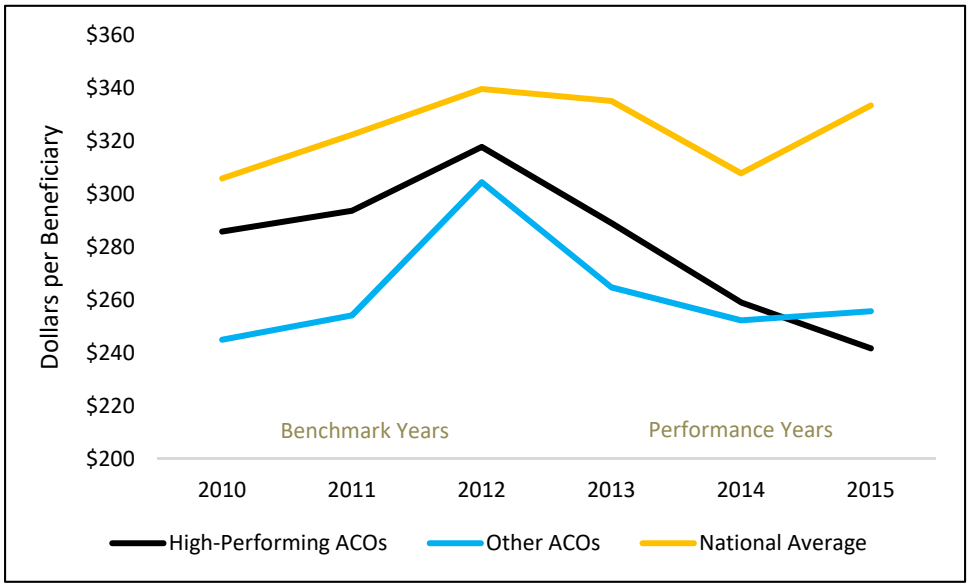
Source: OIG analysis of ACO spending data, 2017.

Exhibit E-2: Average Medicare Spending per Beneficiary for Durable Medical Equipment, 2010 to 2015



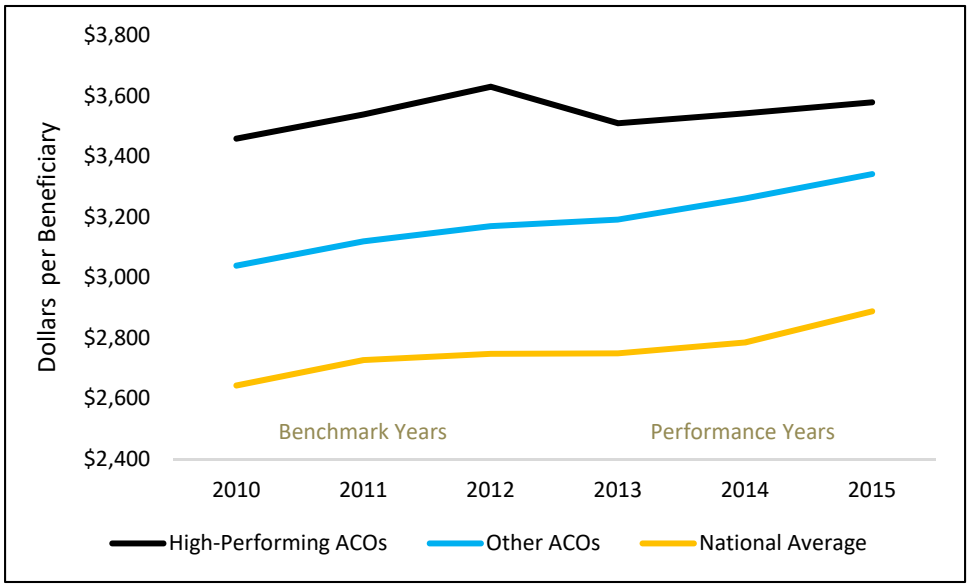
Source: OIG analysis of ACO spending data, 2017.

Exhibit E-3: Average Medicare Spending per Beneficiary for Hospice Care, 2010 to 2015



