

SECOND EVALUATION REPORT

Next Generation Accountable Care Organization Model Evaluation

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Introduction

Building on earlier accountable care organization (ACO) initiatives, the Centers for Medicare & Medicaid Services (CMS) launched the Next Generation Accountable Care Organization (NGACO) model through the Center for Medicare & Medicaid Innovation (CMMI) in January 2016. The NGACO model tests whether stronger financial incentives for ACOs, paired with tools to support patient engagement and care management, can improve health outcomes and lower expenditures for Medicare fee-for-service (FFS) beneficiaries. A key attribute of the NGACO model is a higher level of shared financial risk and reward than what is available under other Medicare ACO models, including the Medicare Shared Savings Program (SSP), or preceding Pioneer ACO model. There are three cohorts of NGACOs, which launched in successive performance years (PYs) of the model—2016 (PY1), 2017 (PY2), and 2018 (PY3)—with all cohorts running through December 2020.

Under the NGACO model, CMS establishes quality standards and sets a spending benchmark for each ACO every performance year based on historical spending for ACO-aligned beneficiaries. As an incentive to participate and to improve the efficiency of care provided to their aligned beneficiaries, NGACOs earn a share of savings from CMS for keeping Medicare spending for their beneficiary population below the benchmark and meeting quality standards. However, if spending exceeds the benchmark, then NGACOs must pay a portion of the losses. NGACOs can choose between two levels of financial risk—partial risk (liable for 80 percent savings/losses) or full risk (liable for 100 percent of savings/losses).

CMS aligns FFS Medicare beneficiaries to an NGACO if the plurality of their medical encounters in an alignment period were with an ACO provider (claims-based).¹ FFS beneficiaries may also voluntarily align to NGACOs. Alignment of beneficiaries with NGACOs is *prospective*, allowing NGACOs to know which beneficiaries are aligned to the ACO at the beginning of every performance year. Regardless of alignment, beneficiaries remain free to see any Medicare provider of their choice. Starting in PY2, beneficiaries were eligible to receive a \$25 Coordinated Care Reward if they visited an NGACO provider for their annual wellness visit (AWV).

NGACOs were also able to apply any of three benefit enhancements in PY1 and PY2. Designed to reduce spending through improved care coordination for aligned beneficiaries, these include:

- [Three-day skilled nursing facility \(SNF\) waiver](#), which allows direct SNF admissions without a qualifying three-day hospital stay
- [Telehealth expansion waiver](#), which permits telemedicine services to originate in the patient's home and authorizes coverage of telemedicine services to patients in non-rural areas
- [Post-discharge home visit waiver](#), which allows a limited number of home visits after hospital discharge from a licensed clinician under the general supervision of an NGACO provider

NORC is continuing to conduct an independent mixed-methods evaluation of the NGACO model. Building on our [First Annual Report](#), this second report includes the model's cumulative impact in PY1

¹ The alignment period is a 24-month period prior to the performance year. For more details on the alignment periods for the second performance year evaluation, please see Appendix Exhibit C4.

and PY2 on measures of Medicare spending, utilization, and quality of care. We additionally present model-wide and cohort-level impacts in PY2 alone.

In its first two years, the NGACO model was associated with a modest and statistically significant decline in gross Medicare spending (-0.6 percent), and a non-significant increase in net Medicare spending (+0.4 percent) after accounting for CMS' shared savings payouts to NGACOs. Reductions in post-acute care spending contributed to the modest model-wide decline in gross Medicare spending. The NGACO model was not associated with notable changes in quality of care. Both the 2016 NGACO cohort and the 2017 NGACO cohort showed gross Medicare spending declines in their first year in the model. However, the 2016 cohort did not reduce spending in its second year. The impacts associated with the second year of the 2017 cohort and for the 2018 cohort will be presented in a subsequent evaluation report.

