Fourth Evaluation Report

Next Generation Accountable Care Organization (NGACO) Model Evaluation

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Report 4

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Executive Summary

Abstract: As of the fourth performance year, the Next Generation Accountable Care Organization (NGACO) model was associated with $667 million in gross savings in Medicare Parts A and B spending. After factoring in $909 million in shared savings and other payouts to NGACOs, however, the model was associated with $243 million in net losses. On average, NGACOs located in markets with higher per capita Medicare Parts A and B expenditures achieved higher spending reductions, as they had greater opportunities to improve efficiency. Some NGACOs operating in markets with lower Medicare expenditures had pathways to spending reductions. The amount of total spending reductions by NGACOs of differing organizational affiliation were similar, but there were notable differences in the care settings where reductions occurred. NGACOs primarily reduced spending in settings other than their own organizational setting. Physician practice-affiliated NGACOs reduced acute care spending, but did not reduce spending for professional services. By contrast, NGACOs affiliated with hospitals or integrated delivery systems (IDS) reduced spending for professional services. There were also observed differences in the timing of spending reductions, with physician practice-affiliated NGACOs and physician-hospital partnerships lowering spending earlier in the model compared to hospital/IDS-affiliated NGACOs. This may reflect physician practice-affiliated NGACOs' focus on acute care spending, where spending reductions per case may be larger than in other settings.

The Centers for Medicare & Medicaid Services (CMS) Center for Medicare & Medicaid Innovation (CMMI) launched the Next Generation Accountable Care Organization (NGACO) model in January 2016. Accountable Care Organizations (ACOs) are "groups of doctors, hospitals, and other health care providers and suppliers that come together voluntarily to provide coordinated, high-quality care at lower costs to their original Medicare patients." The NGACO model is an advanced alternative payment model (AAPM) that builds on previous CMS ACO initiatives. Three cohorts of NGACOs launched in successive model performance years (PYs)—2016 (PY1), 2017 (PY2), and 2018 (PY3)—with all cohorts to operate through December 2021. In the model's fourth performance year (PY4), 41 NGACOs participated, representing markets across 29 states—12 NGACOs who began in the 2016 cohort, 15 in the 2017 cohort, and 14 in the 2018 cohort. Twenty-one NGACOs exited the model between PY1 and PY3, and no new NGACOs entered in the model in PY4.

Model Overview

The NGACO model includes stronger financial incentives than previous ACO models, as well as the option of using alternative payment flows and specific benefit enhancements; see **Exhibit ES.1** for the model's key features. Our evaluation conceptual model and theories of action posit that an NGACO's market context; its structural characteristics—organizational, provider, and beneficiary; the model features selected; and implementation approaches influence its ability to

achieve spending reductions. These factors affect outcomes directly and indirectly, independently and in concert with one another.

This Executive Summary gives a high-level review of model evaluation findings through the end of 2019, PY4. Following an overview of NGACOs through the model's fourth performance year, we present model-wide impacts on gross and net overall spending and impacts by NGACO cohort, as well as model-wide, cohort-level, and NGACO-level impacts on categories of Medicare spending, utilization, and quality of care. Next, we consider the association between spending impacts and key ACO characteristics related to market context, structural characteristics, and model features. Finally, we present findings from a qualitative comparative analysis describing how ACO characteristics may operate together to achieve reductions in gross Medicare spending.

Exhibit ES.1.   Key Features of the NGACO Model

Providers
- Participating providers, both individual practitioners and facilities, define an NGACO's prospectively aligned beneficiaries and contribute to CMS's calculations on quality and spending.
- Preferred providers may share in ACO savings but are not used for prospective alignment and do not contribute to CMS's quality calculations.

Risk Sharing
- ACO must choose:
  - Partial risk (liable for 80 percent shared savings/losses)
  - Full risk (liable for 100 percent of shared savings/losses)

Alignment
- Prospective alignment: CMS provides NGACOs with the list of beneficiaries they are accountable for at the start of each performance year, unlike Shared Savings Program (SSP) ACOs where alignment is determined retroactively.
- Voluntary alignment: Beneficiaries may choose to align with an NGACO provider.

Payment Mechanism
- NGACOs can choose from one of four payment mechanisms:
  - Traditional fee-for-service (FFS);
  - FFS with a fixed per beneficiary per month infrastructure payment (ISP) to support ACO activities;
  - Population-based payments (PBPs) that give ACOs a fixed percentage of expected FFS claims reductions for PBP providers in prospective monthly payments; or
  - All-inclusive population-based payments (AIPBP), in which the ACO receives all expected FFS claims reductions for AIPBP providers in prospective monthly payments.

Benefit Enhancements
- NGACOs can choose to offer a variety of benefit enhancements:
  - Three-day skilled nursing facility (SNF) waiver allows SNF admissions without a qualifying three-day hospital stay.
  - Telehealth expansion waiver covers patient's home and patients in non-rural areas.
  - Post-discharge home visit waiver allows a nurse visit after hospital discharge.
  - Care managment home visit waiver covers beneficiaries at risk of hospitalizations from a licensed clinician to prevent hospitalization.
  - Chronic disease management reward offers gift card to beneficiaries for participating in a qualifying disease management program.
  - Cost-sharing support for Part B services to reduce eligible beneficiaries' out-of-pocket costs for certain services from NGACO providers that have cost-sharing arrangments with their NGACO.

NGACO Model Participants in PY1–PY4: Market Context, Structure, and Model Features

Our conceptual model posits that factors at the market, structural, and model feature levels may influence NGACO performance. Below, we present a brief overview of NGACO participants along these domains. We explore the association of these factors with performance later in the Executive Summary.

NGACO and Non-NGACO Market Context

- NGACOs operated in markets with more beneficiaries, lower percentages of rural beneficiaries, higher rates of Medicare Advantage (MA) penetration and Medicare ACO penetration, and lower physician practice concentration relative to non-NGACO markets.
- Average spending at baseline and hospital concentration was similar between NGACO and non-NGACO markets.

Structure: Trends in Organizational Characteristics

- The blend of organizational affiliations of participating NGACOs changed over the course of the model with the entry of new NGACOs and exit of ACO from the model.
    - The proportion of integrated delivery systems (IDS) or hospital-based NGACOs shrank from over half of NGACOs in the PY1 to almost 40 percent of participants by PY4.
    - Physician practice-affiliated NGACOs increased from 22 percent in PY1 to 37 percent in PY4.
    - NGACO partnerships between physician practices and hospitals composed roughly one-quarter of NGACO participants across all four performance years.
- Over three-quarters of NGACOs had prior experience in either the Medicare Shared Savings Program (SSP), the Pioneer ACO model, or both. By PY4, two-thirds of NGACOs had six or more years of experience as a Medicare ACO.

Structure: Trends in Provider Characteristics

- The average number of practitioners in NGACO networks increased over the course of the model as NGACOs added providers and new NGACOs joined the model. NGACOs in the 2016 cohort had the largest networks, and the 2018 cohort had the smallest.
- Across all cohorts and performance years, over half of participating practitioners identified as primary care, reflecting an NGACO focus on primary care to manage the needs of aligned beneficiaries.
- Over half the participating practitioners had at least one year of experience with Medicare SSP or Pioneer ACOs before they joined NGACOs, reflecting NGACOs' preference for practitioners with prior experience, as they took on two-sided risk.

- Over half of participating practitioners (between 55 and 77 percent) and beneficiaries (between 61 and 68 percent) who participated in a given performance year remained in the model in the following performance year.
- SNFs remained the most common type of participating facility in PY4, reflecting NGACOs' focus on reducing post-acute care (PAC) spending.

Structure: Trends in Beneficiary Characteristics

- Between PY3 and PY4, the average number of aligned beneficiaries increased by 11 percent for the 2016 cohort and 4 percent for the 2017 cohort, but declined by 1 percent for the 2018 cohort.
- NGACOs had a higher percentage of white beneficiaries and a lower percentage of disabled, dually eligible, and rural beneficiaries relative to comparison FFS Medicare beneficiaries in their market areas in PY4.

Model Features Selected

- In PY4, 32 percent of NGACOs elected 100 percent risk, a lower proportion than in PY2 and PY3, but 34 percent selected PBPs, the highest proportion of any performance year.
- The percentage of NGACOs electing the SNF 3-day rule waiver declined from 93 percent in PY2 to 78 percent in PY4. However, the proportion of beneficiaries and SNF stays covered by the waiver increased among NGACOs that implemented it.
- As in previous performance years, the use of other benefits enhancement waivers remained low in PY4: five NGACOs elected the post-discharge home waiver, and eight or fewer elected the newer waivers.

NGACO Model Impacts on Spending, Utilization, and Quality of Care

Impact on Gross and Net Medicare Spending

One goal of the NGACO model is to improve efficiency in care and reduce total Medicare spending. NGACOs in the model receive shared savings payouts from Medicare to improve efficiency in care and maintain Parts A and B spending for their beneficiaries below their financial benchmark in the model. Our evaluation estimates NGACOs' impact on spending for their beneficiaries relative to a comparison group of beneficiaries getting usual care in their markets. All impacts are considered statistically significant if the p-value is at or below 0.10.

Model-Wide Spending Impacts

- Cumulatively, as of PY4, the model *significantly reduced gross Medicare spending* for Parts A and B by 1.2 percent ($154.7 per beneficiary per year [PBPY] or $666.9M in aggregate, p<0.01).
- However, after accounting for Medicare's shared savings and coordinated care reward (CCR) payments to NGACOs of $909.6M over four years, the NGACO model *significantly increased net Medicare spending* by 0.4 percent ($56.3 PBPY or $242.7M in aggregate, p<0.1); see **Exhibit ES.2**.
    - Discordance between gross and net spending impacts reflects differences in the methodology used to calculate financial benchmarks, compared with methods to evaluate performance relative to a matched comparison group.
    - One-third of NGACOs had evaluation findings discordant with financial benchmark results. Some NGACOs with discrepancies between gross and net spending impact left the model because of financial losses despite success in reducing gross spending; others remained in the model with financial gains despite having increased gross spending.
- In PY4, the model significantly reduced gross Medicare spending by 2 percent ($257.9 PBPY or $310.3M overall, p<0.01) for NGACO beneficiaries, relative to the comparison group. However, after accounting for a total of $432.8M in shared savings payments to NGACOs in PY4, net spending increased by 0.7 percent ($101.8 PBPY or $112.5M overall) that was not statistically significant.

Gross spending reductions generally increased from PY1 to PY4, with larger reductions in PY4 relative to previous performance years, which may reflect the exit of NGACOs that performed poorly and average improvements among NGACOs that remained in the model. Over time, average gross Medicare spending reductions for NGACOs nearly doubled, from about 1.0 percent in PY1 to 1.8 percent in PY4. However, the model's shared savings payments for lower spending continued to offset decreases in spending, resulting in net spending increases that were statistically significant in PY2 and cumulatively.

Medicare Spending and Utilization

Reduction in gross Medicare spending for Parts A and B of 1.2% cumulatively and 2% in the fourth performance year (PY4)

Increase in net spending of 0.4% cumulatively and 0.7% in PY4, accounting for CMS payouts

Exhibit ES.2. Estimated Impacts on Gross and Net Medicare Spending and Estimated Aggregate Impacts for the NGACO Model, Cumulative and by Performance Year
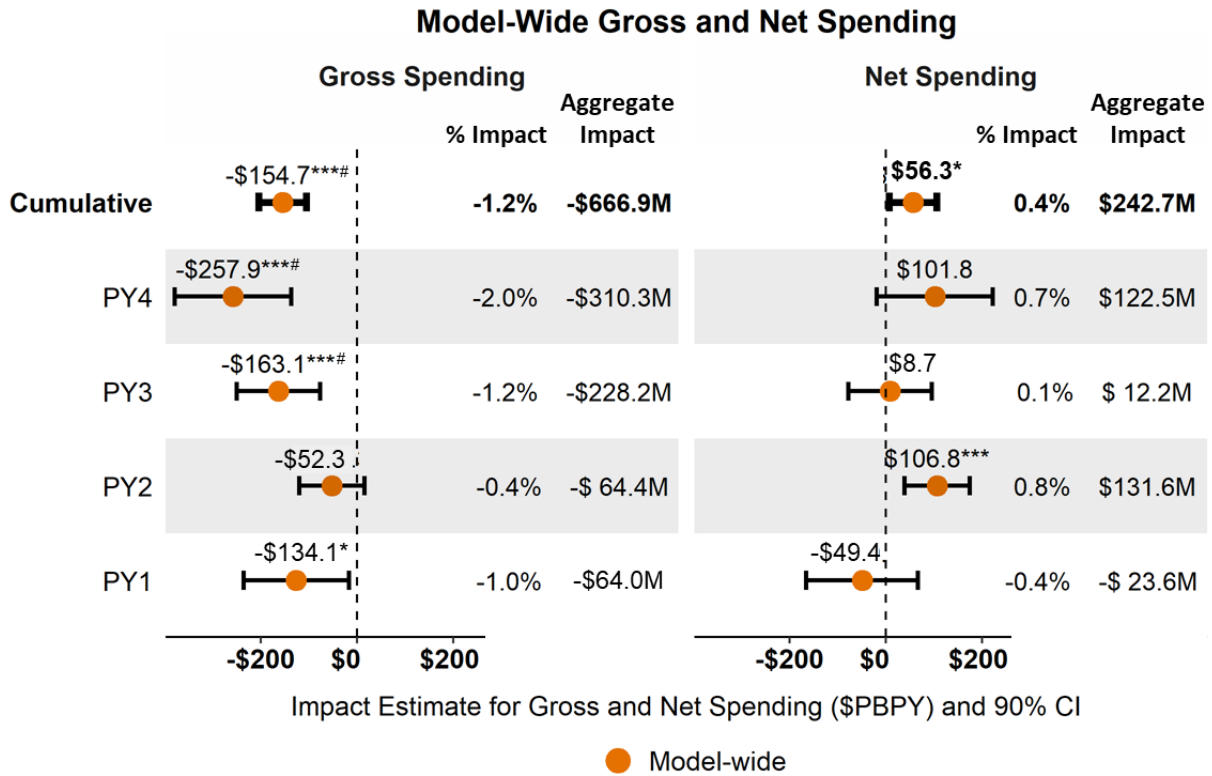
Model-Wide Gross and Net Spending

	Gross Spending				Net Spending		
		% Impact	Aggregate Impact			% Impact	Aggregate Impact
Cumulative	-$154.7****#	-1.2%	-$666.9M	$56.3*	0.4%	$242.7M
PY4	-$257.9****#	-2.0%	-$310.3M	$101.8	0.7%	$122.5M
PY3	-$163.1****#	-1.2%	-$228.2M	$8.7	0.1%	$ 12.2M
PY2	-$52.3	-0.4%	-$ 64.4M	$106.8***	0.8%	$131.6M
PY1	-$134.1*	-1.0%	-$64.0M	-$49.4	-0.4%	-$ 23.6M

Impact Estimate for Gross and Net Spending ($PBPY) and 90% CI

● Model-wide

Impact on Gross and Net Medicare Spending: Differences by Cohort

Estimated spending impacts varied by cohort and over the first four years of the model, as illustrated in **Exhibit ES.3**. The 2018 cohort had the largest gross spending reductions, and the 2016 cohort had the lowest.

Exhibit ES.3. Estimated Impacts on Gross and Net Medicare Spending and Estimated Aggregate Impacts for Each NGACO Cohort, Cumulative and by Performance Year
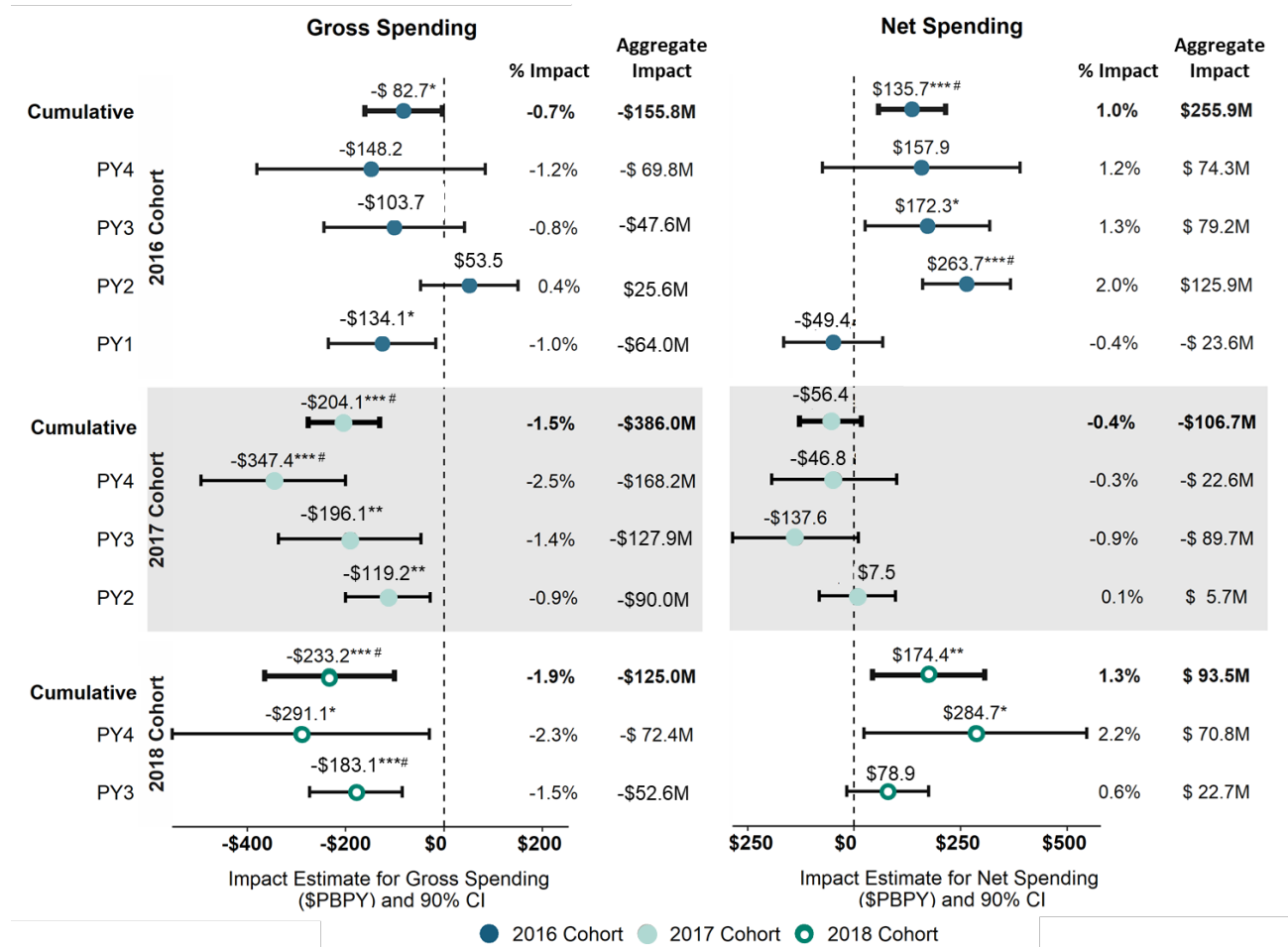
Impact on Gross Medicare Spending: Differences by Beneficiary Subgroup

- At the model level, NGACOs had significant and high gross spending reductions for the beneficiary subgroup with eight or more chronic conditions, both cumulatively (1.5 percent, $456 PBPY) and in PY4 (2.5 percent, $755 PBPY). There were significant and high gross spending reductions for beneficiaries with prior hospitalizations cumulatively (1.2 percent, $410 PBPY).
- NGACOs had significant and large gross spending reductions for non-duals, both cumulatively (1.2 percent, $131 PBPY) and in PY4 (2.2 percent, $245 PBPY).
- There were significant and larger gross spending reductions for white beneficiaries, both cumulatively (1.4 percent, $176 PBPY) and in PY4 (2.3 percent, $298 PBPY). The model did not significantly reduce spending for Black or other racial and ethnic minority groups.

Beneficiary Factors

Larger gross spending reductions for beneficiaries with 8 or more chronic conditions and those with hospitalizations in the prior year.

No significant reduction in spending for beneficiaries who were Black, members of other racial and ethnic minority groups, or dually eligible.

Model-Wide and Cohort-Level Impacts For Spending Categories, Utilization, and Quality of Care

Despite the lack of net savings, the NGACO model and each NGACO cohort saw impacts by category of gross Medicare spending and utilization, particularly in the areas of post-acute care (PAC) and annual wellness visits (AWVs; see **Exhibit ES.4**).

Exhibit ES.4. Estimated Impacts on Categories of Spending and Utilization, Cumulative and in PY4

	Cumulative Spending	Cumulative Utilization	PY4 Spending	PY4 Utilization
Acute Care Hospital	-0.9%	-2.4% for 2018 cohort	-2.3%	-0.8%
Skilled Nursing Facility	-2.0%	-1.0% days, +3.8% stays for 2016 cohort	-4.0%	-2.6% days, +2.0% stays
Other Post-Acute Care	-3.9%	Not measured	-6.0%	Not measured
Outpatient and Emergency Department	-1.5% for 2017 cohort	-1.5% for 2017 cohort	No impact	-2.0% for 2017 cohort
Professional Services	-0.8%	Uninterpretable	-1.6%	Uninterpretable
Annual Wellness Visits		18.1%		22.4%
Home Health	-4.0% for 2018 cohort	-4.7% for 2018 cohort	Uninterpretable	-2.9% episodes
Hospice	-4.0% for 2017, -3.4 for 2018 cohort	Not measured	-6.8%	Not measured

There were no statistically significant model-wide effects in either direction on quality of care concerning ambulatory care-sensitive condition (ACSC)-related hospitalizations, unplanned 30-day hospital readmissions, and readmissions to the hospital after an SNF stay. One exception was the 2018 cohort, which had significant decreases in beneficiaries with ACSC-related hospitalizations—of 3.5 percent in PY4 and 2 percent, cumulatively.

Key Factors Influencing Variations in NGACO-Level Impacts on Spending

Market Factors: NGACOs in markets with the highest per capita Medicare spending levels were associated with larger spending reductions (a 2.6 percent reduction for NGACOs in the highest-spending quintile of hospital referral regions [HRRs] nationally versus a 0.1-1.2 percent reduction for NGACOs in lower-spending quintiles, p<0.05). Very few NGACOs formed in markets with low MA or ACO penetration, and spending reductions were similar across NGACOs above a threshold of MA or ACO penetration (> 15 percent threshold for MA penetration; > 20% threshold for ACO penetration). Spending reductions were also similar across NGACOs in markets of different hospital concentration rates.

Market Factors

Larger average gross spending reductions in markets with highest per capita Medicare spending levels versus markets with lower spending

Structural Factors – Organization: Spending impacts were similar between NGACOs of all organizational affiliations (1-1.2 percent), but care settings where NGACOs reduced spending differed by organizational affiliation. Reduced spending occurred in settings tied to providers other than their own. Physician practice-affiliated NGACOs reduced acute care hospital and outpatient facility spending, while hospital-affiliated NGACOs reduced professional spending; see **Exhibit ES.5**. Physician practice-affiliated NGACOs did not reduce professional spending on average, and physician-hospital partnerships did not reduce outpatient facility spending on average. IDS/hospital system-affiliated NGACOs had modest spending reductions nearly in all care settings.

Structural Factors - Provider Characteristics: NGACOs with more years of average provider Medicare ACO experience were associated with larger spending reductions.

Structural Factors - Beneficiary Characteristics: NGACOs serving populations with more chronic conditions on average were associated with larger spending reductions, whereas those serving very high proportions of beneficiaries with disabilities, dually eligible beneficiaries, and low-income beneficiaries had smaller spending reductions.

Model features: NGACOs choosing 100 percent risk and caps greater than 5 percent were associated with larger average spending reductions (2.2 percent versus 0.2-0.8 percent for NGACOs electing 80 percent risk). NGACOs electing population-based payment mechanisms were associated with larger spending reductions (1.9 percent versus 0.7 percent for NGACOs electing FFS with or without infrastructure payments).

Exhibit ES.5. Estimated Reductions in Medicare Spending Seen in Settings with Highest Share of Costs (Acute Care Hospital, Outpatient Facility, and Professional Services), PY1-PY4 (N=143)
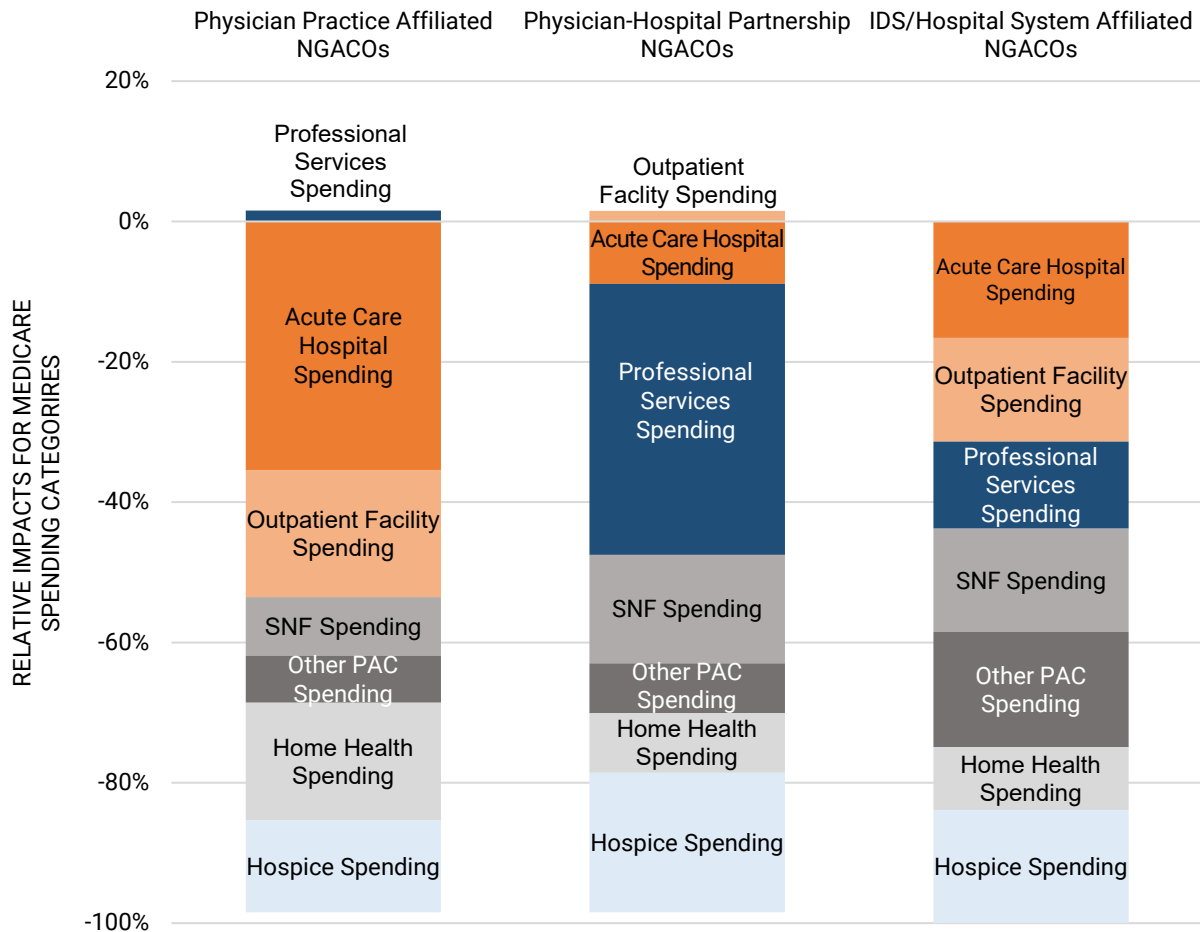
NOTES: Relative impacts for Medicare spending categories are the average impact estimates for the spending categories for NGACOs by organizational affiliation (type), relative to the average gross Medicare spending impact estimate as of PY4. Values above zero reflect increases in a spending category, and values below zero reflect decreases in a spending category relative to total spending impact for each organization type. Professional services include physician, non-physician, and ancillary services (e.g., tests, imaging, ambulance services, Part B drugs administered in physician offices). Other PAC facilities include inpatient rehabilitation facilities and long-term care hospital facilities. Small impacts for durable medical equipment spending are ignored to inform understanding of spending categories influencing total Medicare spending reduction. See Appendix F, Exhibit F.5 for impact estimates on Medicare spending categories, utilization, and quality of care outcomes by organizational affiliation (type).

Pathways to Medicare Spending Reductions: Contextual and Structural Factors

No single factor at the market, structural, or model feature level was necessary for reducing Medicare spending. Our evaluation used qualitative comparative analysis (QCA) to test the hypothesis that combinations of factors influence NGACO spending performance and to describe these combinations or pathways.[1] Pathways considered ACO market environment, organizational affiliation, beneficiary population, and Medicare ACO experience. Five pathways were identified, accounting for nearly half of the cases in which NGACOs achieved spending reductions.

- Three of the five pathways were used by NGACOs in markets considered to be inefficient (high per capita Medicare FFS spending); two pathways taken by physician practice NGACOs and one for hospital-affiliated NGACOs (which include IDS and physician-hospital partnerships).
- The two remaining pathways were taken by NGACOs in markets considered to be efficient (low per capita Medicare FFS spending): one for physician practice NGACOs and one for hospital-affiliated NGACOs.
- Four of the five pathways included NGACOs that selected lower financial risk; none included higher levels of financial risk as a condition for reduced spending.

Five Pathways to Spending Reductions

Larger physician practice NGACOs in high-spending markets

Smaller physician practice NGACOs in high-spending markets

Hospital-affiliated NGACOs in high-spending markets

Physician practice NGACOs in low-spending markets

Hospital-affiliated NGACOs in low-spending markets

Conclusion

Overall, NGACOs reduced *gross* Medicare Parts A and B spending in PY4 and cumulatively through PY4; however, the model was associated with a *net* increase in Medicare spending. NGACOs varied in their spending impacts, which we hypothesized reflected factors at the market, organizational, provider, beneficiary, and model feature levels. On average, NGAGOs that reduced spending tended to operate in markets with higher per capita Medicare spending; have more years of prior experience in Medicare ACOs (both organizations and providers); serve larger proportions of beneficiaries with higher clinical needs, and selecthigher levels of risk or PBP arrangements. No single factor alone explains performance. This report identifies combinations of factors related to market, organizational structure, beneficiaries, and model features that explain differences in NGACO outcomes.

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[1] QCA findings reflect the complex association between factors and outcome, which is conditional on the presence or absence of other factors. Results do not explain all of the cases that were associated with spending reductions— only those that share common contextual and structural characteristics. These findings cannot be interpreted using traditional statistical approaches, such as statistical correlation.

Chapter 1: NGACO Model Overview, Conceptual Framework, Participation, and Trends, 2016-2019

The Centers for Medicare & Medicaid Services (CMS) Center for Medicare & Medicaid Innovation (CMMI) launched the Next Generation Accountable Care Organization (NGACO) model in January 2016. The NGACO model is an advanced alternative payment model (AAPM) that builds upon CMS's previous ACO initiatives. Three cohorts of NGACOs launched in successive performance years (PYs) of the model—2016 (PY1), 2017 (PY2), and 2018 (PY3)—with all cohorts to operate through December 2021.

This evaluation report focuses on two overarching research questions regarding the NGACO model:

1. What are the effects of the model on Medicare expenditures overall and components of those expenditures (e.g., inpatient/outpatient), utilization, and quality of care relative to comparable beneficiaries in fee-for-service (FFS) Medicare?
2. Which factors are associated with an organization's eventual success or failure in the NGACO model as measured by a reduction in gross Medicare spending?

As the NGACO model is complex, involving Medicare beneficiaries served by a variety of providers in various health care markets, there are many more questions about the implementation and impact over the total performance period. The data and analyses in this report provide an important foundation and insight for addressing additional questions about the NGACO model in the final two reports.

1.1 NGACO Participants

Forty-one NGACOs participated in the model in its fourth performance year (PY4)—12 from the 2016 cohort, 15 from the 2017 cohort, and 14 from the 2018 cohort; see **Exhibit 1.1**. Since PY1, 21 NGACOs have exited the model. There were no new NGACOs in PY4.

Exhibit 1.1. Number of NGACOs by Year and by Cohort
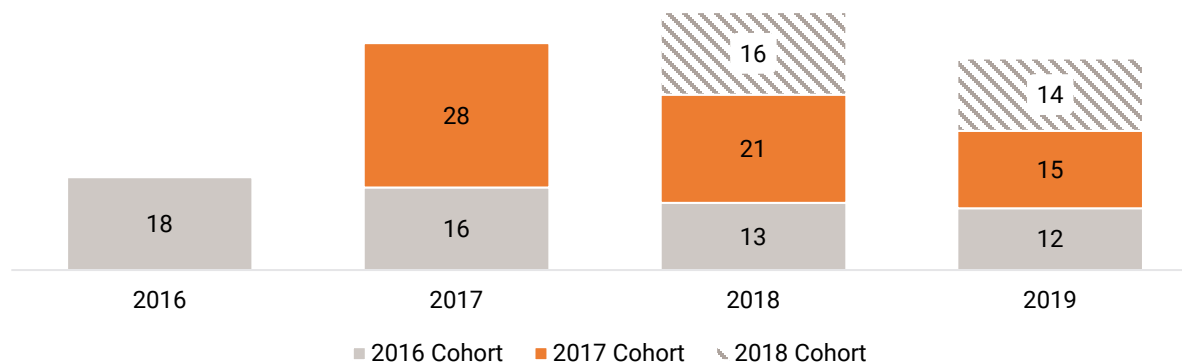
Since September 2016, NORC at the University of Chicago (NORC) has been conducting an independent evaluation of the NGACO model on behalf of CMS. During the first three performance years, the NGACO model was associated with a modest and statistically significant decline in gross Medicare spending (0.9 percent) and a non-significant increase in net Medicare spending (0.3 percent) after accounting for CMS's shared savings payouts to NGACOs. Reductions in spending on professional services, skilled nursing facility (SNF) care, and other post-acute care (PAC) settings contributed to the modest model-wide decline in gross Medicare spending.[2] Our evaluation of the NGACO model did not identify any notable impact on quality-of-care claims-based measures as of PY3. This fourth evaluation report summarizes findings in the model's PY4 as well as cumulative results to date.

1.2 Model Overview

ACOs are "groups of doctors, hospitals, and other health care providers and suppliers that come together voluntarily to provide coordinated, high-quality care at lower costs to their original Medicare patients."[3] In Medicare ACO models or programs, CMS generally sets a spending benchmark based on a given ACO's historical spending and national trends. ACOs earn a share of savings from CMS to keep Medicare spending for their aligned populations below their benchmark and to meet quality standards. ACOs in two-sided risk arrangements must share losses if their spending exceeds their benchmark (downside financial risk). The NGACO model includes stronger financial incentives than previous ACO models and the option of using alternative payment flows and specific benefit enhancements. See **Exhibit 1.2** for the model's key features.

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[2] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[3] Centers for Medicare & Medicaid Services. Next Generation ACO Model. Accessed February 23, 2021. https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/.

Exhibit 1.2. Key Features of the NGACO Model

Providers
- Participating providers, both individual practitioners and facilities, define an NGACO's prospectively aligned beneficiaries and contribute to CMS's calculations on quality and spending.
- Preferred providers may share in ACO savings but are not used for prospective alignment and do not contribute to CMS's quality calculations.

Risk Sharing
- ACO must choose between :
  - Partial risk (liable for 80 percent shared savings/losses)
  - Full risk (liable for 100 percent of shared savings/losses)

Alignment
- Prospective alignment: CMS provides NGACOs with the list of beneficiaries they are accountable for at the start of each performance year, unlike Shared Savings Program (SSP) ACOs where alignment is determined retroactively.
- Voluntary alignment: Beneficiaries may choose to align with an NGACO provider.

Payment Mechanism
- NGACOs can choose from one of four payment mechanisms:
  - Traditional fee-for-service (FFS);
  - FFS with a fixed per beneficiary per month infrastructure payment (ISP) to support ACO activities;
  - Population-based payments (PBPs) that give ACOs a fixed percentage of expected FFS claims reductions for PBP providers in prospective monthly payments; or
  - All-inclusive population-based payments (AIPBP), in which the ACO receives all expected FFS claims reductions for AIPBP providers in prospective monthly payments.

Benefit Enhancements
- NGACOs can choose to offer a variety of benefit enhancements:
  - Three-day skilled nursing facility (SNF) waiver allows SNF admissions without a qualifying three-day hospital stay.
  - Telehealth expansion waiver covers patient's home and patients in non-rural areas.
  - Post-discharge home visit waiver allows a nurse visit after hospital discharge.
  - Care managment home visit waiver covers beneficiaries at risk of hospitalizations from a licensed clinician to prevent hospitalization.
  - Chronic disease management reward offers gift card to beneficiaries for participating in a qualifying disease management program.
  - Cost-sharing support for Part B services to reduce eligible beneficiaries' out-of-pocket costs for certain services from NGACO providers that have cost-sharing arrangments with their NGACO.

1.3 Overview of Model Participants in PY4

Forty-one NGACOs participated in the model during its fourth performance year; see **Exhibit 1.3** for a list of NGACOs by name and state markets.