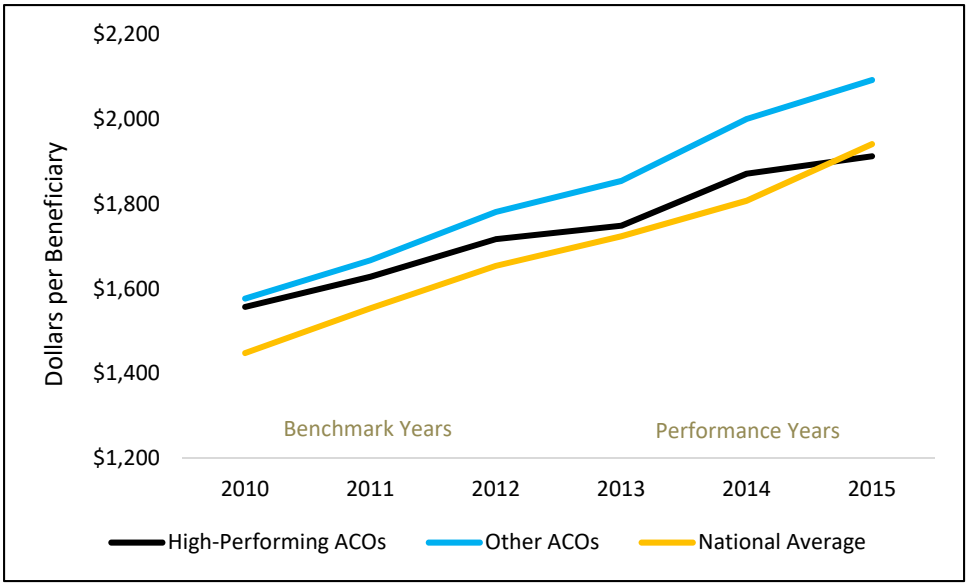
Source: OIG analysis of ACO spending data, 2017.

Exhibit E-4: Average Medicare Spending per Beneficiary for Part B Services, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

Exhibit E-5: Average Medicare Spending per Beneficiary for Hospital Outpatient Care, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

APPENDIX F

Exhibit F-1: Changes in Average Utilization per Beneficiary for ACOs, 2010 to 2015

	Change in Average Utilization: High-Performing ACOs	Change in Average Utilization: Other ACOs	Change in Average Utilization: Nation
Hospital Admissions	(20%)	(14%)	(11%)
Skilled Nursing Facility Admissions*	(16%)	(7%)	(4%)
Primary Care Physician Visits	1%	3%	4%
Emergency Department Visits	(1%)	3%	6%
CT Scans	(17%)	(10%)	(9%)
MRI Scans	0%	4%	6%

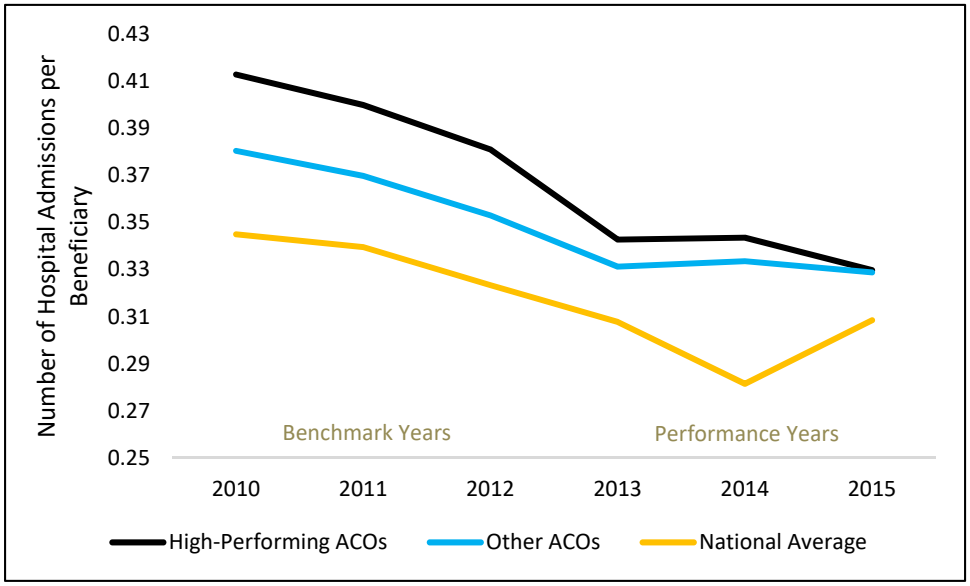
Source: OIG analysis of ACO utilization data, 2017.

* Change in skilled nursing facility admissions is for 2013 to 2015 only due to data availability.