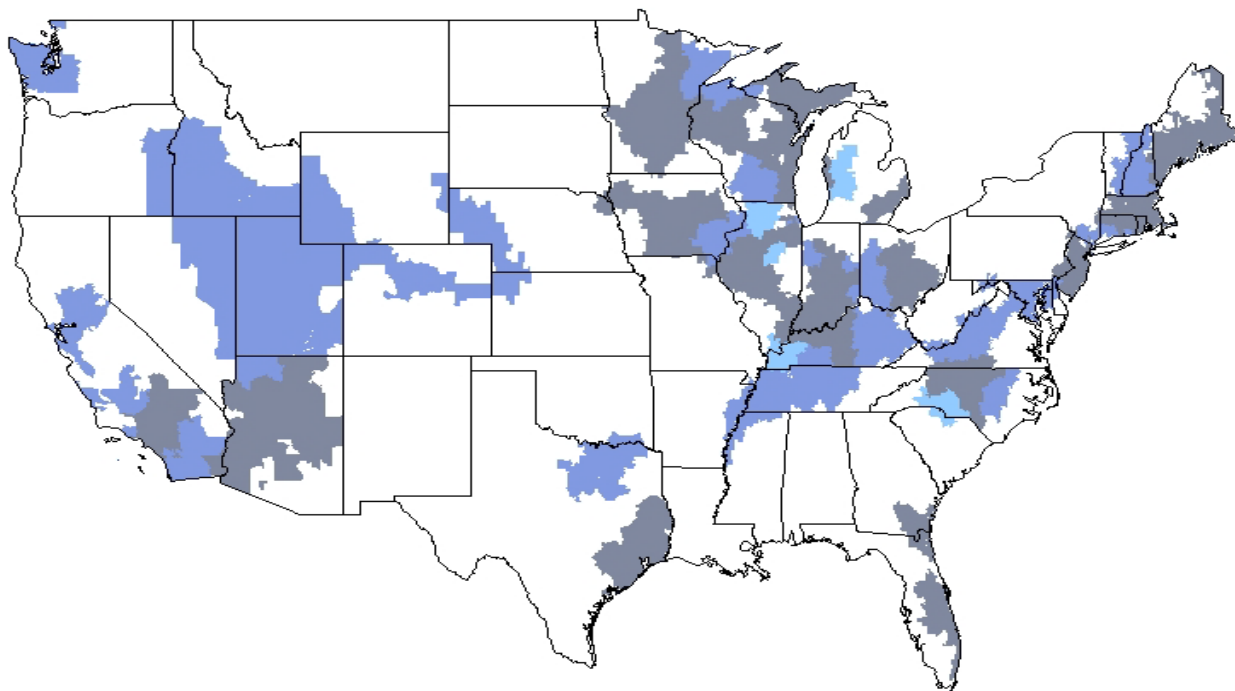
Overview of ACOs Participating in the Model in Performance Years 1 and 2

This report focuses on the full sample of 46 NGACOs that participated in the model in PY1 (2016) and PY2 (2017). In PY1, there were 18 NGACOs in the model's 2016 cohort. The model had 44 NGACOs in PY2, of which 28 newly joined as the 2017 cohort and 16 2016 cohort NGACOs continued from PY1 (two dropped out of the model from the prior year). Appendix A provides a list of the model's common terms and acronyms. Appendix B lists the names and abbreviations of the NGACOs that participated in the model in PY2.

As shown in Exhibit 1, in PY1 and PY2, there were 1.71 million Medicare beneficiaries aligned with 46 NGACOs, spanning 114 hospital referral regions (HRRs) (all shaded areas) and 31 states.² Of these, 1.23 million beneficiaries were aligned with 44 NGACOs that spanned 109 HRRs (areas shaded in light and dark blue) in PY2. The 2017 cohort of NGACOs that entered in PY2 included some ACOs that were in HRRs previously inactive in PY1 (areas shaded in light blue) as well as some ACOs whose HRRs overlapped with 2016 cohort NGACOs continuing from the first performance year (areas shaded in dark blue). NGACOs and their beneficiaries were predominantly located in the Southwest, Northeast, and Midwest.

² We defined an NGACO's market as hospital referral regions with 1 percent or more of the NGACO's aligned population in a performance year

Exhibit 1. Market Areas of NGACO Participants in PY1 and PY2



SOURCE: NORC analysis of the 2016 and 2017 NGACO beneficiary file from the program analysis contractor.

NOTES: An NGACO's market area within a given performance year was defined as the collection of HRRs containing at least 1 percent of the NGACO's aligned population in the year. HRRs in the exhibit were shaded to denote year(s) of activity. HRRs in light blue denote areas where 2016 cohort NGACOs were active in PY1 but inactive in PY2; HRRs in dark blue indicate areas where only 2017 cohort NGACOs were active in PY2; and HRRs in grey indicate areas where 2016 and 2017 cohort NGACOs were active in PY1 and PY2.

Exhibit 2 summarizes the number of NGACOs across cohorts in PY1 and PY2 and the providers therein. NGACO providers include individual practitioners and facilities, which either are deemed “participating” or “preferred.”

- **Participating providers** are the set of primary care and select specialist providers that CMS uses to determine beneficiary alignment and set financial benchmarks. The large number of participating providers reflects the requirement that NGACOs must have a minimum of 10,000 aligned beneficiaries in a performance year. The majority of participating providers were primary care providers, while specialists accounted for two-fifths of participating providers. Two-thirds of NGACO participating providers previously participated in Medicare SSP or Pioneer ACOs. Our estimated impacts of the NGACO model are incremental to the observed participation of NGACO providers in other Medicare ACOs pre-implementation.
- **Preferred providers and facilities** extend an NGACOs' capacity to deliver care to aligned beneficiaries but do not contribute to alignment of beneficiaries. Like participating providers, preferred providers and facilities may use benefit enhancements or opt for their NGACO's payment arrangements. Specialists were more likely to be preferred than participating providers. Skilled nursing facilities were the most common type of facility affiliated with NGACOs.