Exhibit 1.3. NGACOs Participating in PY4

NGACO Organization Name	Abbreviation	States in the NGACO Market
2016 Cohort		
Accountable Care Coalition of Southeast Texas, Inc.	ACCST	TX
Bellin Health DBA Physician Partners, Ltd. (PPL)	Bellin	MI, WI
Cornerstone Health Enablement Strategic Solutions, LLC	CHESS	NC
Deaconess Care Integration	Deaconess	IN, KY
Henry Ford Physician Accountable Care Organization	Henry Ford	MI
Park Nicollet Health Services	Park Nicollet	MN
Pioneer Valley Accountable Care, LLC	Pioneer Valley	CT, MA
Steward Integrated Care Network, Inc.	Steward	FL, MA, NH, OH, PA, RI, UT
ThedaCare ACO, LLC	ThedaCare	WI
Triad HealthCare Network, LLC	Triad	NC
Trinity Health ACO Inc.	Trinity	IL, MI, NJ, OH
UnityPoint Accountable Care (formerly Iowa Health Accountable Care)	UnityPoint	IA, IL, MO
2017 Cohort		
Accountable Care Options, LLC	Accountable Care Options	FL
APA ACO, Inc. (formerly ApolloMed)	APA	CA, WA
Arizona Care Network, LLC	Arizona	AZ
Atrius Health, Inc.	Atrius	MA, NH, RI
Montefiore ACO IPA (formerly Bronx Accountable Healthcare Network IPA, Inc.)	Bronx	NJ, NY
Carilion Clinic Medicare Shared Savings Company, LLC	Carillion	NC, VA
HealthCare Partners (HCP) ACO California, LLC	HCP	CA
Heritage California ACO (formerly Regal Heritage California ACO)	RHeritage	CA
Indiana University Health	Indiana U	IL, IN, KY
NW Momentum Health Partners ACO	PSW	WA
ProHealth Solutions, LLC	ProHealth	WI
Prospect ACO Northeast, LLC	ProspectNE	CT, RI
St. Luke's Clinic Coordinated Care, LTD	St. Luke's	ID, UT
UNC Senior Alliance, LLC	UNC	NC
Southwestern Health Resources Accountable Care Network (formerly University of Texas Southwestern Accountable Care Network)	UTSW	TX

NGACO Organization Name	Abbreviation	States in the NGACO Market
2018 Cohort		
Accountable Care Coalition of Tennessee, LLC	ACC of TN	TN
Best Care Collaborative	Best Care Collab	FL
CareMount ACO	CareMount	CT, NY
Central Utah Clinic	Central Utah	NV, UT
CoxHealth Accountable Care, LLC	CoxHealth	AR, MO
Franciscan Missionaries of Our Lady Health System Clinical Network, LLC	Franciscan	LA
Mary Washington Health Alliance LLC	Mary Washington	VA
NEQCA Accountable Care, Inc.	NEQCA	MA, NH, RI
Primaria ACO, LLC	Primaria	IN
Primary Care Alliance	Primary Care Alliance	FL
Reliance Next Gen ACO, LLC	Reliance	MI, OH
Reliant Medical Group, Inc.	Reliant	CT, MA, RI
Torrance Memorial Integrated Physicians, LLC	Torrance	CA
UW Health ACO, Inc.	UW Health	WI

To understand the reach of the NGACO model, we defined the markets in which NGACOs operate as hospital referral regions (HRRs) where at least 1 percent of their aligned beneficiaries resided. We illustrate these markets for PY4 and previous performance years in **Exhibit 1.4**. In PY4, NGACO markets spanned 29 states but have declined in number over time from the exit of 21 NGACOs between PY1 and PY3. As indicated in **Exhibit 1.5**, 41 NGACOs remained in the model in PY4. As NGACOs joined the model in the first three years, the number of HRRs covered by NGACOs grew from 62 in PY1, to 109 in PY2, and peaked at 127 in PY3. In PY4, the 41 NGACOs in the model spanned 112 HRRs nationwide. Over a quarter of NGACOs (27 percent) that remained up to and including PY4 expanded their markets into additional HRRs during their years in the model. The market footprint of the model was slightly smaller in PY4 than PY3 due to the exit of nine NGACOs. We explore NGACOs' reasons for exiting the model and the impact of these departures in Chapter 3.

Exhibit 1.4.   NGACOs Operated in Fewer Markets in PY4 Than in Previous Performance Years
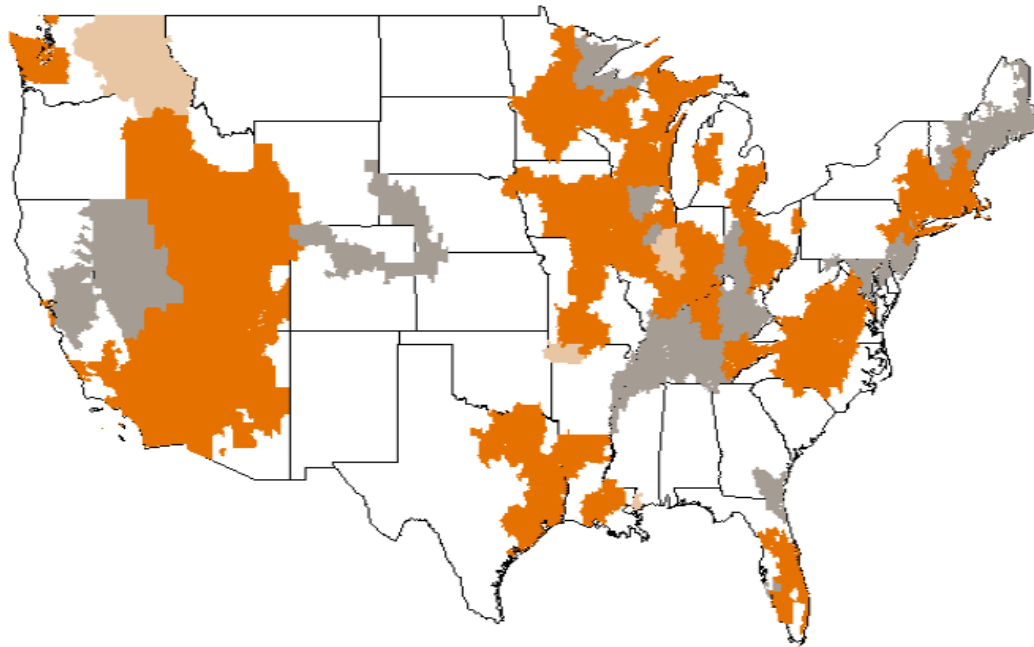
LEGEND

Exited HRRs: included in any prior performance year(s) but not included in PY4

Continuing HRRs: included in PY4 and also in any prior performance year(s)

New HRRs: newly included in PY4

NOTE: 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.

Exhibit 1.5.   Number of ACOs Exiting and Remaining by Cohort

Cohort	Exiters PY1-PY3	Remaining NGACOs in PY4
2016	6	12
2017	13	15
2018	2	14

1.4 NGACO Model Evaluation Conceptual Framework

Evaluating the complex NGACO model requires grounding in the model's theory of action and empirical evidence to understand the independent and dependent variables of interest. Our evaluation's conceptual framework depicts the interdependencies among components of the NGACO model; see **Exhibit 1.6**. The framework reflects existing literature, findings from previous ACO initiatives, findings to date from our evaluation of the NGACO model, and the driver diagrams developed by individual NGACOs. According to the framework, NGACOs select model features

that influence organizational population health management strategies and provider behavior, affecting the care that aligned beneficiaries receive. Beneficiaries' care-seeking behavior, influenced by both the NGACOs and independent factors, ultimately drives the outcomes for which NGACOs are held accountable. All actors operate within a market and policy context that also influences these decisions and outcomes.

The policy context is germane to the operation of the NGACO model and our evaluation approach; however, we do not measure the influence of the policy environment explicitly, as such influence is not directly quantifiable. One consideration is that the NGACO model is one of many developed and tested by CMMI, which was created under the Patient Protection and Affordable Care Act with the charge to test alternative payment models (APMs) in Medicare and Medicaid, and to increase provider accountability for health care cost and quality. Various other policies related to health care that went into effect over the course of the NGACO model may have influenced NGACO and provider behavior as well as beneficiary outcomes—a reality further complicated by the dynamics of national policies that would touch <u>all</u> NGACOs rather than state-specific policies that would impact only some NGACOs. In addition, public health emergencies such as the COVID-19 pandemic have influenced both the NGACO model experience and the health care system at large.

Exhibit 1.6. NGACO Evaluation Conceptual Framework
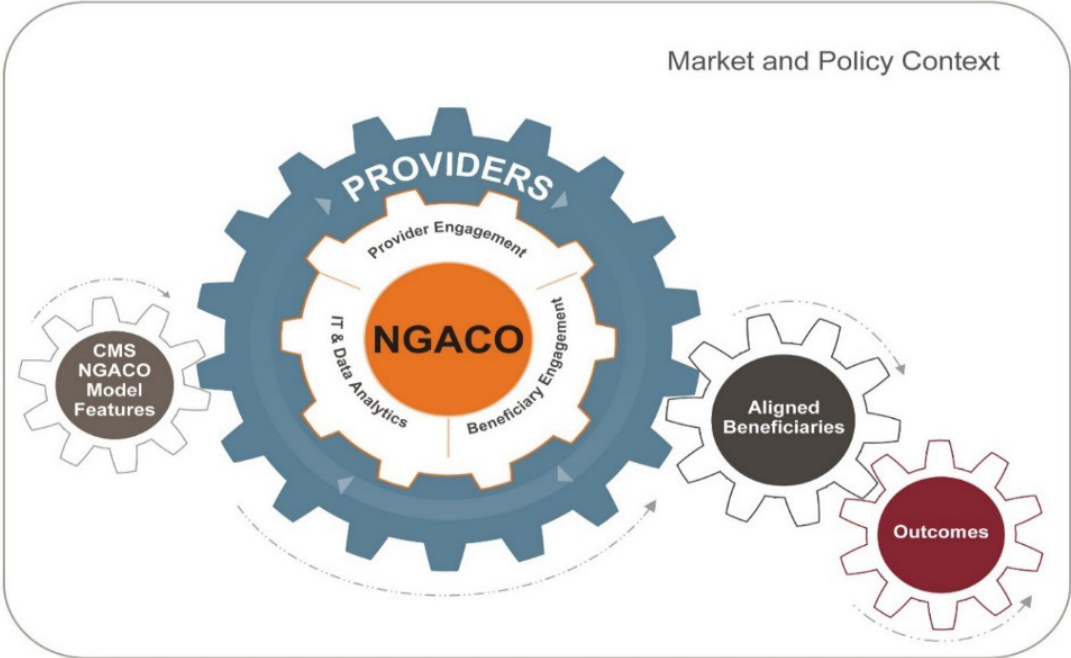
NOTE: Eache gear, i.e., domain, represents a different element of the conceptual framework with the NGACO and its providers working with aligned beneficiaries to affect outcomes within its specific market and policy context. The arrows represent the dynamic interaction between these elements within the model.

In our previous evaluation reports on the NGACO model, we described key factors within each domain or gear of the conceptual framework and began to explore the associations both among the factors and with selected outcomes. **Exhibit 1.7.**depicts the NGACO model's theory of action

as a hypothesized set of causal pathways. In this report, we investigate these relationships, i.e., combinations of conditions and their complex associations with NGACO performance.

Exhibit 1.7. NGACO Model: Hypothesized Theory of Action
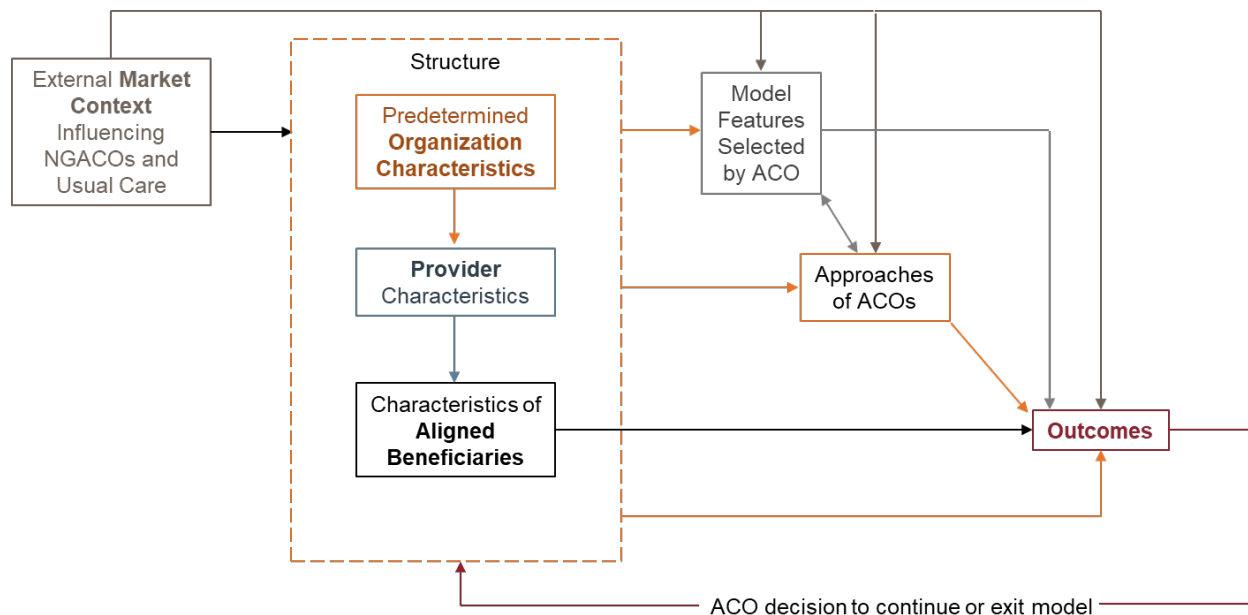
Market Context. As we established in previous reports and our conceptual models, our evaluation is exploring the extent to which external market conditions interact with and affect NGACOs' performance and outcomes. We hypothesize that external market conditions directly influence NGACO performance and outcomes. For instance, markets that are already efficient for FFS Medicare spending may have fewer opportunities to gain additional savings. We also hypothesize that the market context indirectly influences NGACO performance on outcomes by shaping the strategic decisions that NGACO leaders make about their structure, the election of model features, and approaches. For example, the availability and characteristics of providers, as well as the health and utilization patterns of beneficiaries that vary by market, may constrain NGACOs' impact on outcomes. In addition, market conditions may affect the model features that NGACOs select, such as their risk levels and population-based payments (PBPs), as well as specific implementation approaches that NGACOs employ. Organizations that have different affiliations with physician practices, hospitals, and integrated delivery systems (IDSs) have made strategic decisions to participate in the NGACO model. They elect certain features based on the potential to achieve savings in their market, the providers available to form their networks, and the beneficiaries they serve. NGACOs also implement approaches to population health management based on their anticipated likelihood of success concerning impacts on utilization and cost, given market competition and trends.

Structure. Our evaluation also examines how an NGACO's structural composition, which includes organizational, provider, and aligned beneficiary characteristics, affects ACO performance. An NGACO's structure reflects its existing organizational characteristics and those of the provider network it establishes and develops, which influence the settings and services where spending

reductions are realized.[4] The configuration of an NGACO's providers and the characteristics of providers composing it may also influence outcomes directly. Previous research suggests ACOs structured around hospital-based providers have disincentives to reduce care delivered in hospital settings, while ACOs convened by physician providers are more likely to reduce hospital care. Characteristics such as the level of experience with value-based payment in an organization or among its providers may be associated with higher quality and efficiency. Additionally, beneficiary characteristics directly impact outcomes based on clinical and social factors independent of their NGACO alignment. We also hypothesize that an NGACO's structure may affect outcomes indirectly by influencing the election of model features and implementation approaches. NGACOs choose from a menu of various model features (i.e., risk levels, payment mechanisms, and benefit enhancements) and implementation approaches based on their organization's and providers' preferences in addition to their understanding of their aligned beneficiaries' needs.

Model Features. As we demonstrated in our previous evaluation report, NGACOs electing higher risk levels and caps and those opting for PBPs achieved greater spending reductions than NGACOs that elected lower risk and caps and those that used FFS-based payments. Model features can also directly influence outcomes in that an NGACO's risk level and cap determine its incurred shared savings or losses. In addition to direct relationships between model features and outcomes, an NGACO's selection of risk arrangements, payment mechanisms, and benefit enhancements may influence outcomes indirectly through the NGACO's implementation approaches. Notably, the menu of model features available to NGACOs changed over the model's four performance years and may have affected NGACOs' decisions and outcomes in distinctive ways in each performance year.

Implementation Approaches. Our evaluation considers how NGACO implementation approaches have been associated with outcomes. Such approaches, which we detailed in our previous report, include investing in data analytics to leverage prospective alignment; engaging physicians through financial and nonfinancial incentives; engaging beneficiaries through care management and Annual Wellness Visits (AWVs); and collaborating with SNFs to improve post-acute care (PAC). In the second and third performance years, CMS provided a Coordinated Care Reward (CCR) to beneficiaries as an incentive to seek AWVs; this benefit was discontinued in PY4. NGACOs leveraged CCRs for outreach to their aligned populations. We hypothesize that different combinations of implementation strategies have directly influenced quality, utilization, and cost outcomes.

Outcomes. Outcomes for Medicare beneficiaries, providers, and the organizations that join the model are shaped directly and indirectly through the factors and hypothesized pathways described above. In addition, the specific outcomes of shared savings and shared losses affect NGACOs' decisions to remain in the model, and for those that remain, they further inform refinements that may be needed to their provider networks, the use of benefit enhancements, and other design elements.

It is important to note that there are unobserved variables (variables for which we do not have data) associated with the selection of model features, NGACOs' implementation approaches, and

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[4] McWilliams JM, Hatfield LA, Landon BE, Hamed P, Chernew ME. Medicare spending after 3 years of the Medicare shared savings program. N Engl J Med. 2018;379(12):1139–1149. doi:10.1056/NEJMsa1803388.

outcomes that may be correlated with one another. Examples of such variables include NGACOs' internal policies for reimbursing providers or practitioners under the various payment mechanisms or the quality of its implementation approaches.

The NGACO model's goal is to improve the efficiency and quality of care delivery while holding Medicare spending constant or achieving spending reductions that result in savings to the Medicare program without reducing quality. We will use this causal framework to assess NGACO-level characteristics that are successful and unsuccessful in the model. While we cannot conclude that unsuccessful NGACOs would be successful had they followed the path of successful NGACOs, we can identify conditions for success.[5]

1.5 Participation in the NGACO Model in PY1–PY4: Market Context, Structure, and Model Features

The section below describes the 41 NGACOs active in the model's PY4 in terms of key factors delineated in our conceptual model—namely market context, structural characteristics, and model features selected. Chapter 4 explores how these factors are associated with outcomes at the model level and, Chapter 5 looks at how these factors work in combination to affect performance. We have described model-wide implementation approaches in detail in our previous evaluation reports. In a future report, we will explore variations in implementation strategies across NGACOs and their association with outcomes.

1.5.1 Market Context

As illustrated in the conceptual models presented in the previous section, we posit that an NGACO's market context may impact outcomes directly or indirectly. Specifically, we hypothesize that a market's size, urban or rural composition, average Medicare spending, rate of value-based payment model penetration, and extent of provider competition may contribute to outcomes. See **Exhibit 1.8** for a summary of market characteristics that may be influential in determining NGACO performance. Average spending at baseline and hospital concentration were similar between NGACO and non-NGACO markets.[6] NGACOs operated in markets with more beneficiaries, lower percentages of rural beneficiaries, higher rates of Medicare Advantage (MA) and Medicare ACO penetration, and lower physician practice concentration relative to non-NGACO markets. We observe that markets with larger pools of beneficiaries, providers with experience with value-based payment, and greater competition among physician practices were more conducive to NGACO formation under a model with downside risk.

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[5] Moreover, we underscore the complexity of disentangling how market characteristics influence selection of model features or implementation approaches, or how NGACOs in turn adapt to or influence their market context.

[6] To characterize differences in hospital market structure between markets, we used the Herfindahl-Hirschman Index (HHI), which measures market concentration, or the market share of firms in a market. Higher HHI scores indicate higher concentration and less competition, while lower scores reflect more competitive markets.

Exhibit 1.8. Market Context: NGACO Markets Had More Medicare FFS Beneficiaries and More Beneficiaries Living in Urban Areas

	NGACO Markets Average (Range)	Non-NGACO Markets Average (Range)
Number of FFS Medicare Beneficiaries per HRR, 2015***	147,560 (38,740 − 389,139)	96,804 (17,692 − 575,497)
Number of NGACO-Aligned Beneficiaries per HRR, 2019	10,745 (1,937 − 28,484)	N/A
Percent of HRR Population in Rural Areas, 2014***	17% (0% − 60%)	28% (0% − 100%)
Std. Risk-Adjusted Per Capita HRR Medicare Spending, 2015	$9,562 ($8,369 − $11,153)	$9,594 ($6,608 − $12,583)
MA Penetration Rate, 2015 (%)*	34 (18 − 59)	29 (1 − 62)
Hospital Market Concentration, 2015 (HHI)**	3,357 (850 − 5,443)	3,701 (996 − 10,000)
Medicare ACO Penetration, 2015 (%)***	29 (6 − 50)	17 (0 − 73)
Physician Practice Market Concentration, 2015 (HHI) **	612 (63 − 1,894)	802 (72 − 4,859)

NOTES: HHI = Herfindahl-Hirschman Index. The HHI ranges from 0 to 10,000. Markets with an HHI from 1,500 to 2,500 are considered moderately concentrated. Markets with an HHI larger than 2,500 are highly concentrated. Calculation of hospital HHI considers common market share for hospitals within a health system. Physician practice HHI computed from Medicare Data on Physician and Physician Specialties (MD-PPAS) does not distinguish practices (defined as tax identification numbers [TINs]) with shared ownership. Where noted, the differences between the groups are statistically significant at $p<0.1$*, <0.05**, and <0.01***.

SOURCE: NORC analysis of NGACO programmatic data and NGACO beneficiary data linked to Medicare Claims, Medicare Geographic Variation Public Use File, and ancillary data; NGACO beneficiary file from Program Analysis Contractor and claim alignment, 2019; Rural Urban Commuting Area Codes data file, 2014; Medicare Geographic Variation Public Use File, 2015; American Hospital Association Survey and Provider of Service Current File, 2015; Master Data Management beneficiary file, 2015; Medicare Data on Physician Practice and Specialty, 2015.

The average standardized risk-adjusted per capita Medicare spending did not differ between NGACO and non-NGACO markets; however, non-NGACO markets exhibited greater variability in per capita spending than NGACO markets.

1.5.2 Structure

We hypothesize that the NGACO structure, including its organization type, provider network, and aligned beneficiaries, affects outcomes directly and indirectly through selected model features and implementation approaches. Our hypothesized theory of action (**Exhibit 1.6**) captures the interdependencies between these elements as a continual process of responding to the NGACO's outcomes. The structure then selects or changes the selected model features and implementation approaches. Chapter 4 reports how these factors affect gross spending outcomes at the NGACO level. Chapters 5 and 6 explore associations among combinations of structural characteristics with outcomes.

Organizational Characteristics

An NGACO's organization type and prior experience in value-based payment models may affect model performance. As described in the Third Evaluation Report, there are three types of NGACOs: (1) IDS or hospital system-affiliated, (2) physician-hospital partnership, and (3) physician practices such as a medical group practice or network of individual practices that are not affiliated with a hospital system. Different contractual relationships and ranges of practice settings distinguish these types. While IDS or hospital system NGACOs offer a full continuum of care, physician-hospital partnerships and physician practice NGACOs comprise groups of practices and/or hospitals. Although infrequent, NGACOs' organizational types may change throughout the model due to mergers and acquisitions.[7]

For instance, previous research suggests that physician practice-affiliated NGACOs had greater spending reductions than hospital-based NGACOs.[8] The organizational composition of participating NGACOs changed over the course of the model as a result of ACO exits from the model and new cohorts that began in the model. IDSs and hospital-based NGACOs were most prevalent in PY1 but leveled off to approximately one-third of participants by PY3; see **Exhibit 1.9**. The percentage of physician practice-affiliated NGACOs increased over time to be comparable to the percentage of IDS/hospital NGACOs by PY3. NGACO partnerships between physician practices and hospitals composed roughly one-quarter of NGACO participants across all four performance years. **Exhibit C.2 in Appendix C** presents the organizational composition of individual NGACO cohorts in each year PY1-PY4.

The NGACO model was intended for experienced Medicare ACOs ready for higher risk, and for the most part did not attract ACOs new to risk-sharing relationships with CMS. Over three-quarters of NGACOs in the model had experience as Medicare ACOs in earlier models or programs such as Pioneer ACO or Shared Savings Program (SSP) ACO, with two-thirds of NGACOs having six or more years of experience as a Medicare ACO, including their time in the NGACO model. NGACO organizations were selected for their experience and potential capacity to successfully manage downside financial risk and to achieve improvements in population health. Therefore, ACO organizations in the NGACO model may be more experienced and advanced on average than ACOs in the SSP. These differences in NGACO participant characteristics are important to consider in thinking about how to generalize or extrapolate NGACO evaluation results to other regions or groups of organizations.

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[7] From PY1 to PY2, two NGACOs changed organizational type, one large physician-hospital partnership (ThedaCare) became IDS/hospital system-affiliated, and one physician practice-affiliated ACO (CHESS) became a physician-hospital partnership.

[8] McWilliams JM, Hatfield LA, Landon BE, Hamed P, Chernew ME. Medicare spending after 3 years of the Medicare shared savings program. *N Engl J Med*. 2018;379(12):1139–1149. doi:10.1056/NEJMsa1803388.

Exhibit 1.9. Organizational Characteristics: Over Half of NGACOs Were Affiliated with Hospital Systems and/or Had Prior Medicare ACO Experience
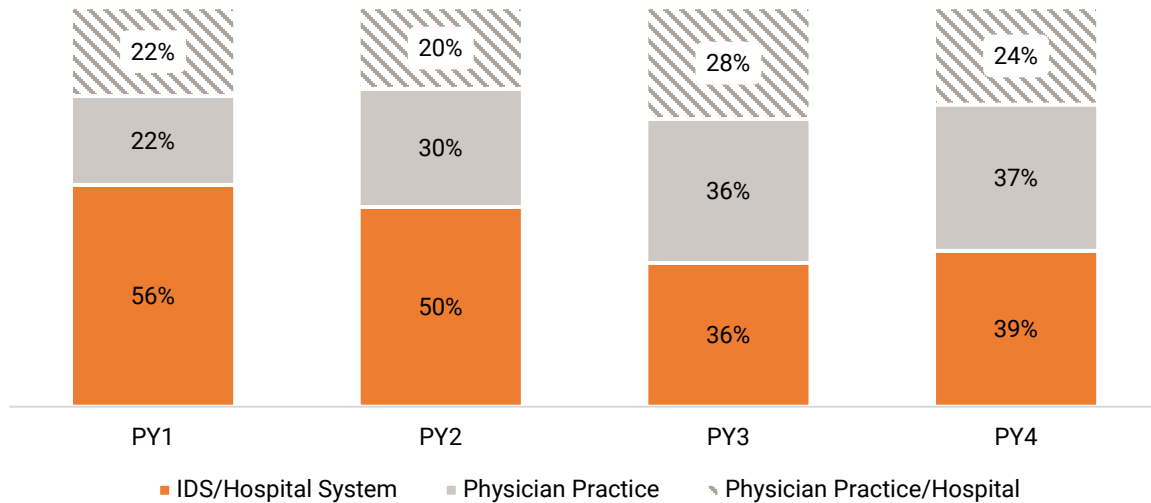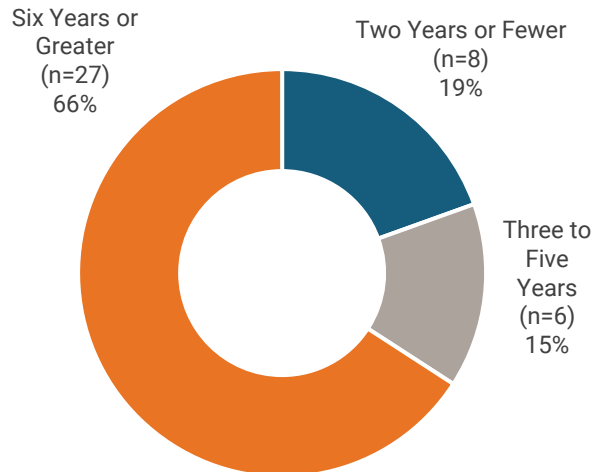
SOURCE: NORC analysis of NGACO evaluation's qualitative data and CMS's ACO programmatic data.

Provider Characteristics

Participating provider networks consisted of a mix of practitioners and facilities, which changed over time as different types of providers transitioned into and out of the model. The characteristics of NGACO network providers, such as specialty and prior experience in value-based payment arrangements, may influence care delivery and outcomes. Below, we describe both the practitioners and facilities participating in the NGACO model in PY4.

The average number of practitioners in NGACO networks increased over the course of the model; see **Exhibit 1.10** below. The 2016 cohort, which had more IDS/hospital-affiliated NGACOs, had the highest number of participating and preferred practitioners per ACO in three of the first four years of the model. The 2018 cohort, with more physician practice-affiliated NGACOs, had on average, the smallest number of practitioners per NGACO among the three cohorts 2018-2019. Across performance years, IDS/hospital system-affiliated NGACOs saw large increases in their numbers of participating practitioners, followed by physician-hospital partnerships; for physician practice-affiliated NGACOs the average numbers of participating practitioners were similar; see **Appendix C, Exhibit C.3**. In all three organization types the average numbers of preferred practitioners declined across performance years; see Appendix C, Exhibit C.4.

Exhibit 1.10. NGACO Provider Networks (Practitioners per NGACO)
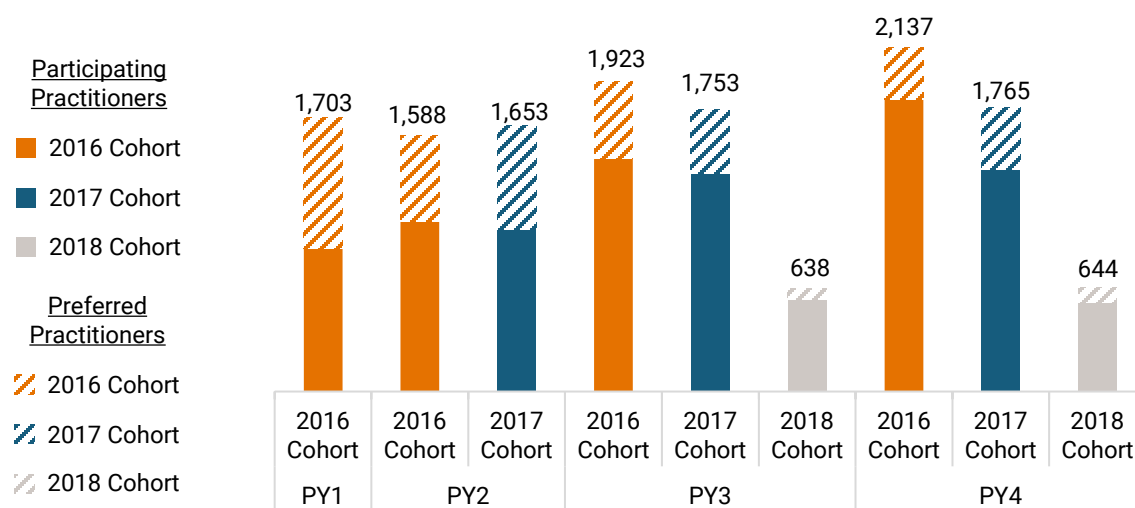
SOURCE: NORC analysis of NGACO provider data. Practitioners include participating and preferred practitioners.

Across all cohorts and performance years, most participating practitioners were classified as primary care, reflecting NGACOs' focus on primary care to manage the needs of their aligned beneficiaries; see **Exhibit.1.11**. We include detail on the characteristics of NGACO provider networks by organization type in **Technical Appendix Exhibits C.5-7**, showing variation in the distribution of primary care, physician and non-physician, and specialists across the different organization types.

Exhibit 1.11. Provider Networks, PY1–PY4: More Participating Practitioners Identified as Primary Care

Primary Care Physicians **Primary Care Non Physicians** **Specialists** **Speciality unknown**
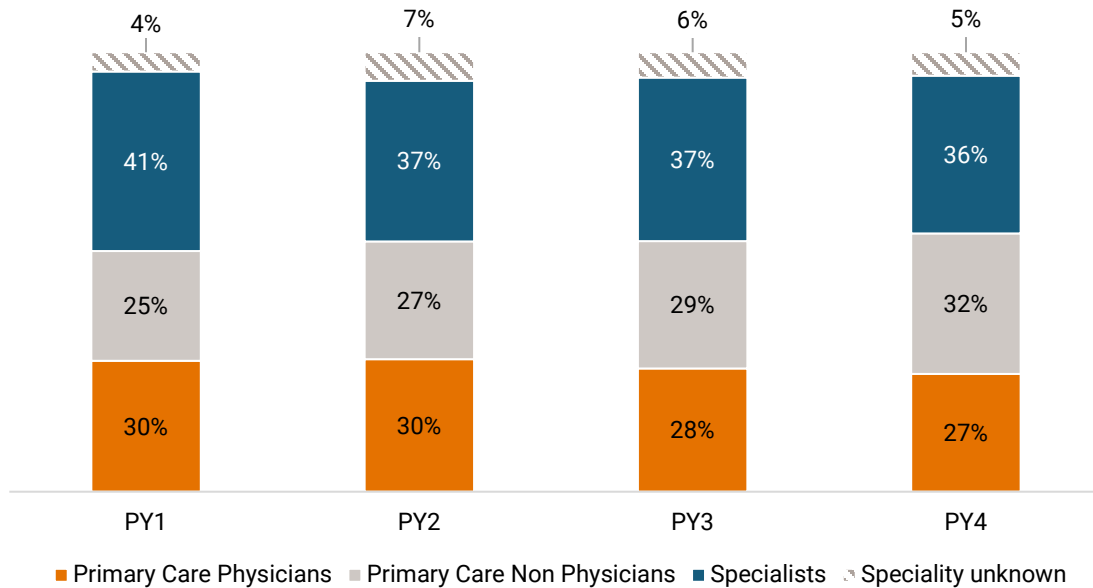
NOTES: Specialists include medical/surgical specialty, obstetrics/gynecology, hospital-based specialty, and psychiatry. Unknown denotes practitioner specialty unidentified.
SOURCE: NORC analysis of NGACO provider data linked to CMS provider files. Medicare Data on Physician and Physician Specialties (MD-PPAS) categories were used to group the taxonomy code for individual practitioners reported on the National Plan and Provider Enumeration System into the broad specialty classification provided in CMS MD-PPAS documentation. See Appendix A for more information.

Most participating practitioners had at least one year of experience with ACOs in the base period, reflecting NGACOs' preference for practitioners with prior experience, as they took on two-sided risk; see **Exhibit 1.12**. NGACOs that were former SSP or Pioneer ACOs and organizations that were new to the ACO model brought in participating practitioners with ACO experience. These providers accumulated more experience over the course of the NGACO model. NGACO cohorts that began in later years started with providers with relatively more experience. NGACOs maintained these providers in their networks, and even as providers transitioned out of the model, NGACOs continued to recruit practitioners with exposure to ACOs. We demonstrate the retention of NGACO practitioners in **Exhibit 1.13**. We examine how impacts vary across NGACOs with different levels of practitioner experience with Medicare ACOs in Chapter 5.

Exhibit 1.12. Provider Networks: Across All Cohorts and Performance Years, NGACO Participating Practitioners Had More Medicare ACO Experience with Each Cohort's Starting Year
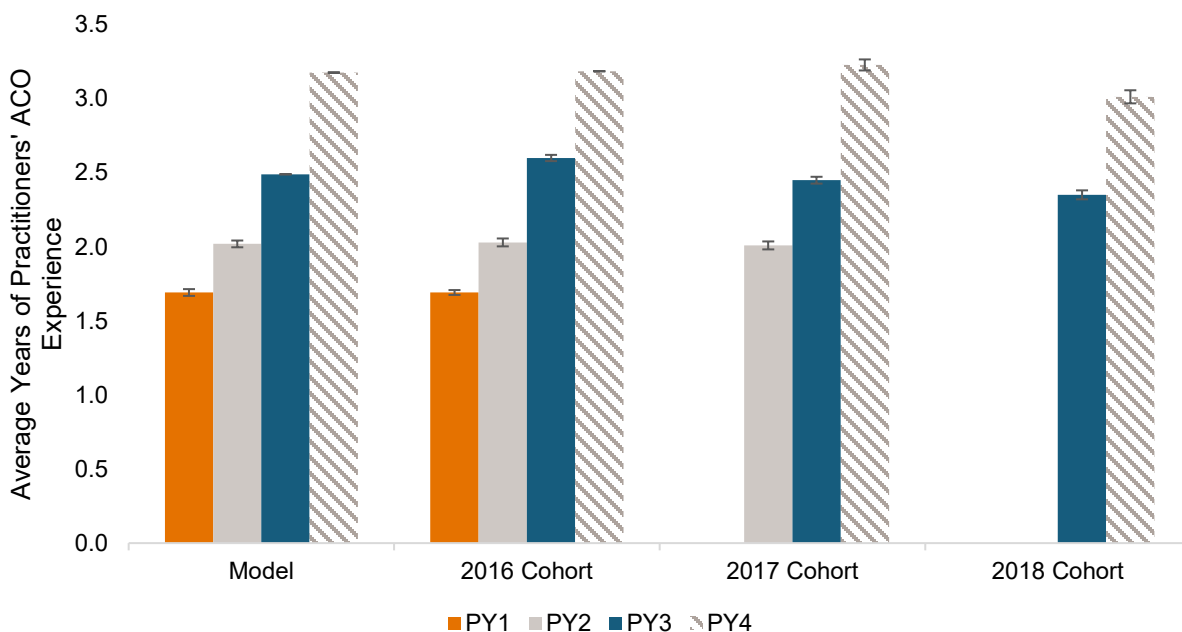
SOURCE: NORC Analysis of NGACO provider data linked to CMS's ACO programmatic data. Appendix C provides a breakdown of the percent of participating providers with prior Medicare ACO experience in PY4.

While providers and beneficiaries may transition in and out of the NGACO model, **Exhibit 1.13** illustrates that most practitioners and beneficiaries who participated in a given performance year remained in the model in the following performance year. The 2016 and 2017 cohorts were able to refine their practitioner networks and increase practitioner retention over time, retaining between one-half and two-thirds of their providers on average. However, the 2018 cohort had the highest retention among all cohorts in its second year in the model, retaining 86 percent of participating providers and 67 percent of preferred providers. In addition, the 2018 cohort started with a larger proportion of primary care practitioners, which suggests that this cohort learned from the experience of the earlier cohorts; see **Appendix C, Exhibit C.8**.

We observe similar trends in beneficiary retention in the NGACO model. On average, NGACOs retained about two-thirds of beneficiaries each performance year, with the 2016 and 2017 cohorts retaining slightly fewer. The exception remains the 2018 cohort, which retained 75 percent of its beneficiaries in its second performance year. Across performance years, IDS/hospital system-affiliated NGACOs saw large increases in the average number of beneficiaries.[9] The average number of beneficiaries was largely similar across performance years

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[9] From PY1 to PY2, one large physician-hospital partnership (ThedaCare) became IDS/hospital system-affiliated, and one physician practice-affiliated ACO (CHESS) became a physician-hospital partnership, both contributing to a slight decline in average number of beneficiaries for physician-hospital partnerships in PY2.

for physician practice-affiliated NGACOs and physician-hospital partnerships; see **Appendix C, Exhibit C.15**.

Exhibit 1.13. Most Practitioners and Beneficiaries Remained in the NGACO Model from the Preceding Year across More than One Performance Year

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Percent of Participating and Preferred Practitioners Continuing in the Model

% Participating Practitioners — Model-wide: PY2 55%, PY3 69%, PY4 77%; 2016 Cohort: PY2 55%, PY3 67%, PY4 72%; 2017 Cohort: PY3 70%, PY4 80%; 2018 Cohort: PY4 86%.