APPENDIX G

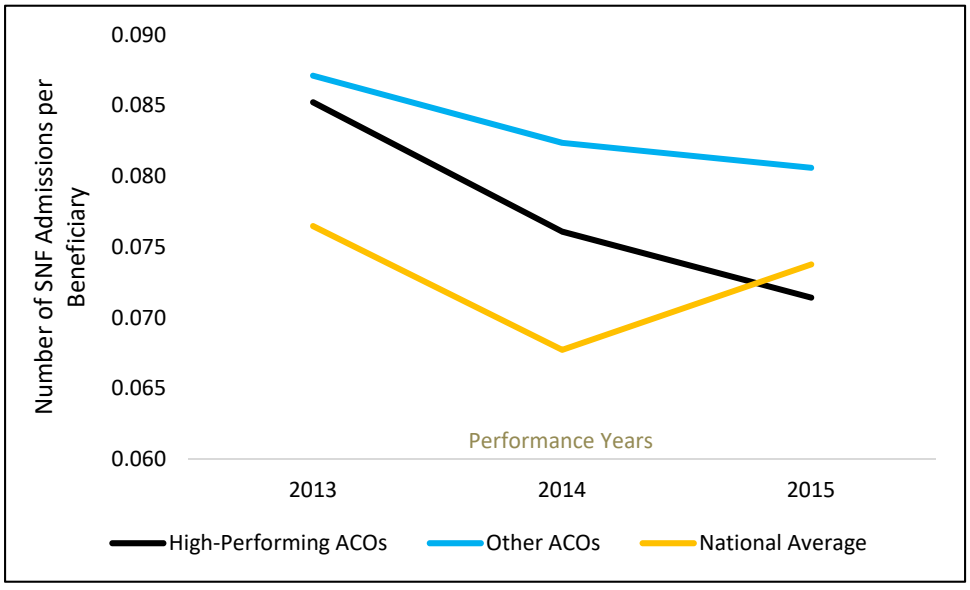
Average Utilization per Beneficiary for Key Services, 2010 to 2015

Exhibit G-1: Average Number of Hospital Admissions per Beneficiary, 2010 to 2015



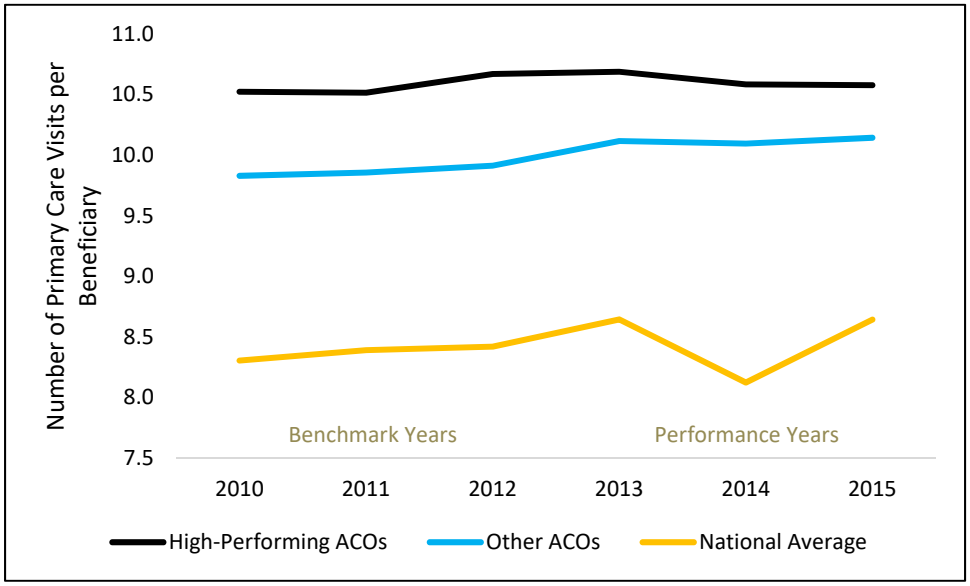
Source: OIG analysis of ACO spending data, 2017.

Exhibit G-2: Average Number of SNF Admissions per Beneficiary, 2013 to 2015*



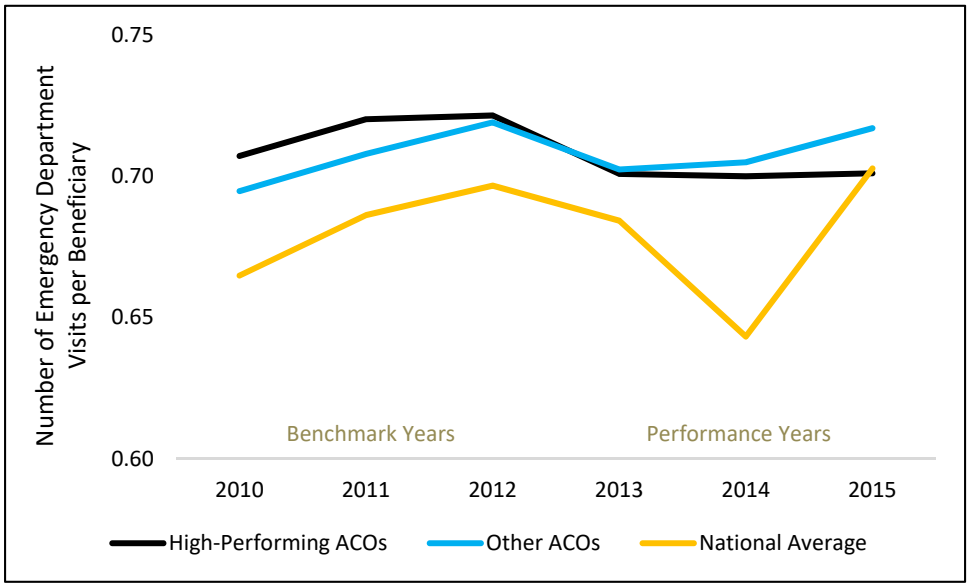
Source: OIG analysis of ACO spending data, 2017.
* Data for skilled nursing facility admissions available for 2013 to 2015 only.