Exhibit 2. Participating and Preferred Providers and Facilities in PY1 and PY2

	PY1 (2016)	PY2 (2017)		
	2016 Cohort	2016 Cohort	2017 Cohort	Model-Wide
Number of NGACOs	18	16	28	44
Total Number of Participating Providers	16,443	16,935	28,215	45,150
Median Number of Participating Providers per ACO (Smallest-Largest)	922 (120-2,638)	966 (184-2,395)	571 (89-4,539)	618 (89-4,539)
Percent Specialist Participating Providers	41%	32%	39%	37%
Percent Participating Providers Previously in Medicare ACOs	64%	58%	66%	63%
Total Number of Preferred Providers	14,627	8,478	18,073	26,551
Median Number of Preferred Providers per NGACO (Smallest-Largest)	320 (0-3,296)	471 (0-1,886)	180 (0-3,149)	325 (0-3,149)
Percent Specialist Preferred Providers	44%	44%	52%	49%
Number of Facilities	775	1,171	1,954	3,125
Median Number of Facilities per NGACO (Smallest-Largest)	43 (0-174)	53 (7-183)	27 (2-588)	33 (2-588)
Percent Skilled Nursing Facilities as % of Facilities	58%	65%	63%	64%

SOURCE: NORC analysis of NGACO provider data for PY1 and PY2, CMS data on participating and preferred providers in the NGACO model.

NOTES: Participating providers are individual practitioners who may contribute to beneficiary alignment; preferred providers partner with ACOs but do not contribute to beneficiary alignment. Facilities may be either participating or preferred facilities.

NGACO Model Evaluation Conceptual Framework

The framework shown in Exhibit 3 depicts how NGACO model features and incentives—in tandem with NGACO operations—influence their providers’ delivery of care and aligned beneficiaries’ receipt of care, which ultimately impact the NGACO model’s outcomes. The conceptual framework will evolve in future reports, as more is known about NGACOs. It is based on existing literature and findings from previous ACO initiatives and considers the driver diagrams developed by individual NGACOs. It also illustrates how model features such as risk level and payment mechanism interact with NGACO operations to influence Medicare spending, utilization, or the quality of health services. All of these factors operate within and interact with the NGACO’s organizational and market contexts. Given the interdependencies of the key model domains, the framework depicts these concepts—with each comprising multiple specific factors or “drivers” within them—as a system of interlocking gears that affect the NGACOs’ overall operations and outcomes.

Exhibit 3. Evaluation Conceptual Framework: Workings of NGACOs

The framework in Exhibit 3 considers how the organizational and market context of an NGACO is related to its provider network and operations; its aligned beneficiaries; and the outcomes observed under the model. Provider composition in the NGACO is determined by organizational decisions to include providers as well as choices to participate by individual providers typically in the NGACO's locality. NGACO operations related to its providers and care delivery often include approaches used to engage providers; recruitment and retention of ACO providers; care management; and information technology (IT) and analytics capabilities. Provider composition in turn determines beneficiary alignment with the NGACO and the NGACO's financial benchmark. Characteristics of aligned beneficiaries such as health status and demographics influence utilization, spending, and quality under the model. The preferences of beneficiaries aligned with NGACOs may influence reliance on NGACO providers or use of out of network providers.

The interlocking gears in Exhibit 3 show that relationships among the constructs represented in the diagram are not unidirectional and may be subject to ongoing adjustments. For example, following beneficiary alignment, an NGACO may modify its care management operations early in a performance year to more proactively target patients with cardiovascular disease or include more cardiac specialists among its preferred providers. Operational changes may in turn reduce the likelihood of high spending in cardiac care or improve expected shared savings for the NGACO.

NGACO elections around model features, provider network and care delivery are posited to influence beneficiary outcomes regarding Medicare spending, utilization and quality, as well as shared savings. NGACOs consider financial benchmarks as well as organizational and market contexts to annually elect model features such as risk level, payment mechanisms, and benefit enhancements. Thus an ACO's operations may evolve over time in response to its financial benchmark and changes in its organizational or market context. NGACO decisions to continue in the model may depend on the realization of shared savings.

We have found that NGACOs may make a variety of organizational decisions that dynamically affect these inter-relationships. Examples of NGACO operations include:

- Provider composition (e.g., removing specialists from their participating network);
- Provider engagement (e.g., requiring providers to directly accept more risk);
- ACO staffing (e.g., hiring more care managers);
- Approaches used in care management (e.g., moving from solely telephonic to more in-person services);
- Health information technology (HIT) (e.g., adopting one electronic health records system);
- Data capabilities and analytics (e.g., hiring more in-house data-analytics staff); and
- Beneficiary engagement activities that are integral to care management (e.g., patient internet portals, offering home visits).
- NGACOs use a variety of mechanisms (e.g., group education, personalized care plans, HIT and financial management) to influence patient care and ultimately cost, utilization, and quality, but are constrained by limitations on the direct management of beneficiaries' care and influence over provider practices.

For this report, we focus on the impact of the NGACO model on Medicare spending, utilization, and quality-of-care outcomes using a quasi-experimental study design. This approach compares outcomes for beneficiaries aligned with NGACO providers with a comparison group of beneficiaries in the same markets primarily reflecting usual care delivered to FFS beneficiaries not in Medicare ACOs.³ Hereafter in this report, "usual care" will refer to health services delivered to FFS beneficiaries in NGACO comparison groups.