% Preferred Practitioners — Model-wide: PY2 51%, PY3 61%, PY4 59%; 2016 Cohort: PY2 51%, PY3 59%, PY4 60%; 2017 Cohort: PY3 64%, PY4 57%; 2018 Cohort: PY4 67%.

Legend: ■ PY2 ■ PY3 ■ PY4

Percent of Beneficiaries Continuing in the Model

Model-wide: PY2 61%, PY3 66%, PY4 68%; 2016 Cohort: PY2 61%, PY3 67%, PY4 66%; 2017 Cohort: PY3 65%, PY4 68%; 2018 Cohort: PY4 75%.

Legend: ■ PY2 ■ PY3 ■ PY4

SOURCE: NORC analysis of NGACO provider and beneficiary data from PY1–PY4.

As noted in our previous evaluation report, NGACOs focused on PAC and strategically collaborated with SNFs. In the model's PY4, SNFs remained the most common type of participating facility in PY4; see **Exhibit 1.14**. As NGACOs in all three cohorts built relationships with SNFs, their SNF network appeared to narrow across performance years. In contrast, the proportions of HHAs in their network appeared to increase marginally; see **Appendix C Exhibits C.9-C.14**.

Exhibit 1.14. In PY4, SNFs Accounted for the Largest Group of Facility Providers

					Total Facilities
PY4	59%	16%	8%	3% 4%	10%	5,767
PY3	59%	16%	8%	4% 4%	10%	6,862
PY2	59%	15%	7%	4% 4%	10%	7,597
PY1	61%	12%	14%	7%	3% 3%	730

■ Skilled Nursing Facility ▫ Home Health Agency ■ Acute Care Hospital ◌ Alignment-Eligible Facility ▫ Hospices ▫ Other
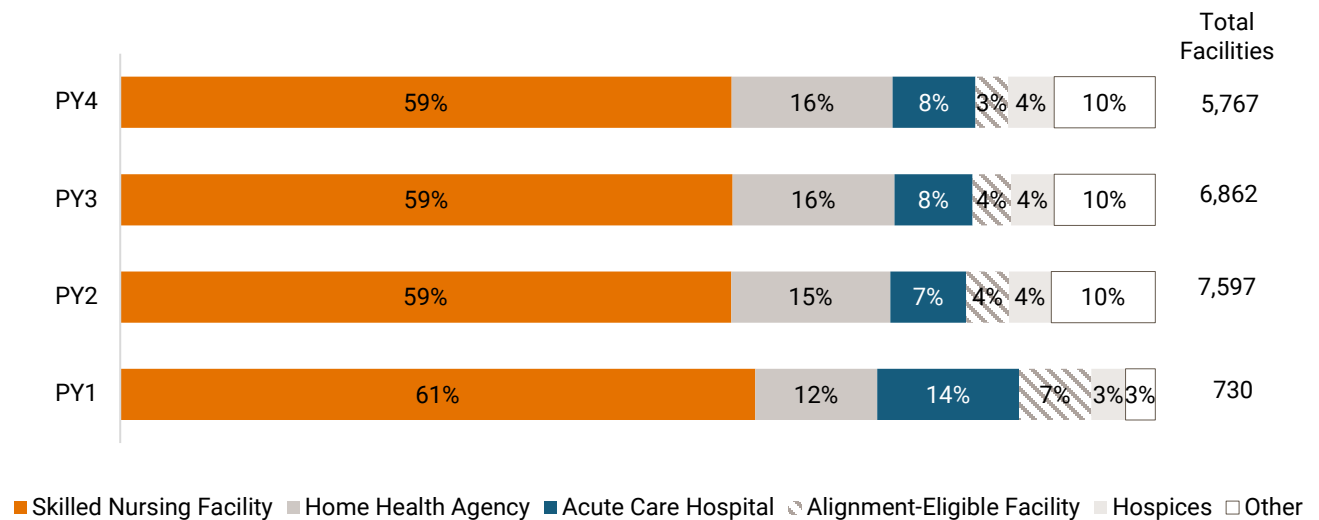
NOTES: Alignment-eligible facilities are defined as Critical Access Hospitals billing professional services for outpatient care, Federally Qualified Health Centers, and Rural Health Clinics; SNF=Skilled Nursing Facility; other=all other facility types.

SOURCE: NORC analysis of administrative and claims data for PY4 (2019). We used multiple data sources to summarize provider characteristics. We identified participating institutions using their taxpayer identification number (TIN), national provider identifiers, and/or their CMS Certification Number (CCN) at the beginning of the performance year. For participating institutions in the NGACO model, we obtained data from CMS, as compiled by the NGACO Program Analysis Contractor. We linked these data on participating institutions to multiple CMS provider datasets and identified the institution type by the third digit of the CCN. See Appendix H for more information.

In general, NGACO-affiliated facility networks gained capacity over the course of the model, with PY4 having the highest average number of hospital beds and second-highest number of SNF beds; see **Exhibit 1.15**. This finding may reflect growing attention on the part of NGACOs to coordinating acute care and PAC. We observed a large reduction in SNF beds per 1,000 beneficiaries from PY2 to PY3 due to several factors, including changes in SNF networks among participating NGACOs and the exit of some NGACOs from the model. Also, as NGACOs in all three cohorts built relationships with SNFs, their SNF network appeared to get narrower across years, and in contrast, the proportions of HHAs in their network appeared to grow; see **Appendix C, Exhibits C.6-C.8.**

Exhibit 1.15. Average Number per ACO of Acute Hospital Beds, SNF Beds, and Other PAC Beds per 1,000 Aligned Beneficiaries, PY1–PY4, Affiliated Facilities
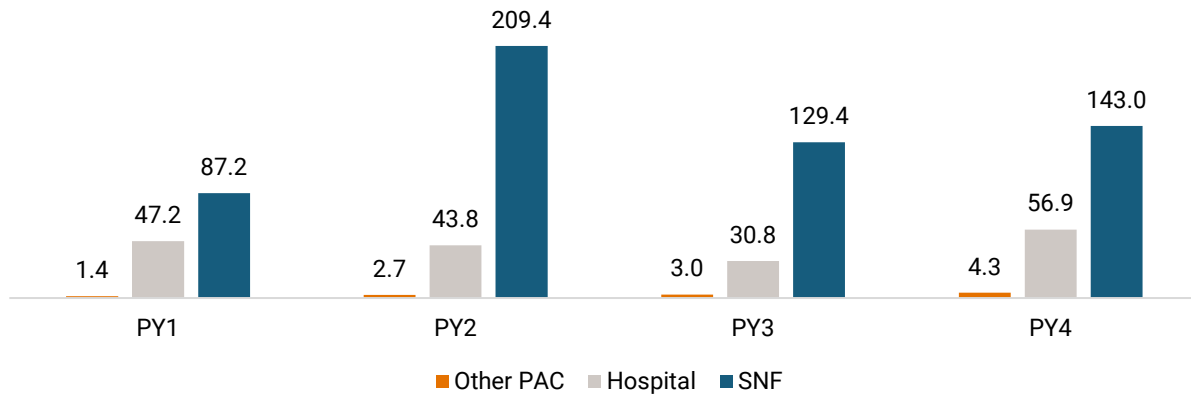
NOTE: Data on beds include all NGACO-affiliated facilities.
SOURCE: NORC analysis of NGACO provider data linked to CMS Provider of Service files.

Beneficiary Characteristics

Beneficiary characteristics may influence the effectiveness of NGACO interventions and independently affect outcomes through care-seeking behavior. NGACOs in PY4 had more aligned beneficiaries than in previous years, which may reflect NGACO leadership decisions to ensure a sufficient number of patients to offset two-sided financial risk; see **Exhibit 1.16**. The average number of aligned beneficiaries also varies by organization type as reported in Technical **Appendix Exhibit C.15**, with larger IDS/hospital-affiliated NGACOs covering more beneficiaries in each performance year, and physician practice/hospital and physician practice-affiliated organizations covering approximately the same number of beneficiaries in PY2-PY4.

Exhibit 1.16. Average Number of Aligned Beneficiaries per NGACO, PY1–PY4
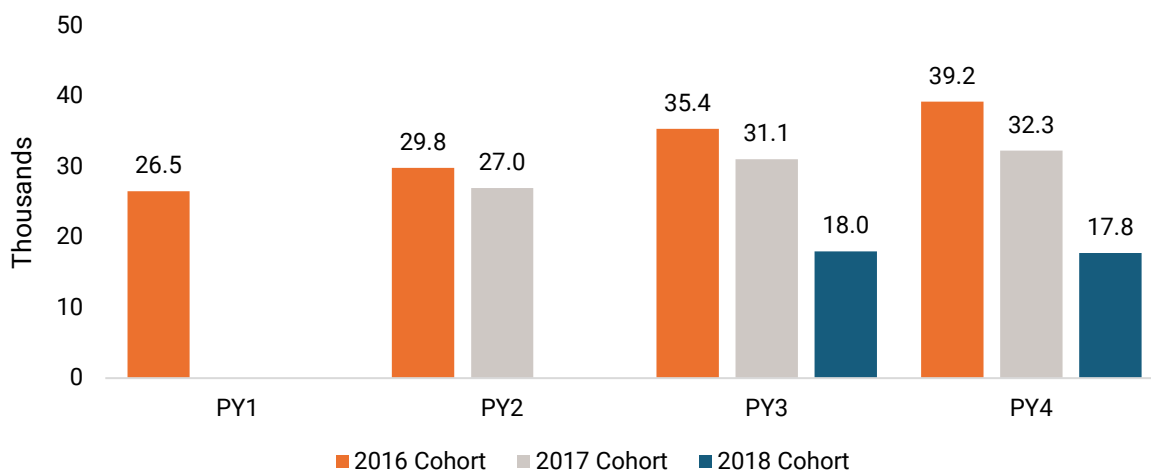
SOURCE: NORC analysis of NGACO model beneficiary data.

NGACOs had a higher percentage of white beneficiaries and a lower percentage of disabled, dually eligible, and rural beneficiaries compared to FFS Medicare beneficiaries in their market areas in PY4; see **Exhibit 1.17**. These differences underscore the importance of implementing methods to ensure the comparison group from an NGACO's market is similar to the beneficiaries served by the NGACO. The disproportionate percentage of white, urban, non-dually eligible, and beneficiaries without disabilities in NGACOs also suggests selection of providers with less-vulnerable patient populations into the NGACO model; this observation has implications for generalizability.

Exhibit 1.17. Beneficiary Characteristics in PY4: Comparing NGACO-Aligned and Non-Aligned FFS Beneficiaries

Characteristic	NGACO Beneficiaries in PY4	Non-NGACO FFS Beneficiaries in NGACO Markets in PY4
Number of beneficiaries	1,203,457	8,902,148
Mean age in years (standard deviation; SD)	73.9 (11.0)	73.3 (12.0)
Gender (%)		
Male	42.3	43.3
Race/Ethnicity (%)		
White	83.0	77.8
Black	6.3	7.3
Hispanic	4.4	6.9
Asian	3.6	4.5
Other	2.8	3.5
Disability/End-Stage Renal Disease (ESRD; %)		
Disability	11.2	14.5
ESRD	0.9	1.1
Coverage (%)		
Any Medicaid dual eligibility	17.8	24.7
Any Part D coverage	77.8	78.0
Clinical Characteristics		
Mean number of chronic conditions (SD)	5.7 (3.8)	5.9 (4.1)
Mortality in reference period (%)	3.6	4.2
Community Characteristics (ZIP Code Level)		
Median income ($; SD)	68,780 (27,342)	69,754 (28,568)
Below poverty line (%; SD)	12.1 (7.8)	12.7 (7.8)
Bachelor's degree or higher (%; SD)	33.8 (16.9)	33.7 (18.3)
Rurality (%)	15.1	21.3

Characteristic	NGACO Beneficiaries in PY4	Non-NGACO FFS Beneficiaries in NGACO Markets in PY4
Alignment-eligible providers within 10-mile radius of beneficiary ZIP code (per 1,000 population; SD) ‡	2.3 (1.4)	2.1 (1.3)

NOTES: Non-NGACO FFS beneficiaries were beneficiaries retrospectively aligned with providers that were not NGACO participating or preferred providers or providers in SSP ACOs. Community characteristics are at the beneficiaries' ZIP code level. NGACO markets are HRRs where at least 1 percent of beneficiaries aligned with an NGACO reside. ‡ Alignment-eligible providers per 1,000 persons based on the total population (not restricted to the Medicare population).
SOURCE: NORC analysis of Medicare enrollment, 2019 claims data, and ancillary data.

1.5.3 Model Features Selected

The NGACO model's features included changes such as adjustments to the financial methodology or the introduction of new benefit enhancements over the course of model. There were also changes in ACO participants' election of features such as risk level or benefit enhancements over time. Changes in NGACO election of model features may reflect organizational learning or may be prompted by scheduled changes in the model's methodology. Our conceptual model posits that the model's features provide incentives that can directly affect ACO performance. In our previous evaluation report, we established that NGACOs electing 100 percent risk, setting risk caps above 5 percent, and using PBPs or all-inclusive PBPs (AIPBP) as payment mechanisms achieved greater spending reductions relative to NGACOs electing lower risk levels and FFS-based payments.[10]

In PY4, a lower percentage of NGACOs elected 100 percent risk compared with PY2 and PY3, but a larger percentage selected PBPs; see **Exhibit 1.18**. The decision on risk election may have been influenced by a change for PY4 (2019) in CMS's benchmarking methodology for calculating shared savings/shared losses.[11] For the 2016 and 2017 cohorts, the PY4 baseline included previous performance years, when these NGACOs were already achieving efficiencies. This may have prompted NGACOs in these cohorts to elect lower risk levels. We discuss the impact of changes in the benchmarking methodology in greater detail in Chapter 3.

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[10] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[11] The relative discount rates to the benchmark in PY4 for election of 100 percent versus 80 percent risk may have influenced more NGACOs to elect 80 percent risk. The model's benchmark was discounted by 1.25 percent for NGACOs that elected 100 percent risk and by 0.5 percent for NGACOs that elected 80 percent risk.

Exhibit 1.18. Model Features, PY1–PY4: NGACO Selection of Risk Arrangements and Payment Mechanisms
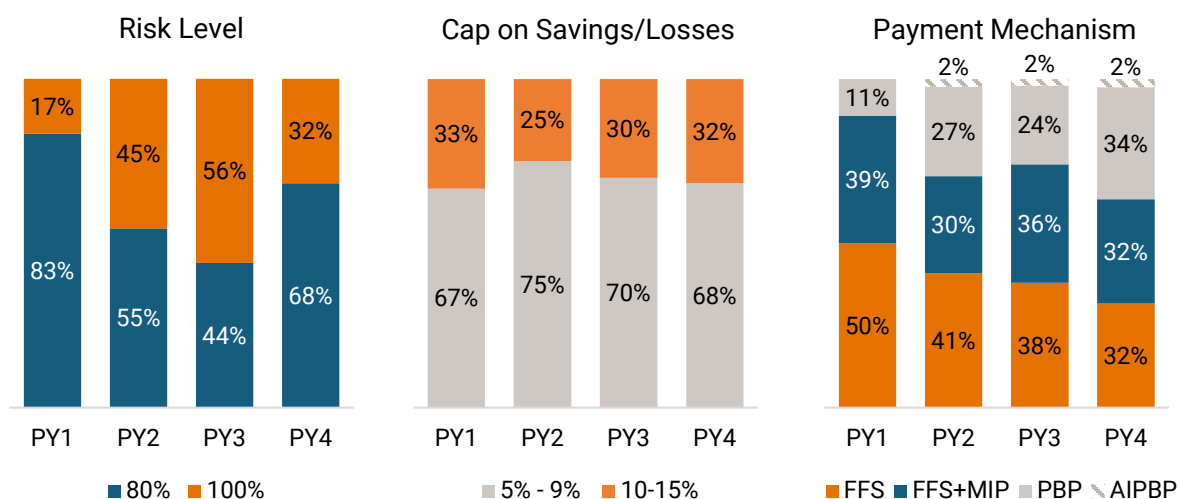
NOTES: FFS = fee-for-service; FFS+MIP = FFS & monthly infrastructure payments; PBP = population-based payment; AIPBP = all-inclusive PBP.[12]
SOURCE: NORC's analysis of NGACO model programmatic data.

The use of benefit enhancement waivers may also influence performance, as the waivers provide additional flexibilities to NGACO providers to deliver optimal care. However, over the course of the NGACO model, uptake of the benefit enhancements has remained low, except for the 3-day SNF waiver. While the percentage of NGACOs electing the SNF waiver declined over the course of the model, most NGACOs still opted for this waiver in PY4, and the proportion of SNF stays covered by the waiver increased in PY4; see **Exhibit 1.19**.

Regarding other benefit enhancements, in PY4, NGACOs gained three new waivers: covering care management home visits, chronic disease rewards, and Medicare Part B cost-sharing support. Despite these new options and experience with the initial benefit enhancements, we continue to

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[12] The actual number of NGACOs selecting each payment mechanism over the four years was as follows:

Number of ACOs by Payment Mechanism and Performance Year

Payment Mechanism	PY1	PY2	PY3	PY4
FFS	9	18	19	13
FFS+MIP	7	13	18	13
PBP	2	12	12	14
AIPBP	0	1	1	1

observe limited waiver use in PY4, which is consistent with our findings through PY3 and other ACO evaluations.[13,14,15]

In initial interviews with NGACO leadership in the early performance years, model participants often stated that they were still evaluating whether and how to implement some of the benefit enhancements. These considerations included assessing how it would impact current practice, implications for physician and facility workflow, and the need for infrastructure and resources. They also considered their prior experience with the 3-day SNF waiver under Pioneer and MA. They described the administrative complexity of the waivers as a key challenge to implementation. Given the continued challenge of integrating benefit enhancements, in PY4 only five NGACOs elected the post-discharge home waiver, and eight or fewer elected the newer waivers.

Exhibit 1.19. Use of the 3-Day SNF Waiver: Waiver Use Increased among Adopters of the Waiver, but Overall Uptake Declined from PY2 to PY4

	PY2	PY3	PY4
3-Day SNF Rule Waiver			
NGACOs that elected SNF 3-day rule waiver services	41	43	32
Percentage of NGACOs electing waiver (%)	93%	86%	78%
3-day SNF waiver stays per 1,000 aligned beneficiaries in waiver-participating ACOs	2.38	2.44	4.82
All SNF stays per 1,000 aligned beneficiaries in waiver-participating ACOs	46.4	52.3	71.4
Percentage of SNF stays that were waiver related in waiver-participating ACOs	5.1%	4.7%	6.7%

SOURCE: NORC analysis of NGACO learning system contractor data.

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[13] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[14] Comprehensive End-Stage Renal Disease Care (CEC) Model Performance Year 3 Annual Evaluation Report. 2020 (November). https://innovation.cms.gov/data-and-reports/2020/cec-annrpt-py3.

[15] Centers for Medicare & Medicaid Services. Evaluation of the Vermont All-Payer Accountable Care Organization Model First Evaluation Report. 2021(August). https://innovation.cms.gov/data-and-reports/2021/vtapm-1st-eval-full-report.

1.6 Overview of Impact Estimates in Report 4

This report focuses on the impacts of the NGACO model, both model-wide and by the factors described above. We present impact estimates for the NGACO model as follows:

- Chapter 2: Model-wide and cohort-level average impacts on gross and net spending, spending categories, utilization, and quality of care.
- Chapter 3: Differences in impact related to NGACO tenure in the model (those that remained in the model and those that exited) and the factors that influenced NGACOs' decisions to stay or exit the model.
- Chapter 4: Impacts of individual NGACOs (NGACO-level findings) as well as variation in impact by market context, structural characteristics, and model feature selection.
- Chapter 5: Qualitative comparative analysis examining NGACOs' contextual and structural pathways to reduce Medicare spending.
- Chapter 6: Summary and discussion of the findings in the report.

Chapter 2: NGACO Model Impacts on Spending, Utilization, and Quality of Care

Key Findings*

Impact on Cumulative Spending

- The NGACO model continued to reduce gross Medicare spending in its fourth performance year (PY). Cumulatively, as of PY4, the model significantly reduced gross Medicare spending for Parts A and B by 1.2 percent ($154.7 per beneficiary per year [PBPY] or $666.9M in aggregate) for NGACO beneficiaries relative to comparators.
- Each NGACO cohort reduced cumulative gross spending (2018 cohort by 1.9 percent; 2017 cohort by 1.5 percent; and 2016 cohort by 1.2 percent).
- Gross spending reductions grew from 1 percent in PY1 to 2 percent in PY4, which may reflect both the exit of NGACOs that performed poorly and improvements among NGACOs that remained in the model.
- After accounting for Medicare's shared savings and coordinated care reward (CCR) payments to NGACOs of $909.6M over four years, the model significantly increased net Medicare spending (by 0.4 percent or $56.3 PBPY or $242.7M in aggregate) and net spending for the 2016 cohort (1.3 percent) and 2018 cohort (1 percent).

Impact on PY4 Spending
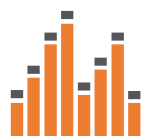
- In PY4, NGACOs reduced gross Medicare Parts A and B spending by $310.3 million (2 percent) relative to usual care.
- After considering shared savings and CCR payouts to NGACOs, the model increased net Medicare spending in PY4, although the increase was not statistically significant. After accounting for $432.8 million in shared savings paid out in PY4, net Medicare spending increased by a statistically non-significant $122.5 million (0.7 percent). Shared savings payments in PY4 were nearly double those in PY3, although there were fewer ACOs in PY4.
- In PY4, two of three cohorts reduced gross Medicare spending for their beneficiaries (2017 cohort by 2.5 percent and 2018 cohort by 2.3 percent). After considering payouts, the 2018 cohort increased net Medicare spending by 2.2 percent.

Spending Impacts among Beneficiary Subgroups

- NGACOs' gross Medicare spending reductions were larger for beneficiaries with more chronic conditions and prior hospitalizations, consistent with the use of population health analytics and care management to identify and manage high-risk beneficiaries.
- NGACOs reduced gross Medicare spending for white beneficiaries but not for other groups of beneficiaries identified by race or ethnicity or dually eligible beneficiaries.

Impact on Categories of Medicare Spending

- The model reduced acute care hospital stays in PY4 and acute care hospital spending cumulatively and in PY4. Acute care hospital spending, which accounted for one-third of total gross Medicare spending, declined both cumulatively by 0.9 percent and in PY4 by 2.3 percent.
- Reductions in professional services spending were modest, which may have reflected limited financial incentives for participating practitioners. Spending for professional services, which accounted for 27 percent of total gross Medicare spending, declined cumulatively by 0.8 percent and in PY4 by 1.6 percent.
- The model's focus on improving care transitions, and in building relationships with SNFs, was seen in reduced spending for SNF and other PAC facilities. Cumulatively, Skilled nursing facility (SNF) spending declined by 2 percent, and other post-acute care (PAC) facility spending by 3.9 percent; in PY4, SNF spending declined by 4 percent and other PAC facility spending by 6 percent.
- Hospice spending increased for both the NGACO and comparison groups in PY4 but at a lower rate for NGACOs.

Impacts on Utilization and Quality

- NGACOs were associated with fewer SNF days, cumulatively (1 percent) and in PY4 (2.6 percent) and with fewer episodes of home health in PY4 (2 percent).
- NGACOs saw substantial increases in use of AWVs, cumulatively (18.1 percent) and in PY4 (22.4 percent), despite the discontinuation of CCR.
- The model was not associated with significant change in quality of care measures, either cumulatively or in PY4.

* All key findings reported are significant at p<0.1 level unless stated otherwise.

In this chapter, we present average impacts of the NGACO model in its first four performance years on total Medicare spending (for Parts A and B), individual spending categories, utilization by category, and quality of care, including:

- Estimated impacts for both gross spending and spending net of shared savings and CCR payments model-wide and for each of the three cohorts, cumulatively as of PY4, and for each of the PYs (PY1-PY4)

- Subgroup analyses to understand changes in the model's spending impacts related to specific beneficiary characteristics

- Results PBPY and as a percent change for all outcomes

- Gross and net Medicare spending impacts in aggregate terms for all beneficiaries served, reporting impact estimates as statistically significant at the 0.1 significance level or lower

While this chapter focuses on model-level and cohort-level findings, we highlight variations at the NGACO level over time and by organizational affiliation, both of which we discuss further in Chapter 4.

We used a difference-in-differences (DID) framework to estimate differential changes in spending, utilization, and quality of care outcomes between a baseline period and each performance year among NGACO beneficiaries, relative to a comparison group. NGACO beneficiaries were aligned with NGACO participating providers in each performance year and the respective baseline period. Beneficiaries in the comparison group were aligned with providers who were not in NGACOs and were weighted to be similar to NGACO beneficiaries, using propensity score weighting. See Appendix A for full details of our methodological approach. See **Appendix D, Exhibits D.1-D.3** for descriptive characteristics for the NGACO and comparison groups for the three cohorts in PY4 and baseline years.

2.1 Impact on Gross and Net Medicare Spending

One goal of the NGACO model is to improve efficiency in care and reduce total Medicare spending. NGACOs in the model receive shared savings payouts from Medicare to improve efficiency in care and maintain Parts A and B spending for their beneficiaries below their financial benchmark in the model. Our evaluation estimates NGACOs' impact on spending for their beneficiaries relative to a comparison group of beneficiaries getting usual care in their markets. Discrepancies between gross spending estimates and shared savings payments to cohorts reflect the different methodologies for calculating shared savings versus evaluation impacts; see Chapter 3 (Section 3.1) for further discussion.

2.1.1 Model-Wide Spending Impacts

Cumulatively, as of PY4, the model significantly reduced gross Medicare spending for Parts A and B by 1.2 percent ($154.7 PBPY or $666.9M in aggregate) for NGACO beneficiaries relative to the comparison group. The cumulative gross spending reduction reflected a decline in average spending for NGACO-aligned beneficiaries between the baseline and performance periods and an increase in average spending for the comparison group during the same time. See **Exhibit 2.2** for the NGACO and comparison groups' average spending per beneficiary in the performance and baseline periods.

After accounting for Medicare's shared savings and CCR payments to NGACOs of $909.6M over four years, the model significantly increased net Medicare spending by 0.4 percent ($56.3 PBPY or $242.7M in aggregate); see **Exhibit 2.1** below. Accounting for shared savings payouts to NGACOs in PY4 more than offset the model's gross spending declines. In PY4, the model significantly reduced gross Medicare spending by 2 percent ($257.9 PBPY or $310.3M overall) for NGACO beneficiaries, relative to the comparison group. However, after accounting for a total of $432.8M in shared savings payments to NGACOs in PY4, net spending increased by 0.7 percent ($101.8 PBPY or $112.5M overall), which was not statistically significant.

Gross spending reductions generally increased over time, with larger reductions in PY4 relative to previous performance years. The size of spending reductions decreased in PY2

relative to PY1, which may be due to the onset of the Quality Payment Program (QPP). Under QPP, we expected the comparison group to increase efficiency because a portion of Medicare spending for both comparison and NGACO groups was tied to value-based care instead of volume alone. From PY2 through PY4, the model's gross spending reductions increased from 0.4 percent to 2 percent. However, the model's shared savings payments continued to offset spending reductions, resulting in net spending increases over time.

Exhibit 2.1. Estimated Impacts on Gross and Net Medicare Spending and Estimated Aggregate Impacts for the NGACO Model, Cumulatively and by Performance Year
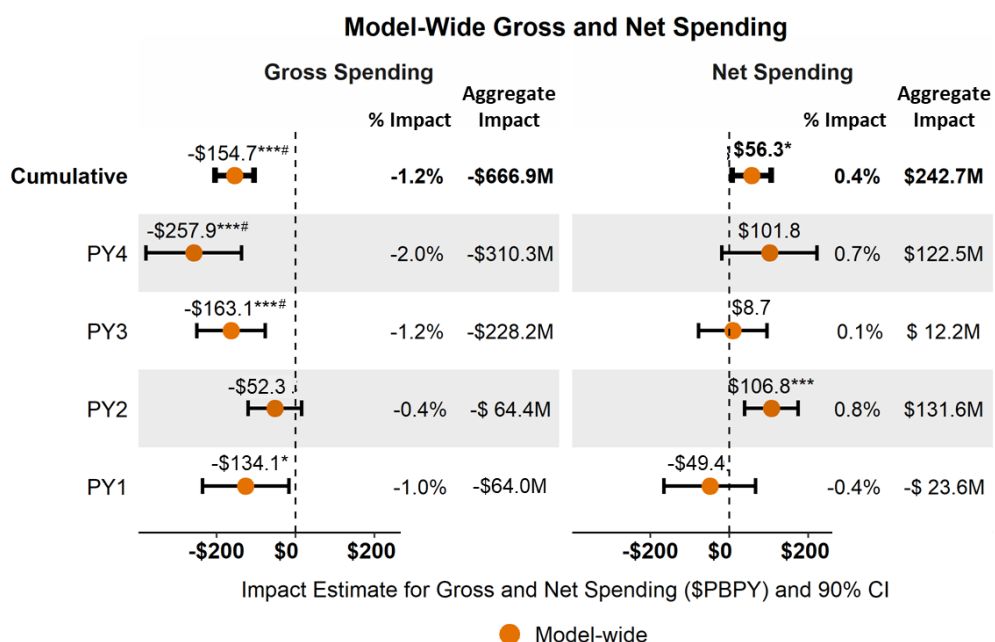
NOTES: Estimated impacts PBPY significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Estimated gross spending impact is the DID estimate of the NGACO model on Medicare Parts A and B spending. Estimated net spending impact is the sum of the gross impact and CMS's payouts to NGACOs for shared savings and CCR. We show 90% confidence intervals (CIs) as bars around the estimates. Mode-wide impact in each performance year reflects the impacts for NGACOs and providers active in the model in the performance year. Cumulative impact is the summary impact from PY1 through PY4 of the model.

Two factors contributed to increases in model-wide gross spending reductions from PY 2 through PY4:

1. **NGACOs that exited the model were mostly NGACOs that did not reduce gross spending on average in the prior year, discussed further in Chapter 3.** By contrast, NGACOs that remained in the model reduced gross spending on average by 1.5 percent across all performance years. Most NGACOs that exited the model incurred shared losses. As a result, the exit of these NGACOs contributed to model-wide improvements in gross spending reductions.

2. **Most NGACOs that joined and remained in the model showed larger average reductions in gross spending over time, described further in** Chapters 3 (Section 3.2) **and** 4 (Section 4.1)**.** These NGACOs may have refined their strategies and approaches during their time in the model. In addition, as reported in Chapter 1, when NGACOs mature in the model, their networks of participating practitioners became more stable (via practitioner retention), contributing to beneficiary retention. Taken together, these improvements by NGACOs that remained in the model contributed to increases in gross spending reductions model-wide across performance years.

The model's impact on gross spending in PY4 was unchanged when excluding Medicare's QPP Merit-Based Incentive Payment System (MIPS) adjustments to both the NGACO and comparison groups. Our main analysis included MIPS adjustments in total gross spending paid to both comparison and NGACO providers. For this reason, we conducted a sensitivity check, removing MIPS adjustments from our analysis of total gross spending. MIPS payments were $0.40 per beneficiary larger for the comparison group than the NGACO group in PY4. After removing the MIPS payments, our findings on the model's gross spending impacts were nearly unchanged; see **Appendix D, Exhibit D.4** for details. Our estimate of the net spending impacts in PY4 did not consider the 5 percent AAPM bonuses paid to some PY4 NGACO and comparison providers because these bonuses are not reflected in claims. QPP MIPS adjustments and AAPM bonuses for 2017 were paid in 2019 (NGACO's PY4) due to a lag between the performance year and CMS payouts. The NGACO model's gross spending impact estimates from PY2 onwards capture the summary effects of QPP with MIPS.

Exhibit 2.2 presents a detailed breakdown of the impact estimates, adjusted mean Medicare spending for the NGACO and comparison groups during the baseline and performance periods, and shared savings payouts and net estimated impacts.

Exhibit 2.2. Estimated Gross and Net Impacts of NGACO Model on Medicare Spending, Cumulative and by Performance Year

	N	Mean Adjusted Spending PBPY				Gross Impact Estimate		Shared Savings		Net Impact Estimate	
		NGACO Group in Baseline Period ($)	NGACO Group in Performance Period ($)	Comparison Group in Baseline Period ($)	Comparison Group in Performance Period ($)	PBPY ($) (95% CI)	Aggregate ($ in Millions) (95% CI)	PBPY ($)	Aggregate ($ in Millions)	Estimate PBPY ($) (95% CI)	Aggregate ($ in Millions) (95% CI)
Cumulative	4,312,249	13,636.61	13,544.27	13,893.27	13,955.58	-154.65***# (-213.85, -95.45)	-666.88***# (-922.17, -411.58)	210.92	909.56	56.28* (-2.93, 115.48)	242.68* (-12.61, 497.97)
PY4	1,203,457	13,532.17	13,544.23	13,776.62	14,046.53	-257.85***# (-402.02, -113.69)	-310.32***# (-483.82, -136.81)	359.63	432.80	101.78 (-42.39, 245.95)	122.49 (-51.01, 295.99)
PY3	1,399,398	13,770.23	13,712.62	13,998.00	14,103.43	-163.05***# (-265.91, -60.19)	-228.17***# (-372.11, -84.22)	171.75	240.34	8.70 (-94.16, 111.56)	12.17 (-131.77, 156.12)
PY2	1,232,215	13,744.23	13,600.04	14,074.08	13,982.18	-52.29 (-133.31, 28.74)	-64.43 (-164.27, 35.42)	159.06	196.00	106.77*** (25.75, 187.80)	131.57*** (31.72, 231.41)
PY1	477,179	13,230.28	12,906.69	13,413.46	13,223.92	-134.06* (-272.82, 4.70)	-63.97* (-130.18, 2.25)	84.701	40.42	-49.35 (-188.12, 89.41)	-23.55 (-89.76, 42.66)

NOTES: Estimated impacts PBPY significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Estimated gross impact is the DID estimate, or the difference between the NGACO and comparison mean adjusted spending in the performance year(s) and baseline years. Cumulative impact is the summary impact from PY1 through PY4 of the model. Mean adjusted spending for the NGACO and comparison groups in the baseline and performance years(s) are the conditional means from the DID regressions. Estimated net impact is the gross impact less shared savings payments to NGACOs and CCR payouts to aligned beneficiaries in the performance years. Significant impacts at the p<0.1 level appear in shaded cells. Lower spending impact estimates are shaded in green; higher spending estimates are shaded in orange. PBPY estimate is the impact estimate per beneficiary per year. Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year(s). Cumulatively as of PY4 the model served 2,422,423 unique beneficiaries across 4,312,249 beneficiary years.

2.1.2 Impact on Gross and Net Medicare Spending: Differences by Cohort

Estimated spending impacts to date have varied across the 2016, 2017, and 2018 NGACO cohorts. Our previous evaluation report through PY3 showed significant reductions in gross spending for the 2017 cohort (1.1 percent) and 2018 cohort (1.5 percent) and a significant increase in net spending for the 2016 cohort (1 percent).[16] Our estimates of gross and net spending through PY4 are consistent with previous findings.

Exhibit 2.3 displays gross and net spending impacts by cohort, both cumulatively as of PY4 and for each performance year through PY4.

Cumulatively through PY4, all three cohorts showed significant but varying reductions in gross Medicare spending. In percentage and PBPY terms, the 2018 cohort (1.9 percent, -$233.2 PBPY) and 2017 cohort (1.5 percent, -$204.1 PBPY) had larger gross spending reductions than the 2016 cohort (0.7 percent, $82.7 PBPY). Differences in net impacts across the three cohorts reflected differences in their gross spending impacts and their payouts for shared savings and CCRs. Higher payouts to the 2018 ($407.5 PBPY) and 2016 ($218.4 PBPY) cohorts negated their gross spending reductions, thereby increasing their overall net spending. Net spending increased significantly for the 2016 (1 percent) and 2018 (1.3 percent) cohorts, while the 2017 cohort had a non-significant decline in net spending (0.4 percent). See **Exhibit 2.4** for a detailed breakdown of the cohorts' impact estimates, adjusted mean Medicare spending for the NGACO and comparison groups during the baseline and performance periods, and shared savings payouts.

In PY4, all three cohorts achieved gross spending reductions larger relative to reductions in previous performance years. However, the impact for the 2016 cohort was not statistically significant. The cohorts' gross spending impact estimates grew over time, despite the overlapping confidence intervals.[17] This is in line with analyses of ACOs in the Medicare Shared Savings Program (MSSP),[18] suggesting that investments in care management, data analytics, provider engagement, and care transformation take time to result in decreases in spending. At the same time, several poor-performing NGACOs exited the model, amplifying the impacts of the NGACOs that remained in the model and improved over time; see Chapter 3 for further discussion.

Variations in per capita Medicare spending across cohorts may have contributed to differences in gross spending impacts. Specifically, NGACOs in the 2017 cohort were more likely to be , on average, in markets with higher per capita Medicare spending than NGACOs in the 2016 and 2018

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[16] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[17] The 2016 cohort did not reduce gross spending in PY2. NGACOs in the 2016 cohort reshaped their provider networks after PY1 by dropping participating specialists and adding participating primary care practitioners. The 2016 cohort's gross Medicare spending reduction in PY4 (1.2 percent) and PY3 (0.8 percent) was larger than PY2, suggesting that its NGACOs and providers may have reduced spending with greater experience in the model.

[18] A 2018 analysis by Avalere found that ACOs in MSSP for four or more years were responsible for the majority of the program's savings. See https://avalere.com/press-releases/medicare-accountable-care-organizations-generate-savings-as-experience-grows.

cohorts. NGACOs in markets with higher per capita Medicare spending may have more opportunities for achieving gross spending reductions. These different market conditions may have also contributed to differences in net spending impacts. Shared savings payouts were higher on average for NGACOs in the 2016 and 2018 cohorts than the 2017 cohort, rewarding NGACOs in lower-spending markets for maintaining their spending below their financial benchmark. NGACOs in the 2016 and 2018 cohorts reduced gross spending on average relative to the comparison groups in their markets, but their gross spending reductions were lower than their shared savings payouts, resulting in increased net spending for those cohorts.