Exhibit G-3: Average Number of Primary Care Visits per Beneficiary, 2010 to 2015



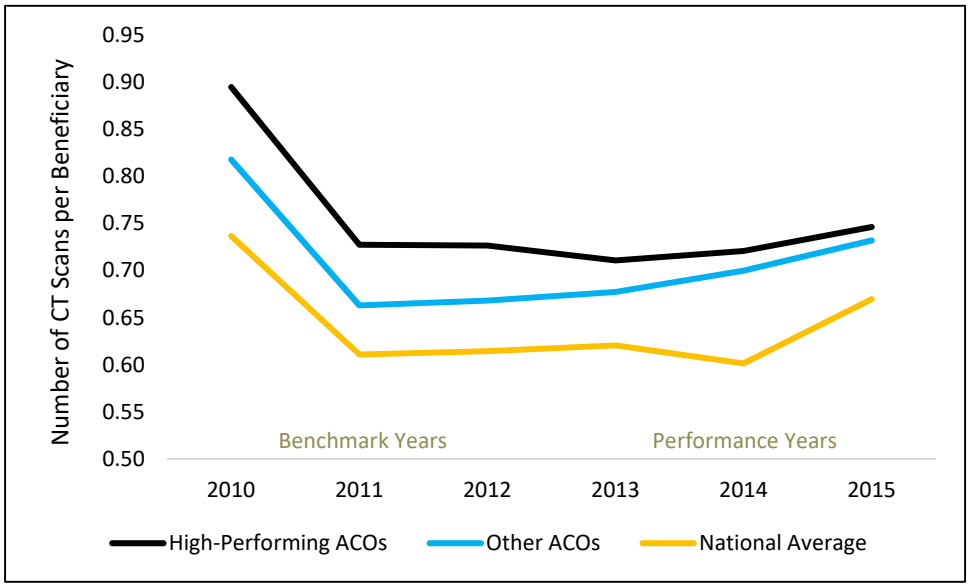
Source: OIG analysis of ACO spending data, 2017.

Exhibit G-4: Average Number of Emergency Department Visits per Beneficiary, 2010 to 2015



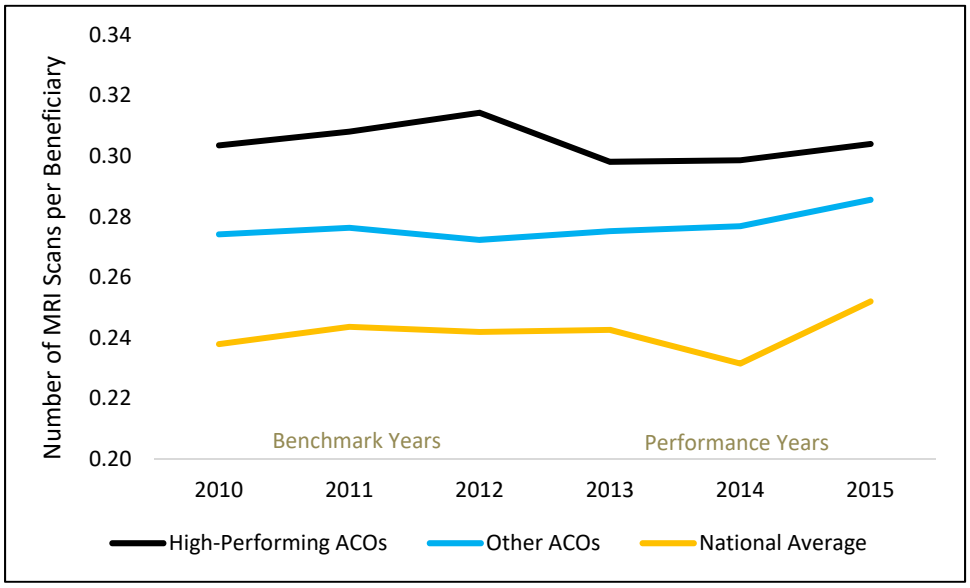
Source: OIG analysis of ACO spending data, 2017.

Exhibit G-5: Average Number of CT Scans per Beneficiary, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

Exhibit G-6: Average Number of MRI Scans per Beneficiary, 2010 to 2015



Source: OIG analysis of ACO spending data, 2017.

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