Overview of Methodology to Assess Impact of the NGACO Model on Spending, Utilization, and Quality

Estimation of impact in PY1 and PY2. We used a quasi-experimental difference-in-differences (DID) study design, similar to the design used in NORC's [First Annual Report](#), to evaluate the impact of the NGACO model in PY1 (2016) and PY2 (2017) on select outcome measures of Medicare spending, utilization, and quality of care. In the DID design, detailed in Appendix C, we estimate the impact of the NGACO model (treatment effect) in a performance year by comparing changes in outcomes for NGACO beneficiaries and a comparison group of beneficiaries receiving care before (a baseline period of three

³ While the majority of beneficiaries in the comparison group are seen by providers that do not participate in a Medicare ACO model, 7 to 13 percent of beneficiaries in the comparison group are seen by providers participating in Medicare SSP.

years) and after the launch of the model. The comparison group beneficiaries were in the same markets as NGACOs and, like the treatment population, were prospectively attributed to non-NGACO providers using the NGACO model's beneficiary alignment rules. The baseline period for both the NGACO and comparison groups helps establish the expected outcomes for the NGACO group in a performance year absent the model, against which the treatment effect is estimated. Because the baseline periods for the 2016 cohort (2013–2015) and 2017 cohort (2014–2016) differed, we assessed impacts separately for each cohort and aggregated them to obtain model-wide impact estimates. After the First Annual Report, we revised the comparison group to ensure that we determined both NGACO and comparison beneficiaries by *prospective attribution alone* to NGACO and non-NGACO providers, respectively, as detailed in Appendix C.⁴ While we do not present revised PY1 impact estimates in this report, we used them for estimating cumulative impact estimates in PY1 and PY2. We estimated cumulative impacts across NGACO cohorts and performance years by proportionately weighting the impact estimates from the cohort-level DID models, computing both per beneficiary per year (PBPY) and percentage impacts. We present methodological details of our approach for estimating the cumulative impacts in Appendix C.

To ensure that comparison group beneficiaries were similar to the NGACO aligned beneficiaries in the same markets, we utilized propensity score weighting to improve balance between the groups. We balanced the two groups on a variety of domains, including beneficiary demographic characteristics and disease burden, as well as community-level socio-economic characteristics. We carried out this balancing effort in each NGACO and in each performance and baseline year (see Appendix C for more details).

Outcome measures. Our primary outcome of interest was total Medicare Parts A and B spending, both before (gross impact on spending) and after (net impact on spending) netting out shared savings payouts to the NGACOs. To understand which changes in care patterns might be contributing to any observed impact on total Medicare spending, we estimated impacts for seven categories of Medicare spending and 11 utilization measures across care settings and professional services. Finally, to understand whether the NGACO model enhanced or preserved quality of care, we estimated impacts for three claims-based quality-of-care measures. We report PBPY impacts for spending measures and per 1,000 beneficiaries per year (BPY) for utilization and quality-of-care measures. We also report the magnitude of impacts as a percentage relative to the expected outcome for the NGACO group in the performance year, absent the model. We consider outcomes uninterpretable if the trends are not parallel between the NGACO and comparison groups in the baseline period; these measures are indicated with the § symbol in the tables below and impact estimates are not reported. Impact estimates were interpretable for total Medicare spending and quality-of-care measures, but uninterpretable for some categories of Medicare spending and utilization measures from failure in the parallel trends assumption. Most NGACOs participated in Medicare SSP or Pioneer during the evaluation's baseline period, including two thirds of NGACO providers. NGACOs' base period participation in Medicare ACOs may have contributed to the failure of the parallel trends assumption observed for several outcome measures. See Appendix C for more information about the parallel trends assumption and tests.

⁴ We retained comparison beneficiaries who were retrospectively assigned to Medicare SSP ACO providers instead of excluding them (as was done in the First Annual Report). Hence, a portion of the revised comparison group beneficiaries in baseline and performance years included beneficiaries final assigned to Medicare SSP ACOs (7-13 percent).

Cumulative Impact of the NGACO Model in the First Two Performance Years (2016-2017)

In this section, we present the cumulative impact of the NGACO model in PY1 and PY2, model-wide and for the 2016 cohort. We additionally present model-wide and cohort-level impacts for PY2. We first present estimated impacts for total Medicare spending, followed by impacts for Medicare spending categories, utilization, and quality-of-care measures.

Our evaluation of the impact of NGACO model cumulatively in PY1 and PY2 included 1.71 million NGACO beneficiaries—56 percent of whom were aligned with the 2016 cohort of NGACOs in PY1 or PY2, and 44 percent of whom were aligned with the 2017 cohort of NGACOs in PY2. For both cohorts, descriptive characteristics of NGACO beneficiaries and propensity score-weighted comparison beneficiaries across baseline periods and PY2 were largely similar. See Appendix Exhibit D.1 (2016 cohort and comparators) and Exhibit D.2 (2017 cohort and comparators).⁵ Because two-thirds of NGACO providers and their attributed beneficiaries in the baseline period were in other Medicare ACOs, the estimated NGACO impacts should be interpreted as incremental effects over the impacts of prior Medicare ACO programs.