Exhibit 2.3. Estimated Impacts on Gross and Net Medicare Spending and Estimated Aggregate Impacts for Each NGACO Cohort, Cumulative and by Performance Year

		Gross Spending	% Impact	Aggregate Impact		Net Spending	% Impact	Aggregate Impact
2016 Cohort	Cumulative	-$ 82.7*	-0.7%	-$155.8M		$135.7***#	1.0%	$255.9M
	PY4	-$148.2	-1.2%	-$ 69.8M		$157.9	1.2%	$ 74.3M
	PY3	-$103.7	-0.8%	-$47.6M		$172.3*	1.3%	$ 79.2M
	PY2	$53.5	0.4%	$25.6M		$263.7***#	2.0%	$125.9M
	PY1	-$134.1*	-1.0%	-$64.0M		-$49.4	-0.4%	-$ 23.6M
2017 Cohort	Cumulative	-$204.1***#	-1.5%	-$386.0M		-$56.4	-0.4%	-$106.7M
	PY4	-$347.4***#	-2.5%	-$168.2M		-$46.8	-0.3%	-$ 22.6M
	PY3	-$196.1**	-1.4%	-$127.9M		-$137.6	-0.9%	-$ 89.7M
	PY2	-$119.2**	-0.9%	-$90.0M		$7.5	0.1%	$ 5.7M
2018 Cohort	Cumulative	-$233.2***#	-1.9%	-$125.0M		$174.4**	1.3%	$ 93.5M
	PY4	-$291.1*	-2.3%	-$ 72.4M		$284.7*	2.2%	$ 70.8M
	PY3	-$183.1***#	-1.5%	-$52.6M		$78.9	0.6%	$ 22.7M

Impact Estimate for Gross Spending ($PBPY) and 90% CI
Impact Estimate for Net Spending ($PBPY) and 90% CI

● 2016 Cohort   ● 2017 Cohort   ○ 2018 Cohort
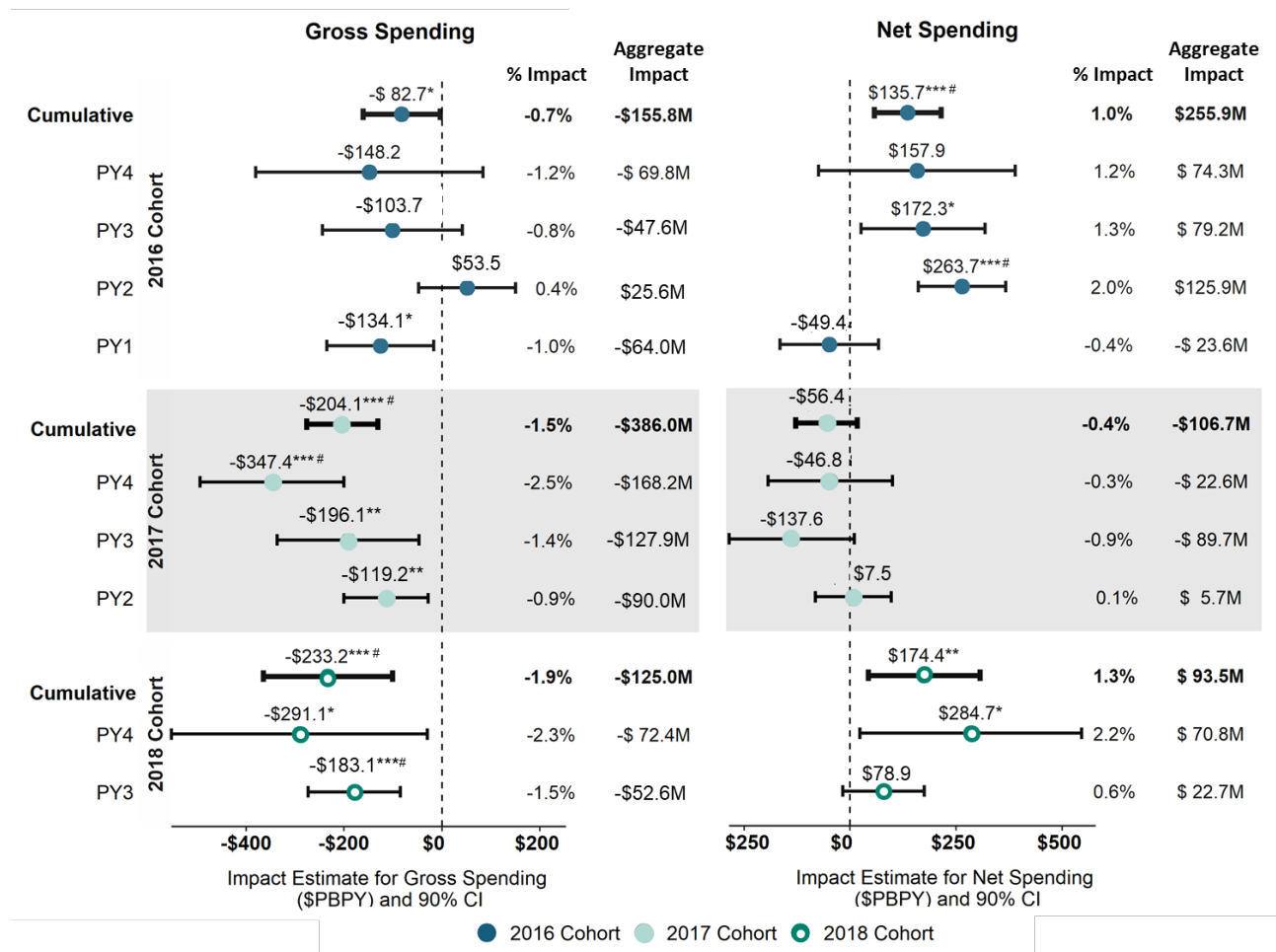
NOTES: Estimated impacts PBPY significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Estimated gross spending impact is the DID estimate of the NGACO model on Medicare Parts A and B spending. Estimated net spending impact is the sum of the gross impact and CMS's payouts to NGACOs for shared savings and CCR. We show 90% CIs as bars around the estimates. Impact for the cohorts in each performance year reflects impacts for their NGACOs and providers active in the model in the performance year. Cumulative impact is the summary impact from PY1 through PY4 of the model.

Exhibit 2.4. Estimated Gross and Net Impacts of Each NGACO Cohort on Medicare Spending, Cumulative and by Performance Year

Cohort	Number of Beneficiaries	Mean Adjusted Spending PBPY				Gross Impact Estimate		Shared Savings		Net Impact Estimate	
		NGACO Group in Baseline Period	NGACO Group in Performance Period	Comparison Group in Baseline Period	Comparison Group in Performance Period	PBPY ($) (95% CI)	Aggregate ($ in Millions) (95% CI)	PBPY ($)	Aggregate ($ in Millions)	PBPY ($) (95% CI)	Aggregate ($ in Millions) (95% CI)
Cohort											
Cumulative	1,884,865	13,031.13	13,095.40	13,252.04	13,398.98	-82.67* (-176.32, 10.99)	-155.81* (-332.35, 20.72)	218.42	411.68	135.75***# (42.09, 229.41)	255.87***# (79.34, 432.40)
	470,657	12,821.42	13,296.41	13,024.62	13,647.82	-148.21 (-424.58, 128.16)	-69.76 (-199.84, 60.32)	306.13	144.08	157.91 (-118.46, 434.28)	74.32 (-55.76, 204.40)
	459,603	13,055.19	13,185.82	13,264.72	13,499.01	-103.66 (-277.94, 70.62)	-47.64 (-127.74, 32.45)	276.00	126.85	172.34* (-1.94, 346.62)	79.21* (-0.89, 159.30)
	477,426	13,015.66	12,998.83	13,302.69	13,232.34	53.53 (-69.39, 176.44)	25.56 (-33.13, 84.24)	210.16	100.34	263.69***# (140.78, 386.60)	125.89***# (67.21, 184.57)
	477,179	13,230.28	12,906.69	13,413.46	13,223.92	-134.06* (-272.82, 4.70)	-63.97* (-130.18, 2.25)	84.70	40.42	-49.35 (-188.12, 89.41)	-23.55 (-89.76, 42.66)
Cohort											
Cumulative	1,891,185	14,382.08	14,153.00	14,703.00	14,678.05	-204.12***# (-290.89, -117.36)	-386.04***# (-550.12, -221.95)	147.71	279.36	-56.41 (-143.17, 30.35)	-106.68 (-270.76, 57.4)
	484,152	14,438.01	14,176.29	14,732.04	14,817.66	-347.35***# (-522.45, -172.25)	-168.17***# (-252.94, -83.39)	300.59	145.53	-46.75 (-221.85, 128.35)	-22.64 (-107.41, 62.14)
	652,244	14,545.40	14,335.54	14,844.61	14,830.82	-196.07** (-372.29, -19.85)	-127.88** (-242.82, -12.94)	58.51	38.16	-137.56 (-313.78, 38.66)	-89.72 (-204.66, 25.22)
	754,789	14,205.07	13,980.33	14,562.00	14,456.48	-119.22** (-226.24, -12.20)	-89.98** (-170.76, -9.21)	126.74	95.66	7.52 (-99.50, 114.54)	5.68 (-75.10, 86.45)
Cohort											
Cumulative	536,199	13,135.77	12,975.16	13,291.43	13,364.01	-233.17***# (-390.18, -76.17)	-125.03***# (-209.21, -40.84)	407.53	218.52	174.35** (17.35, 331.36)	93.49** (9.30, 177.67)
	248,648	13,113.75	12,782.62	13,339.73	13,299.74	-291.14* (-602.54, 20.26)	-72.39* (-149.82, 5.04)	575.87	143.19	284.74* (-26.66, 596.14)	70.8* (-6.63, 148.23)
	287,551	13,154.81	13,141.66	13,249.67	13,419.58	-183.05***# (-297.97, -68.13)	-52.64***# (-85.68, -19.59)	261.96	75.33	78.91 (-36.02, 193.83)	22.69 (-10.36, 55.74)

NOTES: Estimated impacts PBPY significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Estimated gross impact is the DID estimate, or the difference between the NGACO and comparison mean adjusted spending in the performance year(s) and baseline years. Cumulative impact is the summary impact from PY1 through PY4 of the model for the respective cohorts. Mean adjusted spending for the NGACO and comparison groups in the baseline and performance years(s) are the conditional means from the DID regressions. Estimated net impact is the gross impact less shared savings payments to NGACOs and CCR payouts to aligned beneficiaries in the performance years. Significant impacts at the p<0.1 level appear in shaded cells. Lower spending impact estimates are shaded in green, and higher spending estimates are shaded in orange. PBPY estimate is the impact estimate per beneficiary per year for the respective cohorts. Aggregate estimate is impact estimate for all aligned beneficiaries in performance year(s) for the respective cohorts. Cumulatively as of PY4, the 2016, 2017, and 2018 cohorts served 913,645; 1,123,441; and 382,313 unique beneficiaries, respectively.

2.1.3 Impacts on Gross Spending: Differences across Beneficiary Subgroups

Most NGACOs described using risk stratification to identify beneficiaries for more intensive care management. NGACOs reported specifically identifying beneficiaries for care management based on characteristics such as past patterns of high utilization, recent inpatient stays, or having multiple chronic conditions. Our impact analysis considers four beneficiary populations who were likely to have been touched by NGACO care management:

- **Beneficiaries with multiple chronic conditions (8 or more conditions, compared with 3-7 conditions and 0-2 conditions):** Beneficiaries with eight or more chronic conditions had higher baseline spending than beneficiaries with fewer chronic conditions. NGACOs focused on prospectively identifying beneficiaries with multiple chronic conditions.
- **Beneficiaries with hospitalizations in the preceding year (compared with those with no hospitalizations in the prior year):** Beneficiaries with hospitalizations in the preceding year had higher baseline spending than those with no hospitalization in the prior year. Another focus for NGACOs has been the prospective identification of beneficiaries at high risk of hospitalization.
- **Beneficiaries in racial and ethnic groups (white, compared with Black beneficiaries and other racial and ethnic minority groups):** Black beneficiaries had higher baseline spending compared to white, non-Hispanic beneficiaries and beneficiaries in other racial and ethnic minority groups. Previous studies have shown that larger shares of Black beneficiaries report being in poor health than white beneficiaries, and certain chronic conditions are also more prevalent among Black beneficiaries than white beneficiaries. [19] In addition, Black beneficiaries experience underuse of some types of care and overuse of other services.[20] Black beneficiaries are more likely than white beneficiaries to report trouble getting needed care, unwanted delays in getting an appointment, and problems finding a new specialist.[21] However, research has found that Black patients are more likely than white patients to receive low-value tests and treatments,[22] have one or more inpatient stays and emergency department (ED) visits,[23] and be readmitted to a hospital.[24] While most NGACOs did not focus explicitly on engaging beneficiaries in specific racial and ethnic groups, NGACO approaches to

[19] Kaiser Family Foundation. Racial and Ethnic Health Inequalities and Medicare. February 2021. https://files.kff.org/attachment/Report-Racial-and-Ethnic-Health-Inequities-and-Medicare.pdf.

[20] Helfrich CD, Hartmann CW, Parikh TJ, Au DH. Promoting Health Equity through De-Implementation Research. *Ethn Dis*. 2019;29(Suppl 1):93-96. Published 2019 Feb 21. doi:10.18865/ed.29.S1.93.

[21] Kaiser Family Foundation. Racial and Ethnic Health Inequalities and Medicare. February 2021. https://files.kff.org/attachment/Report-Racial-and-Ethnic-Health-Inequities-and-Medicare.pdf.

[22] Schpero WL, Morden NE, Sequist TD, Rosenthal MB, Gottlieb DJ, Colla CH. For Selected Services, Blacks And Hispanics More Likely to Receive Low-Value Care than Whites. *Health Aff (Millwood)*. 2017;36(6):1065-1069. doi:10.1377/hlthaff.2016.1416.

[23] Kaiser Family Foundation. Racial and Ethnic Health Inequalities and Medicare. February 2021. https://files.kff.org/attachment/Report-Racial-and-Ethnic-Health-Inequities-and-Medicare.pdf,

[24] Radford MJ. Racial Disparities in Readmission Rates Following Acute Myocardial Infarction in the Hospital Readmissions Reduction Program Era. *JAMA Cardiol.* 2020;5(2):145–146. doi:10.1001/jamacardio.2019.5120.

population health management may support beneficiaries in groups with higher risk for ED visits and hospitalization.

- **Beneficiaries dually eligible for Medicare and Medicaid (compared with those not dually eligible):** Dually eligible beneficiaries had higher baseline spending than those not dually eligible. While most NGACOs did not explicitly focus on Medicare beneficiaries dually eligible for Medicaid, NGACOs' approaches to identifying beneficiaries for care coordination would include dually eligible beneficiaries. See Appendix A for details on how we defined these populations of beneficiaries and estimated their model-wide impacts.

For each beneficiary subgroup, we estimated cumulative (as of PY4) and PY4 gross spending impacts (see **Exhibit 2.5**). Some cumulative impact estimates could not be interpreted because the spending trends were not parallel between the NGACO and comparison beneficiary subgroups across the baseline period; the Exhibit denotes the absence of these estimates (the § symbol). We observed the following:

- **Larger gross spending reductions for beneficiaries with greater clinical need.** We observed significant and high gross spending reductions for the beneficiary subgroup with eight or more chronic conditions, both cumulatively (1.5 percent, $456 PBPY) and in PY4 (2.5 percent, $755 PBPY). We also observed significant and high gross spending reductions for beneficiaries with prior hospitalizations cumulatively (1.2 percent, $410 PBPY). These findings are consistent with NGACOs' focus on beneficiaries with these risk factors.
- **No significant reduction in spending for Black beneficiaries or beneficiaries in other racial and ethnic minority groups.** While Black beneficiaries had higher average spending in both baseline and performance years than white beneficiaries, we did not observe reductions in spending for Black beneficiaries or beneficiaries in other racial and ethnic minority groups. Of note, Black beneficiaries make up only 6.3 percent of NGACO beneficiaries, so their relatively small prevalence makes it more statistically challenging to measure any changes in spending. In addition, as noted above, higher or unchanged spending for Black Medicare beneficiaries may be related to underlying health disparities and higher utilization. It is important to note that overall spending impacts do not provide insight into drivers of spending, which may provide additional insight into changes in patterns of care associated with the NGACO model.
- **Gross spending reductions for beneficiaries who were not dually eligible but not for those who were dually eligible.** We observed significant and large gross spending reductions for non-duals, both cumulatively (1.2 percent, $131 PBPY) and in PY4 (2.2 percent, $245 PBPY). For dually eligible beneficiaries, cumulative impacts were not interpretable due to a lack of parallel trends, and the impacts in PY4 were nonsignificant. Challenges in coordinating health care (funded through Medicare) and long-term services and supports (funded through Medicaid) for dually eligible beneficiaries may have limited the ability of NGACOs to reduce spending for this population.

See **Appendix D, Exhibit D.9** for a detailed breakdown of the adjusted mean Medicare spending for the NGACO and comparison subgroups during the baseline and performance periods.

Exhibit 2.5. Estimated Impacts on Gross Medicare Spending for Groups of NGACO-aligned Beneficiaries, Cumulative and in PY4
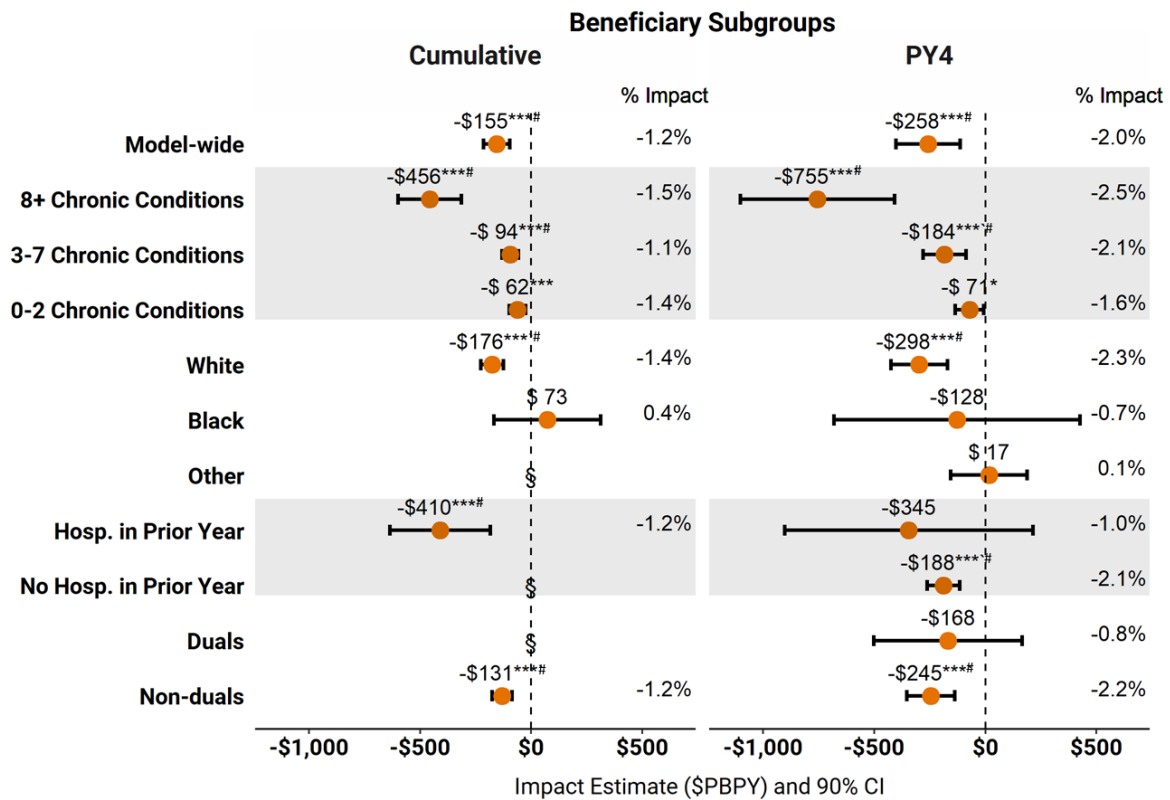
NOTES: Estimated impacts PBPY significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Estimated gross spending impact is the DID estimate of the NGACO model on Medicare Parts A and B spending for each beneficiary subgroup. We show 90% CIs as bars around the estimates. We estimated impacts for the following subgroups separately: beneficiaries with chronic conditions; racial/ethnic groups (defined as white, Black, or Other); beneficiaries with/without hospitalizations in prior year; and beneficiaries based on dual eligibility/non-duals. Cumulative impact is the summary impact for the beneficiary subgroup from PY1 through PY4 of the model. Estimates for a specific beneficiary subgroup reflect the incremental main effect of the NGACO model on gross spending for that subgroup of beneficiaries. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption for subgroup across baseline years.

2.1.4 Impacts for Spending Categories and Utilization Measures

The implications of estimated impacts for Medicare spending depend in part on the relative contribution of each category to total Medicare Parts A and B spending. For NGACO beneficiaries, , acute care hospital facility spending (32 percent) was the greatest contributor to total spending, followed by professional services (27 percent); outpatient facility (18 percent); SNF (9 percent); home health (6 percent); other PAC facilities (3 percent); hospice (3 percent); and durable medical equipment (DME; 2 percent). See **Appendix D, Exhibit D.10** for more information.

We estimated cumulative impacts (as of PY4) and impacts in PY4 for each of these categories of Medicare spending, as well as utilization measures for selected care settings and professional

services.[25] Despite the lack of net savings, the NGACO model and each NGACO cohort saw impacts for certain categories of gross Medicare spending and utilization, particularly in the areas of acute care hospitalizations, SNFs and other PAC, and professional services. (See Exhibit 2.6.) In the remainder of this section, we present detailed impact results for the following categories:

- Acute care hospital
- SNF and other PAC facilities
- Outpatient facility and ED
- Professional services
- E&M visits and AWVs
- Procedures, tests, and imaging
- Home health
- Hospice
- DME

Exhibit 2.6. NGACOs' Impacts in Several Spending and Utilization Categories

	% Cumulative Impact		% PY4 Impact	
	Spending	Utilization	Spending	Utilization
Acute Care Hospital Facility Spending and Stays	-0.9%***#	-0.1%	-2.3%	-0.8%*
SNF Spending and Days	-2.0%***#	-1.0%*	-4.0%***#	-2.6%**
Other Post-Acute Care (PAC) Facility Spending	-3.9%***#		-6.0%***#	
Outpatient Facility Spending and ED Visits	§	§	-1.8%	-1.2%
Professional Services Spending and Beneficiaries with AWVs	-0.8%***#	18.1%***#	-1.6%**	22.4%***#
Home Health Spending and Episodes	§	§	§	-2.0%***#
Hospice Spending	§		-6.8%***#	

NOTES: Estimated percentage impacts significant at *p<0.1, **p<0.05, ***p<0.01, ***#p<0.005. Cumulative impact is the summary impact from PY1 through PY4 of the model. Significant impacts at the p<0.1 level appear in shaded cells. Impacts for Durable Medical Equipment (DME) spending not displayed. § denotes uninterpretable impact estimate due to failure of parallel trends assumption across baseline years. Favorable impact estimates are shaded in green.

Some impact estimates cannot be interpreted because baseline trends are not parallel between the NGACO and comparison groups. We do not report impact estimates in these cases, and exhibits in this chapter use the § symbol to denote the measures for which estimates are not interpretable. One estimate that cannot be interpreted may affect other measures as well: if a cohort-level impact estimate is not interpretable for a given measure in a performance year, the corresponding model-wide estimate for the performance year, the model-wide cumulative

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[25] The impact estimates for Medicare spending categories do not add up to the estimate for total Medicare spending because of differences in the models used to estimate spending outcomes, based on the distribution of both zero and high spenders in the data. Please see Appendix H for details about models for Medicare spending outcomes.

estimate, and the cohort's cumulative estimate may no longer be interpretable. The lack of parallel trends may reflect the participation of over half of NGACO providers in the MSSP and Pioneer ACOs during the baseline period. See Appendix D for more information about the parallel trends assumption and tests.

Impacts for Acute Care Hospital Spending and Utilization

As discussed in the Third Evaluation Report, NGACOs aimed to reduce acute care hospital spending and hospital stays using data analytics to identify prospectively aligned beneficiaries at risk of hospitalization and engaging them through care management, managing transitions of care to prevent readmission. Some NGACOs also used the SNF 3-day rule waiver to avoid unnecessary hospital days.[26] An NGACO's organizational affiliation may influence implementation of these strategies, as well as the overall incentive and ability to reduce inpatient acute care. For example, hospital-affiliated NGACOs may be more sensitive to the prospect of lost revenue from reductions in hospital stays than physician practice-affiliated NGACOs.

Our previous evaluation of the model through PY3 found no significant model-wide reductions in acute care hospital spending or stays, cumulatively or in PY3 alone.[27] The 2018 cohort saw a significant decrease in spending and a non-significant decrease in stays. We suggested that the relatively high percentage share of physician practice-affiliated NGACOs in the 2018 cohort might explain their observed favorable impacts. The model's overall lack of impact on acute care hospital spending in PY3, which makes up about one-third of total gross Medicare spending, may have contributed to its modest gross spending reduction. We hypothesized that the model may yield more discernible impacts on hospital spending and stays in later years, due to the exit of poor performing ACOs, alongside larger reductions in hospital utilization and spending in the longer term for ACOs and beneficiaries continuing in the model.[28] Our findings through P4 confirm this hypothesis, as seen in **Exhibit 2.7**. We observe the following:

■ **Significant cumulative reductions in acute care spending.** We observed cumulative reductions across the model (0.9 percent), for the 2017 cohort (0.9 percent), and for the 2018 cohort (2.4 percent) as of PY4. For acute care hospital stays, only the 2018 cohort had a significant, cumulative reduction (1.6 percent). While reducing spending, the 2017 cohort did not reduce acute care stays.
■ **Significant reductions in acute care spending in PY4.** In PY4, there were significant declines in acute care hospital spending across the model (2.3 percent), for the 2017 cohort (2.8 percent), and for the 2018 cohort (3.4 percent). For acute care hospital stays in PY4, the

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[26] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[27] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[28] In a study of a Pioneer ACO, Hsu et al. (2017) found no significant association between ACO participation and hospitalization rates; however, the study did find an initial increase in hospitalization rates in the first six months of participations for ACO participation and care management programs, and a significant stepwise decline with increasing length of exposure.

model was associated with a 0.8 percent decline and the 2018 cohort with a 2.4 percent decline.

- **A growing trend in reductions in acute care hospital spending and stays over time.** Over time, the number of NGACOs achieving spending and utilization reductions in acute care hospital spending grew; Chapter 4, Section 4.1 and **Appendix F, Exhibit F.3** provide additional detail on ACO-level results. The proportion of ACOs significantly reducing acute care spending increased from 13 percent in PY1 to 24 percent in PY4, and the proportion significantly reducing acute care stays increased from 0 percent in PY1 to 21 percent in PY4.

- **Larger reductions in acute care hospital spending, on average, for physician practice-affiliated NGACOs (1 percent), compared with IDS/hospital system-affiliated NGACOs (0.7 percent)** and **hospital-physician practice partnerships (0.4 percent).** Physician practice-affiliated NGACOs may be less likely to face revenue pressures around lowering acute care hospital stays and spending than IDS/hospital system-affiliated NGACOs (see *Spotlight on NGACO's Efforts to Decrease Hospitalizations*). IDS/hospital system-affiliated and hospital-physician practice partnership NGACOs; however, may have achieved efficiencies by leveraging common health information technology (IT) systems and care coordination resources and may have more control over the length of stay. In future reports, we plan to explore how combinations of NGACO organizational capabilities and implementation approaches influence impacts on these outcomes. See Chapter 4, Section 4.4.1 for additional findings by organizational type and **Appendix F, Exhibit F.5** for the full set of findings.

Exhibit 2.7. Estimated Impacts on Acute Care Hospital Spending and Stays, Cumulative and PY4
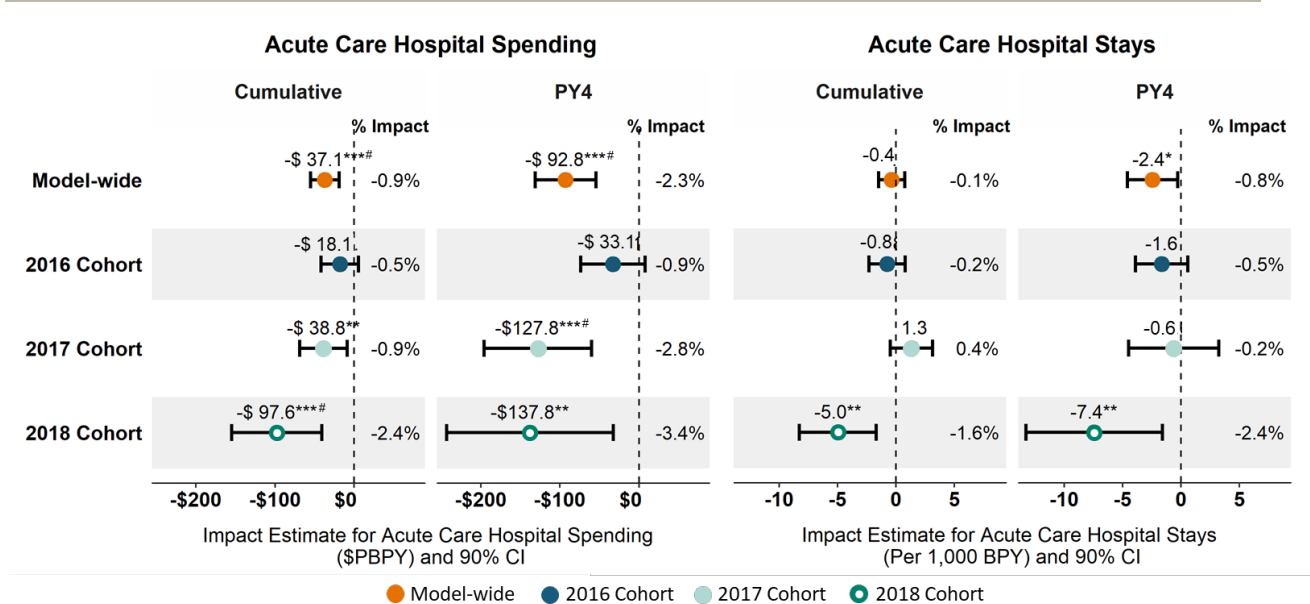
Acute Care Hospital Spending

	Cumulative	% Impact	PY4	% Impact
Model-wide	-$ 37.1***#	-0.9%	-$ 92.8***#	-2.3%
2016 Cohort	-$ 18.1	-0.5%	-$ 33.1	-0.9%
2017 Cohort	-$ 38.8**	-0.9%	-$127.8***#	-2.8%
2018 Cohort	-$ 97.6***#	-2.4%	-$137.8**	-3.4%

Acute Care Hospital Stays

	Cumulative	% Impact	PY4	% Impact
Model-wide	-0.4	-0.1%	-2.4*	-0.8%
2016 Cohort	-0.8	-0.2%	-1.6	-0.5%
2017 Cohort	1.3	0.4%	-0.6	-0.2%
2018 Cohort	-5.0**	-1.6%	-7.4**	-2.4%

Impact Estimate for Acute Care Hospital Spending ($PBPY) and 90% CI

Impact Estimate for Acute Care Hospital Stays (Per 1,000 BPY) and 90% CI

Model-wide   2016 Cohort   2017 Cohort   2018 Cohort

NOTES: Estimated impacts PBPY for spending and per 1,000 BPY for utilization significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for Medicare spending for acute care hospital facilities and acute care hospital stays. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average acute care hospital spending or stays for NGACO beneficiaries in performance year(s) absent the model.

Spotlight: An NGACO's Efforts to Decrease Hospitalizations and Readmissions

Primaria, a physician practice-affiliated NGACO in the 2018 cohort, offers care management services across the continuum from the physician's office to the SNF and home. Primaria emphasizes the importance of the AWV to participating physicians as an opportunity to identify patients needing care coordination to decrease the risk of hospitalization. The key components of Primaria's care management model are:

- **Care coordination program**: The care coordination program focuses on the top 10 percent of beneficiaries at risk for hospitalization. Patients are identified for care management programs through data analytics, physician referrals, and health risk assessments, such as the AWV. Registered nurses based in local hospitals see an NGACO patient while they are in the hospital to ensure care is coordinated upon discharge. Care coordinators provide in-person guidance and education in the primary care setting. A resource coordinator is part of the team to address social, economic, psychological, and emotional barriers that can have an adverse impact on a patient's health and well-being. Primaria increased the number of licensed case social workers to respond to patient mental health needs.
- **Chronic condition management program**: The chronic care management program targets patients with two or more chronic diseases who may not be classified as high risk. A registered nurse care manager works on chronic conditions with patients and provides education (e.g., medications, preventative care) primarily in a physician office, but also in patient homes as needed.
- **Transitional care management (TCM) program:** Post-discharge coordinators, who are licensed practical nurses, telephonically follow any patient who is leaving an inpatient setting or SNF for 30 days to qualify that patient for a TCM visit where patients receive services such as medication reconciliation, disease state education, and coordination with their primary care physician.

In PY4, Primaria reduced acute care hospital spending and stays; SNF spending, days, and stays; and 30-day readmissions.

Impacts for Skilled Nursing Facility and Other Post-Acute Care Spending and Utilization

Recognizing PAC as an important driver of cost, NGACOs have invested in building relationships with SNF networks and coordinating care across settings. Most NGACOs have staff on the ground in SNFs to manage and coordinate care. Approximately half of the NGACOs also instituted regular—often quarterly—in-person or virtual forums or meetings (whether or not the NGACOs embedded staff in SNFs) with a subset of partner SNFs to share data, review performance, and emphasize the importance of care coordination.

NGACOs may have reduced spending for PAC facilities other than SNFs—including inpatient rehabilitation facilities (IRFs) and long-term care hospitals (LTCHs)—by directly substituting placements with SNF placements. To reduce SNF spending, NGACOs collaborated with their network of partner SNFs to focus on decreasing the lengths of SNF stay, in part to offset increases in SNF placements; see *Spotlight: An NGACO's Efforts to Decrease SNF Spending*. These efforts demonstrate that NGACOs focused attention across the full continuum of care.

Our evaluation of the model through PY3 found early evidence of NGACO success in decreasing SNF and PAC spending. There were statistically significant declines in SNF and other PAC

spending across the model, both cumulatively and in PY3.[29] Our observations through PY4, shown in **Exhibit 2.8** below, reinforce our earlier findings

- **Significant reductions in SNF spending.** We found significant reductions in SNF spending for the model overall (a cumulative decrease of 2 percent and a 4 percent decrease for PY4 alone). Reductions in SNF spending are significant for the 2016 cohort (a cumulative decrease of 2.9 percent and a 5.3 percent decrease for PY4) and the 2017 cohort (a cumulative decrease of 1.4 percent and a 3.5 percent decrease for PY4). Compared with the 2018 cohort, these earlier cohorts had more years in the model to develop their SNF networks and engage participating SNFs.

- **Significant reductions in other PAC facility spending.** We observed significant reductions in other PAC facility spending (a cumulative decrease of 3.9 percent and a 6 percent decrease for PY4 alone). Reductions were significant for the 2016 and 2017 cohorts cumulatively (3.4 percent and 4.6 percent, respectively) and during PY4 for all three cohorts (a 5 percent decrease for the 2016 cohort, a 6.1 percent decrease for the 2017 cohort, and a 7.5 percent decrease for the 2018 cohort).

- **Larger reductions in SNF and other PAC spending over time**. These reductions reflect more NGACOs significantly reducing these outcomes across time; see **Appendix F, Exhibit F.3** for more information.

- **Larger reductions in SNF and other PAC spending for hospital-affiliated NGACOs.** Reductions in SNF and other PAC spending were larger on average for hospital-affiliated NGACOs than physician practice-affiliated NGACOs (see **Appendix F, Exhibit F.5**). As discussed in Chapter 5, hospital-affiliated NGACOs may be more likely to focus efforts on reducing costs associated with SNFs, which comprise the majority of PAC spending.

> *"What we found is that we were able to significantly decrease utilization of LTCH and inpatient rehab stays. It turns out that the system in [state]...was, it turned out, admitting patients to those kinds of facilities so that they could qualify for an SNF admission when the patient didn't really need it. So they didn't qualify for acute-level inpatient stay, but they could qualify, say, for inpatient rehab hospital level of stay. It was like a weigh station. So if you were to look at the data from before we participated and after, the biggest drop in utilization was those stays. We were not necessarily expecting that, but that's what happened. And we had one large provider of LTCH and inpatient rehab in our community say that they closed because of the SNF waiver."*
>
> --Executive Director, Physician Practice-Affiliated NGACO

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[29] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

Exhibit 2.8. Estimated Impacts on SNF Spending and Other Post-Acute Care Facility Spending, Cumulative and PY4 Only
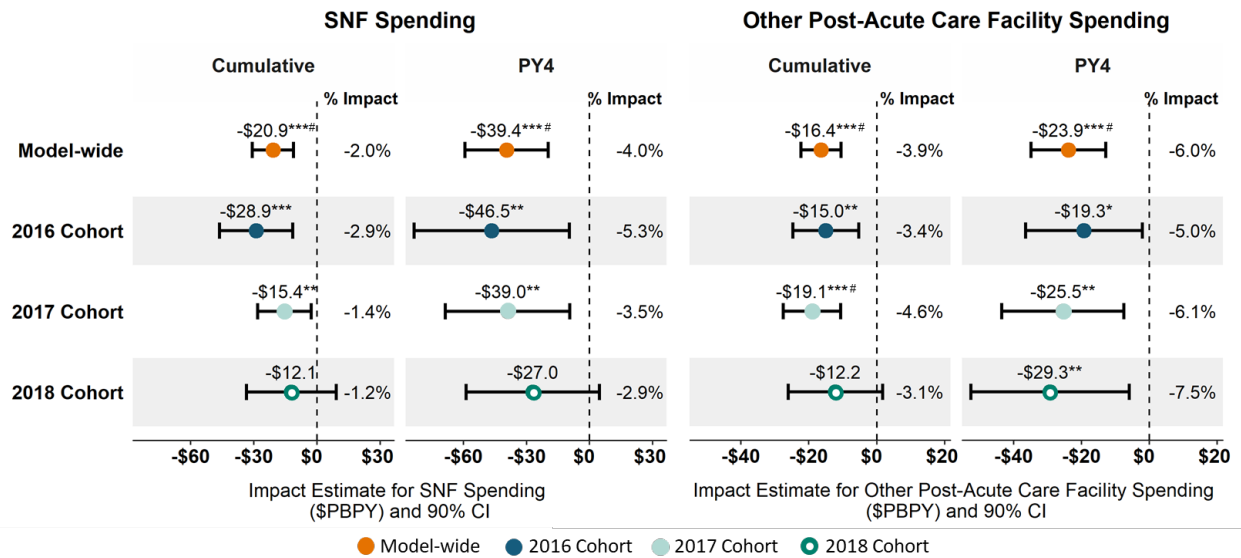
NOTES: Estimated impacts PBPY for spending significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for Medicare spending toward SNFs and other PAC facilities. Other PAC facilities include IRFs and long-term care hospital facilities. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average SNF or other PAC facility spending for NGACO beneficiaries in performance year(s) absent the model.