In Exhibit 4, we summarize the cumulative impact in PY1 and PY2 of the NGACO model on gross and net Medicare spending, model-wide and for the 2016 cohort.⁶ We also present the model-wide and cohort-level impacts in PY2 on gross and net Medicare spending. We show the mean adjusted total Medicare Parts A and B spending for the NGACO and comparison groups in the performance and baseline years, contributing to the gross Medicare spending DID estimates.

Before netting out shared savings payouts, the NGACO model across PY1 and PY2 was associated with a significant \$72.06 PBPY reduction (-0.57 percent) in gross Medicare spending, totaling \$123.18 million. Across PY1 and PY2, the NGACO and comparison groups saw reductions in adjusted total Medicare Parts A and B spending from baseline to performance years, with a larger reduction for the NGACO group. Both cohorts' significant gross spending reductions in their first performance year influenced the cumulative model-wide gross spending reductions.

- **Between the two cohorts, the 2017 cohort in PY2 alone accounted for 70 percent of the total decline in cumulative part A and B spending.** In its first year in the model, the 2017 cohort was associated with a significant \$86.32 million decline in gross Medicare spending. By comparison, the 2016 cohort across PY1 and PY2 was associated with a smaller, not statistically significant \$38.60 PBPY reduction (-0.32 percent) in gross Medicare spending, totaling \$36.85 million.

⁵ Using Medicare claims from the Chronic Conditions Data Warehouse, we were able to align 99 percent of beneficiaries determined by the program analysis contractor as aligned with the 44 NGACOs in PY2 as of January 1, 2017. The program analysis contractor is responsible for estimating performance results used to set the benchmark for financial reward or reimbursement. After additional geographic and coverage exclusions by the end of the performance year, our final study sample was 94 percent of the final population used by the program analysis contractor for financial reconciliation.

⁶ We define gross impact on Medicare spending as impact on Medicare Parts A and B spending before considering shared-savings payouts. We obtained net impact on Medicare spending by adding the total shared savings payout (sum of shared savings and losses) to the gross impact on Medicare spending.

In PY2 alone, the NGACO model was associated with a statistically insignificant \$61.81 million reduction (\$50.16 PBPY reduction, -0.40 percent) in gross spending. The decline in this year alone accounts for roughly half of the cumulative gross spending decline in the NGACO model across PY1 and PY2.

- In PY2, the 2016 cohort was associated with a statistically insignificant \$51.35 PBPY increase (+0.43 percent) in gross Medicare spending, totaling \$24.52 million. Whereas the cohort was associated with a gross spending decline in PY1, in PY2, the decline in adjusted spending among aligned NGACO beneficiaries was smaller than the decline among comparison beneficiaries, going from baseline years to PY2.
- In PY2, the 2017 cohort was associated with a significant \$114.37 PBPY reduction (-0.87 percent) in gross Medicare spending.

After accounting for shared-savings payouts, the net impact of the NGACO model on Medicare spending cumulatively across PY1 and PY2 was a statistically insignificant \$54.40 PBPY increase (+0.42 percent), totaling \$92.99 million. Shared savings payouts to NGACOs across PY1 and PY2 exceeded the model's estimated reductions in gross Medicare spending, resulting in the model-wide net spending increase. Shared savings payments to the 2016 cohort over PY1 and PY2 totaled approximately \$131 million, while its total gross spending decline over time equaled \$36.85 million. By comparison, the 2017 cohort realized a gross spending decline of \$86.32 million that covered shared savings payments to the cohort in PY2.

- The 2016 cohort across PY1 and PY2 was associated with a significant increase of \$98.40 PBPY (+0.79 percent) in net Medicare spending, totaling \$93.94 million.
- Model-wide in PY2, the NGACO model was associated with a significant increase in net Medicare spending of \$93.80 PBPY (+0.72 percent), totaling \$115.59 million.
- In PY2, the 2016 cohort was associated with a significant \$244.08 PBPY increase (+1.97 percent) in net spending, totaling \$116.53 million.
- In PY2, the 2017 cohort was associated with a statistically insignificant \$1.25 PBPY reduction (-0.01 percent) in spending, totaling -\$0.94 million.

Exhibit 4. Cumulative Gross and Net Impact of the NGACO Model in PY1 and PY2 (2016 and 2017) on Medicare Spending

Total Medicare Parts A and B Spending	Cumulative Impact in PY1 and PY2 (2016-2017)		Impact in PY2 (2017)		
	Model-Wide	2016 Cohort	Model-Wide	2016 Cohort	2017 Cohort
Number of NGACO beneficiaries	1,709,394	954,605	1,232,215	477,426	754,789
Mean Adjusted Spending (PBPY)					
<i>NGACO Group</i>					
Performance year(s)	\$12,861	\$12,426	\$13,047	\$12,470	\$13,412
Baseline years	\$13,048	\$12,589	\$13,185	\$12,486	\$13,627
<i>Comparison Group</i>					
Performance year(s)	\$13,211	\$12,690	\$13,414	\$12,694	\$13,869
Baseline years	\$13,325	\$12,815	\$13,502	\$12,762	\$13,970

Total Medicare Parts A and B Spending	Cumulative Impact in PY1 and PY2 (2016-2017)		Impact in PY2 (2017)		
	Model-Wide	2016 Cohort	Model-Wide	2016 Cohort	2017 Cohort
Estimated Gross Impact (DID Estimate)					
PBPY estimate (95% confidence interval)	-\$72.06** (-139.29, -4.82)	-\$38.60 (-127.52, 50.31)	-\$50.16 (-127.89, 27.57)	\$51.35 (-66.56, 169.27)	-\$114.37** (-217.04, -11.70)
Aggregate estimate (95% confidence interval)	-\$123.18M** (-238.11M, -8.24M)	-36.85M (-121.73M, 48.03M)	-\$61.81M (-157.59M, 33.97M)	24.52M (-31.78M, 80.81M)	-\$86.32M** (-163.82M, -8.83M)
Percentage impact	-0.57**	-0.32	-0.40	0.43	-0.87**
Shared Savings Paid Out					
Total (\$)	\$216.17M	\$130.79M	\$177.39M	\$92.01M	\$85.38M
Estimated Net Impact (DID Estimate plus Shared Savings Paid Out)					
PBPY estimate (95% confidence interval)	\$54.40 (-12.84, 121.64)	\$98.40** (9.49, 187.32)	\$93.80** (16.07, 171.54)	\$244.08*** (126.16, 320.72)	-\$1.25 (-103.92, 101.42)
Aggregate estimate (95% confidence interval)	\$92.99M (-21.94M, 207.93M)	\$93.94M** (9.06M, 178.81M)	\$115.59M** (19.80M, 211.37M)	116.53M*** (60.23M, 153.20M)	-\$0.94M (-78.44M, 76.55M)
Percentage impact	0.42	0.79**	0.72**	1.97***	-0.01

NOTES: Impact estimates significant at *p<0.1, **p<0.05, and ***p<0.01. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the NGACO and comparison mean adjusted spending in the performance year(s) and baseline years. Mean adjusted spending for the NGACO and comparison groups in the baseline and performance years(s) are the conditional means from the DID regression. Estimated net impact is the difference between the gross impact and CMS' shared savings payouts to NGACOs in the performance years. Significant impacts at the p<0.1 level appear in **bold** in shaded cells. PBPY estimate is the impact estimate per beneficiary per year. Aggregate estimate is impact estimate for all aligned beneficiaries in performance year(s). Percentage impact is relative to expected average Medicare spending for NGACO beneficiaries in performance year(s) absent the model. The reported net impacts did not include the total Coordinated Care Reward payments made by CMS to NGACO beneficiaries in PY2.

Exhibit 5 summarizes the impacts on Medicare spending categories, utilization, and quality-of-care measures cumulatively across PY1 and PY2, model-wide and for each cohort. Model-wide, we noted reductions in spending in select post-acute care settings, mixed utilization results across settings, and no changes in quality of care. These include the following key findings across care settings:

- **No impact on acute care hospitals:** There were no significant reductions in acute care hospital facility spending or acute care stays, cumulatively across the first two years (-0.39 percent) or for PY2 (-0.28 percent) or for either cohort.
- **Relative increase in SNF stays with no significant change in SNF spending:** Model-wide, both cumulatively and in PY2, NGACOs had a smaller decline in SNF stays relative to the comparison group, which had a larger decline. Thus, there were significant *differential increases* in SNF stays, except for the 2016 cohort in PY2. However, there were no significant impacts on SNF days or reductions in SNF spending.
- **Reduction in payments to other post-acute care facilities:** Spending in other post-acute care facilities (inpatient rehabilitation facilities and long-term care hospitals) decreased significantly in the model-wide cumulative results (-3.48 percent), in PY2 (-3.58 percent), and for the 2017 cohort (-5.27 percent).

- **Model-wide across PY1 and PY2, the intensity of services provided within home health episodes decreased:** Model-wide across PY1 and PY2, the intensity of services provided within home health episodes, as defined by the number of home health visits, declined significantly (-1.25 percent). However, cumulative model-wide impacts for home health spending and home health episodes were uninterpretable.
- **The 2017 cohort reduced outpatient facility spending in PY2:** There were no significant impacts on outpatient facility spending, except for the 2017 cohort in PY2 (-1.97 percent significant reduction). There were no significant impacts on emergency department visits (including observation stays).
- **No spending impact for professional services but some changes in utilization patterns:** There were no significant impacts on professional services spending. The number of beneficiaries receiving annual wellness visits increased significantly, model-wide and for both cohorts and PYs. Evaluation and management (E&M) visits significantly decreased for the 2017 cohort in PY2 (-0.85 percent). There were no notable impacts on number of procedures, tests, or imaging services furnished by professionals and outpatient facilities.
- **No impact on quality-of-care measures:** For the most part, there were no significant impacts on beneficiaries with hospitalizations for ambulatory care sensitive conditions (ACSCs), unplanned 30-day readmissions, or unplanned SNF readmissions; the sole exception was the 2016 cohort in PY2, which showed significant reductions in beneficiaries with hospital readmissions from SNFs (-2.96 percent).