UnityPoint Accountable Care (UAC) joined the NGACO Model in 2016. UAC, which serves 10 regions across three states (Iowa, Illinois, and Wisconsin), identified PAC as one area with the greatest opportunity for improvement. The NGACO's approach includes:

- **Collaborating with SNFs to coordinate care and improve performance.** UAC has focused on developing relationships with SNFs. The NGACO has strict criteria for SNFs to join, including risk scoring and length of stay. If an SNF cannot meet the length of stay goal, it must make a performance plan to achieve the goal. The NGACO uses an SNFist, a nurse practitioner, or physician's assistant who rounds through the SNFs in its network.
- **Placing financial risk on SNFs.** SNFs have the option of putting 3 percent of their payment at risk with the ability to earn back this withhold based on performance on quality and utilization measures. All the SNFs are put into different tiers. Those who perform poorly may lose 25 percent of the withhold, while those who do well could earn 110 percent of the withhold. Each region has its own performance metrics.
- **Focusing on reducing length of stay and ensuring patients get "the right care at the right place at the right time."** UAC uses analytics to help understand where opportunities are and moves each of its nine regions towards the best performer in SNF length of stay (LOS). They use an evidence-based tool that provides a predictive recommendation for LOS based on diagnoses; case managers share the tool with SNF staff. UAC recognizes that the right care for patients may be in the home rather than at an SNF.
- **Culture change.** Efforts to change the culture in UAC hospitals include educating hospital staff— ED physicians, nurses, and social workers—on the importance of viewing SNFs as "a continuation of our care…an extension of us." Staff cited the breakdown of silos between care settings as one of the biggest cultural changes resulting from implementing value-based care initiatives, describing a shift from purely transactional relationships to "true partnerships."

In PY4, UAC significantly reduced SNF spending and days. The NGACO did not reduce SNF stays, in line with model-wide findings.

In our evaluation of the model through PY3, we saw no significant changes in SNF days, while the 2016 cohort had a significant increase in SNF stays.[30] Our estimates through PY4, shown in **Exhibit 2.9**, reinforce earlier findings for SNF stays and show declines in lengths of stay for SNFs. Key findings include:

- **Significant increases in SNF stays in the 2016 cohort.** Estimated impacts for SNF stays cumulatively across the model overall, as well as for the 2017 cohort, are not interpretable because baseline trends are not parallel; for the 2016 cohort, there is a significant 3.8 percent increase in SNF stays overall. In PY4 alone, there are significant increases model-wide (2 percent) and for the 2016 cohort (2.8 percent), which may reflect NGACOs' intentional efforts to shift care to less expensive settings.
- **Significant declines in SNF days.** SNF days decreased significantly by 1 percent across the model overall and by 2.6 percent in PY4 alone; this may suggest the effectiveness of NGACOs'

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[30] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

collaboration with SNFs, which often included efforts to reduce LOS. While all three cohorts showed declines in SNF days, the reductions did not reach levels of statistical significance.

■ **An increasing number of NGACOs reducing SNF days over time.** Increased reductions in SNF days reflect a growing number of NGACOs significantly reducing this outcome over time, as shown in **Appendix F, Exhibit F.3**.

■ **Larger reductions in SNF days and increases in SNF stays for hospital-affiliated NGACOs.** We saw larger reductions in SNF days and increases in SNF stays, on average, for hospital-affiliated NGACOs, who may have been better able to coordinate SNF placements for their beneficiaries than physician practice-affiliated NGACOs. See **Appendix F, Exhibit F.5** for the full set of findings.

Exhibit 2.9. Estimated Impacts on Skilled Nursing Facility Stays and Days, Cumulative and PY4 Only
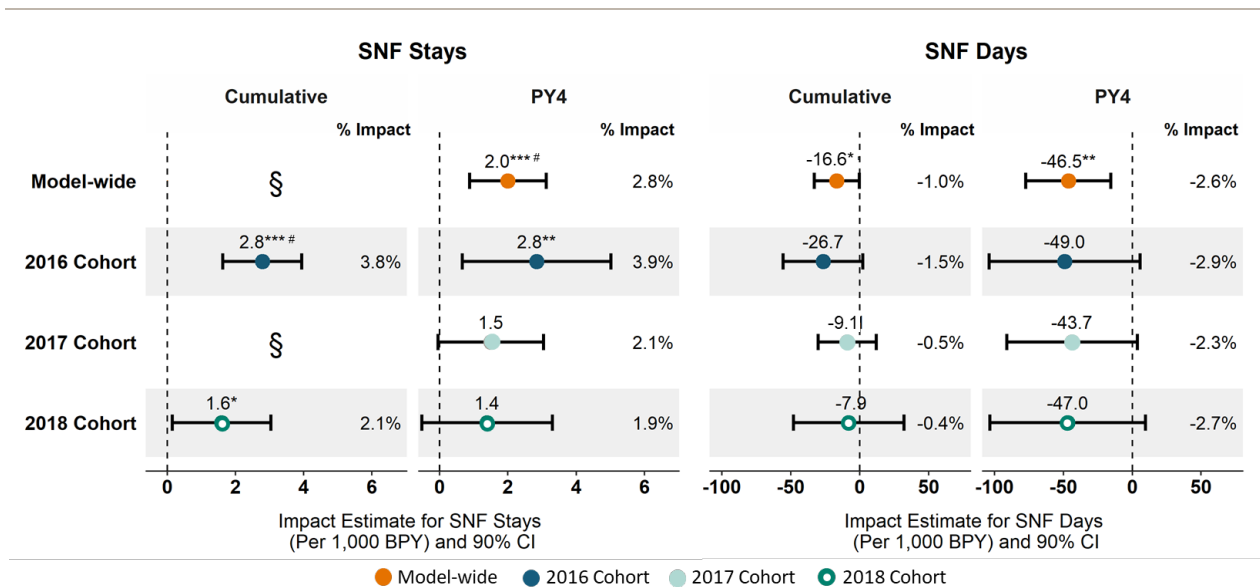
NOTES: Estimated impacts per 1,000 BPY for utilization significant at *p<0.1, **p<0.05, ***p<0.01, and ****#p<0.005. Impact estimates are the DID estimates for SNF stays and SNF days. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average SNF stays and days for NGACO beneficiaries in performance year(s) absent the model. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption for outcome across baseline years

Outpatient Facility Spending and Emergency Department Utilization

Two measures of success for NGACOs in the model are reduced outpatient facility spending and reduced ED utilization; both reflect shifting patients toward lower-resource settings for care. Some organizations worked with participating primary care practitioners to reduce ED visits among aligned beneficiaries. Additionally, NGACOs' ability to successfully reduce outpatient facility care may be influenced by whether a given NGACO is affiliated with a physician practice, which may be better able to promote office-based care, or with a hospital system, which may have greater flexibility to manage outpatient care.

Our previous evaluation of the model through its first three performance years found that most estimated impacts for outpatient facility spending, both cumulatively and by cohort, were not

interpretable, with the exception of a significant reduction for the 2017 cohort cumulatively.[31] Similarly, estimated impacts for ED utilization were not interpretable, except for significant reductions in ED visits and observation stays for the 2017 cohort. Our findings through PY4, shown in **Exhibit 2.10,** follow a similar pattern:

- **Significant reduction in outpatient spending and related utilization for the 2017 cohort.** Cumulative model-wide estimates for outpatient spending and ED utilization (ED visits and observation stays) were not interpretable because baseline trends were not parallel. For the 2017 cohort, there was a significant 1.5 percent reduction in both outpatient spending and related utilization.
- **Significant reduction in ED utilization for the 2017 cohort.** No estimated changes across the model or by cohort were statistically significant in PY4, other than a 2.0 percent reduction in ED utilization for the 2017 cohort.
- **A growing trend across performance years of reductions in outpatient facility spending and ED utilization among NGACOs**. This finding has not correlated with overall impact estimates; see **Appendix F, Exhibit F.3** for more information.
- **Larger reductions in outpatient facility spending and ED utilization for IDS/hospital system-affiliated and physician practice-affiliated NGACOs.** Reductions in outpatient facility spending and ED utilization were larger on average for NGACOs that were IDS/hospital system-affiliated and physician practice-affiliated, while absent on average for NGACOs that were hospital-physician practice partnerships. See Chapter 4, Exhibit 4.9 and **Appendix F, Exhibit F.5** for additional detail on findings by organizational affiliation. Among the three cohorts, the 2017 cohort has the lowest proportion of NGACOs that are hospital-physician practice partnerships, which may have contributed to the cohort achieving significant declines in outpatient facility spending and utilization.

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[31] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

Exhibit 2.10. Estimated Impacts on Outpatient Facility Spending and Emergency Department Utilization, Cumulative and PY4 Only
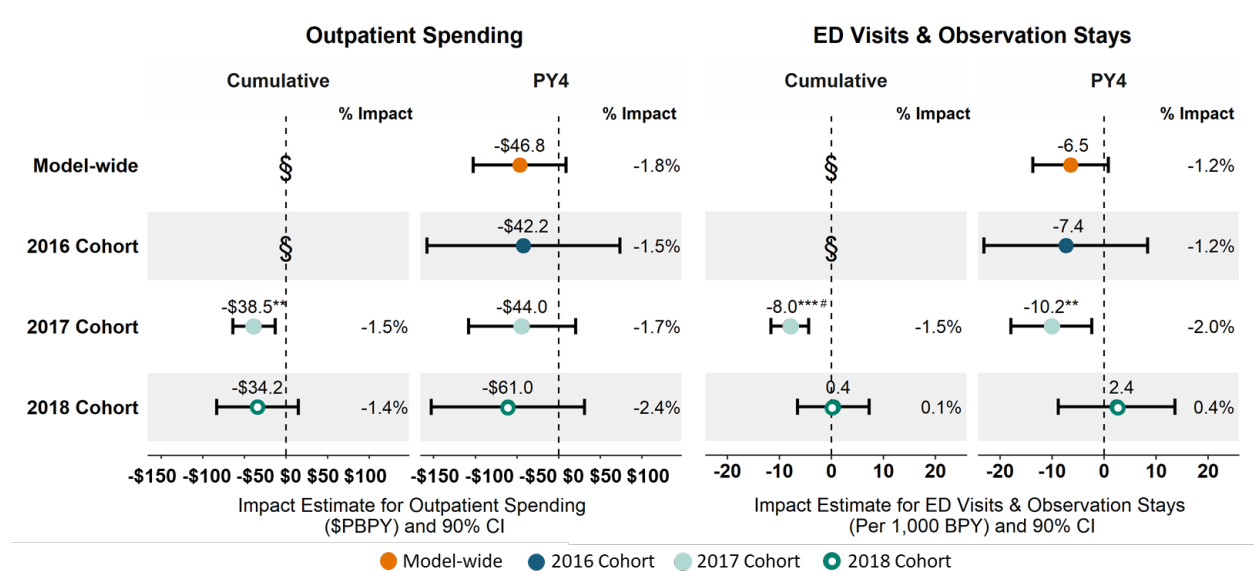
NOTES: Estimated impacts PBPY for spending and per 1,000 BPY for utilization significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for Medicare spending for outpatient facilities and ED visits including observation stays. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average outpatient facility spending or ED visits, including observation stays for NGACO beneficiaries in performance year(s) absent the model. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption for outcome across baseline years.

Impacts for Professional Services Spending and Utilization

Many activities under the NGACO model focused on engaging providers or their patients to impact spending and utilization across settings and services, which could have impacted utilization of professional services.[32] These activities include fostering participating provider networks centered on primary care practitioners and supporting these practices with resources and feedback—in the form of individual physician performance data—and improving communication and coordination between providers and settings. In addition, NGACOs aligned providers' incentives to promote the delivery of efficient and evidence-based care. Together, these strategies encouraged changes in utilization patterns for professional services to direct patients toward the most appropriate lower-cost settings.

Patient-focused activities included care management and encouraging the use of AWVs. NGACOs used new benefit enhancements in PY4 to engage patients with gift cards for disease management or reduced-cost sharing for Part B services. These patient engagement activities may have improved adherence to care and reduced the use of professional services such as follow-up E&M visits.

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[32] Spending for professional services, which accounted for 27 percent of gross Medicare spending, included physician fees, non-physician fees, and ancillary services (e.g., tests, imaging, ambulance services, Part B drugs administered in physician offices).

Our evaluation of the model through its first three performance years found a significant but modest reduction in professional services spending, both for the model overall and for the 2017 and 2018 cohorts. We noted the likely influence of both provider-side and patient-side activities on reducing spending. We also observed that the relative lack of shared downside financial risk with practitioners and limited success in engaging specialists might have further dampened the model's ability to reduce professional services spending.[33] Our estimates through PY4, shown in **Exhibit 2.11** below, are consistent with earlier findings. Our evaluation findings included:

- **Significant reduction in professional services spending overall.** Model-wide, there was a significant reduction in spending cumulatively (a 0.8 percent decline), reflecting reduced spending for the 2017 cohort (a 1.4 percent decline) and the 2018 cohort (a 1.5 percent decline).
- **Significant reduction in professional services spending in PY4.** For PY4, we saw a significant spending reduction across the model (a 1.6 percent decline), reflecting reduced spending for the 2017 cohort (a 2.7 percent decline).
- **Increasing number of NGACOs reducing professional spending over time.** We observed a growing number of NGACOs across performance years reducing professional spending; see **Appendix F, Exhibit F.3** for the full set of findings.

> **Spotlight: An NGACO's Efforts to Increase Annual Wellness Visits**
>
> St. Luke's expanded the use of AWVs, moving from a traditionally passive process to an active one in which primary care offices conduct targeted outreach. Previously, the AWV was only discussed if the patient happened to engage their provider, but St. Luke's has since shifted, even providing an additional financial incentive for providers who use the AWV.

- **Larger reductions in professional services spending for NGACOs organized as hospital-physician practice partnerships.** Reductions in professional services spending were larger on average for hospital-physician practice partnerships (2.3 percent), smaller on average for IDS/hospital system-affiliated NGACOs (0.6 percent), and absent on average for physician practice-affiliated NGACOs (0.05 percent increase); see Chapter 4, Section 4.4.1 and **Appendix F, Exhibit F.5** for additional detail on findings by organizational affiliation. Physician practice-affiliated NGACOs may have focused efforts on reducing inpatient utilization rather than reducing professional services spending because the latter is more closely tied to their total revenue from FFS Medicare. Given the variation in organizational structure among hospital-physician partnerships, financial incentives may vary across NGACOs classified under this organizational type.

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[33] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

Exhibit 2.11. Estimated Impact on Professional Services Spending, Cumulative and PY4 Only
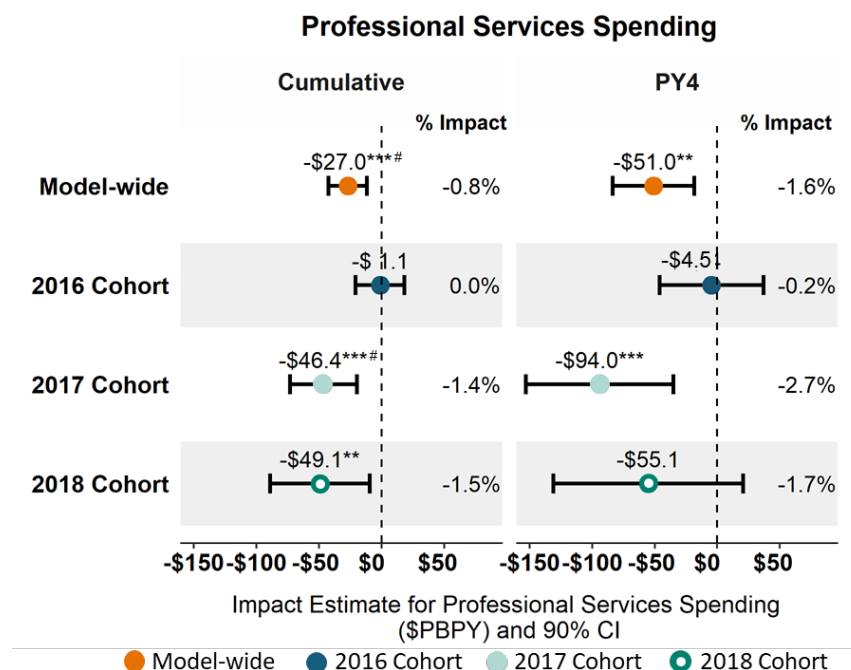
NOTES: Estimated impacts PBPY for spending significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for Medicare spending for professional services. Professional services include physician, non-physician, and ancillary services (e.g., tests, imaging, ambulance services, Part B drugs administered in physician offices). CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average professional services spending for NGACO beneficiaries in performance year(s) absent the model.

Impacts for Evaluation and Management Visits and Annual Wellness Visits

Estimated impacts on E&M visits (**Appendix D, Exhibit D.13**) and AWVs for PY4 (**Exhibit 2.12**) are in line with those reported in our Third Evaluation Report—reductions in E&M visits (when interpretable) and increases in beneficiaries with AWVs. AWVs for beneficiaries to identify and address gaps in their care, and care management for high-risk beneficiaries, may have led to longer periods between E&M visits for some beneficiaries. However, because ambulatory care is preferable to inpatient care from a cost perspective, a reduction in E&M visits may not necessarily be a preferred outcome if it contributes to increased inpatient stays.

Our evaluation findings related to impacts for E&M visits and AWVs include:

- **Increasing number of NGACOs reducing E&M visits over time.** We observed a growing trend across performance years in the number of NGACOs achieving reductions in E&M visits (from 44 percent in PY1 to 69 percent in PY4); see **Appendix F, Exhibit F.3**.
- **Larger declines in E&M visits for hospital-physician practice partnerships.** Declines in E&M visits were slightly larger on average for NGACOs that were hospital-physician practice partnerships (1.7 percent), compared with physician practice-affiliated (1 percent) and IDS/hospital system-affiliated (0.7 percent) NGACOs; see **Appendix F, Exhibit F.5**. On average,

physician practice-affiliated NGACOs reduced E&M visits. However, they also increased other aspects of professional services, particularly procedures and tests, such that total professional services spending did not decrease.

- **Significant increases in AWVs, both cumulatively and for PY4.** Across the model, there was a cumulative increase of 66.9 visits per 1,000 BPY (18.1 percent change) and for PY4, an increase of 92.9 visits per 1,000 BPY (22.4 percent change), despite discontinuation of the CCR after PY3. This is in line with our Third Evaluation Report, which pointed to a significant increase in the numbers of beneficiaries with AWVs, both cumulatively and for PY3 alone.
- **Increasing number of NGACOs with increased AWV visits over time.** We observed a growing trend of increased AWVs across performance years; see **Appendix F, Exhibit F.3**.
- **Larger increases in beneficiaries with AWVs for IDS/hospital system-affiliated NGACOs.** Increases in the percentage of beneficiaries with AWVs were larger on average for NGACOs that were IDS/hospital system-affiliated (22 percent), followed by hospital-physician practice partnerships (18 percent) and physician practice-affiliated NGACOs (15 percent); see **Appendix F, Exhibit F.5**. These findings may be due to the greater capacity of IDS/hospital system-affiliated NGACOs to use health IT and population health analytics to identify beneficiaries who are eligible for AWVs but have not had one. These NGACOs also may have physician practices with greater staffing capacity for scheduling and conducting AWVs.

Because NGACO providers were using E&M visits at different rates than those in the comparison groups, even prior to the NGACO model, estimated impacts of the model on E&M visits were not interpretable, either cumulatively or for PY4 alone. This is consistent with findings reported in the Third Evaluation Report, which estimated changes in the number of E&M visits were not interpretable, save for the experience of the 2017 cohort over time and in PY3.[34]

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[34] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

Exhibit 2.12. Estimated Impacts on the Number of Beneficiaries with Annual Wellness Visits, Cumulative and PY4 Only
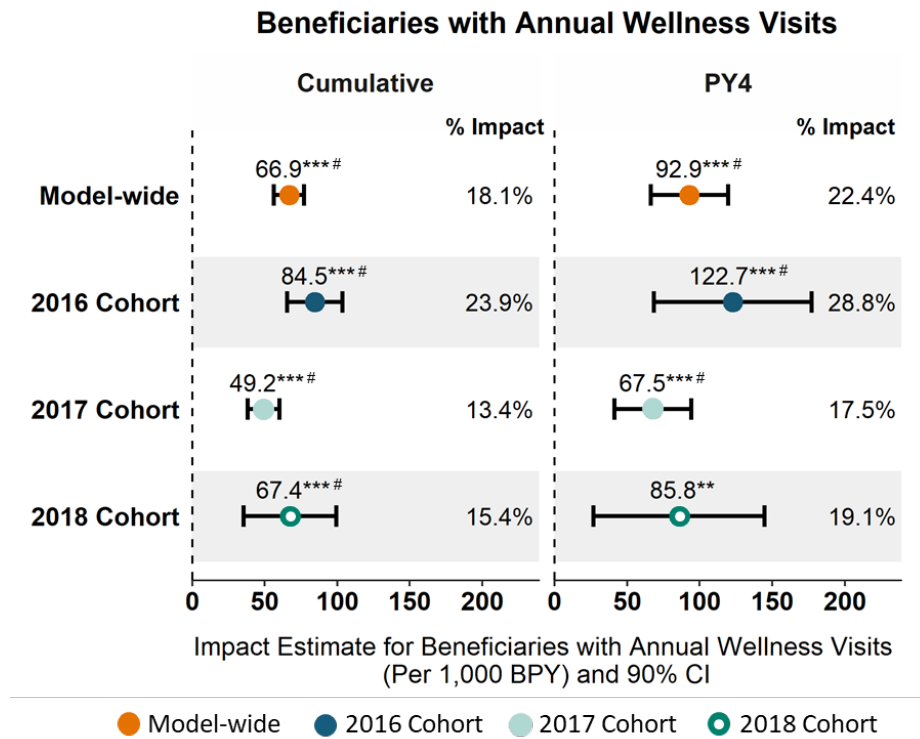
Beneficiaries with Annual Wellness Visits

NOTES: Estimated impacts per 1,000 BPY for utilization significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for E&M visits and beneficiaries with AWVs. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average E&M visits or AWV for NGACO beneficiaries in performance year(s) absent the model. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption for outcome across baseline years.

Impacts for Procedures, Tests, and Imaging Services

Estimated impacts on procedures, tests, and imaging services through PY4, could not be interpreted using our DID methodology because NGACO providers in cohorts with uninterpretable effects were using these services at different rates than those in the comparison groups, even prior to the NGACO model. Where the estimates could be interpreted, they were not statistically significant; see **Appendix D, Exhibit D.14**. This means that we could not create estimates across the model and for each cohort, both cumulatively and for PY4 only.

We observed a growing trend over time (across performance years) of NGACOs reducing procedures (from 14 percent in PY1 to 31 percent in PY4); tests (from 0 percent in PY1 to 38 percent in PY4); and imaging (from 0 percent in PY1 to 33 percent in PY4) services, a development that has yet to result in larger overall impacts; see **Appendix F, Exhibit F.3**. Hospital-affiliated NGACOs had shown reductions on average for procedures and tests, while physician practice-affiliated NGACOs showed increases; see Chapter 4 (Section 4.4.1) for additional discussion of impacts by organizational affiliation, and **Appendix F, Exhibit F.5** for detailed

results. Impacts for imaging services were similar on average for NGACOs based on their organizational affiliation.

Impacts on Home Health Spending and Use

Home health agencies were the second most common type of institutional provider in NGACO networks, though NGACO partnerships with home health agencies were on a smaller scale than were their partnerships with SNFs. NGACOs in high-cost areas reported targeting home health care utilization and spending of aligned beneficiaries, including identifying potential areas of fraud, waste, and abuse. Our previous evaluation found that through the first three performance years, most model-wide and cohort-level impacts for home health spending, episodes, and visits were not interpretable because baseline trends were not parallel. However, the 2018 cohort saw significant and positive change for all three measures (reduced spending and declines in episodes and visits) in PY3.[35] Similarly, as of PY4, most cumulative impact estimates for home health spending and visits continued to be uninterpretable. Yet, the 2018 cohort saw statistically significant reductions in spending (4 percent), in the number of home health episodes (3 percent), and in the number of home health visits (4.4 percent); see **Appendix D, Exhibit D.15**. Key findings for home health spending and utilization included:

■ **Significant decreases in home health episodes in PY4.** There was a model-wide, statistically significant decrease in home health episodes in PY4 (2 percent). The 2018 cohort had significant reduction in home health episodes (4 percent), and 2017 cohort saw a modest but significant decrease (2.2 percent) in home health episodes. The 2016 cohort's reduction in home health episodes was smaller and non-significant (0.3 percent).
■ **More NGACOs achieved spending reductions in home health over time.** We observed a growing trend across performance years in the number of NGACOs achieving reductions in home health spending (from 7 percent in PY1 to 41 percent in PY4); see **Appendix F, Exhibit F.3**.
■ **Larger declines in home health spending and episodes for physician practice-affiliated NGACOs.** Declines in home health episodes and spending were larger on average for physician practice-affiliated NGACOs than hospital-affiliated NGACOs; see **Appendix F, Exhibit** F.5. This may be a result of the increasing proportion of home health episodes and spending in recent years for skilled care for homebound patients, rather than post-acute skilled care specifically, which physician practice-affiliated NGACOs might be better positioned to influence.

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[35] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

Impact on Hospice Spending

In our evaluation of the model's first three performance years, we noted that advance care planning and palliative care were a growing focus for NGACOs but not part of their formal NGACO programs.[36] Hospices represented a small percentage of participating institutional providers (5 percent in PY4). As of PY3, cumulative model-wide effects were not interpretable, but in PY3, NGACOs had lower hospice spending relative to the comparison group. Medicare saw a 7.4 percent increase in hospice spending between 2017 and 2018, which "reflects an increase in the number of beneficiaries using hospice care and in the Medicare base payment rate, as well as a modest increase in average length of stay."[37] Thus, our impact estimates signaled lower increases in hospice spending among NGACOs beneficiaries versus the comparison group. We observed similar patterns through PY4, as illustrated in **Exhibit 2.13**.

> **Spotlight: An NGACO's Efforts to Impact Hospice Spending**
>
> Regal Heritage, a physician practice-affiliated NGACO, invested in educational initiatives and training in hospice and end-of-life care. The ACO brought in local experts to train care management staff on approaching end-of-life discussions and informing patients of options. They also engaged hospice agencies (with which they had preexisting relationships) to bolster collaboration, care coordination, and staff education efforts.

- **Significant relative decreases in cumulative hospice spending for the 2017 and 2018 cohorts overall.** Cumulative impacts model-wide and for the 2016 cohort cannot be determined. However, there are statistically significant relative decreases in spending for the 2017 cohort (4 percent) and the 2018 cohort (3.4 percent).
- **Significant relative decrease in hospice spending in PY4.** NGACOs had a statistically significant decline in hospice spending model-wide in PY4 (6.8 percent), which reflects a larger increase in hospice spending for the comparison group between the baseline and performance periods, and a smaller increase in hospice spending for the NGACO group. The 2016 and 2017 cohorts had lower spending increases for hospice than the comparison groups of 10.7 and 5.5 percent, respectively, in PY4.
- **More NGACOs reduced hospice spending over time.** The proportion of ACOs significantly reducing hospice spending increased from 19 percent in PY1 to 30 percent in PY4. Yet, the average reduction changed from 10 percent in PY1 to 6.8 percent in PY4 (after dropping to 4.3 percent in PY2). See **Appendix F, Exhibit F.3**.
- **Larger relative declines in hospice spending for hospital-affiliated NGACOs.** Relative declines in hospice spending were noted across NGACOs' organizational affiliation, with slightly larger impacts for hospital-affiliated NGACOs than for physician practice-affiliated NGACOs; see **Appendix F, Exhibit F.5**. The NGACO model's focus on addressing the needs of their aligned beneficiaries across the continuum of care, including palliative care, may have contributed to a more judicious use of hospice, relative to usual care. See *Spotlight on NGACOs' Efforts to Impact Hospice Spending*.

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[36] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

[37] Medicare Payment Advisory Commission. 2020. Report to the Congress: Medicare payment policy. Washington, DC: MedPAC. http://www.medpac.gov/docs/default-source/reports/mar20_medpac_ch12_sec.pdf.

Exhibit 2.13. Estimated Impacts on Hospice Spending, Cumulative and PY4 Only
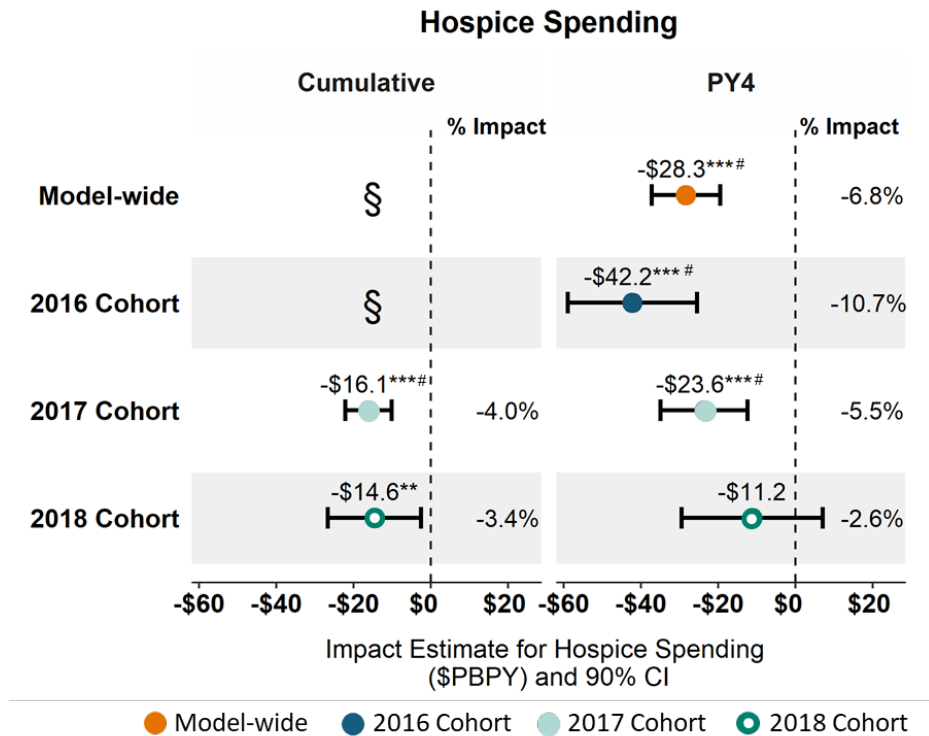
NOTES: Estimated impacts PBPY for spending significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are the DID estimates for Medicare hospice spending. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average hospice spending for NGACO beneficiaries in performance year(s) absent the model. § Denotes uninterpretable impact estimate due to failure of parallel trends assumption for outcome across baseline years.

Impact on Durable Medical Equipment Spending

DME spending has not been an explicit focus for NGACOs. Our evaluation of the model's first three performance years did not find a statistically significant impact on DME spending.[38] Our current evaluation found a significant decrease in DME spending for the 2018 cohort—both cumulatively over the first four performance years (a 2.8 percent decline) and for PY4 alone (a 3.5 percent decline). **Appendix D, Exhibit D.16** presents these findings in detail. We did not see an increasing trend across performance years of NGACOs with significant declines in DME spending, nor did we observe differences in DME spending by organizational affiliation; see **Appendix F, Exhibit F.5**.

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[38] Centers for Medicare & Medicaid Services. Next Generation Accountable Care Organization Model (NGACO) Third Evaluation Report. 2020 (September). https://innovation.cms.gov/data-and-reports/2020/nextgenaco-thirdevalrpt-fullreport.

2.1.5 Impact on Quality of Care

CMS expects the NGACO model to improve or maintain quality of care for Medicare beneficiaries. We measured quality of care in terms of (1) hospitalizations for ambulatory care-sensitive conditions (ACSCs); (2) unplanned 30-day readmissions; and (3) hospital readmissions from SNFs. All three measures were expected to decline under the NGACO model as ACOs improved primary care delivery and prevention, strengthened processes for coordinating care and transitions across settings, and improved infrastructure and networks. Key findings included:

- **No evidence of model-wide impact on beneficiaries with unplanned readmissions or hospital readmissions from SNF, either cumulatively or in PY4**. See Exhibit 2.14 for detailed results. We observed neither significant declines nor increases in beneficiaries with unplanned readmissions or hospital readmissions from SNF for all three cohorts.
- **No impact on beneficiaries with ACSC-related hospitalizations cumulatively or in PY4.** The exception was the 2018 cohort, which had a statistically significant decrease in beneficiaries with ACSC-related hospitalizations in PY4 (3.5 percent) and an overall cumulative decrease (2.0 percent). These findings reflect larger decreases in beneficiaries with ACSC-related hospitalizations for the 2018 cohort and smaller decreases for the comparison group between the baseline and performance periods. No impact was observed for the 2016 and 2017 cohorts.
- **More NGACOs across all cohorts reduced the number of beneficiaries with ACSC-related hospitalizations over time.** We observed an increase across performance years with more NGACOs showing significant reductions in beneficiaries with ACSC hospitalizations (from 6 percent in PY1 to 22 percent in PY4); see **Appendix F, Exhibit F.3**. There were no similar increases over time for the two readmission measures.
- **Modest reduction in beneficiaries with ACSC hospitalizations and increase in beneficiaries with hospital readmissions from SNF for hospital-physician partnerships.** Average impacts for quality of care measures were largely similar for physician practice-affiliated and IDS/hospital system-affiliated NGACOs. But hospital-physician partnerships showed small favorable reductions for beneficiaries with ACSC hospitalizations and unfavorable increases for beneficiaries with hospital readmissions from SNF; see Chapter 4 (Section 4.4.1) for additional discussion of variation in spending by organizational affiliation, and **Appendix F, Exhibit F.5** for detailed results. In future reports, we plan to explore how combinations of organizational characteristics and implementation approaches influence quality of care.

Exhibit 2.14. Impacts on Quality of Care Measures, Cumulatively and in PY4 Only
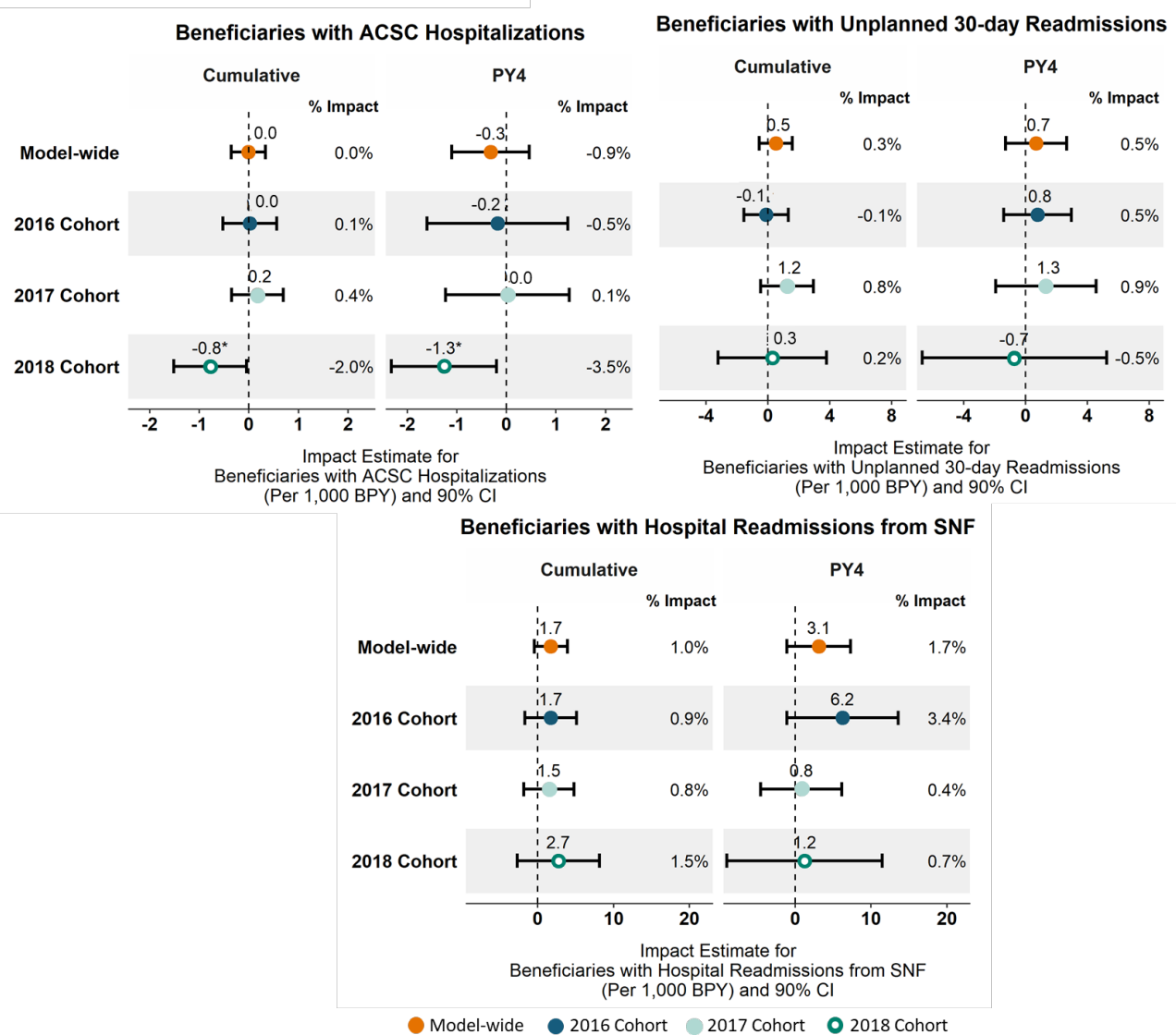
NOTES: Estimated impacts for quality of care measures for beneficiaries per 1,000 BPY, significant at *p<0.1, **p<0.05, and ***p<0.01. Impact estimates are the DID estimates for beneficiaries with hospitalizations for ACSC, unplanned 30-day readmissions, and hospital readmissions from SNF. CIs at 90% level are displayed as bars around the impact estimates. Percentage impact is the impact relative to expected average number of NGACO beneficiaries with hospitalizations for ACSC, unplanned 30-day readmissions, and hospital readmissions from SNF in performance year(s) absent the model.

2.2 Summary

The NGACO model continued to reduce gross Medicare spending in its fourth performance year. However, shared savings payments in PY4 were nearly double those in PY3—despite fewer ACOs—and as a result, the model increased net Medicare spending after considering shared savings and CCR payouts to NGACOs. In PY4, the gross spending reduction was larger than in prior performance years. NGACOs remaining in the model learned and refined approaches to engaging their providers and beneficiaries to manage their populations' spending and utilization. Gross spending reductions were larger for beneficiaries with higher clinical need, particularly those with more chronic conditions and history of hospitalizations, consistent with NGACOs' efforts to identify and manage high-risk beneficiaries. For dually eligible beneficiaries and those identified as members of racial and ethnic minority groups, findings suggest potential opportunities for NGACOs to improve access to primary care, address gaps in care, and make connections to needed services.

The model reduced acute care hospital spending both cumulatively as of PY4 (-0.9 percent) and in PY4 (-2.6 percent). Declines in these outcomes likely reflected NGACOs' efforts to identify beneficiaries most likely to be hospitalized, using risk stratification and employing care management to address the needs of hospitalized beneficiaries to prevent further hospitalizations. The NGACO model's focus on improving transitions in care, especially in building relationships with SNFs, was evident in reduced spending for SNF and other PAC facilities. Spending reductions in the SNF setting were larger for cohorts with longer tenure in the model. This may reflect the time needed for NGACOs to develop SNF networks, implement processes and staffing to manage care for beneficiaries in SNFs, and engage with partner SNFs to improve quality of care and reduce length of stay. Consistent with NGACOs' efforts to engage physicians and beneficiaries, the model reduced spending for professional services and increased rates of beneficiaries with AWVs. Reductions in professional services spending were modest, which may have reflected limited financial incentives for participating practitioners. Consistent with our previous evaluations, the model did not improve or worsen quality of care measures for its beneficiaries. Impacts for Medicare spending categories, utilization, and quality of care measures differed on average for NGACOs based on their organizational affiliation, as previewed in this chapter and discussed further in Chapter 5.

There are important considerations and caveats for considering how to interpret our estimated impacts of the NGACO model:

- Over half of the participating NGACO practitioners in PY4 were previously in Pioneer or SSP ACOs. Estimated impacts of the NGACO model reflect the incremental effect of the NGACO model over other Medicare ACO initiatives in which the NGACO practitioners participated during the model's baseline years.
- Gross and net impacts, model-wide and for the cohorts, reflect wide variation in impacts for individual NGACOs cumulatively as of PY4. Chapter 4 will explore this variation for individual NGACOs.

- Effects on spending also vary for subgroups of NGACOs based on characteristics of their markets, organizations, providers, beneficiaries, and model features elected, which is the subject of Chapter 5. In future reports, we plan to examine how NGACOs' varying implementation approaches in the model are associated with their impacts on spending.

In the following chapter, we explore the reasons for the differences in gross and net impacts we presented in this chapter, and how these differences may have affected NGACOs' decisions on whether to leave or remain in the model.

Chapter 3: Gross and Net Spending Differences and Perspectives on Model Tenure

Key Findings

Model Evaluation and Financial Benchmarking Methodologies Influenced Net Spending Impact

Differences between the model's evaluation and financial benchmarking methodologies partly explain increases in net Medicare spending (0.4 percent or $56.3 PBPY or $242.7M in aggregate), even as the model reduced gross Medicare spending.

Spending Impacts Differed among NGACOs by Tenure in the Model

NGACOs that remained in the model (n=37)
- Earned average shared savings payouts exceeded average gross spending reductions, contributing to a model-wide increase in net spending.
- Reduced gross Medicare spending on average by 1.5 percent.
- Improved performance over time, reducing gross Medicare spending from 1.2 to 2.5 percent between the first and fourth performance years of the model.

Most NGACOs that withdrew from the model (n=25)
- Incurred shared losses and did not reduce gross spending in their last year in the model, on average.
- Cited financial losses or risk of it among reasons for their exit during qualitative interviews with ACO leaders.

Comparing Evaluation and Financial Benchmarking Outcomes Highlights Challenges with Establishing Financial Benchmarks

- There was concordance between the evaluation and benchmarking spending outcomes for more than two-thirds of NGACOs. These NGACOs either reduced gross spending in the evaluation *and* earned shared savings from CMS **or** increased gross spending relative to their comparison group *and* paid CMS back a share of its losses.
- A few NGACOs that remained in the model increased gross spending in the evaluation but earned shared savings. These NGACOs contributed to a model-wide increase in net spending.
- A few NGACOs incurred shared losses even though they decreased gross spending relative to the comparison group in the evaluation. Most of them exited the model.

In the previous chapter, we showed that the NGACO model reduced gross Medicare spending. Yet, this reduction was diminished once Medicare's payouts to NGACOs for shared savings were deducted, increasing net spending. In this chapter, we further analyze the implications of these outcomes as well as the following dynamics:

■ We describe the differences in the evaluation and financial benchmarking methodologies and the purpose of the measures each yields.
■ We assess the extent to which there was concordance between the evaluation's findings concerning NGACOs' impact on spending and the shared savings/losses that were determined by the model's financial benchmarking methodology.
■ We compare gross spending impacts and shared savings for NGACOs that exited the model with those for NGACOs that continued to participate.
■ We assess (1) the extent to which those that remained in the model continued to earn shared savings, and (2) how this trend affected net spending.
■ We discuss how actual or potential shared losses influenced NGACO exit.
■ We describe the differences between the evaluation and financial benchmarking methodologies and the purpose of the measures each yields.

The NGACO model's program team and our independent evaluation used different methods to measure NGACOs' impacts on Medicare spending. The CMS financial benchmarking methodology uses a predictive approach to reward NGACOs' financial performance on spending relative to historical (and regional) benchmarks. By contrast, the evaluation assesses the NGACO model's impact on spending relative to a comparison group and assesses performance relative to what would have been expected had beneficiaries not been aligned with an NGACO. We found that these different methods can yield different results in that some NGACOs may have received shared savings from CMS, but were not shown to reduce spending from an evaluation perspective. Similarly, other NGACOs may have needed to repay shared losses to CMS, despite having reduced gross spending relative to their comparison groups, as measured by the evaluation. These different methods can also yield results that differ in magnitude in that the shared savings (or losses) for some NGACOs are larger (or smaller) than gross spending reductions (or increases).

By the end of PY4, 25 of the 62 NGACOs that had ever participated exited the model, largely due to financial losses and uncertainty related to the model's benchmark and risk adjustment policies. On average, exiting NGACOs did not reduce gross spending and incurred shared losses in the performance year preceding their exit, while those continuing in the model significantly reduced gross spending and earned shared savings. While exiters were disproportionately those that had lost money, this was not universally the case. Examining any discrepancies between the savings as determined by the evaluation and benchmarking approaches may shed light on the calculus applied by some NGACOs deciding whether to remain in or exit the model.

For instance, NGACOs that exited the model were more likely than those that remained to have had discordant spending results, i.e., they reduced spending relative to the comparison group but incurred shared losses to pay back to CMS. By contrast, NGACOs that continued in the model tended to see gross spending reductions that increased over multiple performance years. However, as shared savings payouts increased for NGACOs that remained in the model and gross spending increased for a handful of them, net Medicare spending associated with the model grew as well.

3.1 The NGACO Model's Evaluation and Financial Benchmarking Methodologies and Outcome Measures Differed

The NGACO model's evaluation and financial benchmarking methods estimate distinct measures of NGACO performance on Medicare spending. Our evaluation estimates NGACOs' gross impact on Medicare spending by comparing changes in Medicare spending between performance years and a baseline period for NGACOs, relative to a *comparison group* receiving usual care in their markets over the same period. By contrast, CMS determines NGACOs' shared savings and losses by comparing spending in a given performance year to the model's *financial benchmark*, which is set to their baseline period spending with regional adjustments. Shared savings are an important mechanism for NGACOs to fund and sustain their activities, and those that do not earn shared savings could incur operational losses. Moreover, NGACOs that pay out shared losses could incur large financial losses, prompting their exit from the model. **Exhibit 3.1** details the differences between the evaluation and benchmarking methodologies with respect to comparators, baseline periods, and other factors.

In 2019, CMS implemented a change in the model's benchmarking methodology. From PY1 to PY3, CMS used a single, fixed base year of 2014. For PY4–PY5, CMS incorporated a continuously updating two-year baseline to encourage continuous improvement by NGACOs and increase the reliability of their benchmark. In PY4 (2019), the two-year baseline period moved to 2016–2017, which included the period in which the 2016 and 2017 cohorts were active in the NGACO model. Our evaluation's baseline years were set to be the three years preceding an NGACO's entry into the model. Both the evaluation and benchmarking methodologies use the model's prospective attribution approach to determine which beneficiaries would be aligned to the NGACOs in the baseline and performance years.

Beginning in PY4, CMS modified the benchmark by increasing the potential impact of the adjustment for NGACOs' efficiency in the baseline period relative to adjustments applied in earlier years. This adjustment offsets the change to the rolling two year baseline, balancing rewards for NGACOs in low- and high-cost areas in order to bring the methodology in greater alignment with model goals such that it rewards efficient ACOs for continued cost savings.[39] Our evaluation methodology aims to approximate how NGACOs would have performed in the absence of the model. For this reason, the evaluation's impact estimate accounts for possible efficiencies gained by the comparison group to estimate the marginal effect of the NGACO model.

Spending reductions estimated by both methodologies have moved in the same direction, finding that the NGACOs reduced Medicare spending for their beneficiaries relative to both their baseline and their region. However, after factoring in payouts for shared savings and CCRs in PY1–PY4,

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[39] The adjustment raised the benchmark for NGACOs that were lower cost (relative to their region) or were in lower cost regions (relative to the national average) during baseline, giving them the potential to continue earning shared savings. It lowered the benchmark for NGACOs that were higher cost (relative to their region) or were in higher cost regions (relative to the national average), potentially decreasing their shared savings rewards. The adjustment balances rewards for gains of efficiency by lower cost NGACOs and for improved efficiency by higher cost NGACOs.

our evaluation found that these payouts exceeded NGACOs' gross spending reductions, resulting in a net loss for CMS. In addition, gross spending impacts and shared savings payouts differed between NGACOs that remained in and exited the model, as discussed further in the next section.

Exhibit 3.1. Differences between the NGACO Model's Evaluation and Financial Benchmarking Methodologies

	Evaluation Methodology	Benchmarking Methodology (as of 2019)
What is estimated?	NGACOs' gross impact on Medicare Parts A and B spending in a performance year for their beneficiaries, relative to observed spending for a comparison group	NGACOs' shared savings (or losses) based on their performance against a projected financial benchmark for Medicare Parts A and B spending for their beneficiaries in a performance year
How is it estimated?	**Comparison group** ■ Gross spending impact estimated using a DID design, comparing changes in spending between the performance year and a baseline period for each NGACO and its propensity score weighted comparison group from the same markets ■ Gross spending impact estimated separately for each NGACO relative to its comparison group ■ Comparison group determined similar to NGACO group using model's prospective attribution, beneficiary eligibility, and provider eligibility requirements	**No comparison group** ■ Shared savings (or losses) calculated as the difference between the NGACO's financial benchmark and incurred expenditures for its beneficiaries in a performance year ■ NGACO's financial benchmark in a performance year is trended from its baseline years' expenditures with an adjustment reflecting the NGACO's efficiency in the baseline period ■ Final shared savings (or losses) depend on NGACO's risk level, savings/losses cap, performance on quality measures, and election of stop-loss ■ NGACO benchmarks are computed using spending growth among all eligible beneficiaries nationally
How is the baseline period determined?	A three-year average, set prior to an NGACO's first year in the model, as follows: ■ 2016 Cohort: 2013 to 2015 ■ 2017 Cohort: 2014 to 2016 ■ 2018 Cohort: 2015 to 2017	A two-year rolling average that starts three years prior to a performance year to provide complete years of baseline data, set as follows: ■ PY4 (2019): 2016 and 2017 ■ PY5 (2020): 2017 and 2018 The baseline period for PY1–PY3 was one year (2014)
Other differences between methodologies	■ Definitions of market or service area (i.e., the use of Hospital Referral regions for the evaluation and counties in the benchmark methodology) See Appendix E, Exhibit E.1 for a summary of differences between the financial benchmarking and evaluation methodologies.	

SOURCE: Next Generation ACO Model Benchmarking Methodology in 2019 and 2020[40]

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[40] Centers for Medicare & Medicaid Services. Calculation of the Performance Year Benchmark: Performance Years 2019 and 2020. 2018 (September). https://innovation.cms.gov/files/x/nextgenaco-benchmarkmethodology-py4.pdf.

3.2 Impact on Gross Spending and Shared Savings/Losses Aligned for the Majority of NGACOs

Examination of differences between gross spending impacts and shared savings/losses reveals that not only did the model reward NGACOs more than it saved Medicare, but it also paid shared savings to some NGACOs that increased Medicare spending in the evaluation. As stated at the outset of this chapter, our evaluation's estimate of gross spending impacts differed from the financial methodology in various ways. However, at the model level, we observed concordance between the evaluation and financial results for two-thirds of NGACOs, including those that remained and those that exited the model. Only about one-third of the ACOs showed a discrepancy between the two types of results. This discrepancy reveals the challenges with establishing financial benchmarks for ACOs and possibly opportunities for better designs to secure greater savings for CMS.

Below, we depict the concordant and discordant outcomes cumulatively as of PY4 using a quadrant chart for the 62 NGACOs **(Exhibit 3.2).** Most NGACOs that remained reduced gross spending and earned shared savings, while NGACOs that exited increased gross spending and incurred shared losses. This shows that the evaluation and benchmark results were similar directionally for most NGACOs. Discordant outcomes are likely to misalign ACO incentives, and their occurance suggests potential for further improvements to the benchmarking methodology.

Each of the four quadrants captures a different group of NGACOs, as follows:

1. **Lower left:** *Shared savings/decreased gross spending (CONCORDANT)*. NGACOs in this quadrant realized shared savings and decreased spending relative to a comparison group. These outcomes are favorable for NGACOs and potentially Medicare if lower spending achieved is greater than the savings distributed.
2. **Upper left:** *Shared savings/increased gross spending (DISCORDANT)*. NGACOs in this quadrant realized shared savings and increased spending relative to a comparison group. These outcomes are favorable for NGACOs but unfavorable for Medicare, as they create incentives for NGACOs that increase net spending to remain in the model.
3. **Upper right:** *Shared losses/increased gross spending (CONCORDANT)*. NGACOs in this quadrant realized shared losses and increased spending relative to a comparison group. These outcomes are unfavorable for both NGACOs and Medicare.
4. **Lower right:** *Shared losses/decreased gross spending (DISCORDANT)*. NGACOs in this quadrant realized shared losses and decreased spending relative to their comparison groups. These outcomes are seemingly favorable for Medicare but unfavorable for NGACOs, as they are likely to exit the model.

Exhibit 3.2. Cumulative Gross Spending and Shared Savings/Losses for NGACOs that Remained in or Exited the Model, as of PY4 (N=62)
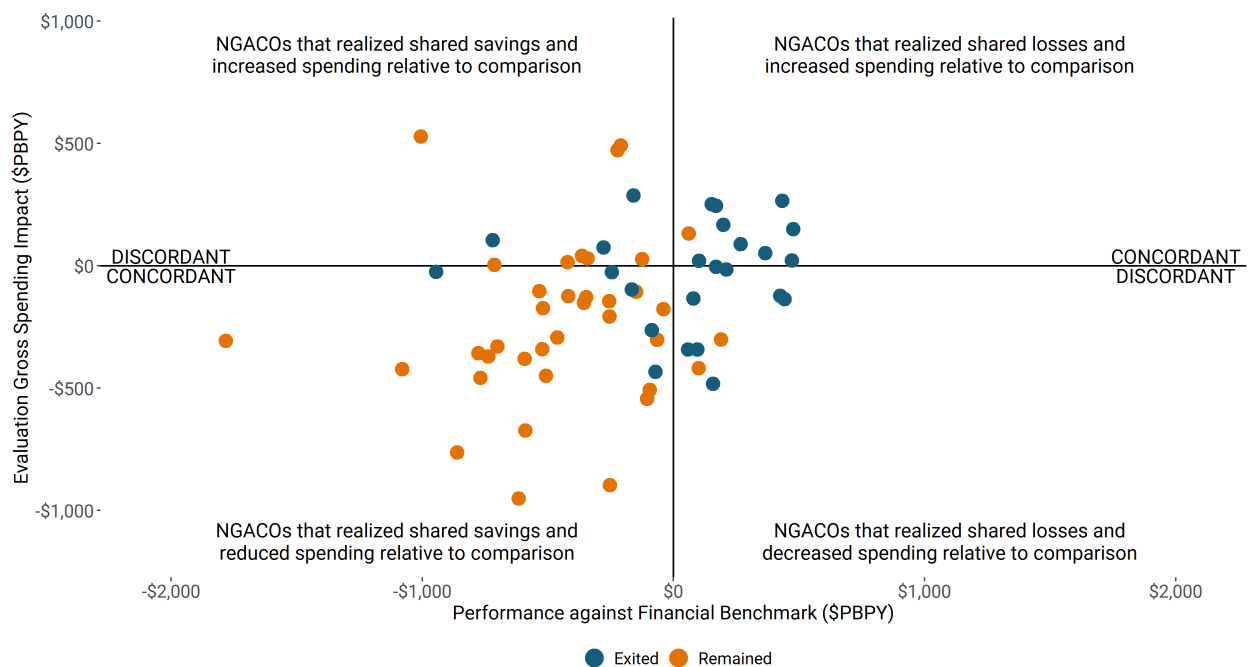
NOTES: For 62 NGACOs that ever participated in the model, we display the cumulative point estimate PBPY for gross spending impacts (relative to comparison group) on the vertical axis, and shared savings/losses (relative to financial benchmark) on the horizontal axis. NGACOs that exited the model are shown in blue and those that remained in the model are in orange. Lower left quadrant shows concordant NGACOs that realized shared savings and reduced gross spending relative to comparison. Upper left quadrant shows discordant NGACOs that realized shared savings and increased gross spending relative to comparison. Upper right quadrant shows concordant NGACOs that realized shared losses and increased gross spending relative to comparison. Lower right quadrant shows discordant NGACOs that realized shared losses and reduced gross spending relative to comparison.

Exhibit 3.2 shows that ACOs that incurred shared losses (right-sided quadrants) overwhelmingly exited the model, whereas ACOs that realized shared savings (left-sided quadrants) mostly stayed in the model. See **Appendix E, Exhibits E.2-E.3** for quadrant charts that depict findings by cohorts for NGACOs that remained in the model and exited.

Two-thirds of NGACOs that ever participated in the model had concordant spending outcomes (quadrants 1 and 3), while one-third had discordant spending outcomes (quadrants 2 and 4). Concordant/discordant spending outcomes varied among NGACOs that remained in the model and exited, as follows:

- **More than 2 in 5 NGACOs that ever participated in the model (29 of 62) cumulatively reduced gross spending in the evaluation and earned shared savings.** Most NGACOs that remained in the model had this concordant set of spending outcomes (27 of 37). Most of the NGACOs in the quadrant were from the 2017 cohort (n=12), followed by the 2016 cohort (n=9) and 2018 cohort (n=8); see **Appendix E, Exhibit 1**.
- **More than 1 in 5 NGACOs (13 of 62) cumulatively increased gross spending in the evaluation but earned shared savings.** These instances of discordance contributed to

increases in the models' net spending impact. Most NGACOs with this discordant set of outcomes were from the 2016 cohort (n=5) and the 2018 cohort (n=6), influencing the net spending increases for these cohorts. Only two were from the 2017 cohort; see **Appendix E, Exhibits E.2-E.3**. As discussed in the previous section, seven of these 13 NGACOs remained in the model and five exited due to financial uncertainties.

- **One in 5 NGACOs (12 of 62) cumulatively increased gross spending in the evaluation and incurred shared losses.** Most of the NGACOs that exited the model (11 of 25) had this concordant set of spending outcomes. Most of these NGACOs were from the 2017 cohort (n=6) with one each from the 2016 and 2018 cohorts.
- **Few NGACOs (8 of 62) cumulatively decreased gross spending but incurred shared losses.** All but one NGACO with this discordant set of spending outcomes exited the model. NGACOs in this quadrant were from the 2017 (n=5) and 2016 cohorts (n=3). Seventeen of the 25 NGACOs that exited the model had shared losses cumulatively: six incurred shared losses despite reducing gross spending relative to a comparison group.

3.3 Increased Shared Savings among NGACOs that Stayed in the Model Impact CMS's Net Spending

By the end of PY4, 25 of the 62 NGACOs that had ever joined the model exited. We hypothesized that exiting NGACOs would have incurred shared losses on average, thus prompting their exit. In contrast, NGACOs that remained would have earned shared savings on average, motivating their continuation in the model. In **Exhibit 3.3** below, we present average gross spending impacts and shared savings/losses from PY1 through PY4 for NGACOs that remained in the model and those that exited. It shows that among NGACOs that remained in the model, CMS paid out shared savings that were larger than the spending reductions cumulatively, and in PYs 2 and 4 in particular. See Appendix A for additional methodological details.

Consistent with our hypotheses, we observed the following:

- On average across four performance years, NGACOs that remained in the model showed significant reductions in average gross spending (1.5 percent). NGACOs that exited did not show reductions in gross spending in the performance year preceding their exit (0.3 percent).
- NGACOs that remained in the model increased their average gross spending reductions over time (from 1.2 percent in PY1 to 2.5 percent in PY4), and these reductions were statistically significant in each performance year. As noted earlier, NGACOs that remained in the model likely refined their implementation approaches over time to better engage their providers and beneficiaries and increase the efficiency of care delivery.
- On average, NGACOs that remained in the model earned shared savings, while those that exited paid out shared losses. Cumulatively through PY4, shared savings grew for NGACOs that remained in the model but exceeded their gross spending reductions in magnitude, contributing to model-wide increases in net spending. Specifically, average shared savings payouts exceeded average gross spending reductions in PY2 and PY4, as well as cumulatively, for NGACOs that remained in the model.

Exhibit 3.3. Gross Spending Impacts and Shared Savings/Losses for NGACOs that Remained in the Model or Exited the Model, on Average and in Each Performance Year
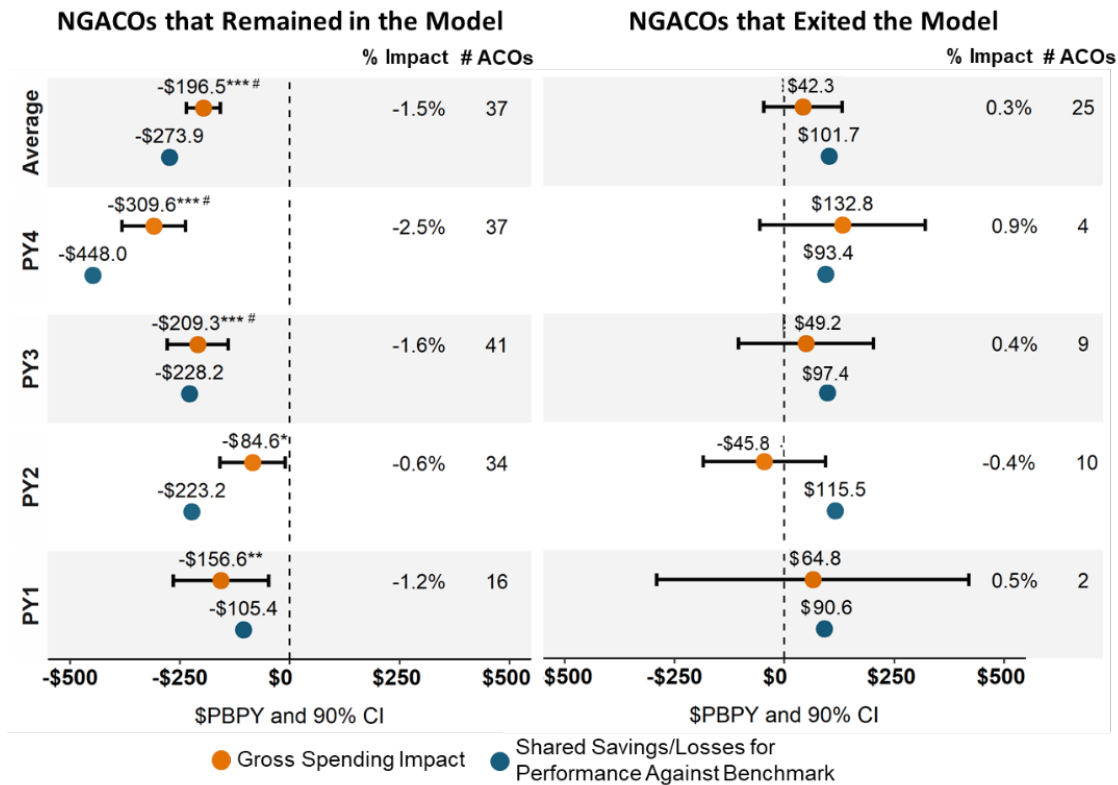
NOTES: Gross spending impact PBPY was significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Gross spending impact in a performance year is the average DID estimate for Medicare Parts A and B spending for NGACOs that exited the model after a performance year or remained in the model. Confidence intervals for the gross spending impacts are shown for the 90% level and are displayed as bars around the impact estimates. The Shared Savings or Loss is not an estimated value; rather, they are the actual payments made and there is no standard error for these results; thus, we did not compute confidence intervals. Percentage impact is the impact relative to expected average number of NGACO beneficiaries with average gross spending impacts from PY1 through PY4. Performance against benchmark in a performance year is the average shared savings/losses PBPY for NGACOs that exited the model after a performance year or remained in the model. Average performance against the benchmark reflects shared savings/losses PBPY from PY1 through PY4 for NGACOs that exited or remained in the model.

3.4 Reasons NGACOs Reported for Withdrawing from the Model

At the end of PY4, 25 of the 62 NGACOs that ever participated in the model had withdrawn, largely due to financial concerns. **Exhibit 3.4** lists the NGACOs that withdrew from the model and indicates whether they earned shared savings or losses in each year of participation. Based on our evaluation findings, the final column on the right indicates whether, on a cumulative basis, the NGACOs decreased or increased spending relative to a comparison group.

Two-thirds of the NGACOs that left the model between PY1 and PY4 had cumulative shared losses (17 of 25). Thirteen reduced spending relative to a comparison group, of which seven earned shared savings and six incurred shared losses. There was some variation across cohorts:

- **2016 Cohort**. Seven of the 18 NGACOs withdrew. Of these, three incurred shared losses in their last year in the model, as well as cumulatively.
- **2017 Cohort.** Sixteen of the 28 withdrew. Of these, 13 incurred shared losses in their last year in the model, while 12 incurred shared losses cumulatively. This includes one that CMS did not permit to continue in the model for a third performance year.
- **2018 Cohort**. Two of the 17 withdrew after only one performance year, and one incurred shared losses in that year.

To examine reasons for withdrawal, we interviewed leaders from 17 of these NGACOs between 2017 and 2020, around or after their exit.[41] They cited numerous reasons, including financial losses and their perceived financial unpredictability of the model. In particular, some cited the model's changing benchmark and risk adjustment policies as factors in their decision-making. In a few cases, additional external factors such as health system mergers and state-specific payment initiatives reinforced their decisions to exit the model.

> **Differences in Characteristics of NGACOs that Remained in the Model and Withdrew**
>
> We examined whether NGACOs remaining in the model differed from those that withdrew with respect to selected characteristics of their markets, organizations, providers, beneficiaries, and model features selected.* NGACOs that withdrew from the model did not differ from those that remained with respect to organizational type or market characteristics, including Medicare spending in their markets. NGACOs remaining in the model were associated with electing larger risk caps, having participating providers with more years of Medicare ACO experience, fewer beneficiaries with disabilities, and beneficiaries with a greater proportion of their Medicare Parts A and B spending within their NGACOs' provider network. A comprehensive comparison of characteristics of NGACOs that remained in the model and withdrew will be conducted in the final evaluation report.
>
> *We used multivariate logistic regression to assess differences in characteristics of NGACOs that remained in the model versus those that withdrew.*

In presenting NGACO reasons for withdrawal, we recognize potential biases of NGACOs in reporting perceptions of their performance, and the limitations to the qualitative interviews we conducted with each NGACO over the course of the model. For instance, we cannot verify statements or explore alternative reasons for shared losses—e.g., the quality of the stated programmatic efforts or success in implementation—in the few. We are also limited to analyzing what they said, and cannot account for what they did not reveal. We point out potential biases and alternatives where possible, and emphasize these findings are presented from exiting NGACOs' perspectives in order to better understand their reasons for withdrawal.

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[41] The evaluation team reached out to all NGACOs that exited the model (except OSF, which withdrew before the evaluation began), and completed interviews with all of those that accepted.

Exhibit 3.4. 25 NGACOs Have Withdrawn Over the Course of the Model, Including Those that Earned Shared Savings

NGACO Organization Name	Shared Savings (SS) or Loss (SL)				Cumulatively decreased (-) or increased (+) spending relative to a comparison group	Joined SSP after Exit
	PY1 (2016)	PY2 (2017)	PY3 (2018)	PY4 (2019)		
2016 Cohort						
Baroma (Uniphy)**	SS	SS	SS	–	-	
Beacon*	SL	SS	–	–	+	•
Lifeprint (Optum)	SL	SL	–	–	-	
MemorialCare	SL	SL	–	–	-	
OSF*	SL	–	–	–	+	•
Prospect**	SS	–	–	–	-	
Steward*	SS	SS	SS	SS	-	•
2017 Cohort						
ACCC**	–	SL	–	–	-	
Allina*	–	SL	–	–	-	
Bronx	–	SS	SL	SL	+	
Dartmouth-Hitchcock*	–	SL	SL	–	+	
Fairview*	–	SL	–	–	+	
HCP*,**	–	SS	SS	SL	+	
Hill	–	SL	SL	–	-	
Integra**	–	SS	SS	–	-	•
KentuckyOne**	–	SS	–	–	-	•
Monarch*	–	SL	–	–	-	
Michigan Pioneer*	–	SS	SL	–	-	•
National**	–	SL	SL	–	+	
Partners*	–	SS	SL	–	-	•
Premier (OH)	–	SS	–	–	+	•
Heritage (Regal)*	–	SS	SL	SL	+	
Sharp*	–	SL	–	–	+	
2018 Cohort						
North Jersey Health Alliance	–	–	SS	–	+	
Connected Care of Southeastern MA**	–	–	SL	–	+	•

NOTES: * Previously participated in Pioneer ACO Model; ** Previously participated in SSP; SS=Shared Savings; SL=Shared Losses.

In addition, it is important to recall that in testing the NGACO model, CMS had the contractual right to make changes to the model over time, keeping with their fiduciary responsibilities in administering Medicare. An NGACO's decision to remain or withdraw from the model was made

in the context of CMS's decisions to modify the model's financial benchmarking methodology over time. The financial methodology is based on calculations of

(1) a baseline period,

(2) regional expenditures,

(3) a quality and efficiency discount rate,

(4) risk adjustment,

(5) stop-loss, and

(6) a partial-year enrollment.[42]

Each component of this methodology has changed over time due in part to feedback and input CMS received from the NGACOs themselves (i.e., the regional adjustments). As noted above, CMS changed the baseline calculation from a single calendar year (2014) for PY1 to PY3 to a rolling two-year baseline period in PY4 and PY5. For the 2016 and 2017 cohorts, this new baseline included years in which they were already active in the NGACO model, which may have made it more challenging to achieve shared savings. Additionally, CMS changed the benchmark's risk adjustment methodology—which adjusts for changes in the aligned population's risk scores—in PY2 and PY3 (see text box on risk adjustment in NGACO model's benchmark in Section 3.4.1).[43]

Below, we provide more detailed descriptions of NGACOs' perspectives on withdrawing and offer some enumeration of the details for illustrative purposes. The enumeration of these qualitative findings is not intended to indicate representativeness or generalizability, but simply to indicate the extent to which a finding verbally articulated in an interview was echoed by others. Others may have had similar views but may not have articulated them. Therefore, the counts should be considered cautiously.

3.4.1 Reasons Related to Financial Losses and Perceptions of Unpredictability

While most NGACOs cumulatively earned shared savings (42 out of 62), 17 NGACOs that withdrew (out of 25) incurred cumulative financial losses. Two others expected financial losses based on their quarterly benchmark reports from CMS before they withdrew, but then earned shared savings for that performance year. Most NGACOs indicated that they withdrew from the model because of their financial losses or risk of future loss. Several attributed losses or potential losses to the model's calculation of baseline expenditures or the risk adjustment methodology. Some cited general unpredictability of the financial model among their reasons. Though NGACOs may have had other challenges with implementation, when asked why they withdrew, they most often cited these types of issues as their main reasons.

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[42] Centers for Medicare & Medicaid Services. Next Generation ACO Model: Frequently Asked Questions, April 2019. https://innovation.cms.gov/files/x/nextgenacofaq.pdf.

[43] National Association of ACOs: Summary of Next Generation Model Program Methodology Changes for 2019 and 2020. https://www.naacos.com/assets/docs/pdf/SummaryNextGenerationModelProgramMethodologyChanges2019_2020v2.pdf.

Five NGACOs that withdrew after PY2 or PY3 cited challenges with reducing Medicare spending below their benchmark because their prior performance contributed to low 2014 baseline period spending. Leadership aligned their lack of financial success in the model with low baseline expenditures incurred by aligned beneficiaries in 2014. As a result of a low benchmark, one member of an NGACO leadership team described the experience of having to "dig out of that hole for 2018." Leadership from two former Pioneer ACOs reported that their efficiency under Pioneer resulted in more challenging financial targets under NGACO. One of them opted for the SSP afterwards, believing it would be a better fit given the level of risk they were willing to take on and "where [they] were maturity-wise in [their] value-based care journey." Among the changes to the financial model, CMS adjusted the benchmark in PY4 (2019) to account for regional differences in baseline efficiency such as those cited by the NGACOs with what they considered to be low benchmarks.

However, four NGACOs that withdrew after PY3 were concerned that they would incur large losses with changes to the baseline calculations in PY4 and PY5. While some NGACOs may have welcomed CMS changes in PY4 that raised the benchmark for NGACOs in low-spending regions and lowered the benchmark for NGACOs in high-spending regions, others took issue with it. Two interview respondents shared their concerns:

> The benchmark change for 2019 was extremely significant for us and would put us in position for significant risk of a loss. It was why we chose not to proceed....We [joined] in year 3, trying to get everything under control and get systems set up and get physicians on board, but then the benchmark dropped. So it just didn't work out number-wise.

> When looking at the overall financial predictions due to the methodological changes in PY4/5, Medicare SSP Advanced presented a better option given likely financial losses under NextGen. Our decision was made based on sizable deficit...We had some challenges with the methodology, fundamentally that was one of the primary things that ultimately made us choose to withdraw.

Five NGACOs reported that either the original or changed risk adjustment methodology contributed to decisions to withdraw from the model. Two NGACOs suggested that renormalizing risk scores in PY1 was the main reason they owed money to CMS. Another aligned large financial losses with changes in the risk adjustment methodology in PY2 (see text box). Leadership at another NGACO described how the change in methodology coincided with a large

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Risk-Adjustment in the NGACO Model's Benchmark

An NGACO's benchmark is risk-adjusted for changes in health status of its performance and baseline years' beneficiary populations, safeguarding against influence of changes in coding intensity over time. CMS risk adjusts an NGACO's performance year benchmark to reflect the change in average risk scores between the base- and performance-year populations, with the increases in risk scores capped between 0-3 percent. "Renormalization" of risk scores for an NGACO's population (to all eligible beneficiaries nationally) controls for changes in risk scores between the baseline and performance years due to changes in coding practices. In PY2 and PY3, due to unforeseen increases in risk scores between the baseline (2014) and performance years, CMS gave NGACOs the option to choose between renormalization and prospective coding adjustment to their performance year risk scores. Factors contributing to growth in risk scores during this period included implementation of ICD-10, widespread EHR adoption, and increases in value-based care payments for Medicare and other payers.

drop in the number of their aligned beneficiaries. This NGACO reported not having enough information about their benchmark to make an informed decision about the risk adjustment options that were offered in fall 2017. One NGACO that withdrew after PY3 reported:

We felt like they changed the game midstream, and felt like the regional benchmark trend comparison was not reflective of what was happening in our market. We were not the same as others in our market…As we modeled out what 2019 would look like, given what we knew about the model, we couldn't in good conscience tell our Board of Trustees, "Oh hey, we might have to pay another eight million dollars." Even on a $2 billion entity, that is $8 million we can't spend on patients giving quality care.

Nine NGACOs indicated that changes to the model's financial methodology stoked uncertainty in the model as a whole. NGACO leaders reported being unsure whether there would be additional changes to the risk adjustment and financial methods beyond those made in PY2. Several NGACO leaders expressed concern over perceived "shifting rules" for risk adjustment or other model features and the effects on their ability to succeed and maintain institutional buy-in from their owners, governing board, and partners. A member of the leadership team at one NGACO reported:

We didn't understand how shifty the rules of the game are, how fluid the parameters of the program could be. That was frustrating on the organizational level because…[t]hat was a challenge—whether it is systems or approval or contracts, there's a lot of layers you have to go through to be flexible in a constantly shifting environment of rules.

Beyond risk adjustment, most NGACOs exiting the model also observed dramatic swings in the quarterly financial benchmark reports, often alternating from savings in one quarter to losses in the next. As such, some leaders were unsure whether CMS data were a good predictor of performance; as a result, the NGACO was not comfortable relying on these reports for planning purposes. To predict performance more effectively, some exiting NGACOs reported having invested in their own data analytics to recreate benchmark reports, including the Incurred But Not Reported estimate provided by CMS as a high-level projection of claims run out. These NGACOs reported failing to see a resemblance between CMS data and their own. Consequently, they did not feel they could rely on CMS reports to inform their future performance. One leader explained:

I don't think it's unfair to say that the energy we devoted to analytics is a little bit of a zero-sum game. We spent a huge amount of time and energy on how to predict and project so we can make rational decisions, and all that energy would have been better spent on figuring out how to intervene for this population.

The lack of predictability or ability to explain benchmark reports reduced confidence in the model among parent organizations and boards. One NGACO director explained:

Leaders want to know how we're doing and we really didn't have much faith giving [them] our numbers, without giving a huge caveat of plus/minus $5 million.

Another member of an NGACO's leadership team explained:

As someone who had to inform boards and senior leaders, it was very difficult [to explain methodology changes]. Honestly, people would stare and wonder if you were making this stuff

up. They just could not believe it. I think that is a takeaway. You want to be credible in this space, and when there are things like that going on, it is hard to be.