Exhibit 5. Cumulative Impact of the NGACO Model in PY1 and PY2 (2016 and 2017) on Medicare Spending Categories, Utilization, and Quality of Care

Outcome	Cumulative Impact in PY1 and PY2 (2016-2017)				Impact in PY2 (2017)					
	Model-Wide		2016 Cohort		Model-Wide		2016 Cohort		2017 Cohort	
	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact
Spending Across Care Settings (PBPY)										
Acute care hospital	-15.9	-0.39	-17.43	-0.44	-11.23	-0.28	-6.88	-0.18	-13.98	-0.33
SNF	-7.63	-0.74	-17.62	-1.715	-8.07	-0.79	-28.75	-2.96	5.01	0.48
Other post-acute care facility	-15.17***	-3.48***	-10.57	-2.27	-14.76**	-3.58**	-4.93	-1.13	-20.98***	-5.27***
Outpatient facility	\$	-	\$	-	-22.75	-0.99	12.83	0.56	-45.26***	-1.97***
Professional services	-0.8	-0.03	5.07	0.17	-7.49	-0.25	-6.32	-0.22	-8.23	-0.26
Home health	\$	-	\$	-	\$	-	\$	-	-1.51	-0.19
Durable medical equipment	\$	-	5.07	2.01	\$	-	7.21	3.12	\$	-
Utilization (per 1,000 BPY)										

Outcome	Cumulative Impact in PY1 and PY2 (2016-2017)				Impact in PY2 (2017)					
	Model-Wide		2016 Cohort		Model-Wide		2016 Cohort		2017 Cohort	
	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact	Impact Estimate	% Impact
Acute care stays	0.89	0.28	0.28	0.09	1.03	0.33	0.05	0.02	1.65	0.53
SNF stays	2.25***	3.39***	2.24***	3.11***	2.05***	3.43***	1.72	2.80	2.26***	3.84***
SNF days	4.6	0.29	-12.54	-0.71	8.21	0.61	-20.38	-1.51	26.29	1.97
ED visits and observation stays	§	-	§	-	-2.45	-0.43	2.39	0.41	-5.51	-0.99
E&M visits	§	-	§	-	§	-	§	-	-119.80***	-0.85***
Procedures	-2.72	-0.03	-35.4	-0.37	28.11	0.28	11.5	0.12	38.61	0.37
Tests	§	-	§	-	§	-	§	-	23.71	0.09
Imaging services	§	-	8.66	0.17	§	-	-10.65	-0.22	§	-
Beneficiaries with AWV	40.44***	12.43***	45.57***	14.87***	48.87***	14.08***	72.45***	21.06***	33.96***	9.73***
Home health episodes	§	-	§	-	0.75	0.54	0.47	0.30	0.93	0.55
Home health visits	-49.60*	-1.25*	-58.79	-1.48	-29.81	0.75	-16.92	-0.43	-37.97	-0.95
Quality of Care (per 1,000 BPY)										
Beneficiaries with ACSC hospitalizations	0.39	0.93	0.51	1.19	0.19	0.44	0.09	0.20	0.25	0.60
Beneficiaries with unplanned 30-day readmissions	0.19	0.12	-0.07	-0.04	-0.64	-0.42	-2.45	-1.60	0.51	0.34
Beneficiaries with hospital readmissions from SNF	-0.16	-0.09	-2.17	-1.19	-0.66	-0.36	-5.50*	-2.96*	2.35	1.28

NOTES: Impact estimates significant at *p<0.1, **p<0.05, and ***p<0.01. Impact estimate is the difference-in-differences estimate. Percentage impact is relative to expected average outcome for the NGACO group in performance year(s) absent the model. Significant and interpretable percent impacts at p<0.1 level appear in **bold** in shaded cells. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption across baseline years. ACSC = ambulatory care sensitive conditions; AWV = annual wellness visit; ED = emergency department; E&M = evaluation and management; BPY = per beneficiary per year; SNF = skilled nursing facility. "Other post-acute care facility" includes inpatient rehabilitation facilities and long-term care hospital facilities. Outpatient facility includes hospital outpatient, ED, ambulatory surgical centers, and comprehensive outpatient rehabilitation facilities. Other post-acute care facility includes inpatient rehabilitation facility and long-term care hospital facility. Procedures, Tests, and Imaging Services include counts of services rendered by professionals and outpatient facilities.

Discussion

Cumulatively, the NGACO model was not associated with reduced net Medicare spending in its first two years. NGACO providers reduced gross Medicare spending for their aligned beneficiaries by an estimated \$123 million in aggregate (-0.57 percent) compared to similar comparison beneficiaries. After accounting for shared savings payments, the estimated net impact on Medicare spending was a non-significant spending increase of \$93 million in aggregate (+0.4 percent). Notably, NGACOs had no effect on utilization or spending for hospitalizations, an area of large savings potential. Nonetheless, the model did appear to have an impact on certain categories of spending and utilization.

Post-acute Spending and Utilization

The NGACO model seemed to influence post-acute spending and utilization in several ways. NGACOs achieved gross reductions in post-acute care spending for inpatient rehabilitation facilities and long-term care hospitals, and a relative increase in SNF stays over the comparison group. Based on qualitative components of the NGACO evaluation, we learned that NGACO administrators in PY1 focused on reducing inefficient use of SNF, home-health, and other post-acute care through their preferred provider networks and, to a lesser extent, the 3-day SNF waivers. The quantitative evaluation results may reflect substitution of more intensive post-acute care settings to lower acuity options, consistent with previous ACO evaluations that found a reduction in discretionary post-acute spending.⁷ Changes in other post-acute care spending may be relatively easy to generate, whereas developing ongoing referral relationships with SNFs and generating subsequent efficiencies likely requires more than a year. Supporting this possibility, the 2016 cohort did achieve a reduction in SNF readmissions in its second performance year.

Annual Wellness Visits

We observed significant increases in NGACO beneficiaries with annual wellness visits. This increase could be occurring for two reasons: 1) a \$25 Coordinated Care Reward was offered to beneficiaries in PY2 in exchange for receiving an annual wellness visit; and 2) in interviews conducted in 2016, many NGACOs in PY1 reported using annual wellness visits as a means to better engage with attributed beneficiaries and address their gaps in care.

Differences in Impacts between Cohorts

Both cohorts had gross spending reductions of nearly 1 percent in their respective first years in the model, but the 2016 cohort did not sustain this reduction into its second performance year. The comparison group for the 2016 cohort NGACOs in PY2 had lower average spending than the comparison group for the 2017 cohort. The 2017 cohort also showed significant reductions in outpatient facility spending as well as E&M visits, contrary to the 2016 cohort. One possible explanation for this result may be that care coordination activities of the NGACOs in the 2017 cohort differ from the 2016 cohort in ways that may be preventing excessive E&M visits. We will continue to explore differential performance by cohort and potential explanations in future reports.

⁷ McWilliams, J. Michael, Lauren G. Gilstrap, David G. Stevenson, Michael E. Chernew, Haiden A. Huskamp, and David C. Grabowski. "Changes in post-acute care in the Medicare Shared Savings Program." *JAMA Internal Medicine* 177, no. 4 (2017): 518-526.

The Evolution of Usual Care

For a given cohort, reductions in gross Medicare spending are relative to the spending level and trend in a cohort's comparison group, which experiences usual care under FFS Medicare in a cohort's market area. The decline in Medicare spending for comparison beneficiaries aligned from baseline to performance years could have resulted from changes in usual care in FFS Medicare. These recent reductions in spending among the comparison group raise the bar for the NGACO model to achieve savings, compared to evaluations of prior Medicare ACO initiatives. There are three likely reasons for this trend. First, since many NGACOs were former Pioneer or SSP ACOs, the clinical or operational changes implemented under NGACO may not have been sufficient to substantially change care relative to their pre-NGACO participation. In addition, the brief time within the model (1-2 years) may not have been sufficient for intended changes to be fully implemented or to take full effect. Second, growing proportions of beneficiaries in the comparison group received much of their care in performance years from providers in SSP ACOs because of the growing footprint of that program.⁸ Spending among comparison beneficiaries may decline if care coordination and other activities routinely used among ACOs becomes a more common feature of NGACO markets. Third, CMS's value-based programs as well as other shared savings and episode-based care initiatives increasingly link FFS Medicare payments to quality and value. The rise and confluence of these value-based programs may be influencing utilization patterns in similar ways as ACOs.^{9,10} In sum, our evaluation considers the real-world context of the NGACO model. NGACOs deliver care concurrent with other payment and delivery system transformation efforts affecting Medicare beneficiaries as a whole.

The NGACO model aims to reduce Medicare spending through greater organizational rewards and risks to elicit changes in provider financial alignment and care delivery. These changes in care and their impacts are driven in part by organizational and contextual factors such as market characteristics, provider networks, and beneficiary populations. Modest impacts of the NGACO model cumulatively and in PY2 alone likely reflect wide variations in impacts across individual NGACOs, as was observed in PY1.

Variation in results across NGACO cohorts and performance years will be better illuminated and discussed in greater detail in our Third Evaluation Report, which will incorporate analyses of the model's third performance year, including qualitative and survey data as well as data on NGACOs' markets and operational contexts. We will apply rigorous mixed-methods analyses to develop a deeper understanding of how contextual, organizational, and provider-related factors are associated with spending and quality for NGACOs. We will also present impacts for individual NGACOs and discuss factors influencing variations in impact across NGACOs. Eventually, our goal is to identify factors associated with ACOs that reduce spending or improve quality to inform the development of future value-based models.

⁸ McWilliams, J. Michael. "Savings from ACOs—building on early success." *Annals of Internal Medicine* 165, no. 12 (2016): 873.

⁹ CMS's value-based programs include (i) Hospital Value-Based Purchasing Program, (ii) Hospital Readmission Reduction Program, (iii) Hospital Acquired Conditions Reduction Program, (iv) Physician Value-Based Modifier, (v) End-Stage Renal Disease Quality Incentive Program, (vi) Skilled Nursing Facility Value-Based Program, (vii) Home Health Value-Based Program.

¹⁰ We controlled for participation in overlapping shared-savings CMMI initiatives in our multivariate analyses, but did not control for participation in overlapping episodic CMMI initiatives because it contributed to failure of parallel trends across baseline years for total Medicare spending.