Seven NGACOs explained that the timeframe for electing to exit influenced their decisions. Many of the NGACOs that exited reported not having enough information about their financial risks by the deadline for withdrawing for the next performance year. Some ACOs indicated the public release of final shared savings/loss information was not timed sufficiently before the deadline for deciding whether to continue in the model. In describing the misalignment in timing, one member of an NGACO leadership team stated:

You don't really know [the financial realities] until you have no other options and all you can do is drop out as a network.

Leaders at a few NGACOs that subsequently withdrew related the perception that they would have broken even or earned shared savings had they remained in the model, but the timing was such that a decision had to be made before they knew exactly how they fared financially. Among these former NGACOs, only one regretted their decision to exit.

Another timing-related issue concerned challenges around aligning provider participation with other CMS/CMMI models and programs. One NGACO leader explained that providers had to drop out of the SSP to participate in the NGACO model before receiving details on their financial benchmark for NGACO. Because participating providers had already exited from the SSP to join their NGACO, the NGACO was not in a position to walk away when the benchmark and attribution were not what they had expected. Further, a motivating factor for joining the NGACO model was the ability to facilitate QPP requirements for small, independent practices. Leadership at several NGACOs feared that by the time they exited the model, it would be too late for their providers to align with another alternative payment model, exposing their providers to MIPS reporting requirements.

3.4.2 External Factors

For some NGACOs, contextual factors influenced the decision to withdraw. For instance, due to broader financial issues, one NGACO was amidst several organizational changes, including a potential merger with another health system. Its leadership reported uncertainty over whether the new owners of the health system would feel comfortable with quarterly performance swings and the potential of a changing benchmark, especially given that the NGACO constituted a large portion of the health system's lines of business. Factors such as these were rarely the deciding factor but sometimes motivated an NGACO's decision to exit the model.

3.5 Summary

The NGACO model and evaluation have different purposes and use different approaches to determine the effects of NGACOs on Medicare spending. The model's benchmark approach determines an NGACO's shared savings/losses by comparing its spending against a prospectively set benchmark. At the same time, the evaluation estimates an NGACO's impact on gross spending relative to a comparison group receiving usual care. While gross spending

impacts and shared savings/losses moved in the same direction in aggregate, one-third of NGACOs had discordant evaluation and financial results. Shared losses and uncertainty around the model's financial benchmarking methodology prompted 24 of the model's 62 NGACOs to withdraw from the model by the end of its fourth performance year.

There are several limitations to consider in interpreting the results presented in this chapter. In terms of gross and net savings differences, the evaluation's net savings estimates do not capture any shared savings payouts to the NGACOs in the base years, when many of them were operating as SSP ACOs. Assuming that many of these organizations and providers would have continued in the SSP in the absence of the NGACO model, our net savings estimate is conservative, for it does not consider the payouts that CMS would otherwise have continued to make.

In addition, our evaluation does not estimate impacts for exiting NGACOs *after* they exited the model due to the inherent challenges of doing so. Most exiting NGACOs joined the Shared Savings Program, while providers in the exiting NGACOs joined either SSP ACOs or other NGACOs, or returned to usual care in subsequent years. The complexity of this provider churn makes it difficult to estimate impacts for NGACO providers after their exit from the model. However, we are exploring potential approaches, pending identification of variables that reasonably predict NGACO exit but are not associated with gross spending impacts.

Our estimate of the model's gross spending impact reflects the incremental effect of NGACO incentives relative to the incentives that NGACO providers experienced in the baseline years due to a combination of Pioneer ACOs, SSP ACOs, and usual care. The gross impact is also conservative in that we do not include any effects on spending reductions to be incurred beyond the evaluation period. As noted elsewhere in this evaluation, the NGACOs' investments under the model may pay long-term dividends with respect to averted costs of ED visits and hospitalizations.

Despite these limitations, our findings can be informative to CMS as it designs payment methodologies for future models. The challenge will be in establishing financial incentives that sufficiently encourage participation and reward true improvements in performance without washing out gross spending reductions. Further, though this chapter presents analysis of the differences in net and gross spending outcomes, the remainder of the report will only consider changes in gross Medicare spending associated with the model. We will consider factors that influence NGACO-level impacts on gross spending, as well as pathways or combinations of contextual and NGACO-specific characteristics that are associated with gross reductions in Medicare spending.

Chapter 4: Key Factors Influencing Variations in NGACO-Level Impacts on Spending

Key Findings

Impacts by NGACOs on Total Spending, PY1–PY4

- From PY1 to PY4, the proportion of NGACOs that reduced spending grew (from 13 to 34 percent). The average reduction in spending also increased (from 1 to 1.8 percent).
- Cumulatively through PY4, 17 of the 62 NGACOs that ever participated in the model achieved statistically significant Medicare spending reductions; one NGACO increased spending.
- In PY4, 14 of 41 NGACOs significantly reduced spending and 12 NGACOs reduced spending but not significantly. Three NGACOs significantly increased spending.

Impacts by NGACOs on Spending Categories, Utilization, and Quality of Care, PY1–PY4

- The percentage of NGACOs with reduced acute care hospital spending and stays, ED visits and observation stays, SNF days, other PAC spending, home health spending, and declines in rates of ACSC hospitalizations, grew over time.
- NGACOs with spending reductions had spending declines in three settings that represent the highest relative share of total Medicare costs, including acute care hospital, outpatient facility, and utilization and spending for professional services.
- At least half of NGACOs reduced spending in other PAC, home health, and hospice settings. However, NGACOs that achieved spending reductions in these settings frequently did not reduce total spending due to spending increases in other care settings.
- Total spending reductions for NGACOs were achieved without decrements in the observed quality of care measures.

Market Characteristics Associated with NGACO Total Spending Impacts

- NGACOs in markets with the highest per capita Medicare spending levels were associated with larger average spending reductions (2.6 percent reduction versus 0.1-1.2 percent for NGACOs in markets with lower per capita Medicare spending).
- NGACOs succeeded in reducing total spending in markets with various levels of hospital concentration. Exceptions were physician practice-affiliated NGACOs in markets with high hospital concentration (0.01 percent reduction versus 1.4 percent for physician practice NGACOs in markets with lower hospital concentration).

Associations between Organizational Affiliation (Structure) and NGACO Total Spending Impacts

- Spending impacts were similar for NGACOs of all organizational affiliations (1-1.2 percent). Care settings where NGACOs reduced spending differed by organizational affiliation. Reduced spending occurred in settings tied to providers other than their own. Physician practice-affiliated NGACOs reduced acute care hospital and outpatient facility spending, while hospital-affiliated NGACOs reduced professional spending.
- IDS/hospital system-affiliated NGACOs were associated with larger average spending reductions after three or more years in the model (1.9 percent). At the same time, physician-hospital partnerships and physician practice-affiliated NGACOs were associated with larger average spending reductions during their first two years (1-1.6 percent). Differences were not significant.

- On average, higher hospital concentration was associated with smaller reductions in Medicare spending for physician ACOs compared to their counterparts in less concentrated hospital markets (1.4 percent versus 0.01 percent, $p < 0.05$). Differences in hospital market concentration were not associated with differences in hospital ACO spending impact.

Associations between Provider Network Characteristics (Structure) and NGACO Total Spending Impacts

- Prior experience in a Medicare ACO—at both the provider and ACO levels—was associated with larger reductions in spending, though not significantly.

Associations between Beneficiary Characteristics and NGACO Total Spending Impacts

- NGACOs with smaller proportions of their beneficiary populations needing coordination of medical care with long-term care or social supports (e.g., fewer beneficiaries with disabilities and dually eligible beneficiaries) were associated with larger reductions in spending (>2 percent).
- NGACOs serving beneficiaries with more chronic conditions on average were associated with larger reductions in spending, though not significantly.

Associations between Selected Model Features and NGACO Total Spending Impacts

- NGACOs choosing 100 percent risk and cap greater than 5 percent were associated with larger average spending reductions (2.2 percent versus 0.2-0.8 percent for NGACOs electing 80 percent risk).
- NGACOs electing population-based payment mechanisms were associated with larger spending reductions (1.9 percent versus 0.7 percent for NGACOs electing FFS with or without infrastructure payments).

In this chapter, we present factors associated with variation in NGACO-level total spending impacts. Per our evaluation plan approved by CMS, we focus on gross spending impacts to understand how NGACOs reduced Medicare Parts A and B spending for their beneficiary populations and factors contributing to these reductions. We organize the chapter into two parts:

- **<u>NGACO impacts on gross spending and other outcomes</u>.** First, we describe patterns in gross spending impacts across the 62 NGACOs that participated in the model at any time and the 41 NGACOs that participated in the model in PY4.
  - We describe NGACOs' trends in impacts for Medicare spending categories, utilization, and quality of care from PY1 through PY4. We use the combined NGACO performance years as our unit of analysis to examine trends in impacts for 153 NGACO performance years.
  - We also assess how impacts for outcomes varied for subgroups of NGACOs based on whether they reduced, increased, or were neutral in their impact on gross Medicare spending.
- **<u>Key factors influencing variation in gross spending impacts for NGACOs</u>.** Second, we examine how DID regression-adjusted reductions in NGACO gross Medicare spending varied by characteristics of NGACOs' market environment, organizational structure, provider networks, aligned beneficiary populations, and model features elected.
  - We examine patterns in average gross spending impacts for NGACO performance years subgrouped by their characteristics. We compute the average gross spending impact associated with each subgroup by weighting gross spending impact estimates by the proportion of ACO aligned beneficiaries in the estimate's performance year.
  - The reported associations between an NGACO-level characteristic and gross spending impacts should not be interpreted as causal because we do not adjust subgroups' impacts for differences in other NGACO-level characteristics.

For these analyses, we report statistical significance at the 0.1 level. Results are presented PBPY and by percentage change.

4.1 NGACO Impacts on Gross Spending and Other Outcomes

The proportion of NGACOs with significant declines in total Medicare spending has grown over the four years of the model. **Exhibit 4.1** presents estimated cumulative impact of all NGACOs on gross Medicare spending (PBPY and as a percentage) through PY4. **Exhibit 4.2** presents estimated impacts in PY4 on gross spending (PBPY and as a percentage) for all active NGACOs. All estimates for a given cohort are depicted in the same color. We exclude NGACOs with estimates that were not interpretable due to a failure of the parallel trends test. In Appendix F, we show the cumulative gross spending impact over time (**Exhibit F.1**) and the gross spending impact in each performance year (**Exhibit F.2**) for all NGACOs that were ever in the model, including those that failed the test of parallel trends. See Appendix H for the conditional means for spending and other outcomes in the base year and performance years for all NGACOs operating in PY4 and their comparison groups.

We observed the following:

■ **Over time**, average gross Medicare spending reductions for NGACOs increased from about 1.0 percent in PY1 to 1.8 percent in PY4.[44] The percentage of NGACOs that significantly reduced spending increased from 13 percent in PY1 to 34 percent in PY4; see **Appendix F, Exhibit F.3**. These trends reflect a growing proportion of NGACOs with spending reductions among those remaining in the model and exit of poor performing NGACOs, as noted in Chapter 3.

■ Trends in declines for other outcomes at the NGACO-level contributed to the total spending declines observed. From PY1 to PY4, the percentages of NGACOs that significantly reduced acute care hospital spending and stays, ED visits and observation stays, SNF days, other PAC spending, home health spending, and declines in rates of ACSC hospitalizations grew over time. The average declines in these outcomes increased across PYs for NGACOs; see **Appendix F, Exhibit F.3**.
   ■ As of PY4, 17 of the 62 NGACOs that ever participated in the model significantly reduced spending, compared to 10 of 50 in PY3.

■ **In PY4**, 14 of the 41 NGACOs in the model had significant reductions in gross spending, a larger proportion than PY3, during which eight of 50 NGACO had significantly reduced spending. Most NGACOs that remained in the model in PY4 reduced spending in a prior performance year.

   Impacts for other outcomes for the 153 NGACO performance years were examined by clustering them into three subgroups based on performance representing:
   (1) NGACOs that cumulatively reduced total spending (by 1.2 percent or more, regardless of statistical significance);

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[44] Included are results that were not significant but excludes those that could not be interpreted due to failure of the parallel trends test.

(2) NGACOs that cumulatively increased total spending (by 1.2 percent or more, regardless of statistical significance); and

(3) NGACOs that cumulatively were neutral in their impact on total spending (i.e., estimated impacts fell between +/-1.2 percent).

Appendix F, Exhibit F.4 presents impacts for spending categories, utilization, and quality of care outcomes for these three NGACO subgroups.[45] In summary:

- NGACOs with spending reductions had spending declines in three settings that represent the highest relative share of total Medicare costs, including acute care hospital, outpatient facility, and utilization and spending tied to professional services. NGACOs with reductions were also able to reduce spending for SNF by a reduction in SNF days.
- At least half of NGACOs reduced spending in other PAC, home health, and hospice settings. Because these spending categories contributed relatively small shares of total costs, such reductions did not lower total spending. Some NGACOs that achieved spending reductions in these settings did not reduce total spending due to spending increases in other higher-cost care settings such as professional services, SNF, outpatient, and acute care hospital.
- NGACOs achieved spending reductions while maintaining quality of care.

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[45] We chose the 1.2 percent threshold regardless of statistical significance because this was the cumulative model-wide percentage impact cumulatively as of PY4, as well as the minimum detectable effect size at the 0.1 level for NGACOs cumulatively as of PY4.

Exhibit 4.1. Cumulative Impact on Gross Medicare Spending PBPY, by NGACO

Torrance	-6.1%***
Primiaria	-6.1%***
Best Care Collab	-5.6%***
Northwest	-5.1%**
Accountable Care Options	-3.7%***
MemorialCare (PY2)	-3.2%**
St. Luke's	-4.2%***
Prospect (PY1)	-2%
ACCST	-2.9%***
Mary Washington	-3.5%*
UTSW	-2.6%***
Franciscan	-3.2%**
ACC of TN	-3.7%***
Allina (PY2)	-3%
Atrius	-2.7%***
APA	-1.8%
Primary Care Alliance	-2.6%
ThedaCare	-3%*
ProspectNE	-2.2%*
UnityPoint	-2.7%***
KentuckyOne (PY2)	-2.2%
Deaconess	-1.7%
UNC	-1.5%
Trinity	-1.2%**
Central Utah	-1.3%
Hill (PY3)	-0.9%
Monarch (PY2)	-0.9%
Carilion	-1.2%
Optum (PY2)	-1%
Park Nicollet	-0.9%
CareMount	-0.8%
Steward	-0.7%
Integra (PY3)	-0.2%
Baroma (PY3)	-0.1%
ACCC (PY2)	-0.1%
Partners (PY3)	0%
Reliance	0%
NECQA	0.1%
Connected Care (PY3)	0.2%
Pioneer Valley	0.2%
Triad	0.3%
UW Health	0.4%
HCP	0.3%
Beacon (PY2)	0.7%
Fairview (PY2)	0.8%
CoxHealth	1.4%
Bronx	0.8%
RHeritage	1.2%
Sharp (PY2)	1.9%
OSF (PY1)	2.3%
Dartmouth-Hitchcock (PY3)	2.2%
Premier (PY2)	2.4%
Bellin	5.4%***
Reliant	4%

Cumulative Impact Estimate for Gross Spending ($PBPY) and 90% CI

● C2016   ● C2017   ○ C2018

NOTES: Cumulative impact estimates as of PY4 and 90% CIs for gross Medicare spending PBPY displayed for 36 NGACOs; 2016 cohort NGACOs (10) in blue solid dots, 2017 cohort NGACOs (12) in light teal solid dots, and 2018 cohort NGACOs (14) in dark teal open dots. For 18 NGACOs that exited the model before PY4, cumulative impact as of performance year prior to exit and 90% CI displayed with dashed lines; 2016 cohort NGACOs (6) in faded blue solid dots, 2017 cohort NGACOs (11) in faded light teal solid dots, and 2018 cohort NGACOs (1) in faded dark teal open dots. In parentheses are the last performance years in which the exiting NGACOs were active. Impacts not displayed for eight NGACOs that failed the parallel trends tests for gross Medicare spending: two 2016 cohort NGACOs, five 2017 cohort NGACOs, and one 2018 cohort NGACO. NGACOs ordered in increasing order of their impact estimates, with those reducing spending on top and those increasing spending at the bottom. ***#p<0.005, ***p<0.01, **p<0.05, *p<0.1.

Impact estimates and CIs to the left of the zero line denote NGACOs with reductions in gross Medicare spending, and those to the right denote NGACOs with increases in gross Medicare spending. Point estimates within the gray shaded area are between +/-1.2 percent.

Exhibit 4.2. Impact in PY4 on Gross Medicare Spending PBPY, by NGACO

NGACO	Estimate
Torrance	-10.6%***
Primiaria	-10.1%***
Best Care Collab	-8.4%***
ProHealth	-8.9%***
Accountable Care Options	-5.6%***
UnityPoint	-6%***
UNC	-5.4%***
ACCST	-3.9%*
APA	-3.2%*
Primary Care Alliance	-4.9%**
ProspectNE	-3.6%
St. Luke's	-4.4%**
Franciscan	-4%*
Northwest	-4.3%
Mary Washington	-3.7%
UTSW	-3%***
Deaconess	-3.2%
ACC of TN	-3.9%**
Atrius	-3%
Park Nicollet	-2.6%
Trinity	-1.7%
Carilion	-1.9%
CareMount	-1.5%
Triad	-0.9%
ThedaCare	-0.8%
Steward	-0.5%
UW Health	0.2%
CHESS	0.4%
NECQA	0.8%
CoxHealth	1.2%
Central Utah	2.1%
Bronx	1.8%
Pioneer Valley	2.6%
Reliance	2.9%
RHeritage	2.5%
HCP	2.3%
Bellin	6.6%**
Reliant	7.7%*
Henry Ford	7.5%***

Performance Year Impact Estimate for Gross Spending ($PBPY) and 90% CI

x-axis: -$2,000 -$1,000 $0 $1,000

● C2016 ● C2017 ○ C2018

NOTES: Impact estimates in PY4 and 90% CIs for gross Medicare spending PBPY displayed for 39 NGACOs; 2016 cohort NGACOs (12) in blue solid dots, 2017 cohort NGACOs (13) in light teal solid dots, and 2018 cohort NGACOs (14) in dark teal open dots. Impacts not displayed for two cohort 2017 NGACOs that failed the parallel trends tests for gross Medicare spending. NGACOs ordered in increasing order of their impact estimates, with those reducing spending on top and those increasing spending at the bottom. ***#p<0.005, ***p<0.01, **p<0.05, *p<0.1. Impact estimates and CIs to

the left of the zero line denote NGACOs with reductions in gross Medicare spending, and those to the right denote NGACOs with increases in gross Medicare spending. Point estimates in the gray shaded area are between +/-1.2 percent.

4.2 Key Factors Influencing Variation in Gross Spending Impacts for NGACOs

Over the model's first four performance years, the 62 NGACOs that participated in at least one year showed widely varying impacts on gross Medicare spending. Variation in gross spending impact estimates reflect differences between ACOs as well as changes within ACOs over time. To understand the influences of different ACO characteristics on gross spending impacts, we examined gross spending impact estimates for subgroups of ACOs based on ACOs' market context, organizational characteristics, provider networks, aligned beneficiary populations, and model features. We computed the average gross spending impact for each subgroup of ACO characteristics by weighting the gross spending impacts for its NGACO performance years by the proportions of its aligned beneficiaries. Because a subgroup's impacts were unadjusted for other differences in NGACO-level characteristics, the associations between an NGACO-level characteristic and gross spending impacts presented in this chapter are not causal. We also investigated these characteristics in explaining variation in gross spending impacts between NGACOs and within NGACOs over time.[46,47]

See **Exhibit 4.3** for a visual summary of the framework and domains that guide this analysis.

- ■ Across the five domains listed above, we examined:
  - ● **Twelve variables reflecting market context** included per capita FFS Medicare spending, MA penetration rate, Medicare ACO penetration rate, and hospital concentration, defined before performance years, baseline years, and as change between the two periods.[48]
  - ● **Three organizational characteristics** included organization type (based on affiliation with IDS/hospital system, physician-hospital partnership, and physician practices), years of prior Medicare ACO experience, and interaction between organization type and market hospital concentration, defined before each performance year.

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[46] We chose the 1.2 percent threshold regardless of statistical significance because this was the cumulative model-wide percentage impact cumulatively as of PY4, as well as the minimum detectable effect size at the 0.1 level for NGACOs cumulatively as of PY4.

[47] We used meta-regression to assess variation in gross spending impacts for the 62 NGACOs across four performance years. See Appendix A for details on the approach and Appendix G, Exhibit G.1 for results.

[48] For the four market characteristics discussed in this chapter (ACO and MA penetration rates, per capital FFS beneficiary spending level, and hospital concentration), we hypothesized that both the baseline and change between the baseline and performance year might explain variation in NGACO performance. We did not test this theory, since baseline and change characteristics are endogenous to an organization's participation in the model. An organization's joining the model may itself affect market characteristics. In addition, NGACOs may influence changes in practitioners' behavior to reflect available market resources at the time that an organization joined the NGACO model. See Appendix G for results of these analyses.

- **Three aspects of NGACO provider networks** included its participating providers' average years of Medicare ACO experience, acute care hospital beds per 1000 aligned beneficiaries, and SNF beds per 1000 aligned beneficiaries, defined before each performance year
- **Six variables reflecting an NGACO's beneficiary population** included its size (defined by the number of aligned beneficiaries); average number of chronic conditions for the beneficiary population; proportions of its population with disability and dual eligibility; average level of poverty in its population's communities; and proportion of its population residing in rural areas- defined before each performance year.
- **Two variables that capture the NGACO's selected model features** included its level of financial risk and payment mechanism elections before each performance year.

Exhibit 4.3. Causal Framework Revisited: Assessing Key Factors that Influence Variation in Gross Medicare Spending
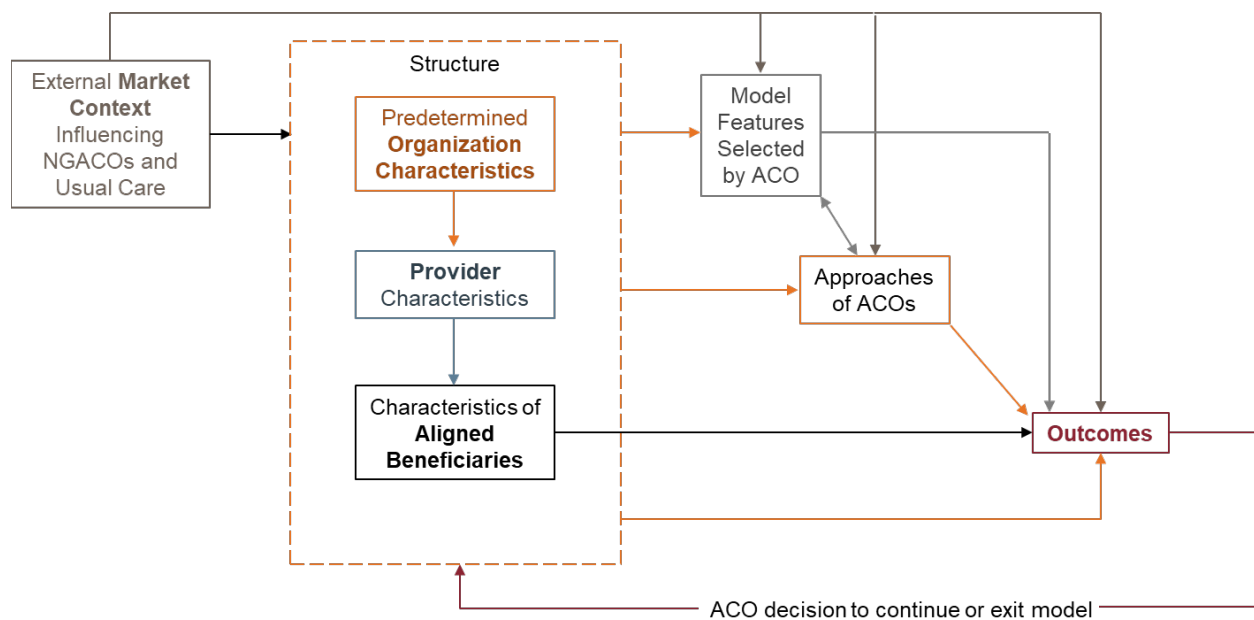
- Depending on the measure, we grouped NGACOs into quintiles or groups based on threshold criteria as defined in the literature. See Appendix G for more details about our methods.
- We present the results of these analyses in reference to our theories of change and related hypotheses.

For 62 NGACOs across four performance years, characteristics of their markets, organizations, provider networks, aligned beneficiary populations, model features elected, and overlapping CMMI initiatives explained 57 percent of the variation in gross spending impacts.[49] None of the groups of factors sufficiently explained *all* of the observed variation in gross spending impacts for the 143 NGACO-years (excluding the 10 NGACO-years that failed parallel trends for gross

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[49] We used meta-regression to assess variation in gross spending impacts for the 62 NGACOs across four performance years. See Appendix A for details on the approach and Appendix F, Exhibit F.7 for results.

spending). Among groups of factors examined, characteristics of the NGACO markets, particularly the presence of overlapping CMMI initiatives for the NGACO and comparison groups,[50] accounted for one-fourth of the variation in spending impacts among NGACOs and over time. Characteristics of the NGACOs' beneficiary populations, provider networks, and model features elected explained about one-fifth of the variation in spending impacts. Organizational characteristics accounted for almost none of the variation in NGACOs' total spending impacts, beyond variation explained by other factors. However, influences for categories of Medicare spending and utilization varied largely by organization type. The final evaluation report will include findings related to influences of an NGACO's approaches in the model and overlapping CMMI initiatives on gross spending impacts.

Most analyses we present in this chapter show how NGACOs' spending impacts vary by one individual factor at a time; however, one or more factors may interact to influence performance. This assessment of individual factors was a foundation for understanding how configurations of multiple factors may interact, a focus of qualitative comparative analysis (QCA) in Chapter 6.

4.3 Market Context

Theory of Change. Market conditions—characteristics of the environment in which NGACOs form and operate—affect Medicare spending and influence an NGACO's structure (e.g., its organizational type, resources available, or provider networks) and its choice of model features.

4.3.1 Hypotheses and Findings

In **Exhibit 4.4**, we summarize key findings on the association of market factors with NGACO-level gross spending impacts. The market variables for NGACOs were defined with respect to all HRRs in the nation to understand the characteristics of NGACO markets and the association of these market characteristics with spending impacts. We defined each market characteristic before each PY, before each baseline year, and as change between the two periods (the most recent data used for the market characteristics are only available one year before the PY); therefore, the data were lagged in each base year as well.[51]

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[50] Overlapping CMMI initiatives reflect the interaction of market context with providers and beneficiaries in NGACO and usual-care groups. These initiatives evolved between the baseline and performance periods.

[51] The most recent data used to characterize markets were only available lagged by one year. Hence, all measures of market characteristics reflect the year preceding the performance or base year.
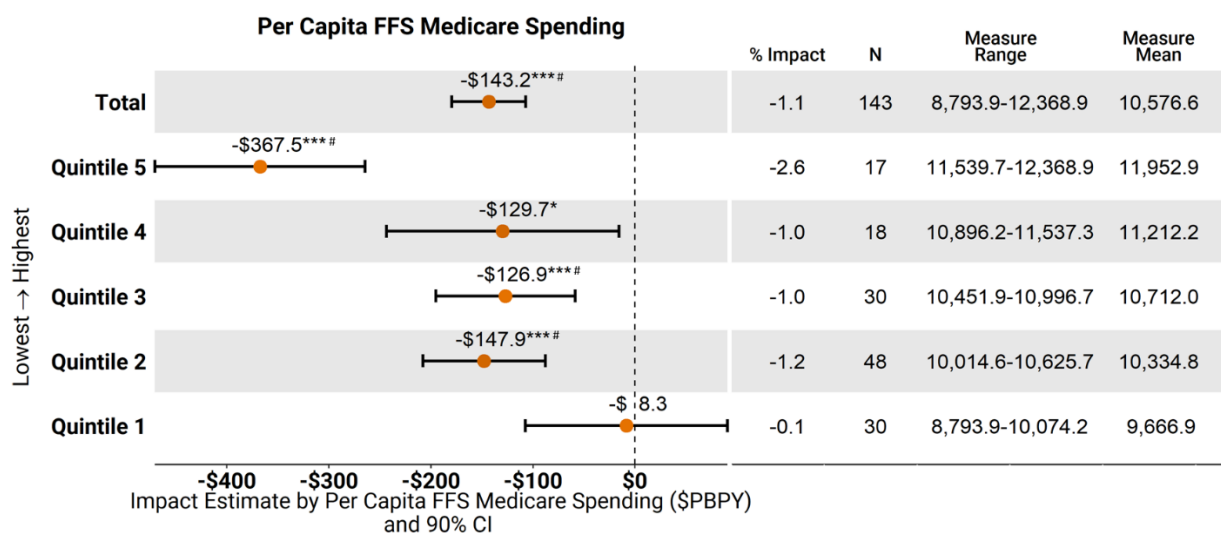
Exhibit 4.4. NGACO Market Factors' Association with Gross Spending Impacts: Summary of Findings

Market Factor	Association with NGACO-level Gross Spending Impacts: PY1–PY4
Per Capita FFS Medicare Spending Level NGACOs grouped into quintiles based on per capita FFS Medicare spending levels in their markets relative to all HRRs nationally	■ NGACOs in markets with highest per capita Medicare spending levels associated with larger spending reductions (2.6 percent reduction for NGACOs in the highest-spending quintile of HRRs nationally versus 0.1-1.2 percent reduction for NGACOs in lower-spending quintiles of HRRs nationally, p<0.05). ■ Findings robust to defining per capita spending level before performance or baseline years. ■ No clear pattern for change in per capita FFS Medicare spending level from baseline to performance years.
Medicare Advantage (MA) Penetration Rate NGACOs grouped into quintiles based on MA penetration rate in their markets relative to all HRRs nationally	■ Spending reductions similar for NGACOs in markets above a threshold MA penetration rate (>15 percent). Very few NGACOs formed in markets with the lowest MA penetration rate nationally. ■ Findings robust to defining MA penetration rate prior to performance or baseline years. ■ No clear pattern for change in MA penetration rate from baseline to performance years.
Medicare ACO Penetration Rate NGACOs grouped into quintiles based on Medicare ACO penetration rate in their markets relative to all HRRs nationally	■ Spending reductions similar for NGACOs above a threshold Medicare ACO penetration rate (>20 percent). Markets with lowest Medicare ACO penetration rate had fewer NGACOs. ■ Findings robust to defining Medicare ACO penetration rate before performance or baseline years. ■ No clear pattern for change in Medicare ACO penetration rate from baseline to performance years.
Concentration among Hospitals NGACOs grouped into three categories based on Herfindahl-Hirschman Index (HHI) for hospitals in their markets: (1) Unconcentrated (HHI<1500); (2) Moderately concentrated (HHI 1500<2500); and (3) High/super concentrated (HHI ≥ 2500)	■ Spending reductions largely similar for NGACOs in markets with varying hospital concentrations. (See Organization Factors for Interaction between Organization Type and Market Hospital Concentration.) ■ Findings robust to defining market hospital concentration before performance or baseline years. ■ No clear pattern for change in market hospital concentration from baseline to performance years.

Per Capita FFS Medicare Spending Level. NGACOs operating in markets with higher Medicare spending may have more opportunities to address inefficiencies and thereby reduce spending by larger amounts than NGACOs operating in markets with lower Medicare spending. NGACOs in markets with higher per capita spending, defined prior to a performance year, were associated with larger spending reductions, as seen in **Exhibit 4.5**. NGACOs in markets in the top quintile of per capita Medicare spending nationally were associated with a 2.6 percent average spending

reduction that was significantly larger than average spending reductions of 0.1-1.2 percent for NGACOs in markets in the lower quintiles of per capita Medicare spending nationally. Findings were similar when we examined subgroups classified by per capita FFS spending in the year(s) before a base year(s); see **Appendix F, Exhibit F.7**.

Exhibit 4.5. Average Gross Medicare Spending Impacts for NGACOs, by Performance Year Per Capita FFS Medicare Spending Level in ACO Market

Per Capita FFS Medicare Spending	% Impact	N	Measure Range	Measure Mean
Total −$143.2***#	-1.1	143	8,793.9-12,368.9	10,576.6
Quintile 5 −$367.5***#	-2.6	17	11,539.7-12,368.9	11,952.9
Quintile 4 −$129.7*	-1.0	18	10,896.2-11,537.3	11,212.2
Quintile 3 −$126.9***#	-1.0	30	10,451.9-10,996.7	10,712.0
Quintile 2 −$147.9***#	-1.2	48	10,014.6-10,625.7	10,334.8
Quintile 1 −$ 8.3	-0.1	30	8,793.9-10,074.2	9,666.9

Impact Estimate by Per Capita FFS Medicare Spending ($PBPY) and 90% CI

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Per capita FFS Medicare Spending level measured in year before each performance year for NGACOs' markets. Markets defined as an NGACO's HRRs. NGACOs grouped into quintiles based on per capita FFS Medicare spending levels in their markets relative to all HRRs nationally. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each quintile subgroup. For each subgroup, we display the impact estimate as percentage (% Impact); number of NGACO-years (N); range of per capita FFS Medicare spending in markets for NGACO-years (Measure range); and average per capita FFS spending in markets (Measure mean). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

MA Penetration Rate. NGACOs may face challenges forming in markets with low MA penetration because fewer providers may have exposure to and experience with value-based payment arrangements. Consistent with our hypothesis, we found that very few NGACOs formed in markets with the lowest MA penetration nationally (there were only five NGACO-years in the lowest quintile of HRRs); see **Appendix F, Exhibits F.10-F.12**. Above this threshold for MA penetration (>20 percent), we found no clear association between NGACOs' spending impacts and their markets' MA penetration rates. We noted similar patterns when we defined MA penetration in NGACOs' markets before the performance or base years.

Medicare ACO Penetration. We hypothesized that NGACOs would similarly face challenges forming in markets with low Medicare ACO penetration because such markets would have few providers with prior Medicare ACO experience. Consistent with our hypothesis, we found that few

NGACOs formed in markets with lower Medicare ACO penetration nationally (there were only 15 NGACO-years in the two lowest quintiles of HRRs); see **Appendix F, Exhibits F.13-F.15**. Above this threshold for Medicare ACO penetration (>20 percent), we found no clear association between NGACOs' spending impacts and their markets' Medicare ACO penetration rates. Our findings were similar when we defined Medicare ACO penetration in NGACOs' markets before the performance or base years.

Hospital Market Concentration. We hypothesized that NGACOs in less concentrated hospital markets had greater scope for reducing Medicare spending, with more flexibility to attract providers and aligned beneficiaries. NGACOs in highly concentrated hospital markets could also have been better able to manage beneficiaries' care, and beneficiaries in these markets may have been more likely to seek care within the NGACOs' provider networks. At the same time, a dominant provider might have discouraged lowering costs due to the direct impact on its finances. We found that NGACOs were associated with reduced total spending in both highly to super highly concentrated markets (low competition) and markets with moderate to high hospital concentration (more competition); see **Appendix F, Exhibits F.16-F.18**.

4.4 NGACO Structure

Theory of Change. Organizational characteristics of NGACOs—their affiliation with health systems, hospitals and physician practices, provider networks, and characteristics of their beneficiary populations—may influence the NGACOs' ability to manage beneficiaries' care and choice of model features.

4.4.1 Organizational Characteristics: Hypotheses and Findings

In **Exhibit 4.6**, we summarize key findings on the association of NGACO-level organizational factors with gross spending impacts.
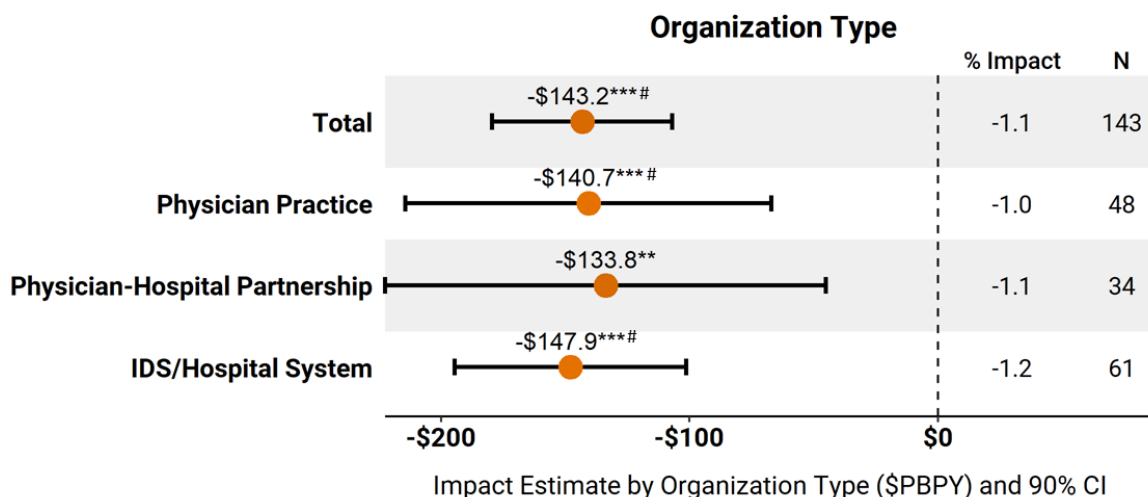
Exhibit 4.6. Association of NGACO Organizational Factors with Gross Spending Impacts: Summary of Findings

Organizational Factor (Variable Definition)	Association with NGACO-level Gross Spending Impacts PY1-PY4
Organizational Affiliation Three subgroups for NGACOs affiliated with: (1) IDS/hospital systems, (2) physician practice/hospital partnerships, and (3) physician practices	■ The average size of Parts A and B spending reductions were similar for NGACOs affiliated with IDS/hospital systems, physician practice/hospital partnerships, and physician practices (1-1.2 percent reduction). ■ The pattern of effects on spending over time differed by organizational affiliation. IDS/hospital system-affiliated NGACOs had larger average spending reductions after three or more years in the model (1.9 percent). Physician-hospital partnerships and physician practice-affiliated NGACOs had larger average spending reductions during their first two years (1-1.6 percent), but differences were not statistically significant. ■ The settings where spending reductions occurred largely differed by NGACO organizational affiliation. Physician practice-affiliated NGACOs were associated with larger reductions in acute care hospital and outpatient facility spending. Hospital-affiliated NGACOs saw larger reductions in spending for professional services.
Organizational Affiliation Interacted with Market Hospital Concentration Six subgroups for NGACOs affiliated with (1) IDS/hospital systems in low/moderate concentrated market, (2) IDS/hospital systems in high/super high-concentrated market, (3) physician practice/hospital partnership in low/moderate-concentrated market, (4) physician practice/hospital partnership in high/super high-concentrated market, (5) physician practices in low/moderate-concentrated market, (6) physician practices in high/super high-concentrated market	■ Physician practice ACOs in markets with lower hospital concentration were associated with significantly larger average spending reductions than their counterparts in markets with higher hospital concentration (1.4 percent versus 0.01 percent, $p<0.05$). ■ There are no significant differences in average spending reductions between ACOs in markets with lower and higher hospital concentration for physician-hospital partnerships (1.3 percent versus 1 percent) or IDS/hospital systems (1.1 percent versus 1.3 percent).
Years of Prior Medicare ACO experience Four subgroups for NGACOs with prior Medicare ACO experience of (1) 0≤2 years, (2) 2≤3 years, (3) 3≤5 years, (4) 5 years or more.	■ NGACOs with more years of prior Medicare ACO experience were associated with larger spending reductions, though differences were not significant. ■ NGACOs with five or more years of Medicare ACO experience averaged larger spending reductions (1.3 percent); NGACOs with average of 0≤2 years of Medicare ACO experience were associated with smaller spending reductions (0.9 percent).

Organizational Affiliation. We hypothesized that NGACOs could reduce Medicare spending irrespective of their organizational affiliation. Finally, we expected the drivers of spending reductions to differ by type of organization. NGACOs would reduce Medicare spending by mostly cutting other providers' costs for their aligned population, rather than reducing their own costs (i.e., physician practice-affiliated ACOs would reduce Medicare spending for hospitals but not for professionals).

All three types of NGACOs were associated with similar magnitudes of reduced total spending, with little variation in the size of total spending impacts across organizational types (1-1.2 percent reduction); see **Exhibit 4.7**. Our findings remain consistent with those presented in the Third Report and different from SSP where ACOs with financial independence from hospitals were associated with larger reductions in Medicare spending.

Exhibit 4.7. Average Gross Medicare Spending Impacts for NGACOs, by Organizational Affiliation (N=143)

Organization Type

	Impact Estimate	% Impact	N
Total	-$143.2***#	-1.1	143
Physician Practice	-$140.7***#	-1.0	48
Physician-Hospital Partnership	-$133.8**	-1.1	34
IDS/Hospital System	-$147.9***#	-1.2	61

Impact Estimate by Organization Type ($PBPY) and 90% CI

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each subgroup of organizational affiliation. For each subgroup, we display the impact estimate as percentage (% Impact). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

The pattern of spending reductions over time varied by organizational affiliation; see Exhibit 4.8. Physician-hospital partnerships and physician practice-affiliated NGACOs were associated with larger average spending reductions during their first two years in the model (1-1.6 percent), and smaller average spending reductions after three or more years (0.5-0.6 percent). In contrast, IDS/hospital system-affiliated NGACOs were associated with smaller average spending reductions in their first two years (0.7-0.8 percent) and larger average spending reductions after three or more years in the model (1.9 percent). Although the differences between the organization types were not statistically different, our findings for NGACOs differ from SSP, where physician

practice ACOs were associated with larger reductions across years.[52] Our findings for IDS/hospital system-affiliated NGACOs are also consistent with those presented in the next chapter. This suggests that it may have taken more time for NGACOs in larger organizations than those in smaller physician practice-affiliated NGACOs to implement new programs to address those areas the NGACOs identified as opportunities for improvement.

Exhibit 4.8. Average Gross Spending Impacts for NGACOs, by Organization Affiliation and Number of Years of Participation in the Model (N=143)

Collapse Year 3 and Year 4 (excluding results failed in parallel trends), N=143

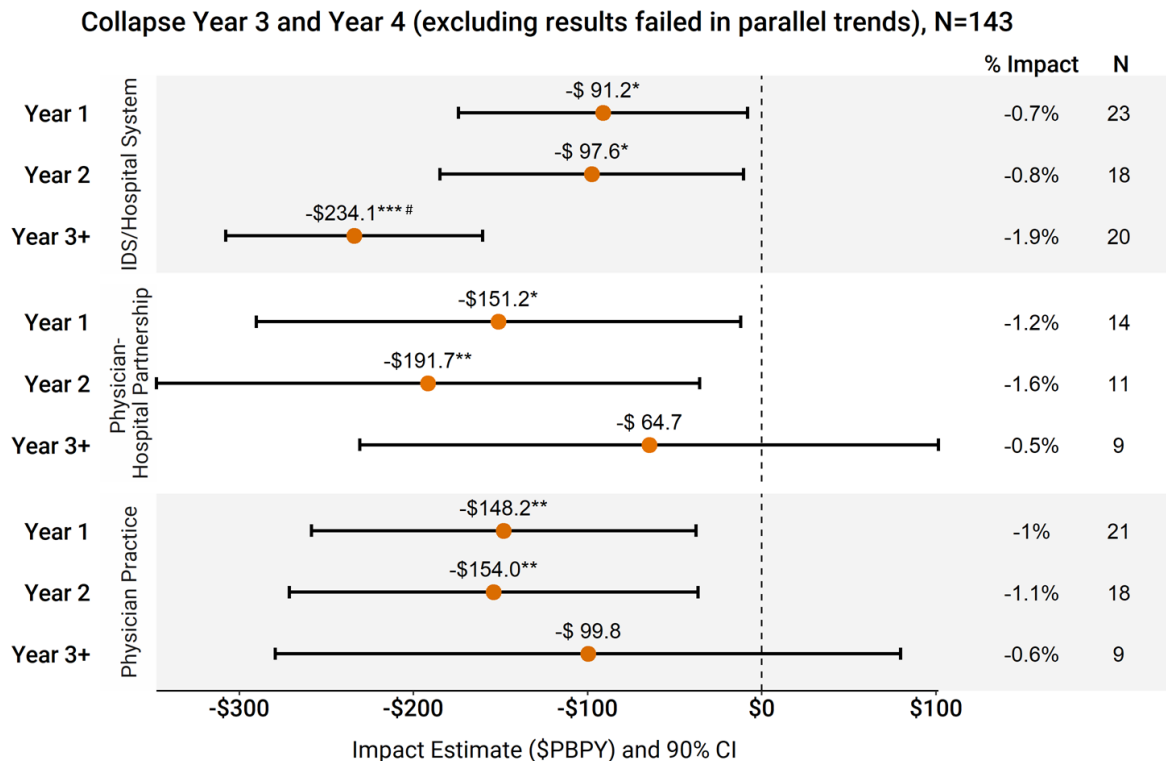|		% Impact	N
IDS/Hospital System Year 1	-$ 91.2*	-0.7%	23
Year 2	-$ 97.6*	-0.8%	18
Year 3+	-$234.1***#	-1.9%	20
Physician-Hospital Partnership Year 1	-$151.2*	-1.2%	14
Year 2	-$191.7**	-1.6%	11
Year 3+	-$ 64.7	-0.5%	9
Physician Practice Year 1	-$148.2**	-1%	21
Year 2	-$154.0**	-1.1%	18
Year 3+	-$ 99.8	-0.6%	9

Impact Estimate ($PBPY) and 90% CI

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each subgroup of organizational affiliation and years of participation in the model. For each subgroup, we display the impact estimate as percentage (% Impact). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

The settings where NGACOs reduced total Medicare spending differed by organizational affiliation. In **Exhibit 4.9**, we display relative reductions in the different spending categories for NGACOs based on their organizational affiliation. Relative reductions are the contributions of

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[52] McWilliams, J. Michael, Laura A. Hatfield, Bruce E. Landon, Pasha Hamed, and Michael E. Chernew. "Medicare spending after 3 years of the Medicare Shared Savings Program." *New England Journal of Medicine* 379, no. 12 (2018): 1139-1149.

reductions in *categories* of Medicare spending to an organizational type's total gross spending reduction. We observed the following:

■ Physician practice-affiliated NGACOs reduced Medicare spending largely by decreasing acute care hospital and outpatient facility spending; on average, these NGACOs did not reduce professional services spending.
■ Hospital-physician partnership NGACOs reduced professional services spending more than spending for acute care hospital and outpatient facilities.
■ NGACOs affiliated with IDS/hospital systems reduced spending in acute care facilities to a lesser degree and professional services spending to a greater degree than physician practice-affiliated NGACOs.
■ Together, reductions in spending for acute care hospital facility, outpatient facilities, and professional services contributed around half of the total gross spending reductions for all three types of organizational affiliation (physician practice, hospital-physician partnership, and IDS/hospital system).
■ The remaining spending decreases were from reduced spending on other providers in SNF, other PAC, home health, and hospice settings. Each organizational type had a distinct influence in reducing spending for their beneficiaries across these settings.

Exhibit 4.9. NGACO Organizational Affiliation: Relative Percent Impacts for Medicare Spending Categories, PY1−PY4 (N=143)
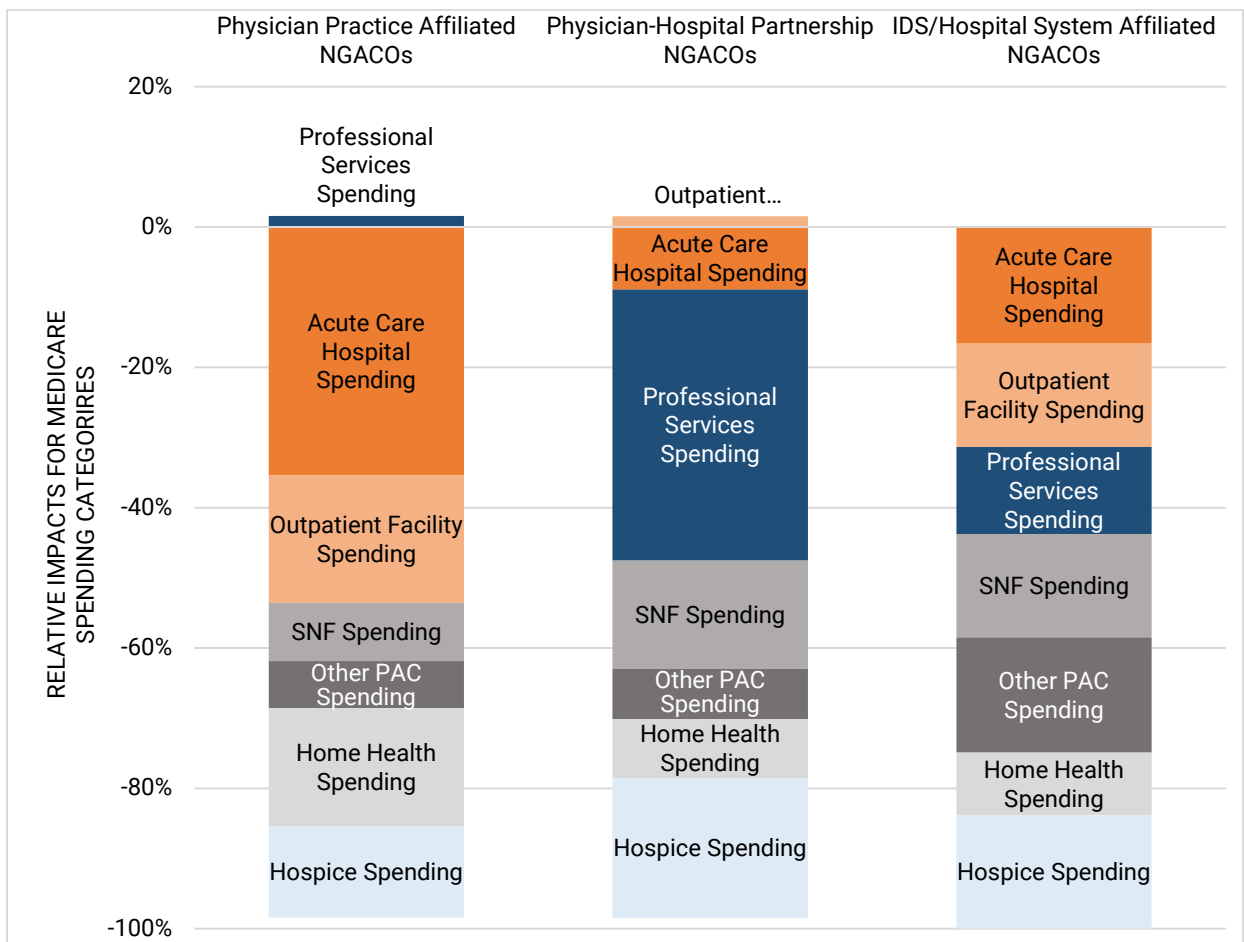
NOTE: Relative impacts for Medicare spending categories are the average impact estimates for the spending categories for each organizational type relative to its average gross Medicare spending impact estimate as of PY4. Values above zero reflect increases in a spending category, and values below zero reflect decreases in a spending category relative to total spending impact for each organization type. We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. See Appendix F, Exhibit F.5 for the organization type's impact estimates on Medicare spending categories, utilization, and quality of care outcomes.

Interaction of Organizational Affiliation with Hospital Market Concentration. We examined how NGACO organizational affiliation interacted with hospital concentration to impact total spending. NGACOs affiliated with physician practices may have greater scope for reducing spending in the hospital setting when situated in less concentrated hospital markets. More hospital competition may facilitate physician practice NGACOs in reducing costly utilization through referral patterns and more efficient hospital-based care delivery. However, markets with dominant hospital players may present a more challenging context in which physician practice ACOs may exert similar

influence.[53] In contrast, an IDS/hospital system-affiliated NGACO is likely to maintain its inherent network advantage in markets with higher or lower hospital concentration. Our hypotheses held true to some extent. Physician practice NGACOs were associated with significantly larger spending declines in markets with lower hospital concentration than those with higher hospital concentration (1.4 percent reduction versus 0.01 percent reduction). Compared to markets with lower hospital concentration, fewer NGACOs were located in markets with high hospital concentration (33 versus 15). Physician practice NGACOs may be less likely to form in markets with higher hospital concentration, and hospitals and delivery systems focused on increasing market share may be less willing to engage with physician practice ACOs comprised of independent practices. In contrast, IDS/hospital system-affiliated NGACOs and physician-hospital partnerships successfully reduced spending in markets with higher or lower hospital concentration. See **Appendix F, Exhibit F.19**.

Prior Medicare ACO Experience. We hypothesized that NGACOs with more years of Medicare ACO experience would be better positioned to reduce Medicare spending. We know from qualitative interviews that NGACO leaders gained insight from their participation in Pioneer and MSSP. They may have more data, more mature and engaged provider networks, providers with greater experience in Medicare ACOs, and a care management infrastructure on which to build. Although we found some evidence of this effect, our findings were not statistically significant: NGACOs with the most prior experience were associated with the largest spending reductions (1.3 percent), while those with under two years of experience were associated with the smallest reductions in spending (0.9 percent); see **Appendix F, Exhibit F.20**. Finally, we have not examined whether past success in earning shared savings (as Medicare ACOs) was associated with larger reductions.

4.4.2 Characteristics of ACO Provider Networks: Hypotheses and Findings

In **Exhibit 4.10**, we summarize key findings on the association of NGACOs' provider network factors with gross spending impacts.

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[53] For example, providers in physician practice NGACOs may have fewer options for hospital referral in markets with high/super high hospital concentration and more options for hospital referrals in markets with low/moderate hospital concentration.

Exhibit 4.10. NGACO Provider Network Factors' Association with Gross Spending Impacts: Summary of Findings

Provider Network Factor (Variable Definition)	Association with NGACO-Level Gross Spending Impacts PY1-PY4
Average Years of Prior Medicare ACO experience for Participating Practitioners Four subgroups for NGACOs with participating practitioners' average prior Medicare ACO had experience from (1) 0≤1 years, (2) 1≤2 years, (3) 2 ≤3years, and (4) 3 years or more.	■ Having practitioners with three more years of Medicare ACO experience is associated with larger reductions, though differences were not significant. ■ NGACOs with an average of one or more years of practitioner Medicare ACO experience saw significant spending reductions (of at least 0.2 percent). NGACOs with three or more years of average practitioner experience had significantly larger spending reductions than those with less than one year of experience.
Number of Acute Care Hospital Beds in Provider Network NGACOs grouped into quintiles based on number of acute care hospital beds in-network per 1,000 aligned beneficiaries.	■ No clear association noted.
Number of SNF Beds in Provider Network NGACOs grouped into quintiles based on number of SNF beds in-network per 1,000 aligned beneficiaries.	■ NGACOs with fewer SNF beds in-network associated with larger spending reductions, though differences were not significant.

Practitioners' Medicare ACO Experience. We hypothesized that practitioners with more years of prior Medicare ACO experience, which differs from organization-level experience reported above, would be associated with larger decreases in overall spending since they have greater awareness of the goals of an ACO. In qualitative interviews, NGACO leaders discussed the importance of including physicians that were open to "changing culture and changing behavior", which prior ACO experience might facilitate , We found some evidence to support this hypothesis: NGACOs where individual practitioners had a higher average number of years of prior Medicare ACO experience were associated with larger spending reductions, though differences between subgroups with the highest and lowest experience were not significant. See **Appendix F, Exhibit F.2**1.

ACO Network Hospital Bed Capacity. NGACOs with more acute care hospital beds in their network may face greater impediments to achieving larger spending reductions because their hospitals may have less incentive to reduce inpatient admissions and length of stay. Although acute care spending was the main contributor to overall spending, the number of acute care hospital beds in the network was not associated with total spending reductions; see **Appendix F, Exhibit F.22**. In sensitivity analyses, we found no association between NGACOs' hospital bed capacity in their network and impacts for acute care hospital spending or stays.

ACO Network SNF Bed Capacity. We hypothesized that NGACOs with fewer SNF beds for aligned beneficiaries in the network may be more likely to reduce spending. NGACOs were generally discerning in choosing their partner SNFs. Those that were more selective in partnering with fewer but high-quality SNFs may be more successful in managing care transitions for their beneficiaries, reducing SNF lengths of stay, and lowering spending. NGACO leaders discussed the importance of having their staff embedded in SNFs, which may have been more feasible in smaller networks. We found that the number of SNF beds in the NGACO networks varied greatly. NGACOs with fewer SNF beds in their network were associated with larger spending reductions, but differences were not significant; see **Appendix F, Exhibit F.23**. In sensitivity analyses, we found no significant associations between NGACOs' SNF bed capacity in their network and impacts for SNF spending or days. NGACO leadership explained that because they were unable to direct beneficiaries to in-network SNFs, beneficiaries frequently chose SNFs outside the NGACO network. When NGACOs had small SNF networks, beneficiaries may have been more likely to go to SNFs outside of the network. NGACOs had little ability to manage care for beneficiaries and length of stay in non-network SNFs where NGACOs did not have SNFists or care managers embedded or rounding.

4.4.3 Beneficiary Characteristics

Theory of Change. The characteristics of beneficiary groups—such as health or sociodemographic factors associated with barriers to accessing care—offer varied opportunities to reduce spending. Targeting improvements in care delivery to beneficiaries with the greatest health care needs may have yielded the largest return on these investments, and in turn, resulted in larger spending reductions. Results from Chapter 2 showed that the NGACO model had larger impacts on beneficiaries with greater clinical need, specifically those with multiple chronic conditions and those with a hospitalization in the prior year.[54] Here, we present impacts across NGACO subgroups classified into quintiles based on the percentage of each type of beneficiary in an ACO's aligned population.

4.4.4 Hypotheses and Findings

In **Exhibit 4.11**, we summarize key findings on the association of NGACOs' aligned beneficiary population characteristics with gross spending impacts

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[54] NGACOs also had larger spending reductions among dually eligible beneficiaries compared to the non-dually eligible; however, trends between the NGACO and comparison groups were not parallel in the base years, and thus these impacts cannot be ascribed solely to the NGACO model.

Exhibit 4.11. NGACO-Aligned Beneficiary Population Characteristics' Association with Gross Spending Impacts: Summary of Findings
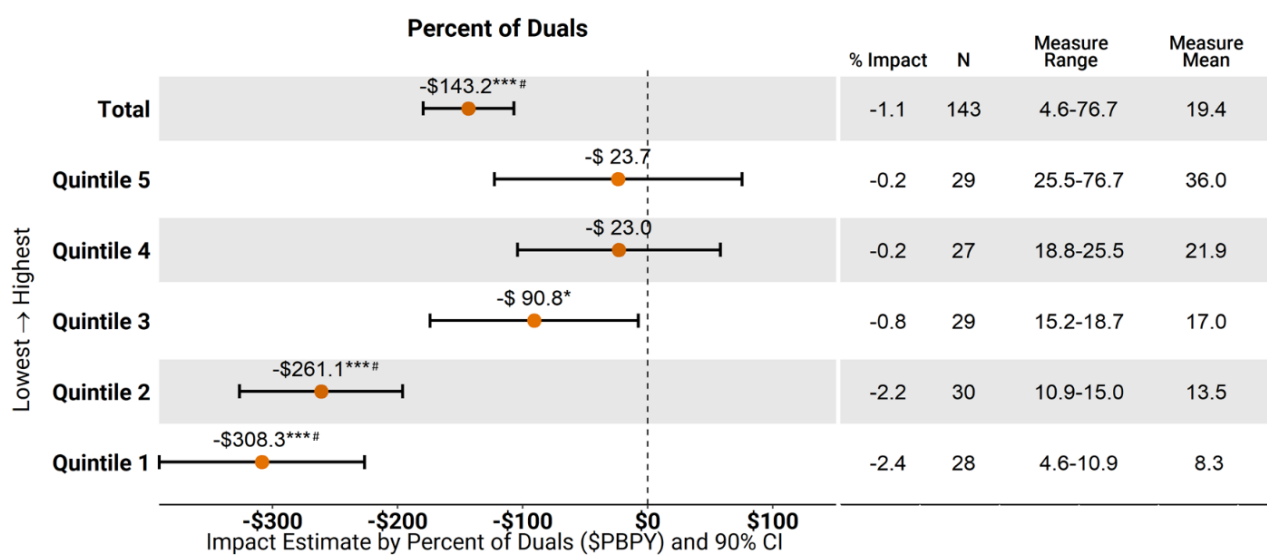
Aligned Beneficiary Population Characteristic (Variable Definition)	Association with NGACO-level Gross Spending Impacts PY1–PY4
Size of aligned beneficiary population NGACOs grouped into quintiles based on number of aligned beneficiaries	■ No clear association noted
Proportion of beneficiaries with dual eligibility in population NGACOs grouped into quintiles based on proportion of beneficiaries with dual eligibility in population	■ NGACOs with higher percentages of beneficiaries with dual eligibility in population associated with significantly smaller Average spending reductions (0.1-0.2 percent reduction for ACOs in higher quintiles versus 2.4-2.2 percent reduction for ACOs in lower quintiles, p< 0.01), suggestive of threshold effect.
Proportion of beneficiaries with Disability in population NGACOs grouped into quintiles based on proportion of beneficiaries with disability in population	■ NGACOs with higher percentages of beneficiaries with disability in population associated with significantly smaller average spending reductions (0.1 percent reduction-0.2 percent increase for ACOs in higher quintiles versus 2.7-2 percent reduction for ACOs in lower quintiles, p<0.01), suggestive of threshold effect.
Average number of chronic conditions in beneficiary population NGACOs grouped into quintiles based on average number of chronic conditions for aligned beneficiaries	■ NGACOs whose aligned beneficiaries average higher numbers of chronic conditions are associated with higher spending reductions, though differences between quintiles were not significant
Average poverty level in population's communities NGACOs grouped into quintiles based on average poverty level in aligned beneficiaries' ZIP Code Tabulation Areas (ZCTAs)	■ NGACOs with higher average poverty level in populations' communities associated with smaller spending reductions, suggestive of threshold effect.
Proportion of Population residing in Rural Areas NGACOs grouped into quintiles based on proportion of aligned beneficiaries residing in rural ZIP codes	■ No clear association noted.

Size of Aligned Beneficiary Population. We hypothesized that NGACOs with more aligned beneficiaries may benefit from economies of scale, with larger populations enabling investments in population health management infrastructure that contribute to spending reductions. However, we found no evidence that NGACO size was associated with spending reductions, as both large and small NGACOs were able to significantly reduce spending; see **Appendix F, Exhibit F.24**.

Dual Eligibility and Disability. NGACOs serving populations with lower proportions of dually eligible beneficiaries or people with disabilities may have been better able to reduce spending, due

to fewer challenges in coordinating Medicare paid medical care with long-term services and other social supports. Our findings were consistent with this hypothesis: NGACOs with a larger percentage of dually eligible beneficiaries were associated with smaller and non-significant impacts on gross Medicare spending, as were NGACOs with a larger percentage of beneficiaries living with disability. By contrast, NGACOs with smaller percentages of dually eligible beneficiaries or beneficiaries with a disability saw significant spending reductions of at least 2 percent or more. These findings likely reflected challenges that NGACOs with a higher threshold of vulnerable beneficiaries faced in addressing long-term care and health-related social needs for their populations. See **Exhibit 4.12** and **Exhibit 4.13** below.

Exhibit 4.12. Average Gross Medicare Spending Impacts for NGACOs, by Percentage of Beneficiaries with Dual Eligibility

	% Impact	N	Measure Range	Measure Mean
Total: −$143.2***#	-1.1	143	4.6-76.7	19.4
Quintile 5: −$23.7	-0.2	29	25.5-76.7	36.0
Quintile 4: −$23.0	-0.2	27	18.8-25.5	21.9
Quintile 3: −$90.8*	-0.8	29	15.2-18.7	17.0
Quintile 2: −$261.1***#	-2.2	30	10.9-15.0	13.5
Quintile 1: −$308.3***#	-2.4	28	4.6-10.9	8.3

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and #***p<0.005. NGACOs grouped into quintiles based on their percentage of aligned beneficiaries with dual eligibility. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each quintile subgroup. For each subgroup, we display the impact estimate as percentage (% Impact), number of NGACO-years (N), percentage duals among NGACO-years (Measure range), and average percentage duals (Measure mean). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

Exhibit 4.13. Average Gross Medicare Spending Impacts for NGACOs, by Percentage of Beneficiaries Living with Disability
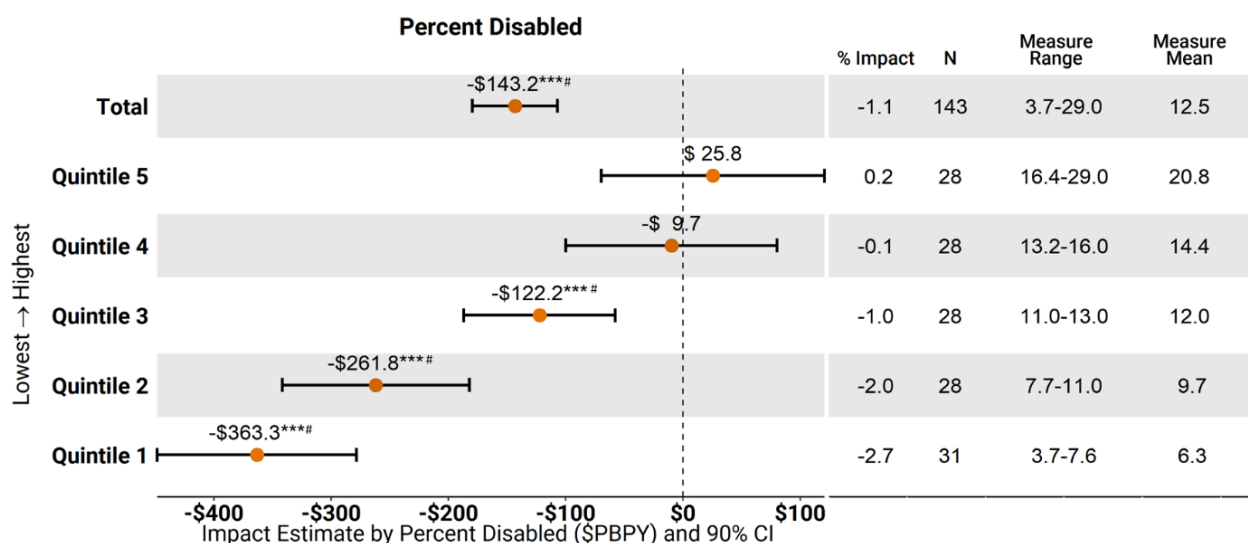
NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. NGACOs grouped into quintiles based on their percentage of aligned beneficiaries with disabilities. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each quintile subgroup. For each subgroup, we display the impact estimate as percentage (% Impact), number of NGACO-years (N), percentage beneficiaries with disability among NGACO-years (Measure range), and average percentage with disability (Measure mean). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups is detailed in Appendix A.

Disease Burden. NGACOs serving populations with a higher disease burden may have more opportunity to improve care delivery and achieve spending reductions for beneficiaries with higher spending. Consistent with this hypothesis and with results from Chapter 2, we found that NGACOs serving beneficiaries with more chronic conditions were associated with larger spending reductions, although differences between groups were not statistically significant; see **Appendix F, Exhibit F.25**.

Rurality. In our qualitative work, NGACOs serving rural areas reported challenges in addressing needs for their beneficiary populations, with rurality a proxy for their population's sociodemographic disadvantage. We did not find any associations between NGACOs' degree of rurality and gross spending impacts; see **Appendix F, Exhibit F.26**.

Poverty. Higher poverty levels in the communities where beneficiaries live may make access to care and care management more challenging, resulting in greater unmet social needs. The average poverty rate of the ZCTAs across an NGACO's aligned beneficiaries was assigned as an NGACO's area poverty rate and grouped into quintiles. Over one-third of the sample of NGACO year observations had an area poverty rate of 2.2 percent or less. NGACOs, excepting those with the largest percentage of beneficiaries in high poverty communities, saw significant reductions in spending, suggesting a threshold where they might face challenges in coordinating their populations' health-related social needs. These findings emphasize the challenges that NGACOs

likely faced in addressing unmet social needs that in turn had implications for both utilization and population health; see **Appendix F, Exhibit F.27**.

4.5 Model Features

Theory of Change. NGACOs select model features to optimize their performance and outcomes in the model, subject to their market contexts and organizational capacity to take on different levels of risk or payment mechanisms.
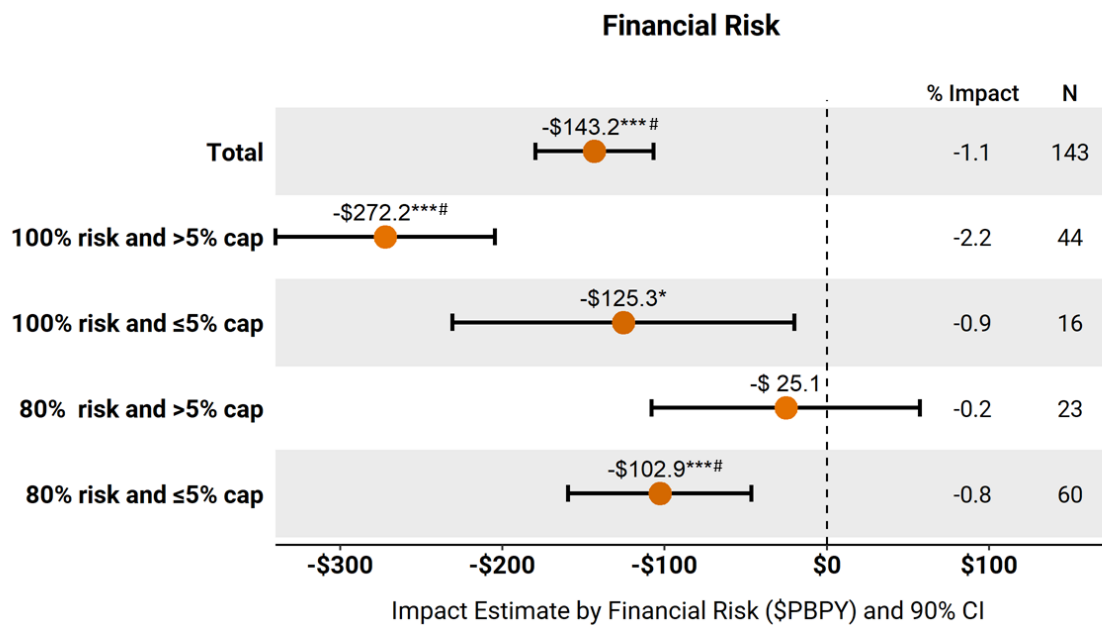
4.5.1 Hypotheses and Findings

Characteristics of NGACOs Electing Higher Financial Risk*
NGACOs electing higher financial risk were likely to be in markets with higher levels of per capita Medicare spending, higher MA penetration rate, and higher hospital concentration. They were less likely to be physician-hospital partnerships. They were likely to have fewer hospital beds in their network and their beneficiary populations were likely to have more chronic conditions on average.
*We used multivariate regression to assess market, organizational, provider and beneficiary population characteristics of NGACOs electing higher financial risk.

Financial Risk. NGACOs chose higher risk levels and risk caps based on their perceived ability to earn shared savings by keeping spending for their beneficiary populations below their financial benchmark in the model. We found evidence to support this hypothesis. NGACOs choosing greater risk at the 100 percent level and cap greater than 5 percent were associated with significantly larger average spending reductions (2.2 percent) than those electing 80 percent risk (0.2-0.8 percent); see **Exhibit 4.14** below.

Exhibit 4.14. Average Gross Medicare Spending Impacts for NGACOs, by Degree of Financial Risk

Financial Risk

		% Impact	N
Total	-$143.2***#	-1.1	143
100% risk and >5% cap	-$272.2***#	-2.2	44
100% risk and ≤5% cap	-$125.3*	-0.9	16
80% risk and >5% cap	-$ 25.1	-0.2	23
80% risk and ≤5% cap	-$102.9***#	-0.8	60

Impact Estimate by Financial Risk ($PBPY) and 90% CI

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each subgroup by degree of financial risk. For each subgroup, we display the impact estimate as a percentage (% Impact). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

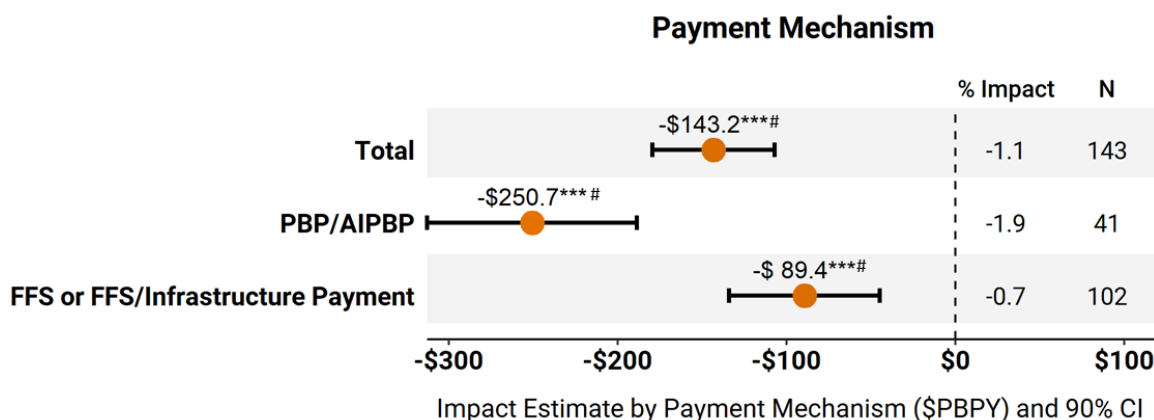**Payment Mechanism.** NGACOs electing PBPs or AIPBP likely had the ability to achieve larger Medicare spending reductions. PBP/AIPBP provided NGACOs with more flexible cash flows to invest in infrastructure designed to manage population health, as well as the ability to pass risk-based payments on to providers. Our findings were consistent with this hypothesis: NGACOs electing population-based payment mechanisms were associated with significantly larger spending reductions (1.9 percent) than NGACOs electing FFS payment (0.7 percent); see **Exhibit 5.22**.

> **Characteristics of NGACOs electing Population Based Payment Mechanisms**
>
> NGACOs electing population based payment mechanisms were likely to be in markets with higher Medicare ACO penetration and have more organizational years of experience as Medicare ACOs. They were likely to have many SNFs in their network. Their populations were likely to have more chronic conditions on average, and fewer beneficiaries belonging to racial/ethnic minorities and fewer beneficiaries with disability.
>
> *We used multivariate logistic regression to assess market, organizational, provider and beneficiary population characteristics of NGACOs electing population based payment mechanisms*

Exhibit 4.15. Average Gross Medicare Spending Impacts for NGACOs, by Payment Mechanism

Payment Mechanism

	Impact Estimate	% Impact	N
Total	-$143.2***#	-1.1	143
PBP/AIPBP	-$250.7***#	-1.9	41
FFS or FFS/Infrastructure Payment	-$ 89.4***#	-0.7	102

Impact Estimate by Payment Mechanism ($PBPY) and 90% CI

NOTES: Impact estimates for gross Medicare spending PBPY and 90% CIs displayed. Impact estimates significant at *p<0.1, **p<0.05, ***p<0.01, and ***#p<0.005. Impact estimates are weighted averages of the gross Medicare spending DID estimates for the NGACO-years in each subgroup by payment mechanism. For each subgroup, we display the impact estimate as a percentage (% Impact). We considered gross Medicare spending impacts for 143 out of 153 NGACO-years as of PY4, excluding 10 NGACO-years due to failure of parallel trends. Approach to estimating impacts for the subgroups detailed in Appendix A.

4.6 Summary

The results in this chapter demonstrate that the proportion of NGACOs with significant reductions in Medicare spending grew over the four years of the model, from 13 percent in PY1 to 34 percent in PY4. Average spending reductions for NGACOs also grew over time from 1 percent in PY1 to 1.8 percent in PY4. These reductions occurred in settings that represent the highest share of costs, including acute care hospital, outpatient facility, and professional services. While half of NGACOs achieved reductions in spending in other PAC, home health, and hospice settings, these services affected a small proportion of the aligned beneficiary population and were not large enough to reduce overall spending. In fact, few NGACOs that achieved spending reductions in these settings increased total spending. Reductions in total spending were achieved while maintaining quality of care.

Spending reductions for NGACOs varied by selected characteristics of their market environment or context, organizational structure, provider networks, aligned beneficiary populations, and model features elected, as follows:

■ **Market context.** NGACOs in markets with higher per capita Medicare spending were associated with significantly larger spending reductions on average, reflecting more opportunities in inefficient markets to reduce Medicare spending. Levels of MA and Medicare ACO penetration in the market were not associated with spending reductions but likely influenced entry of NGACOs in the model. Market hospital concentration, while not directly associated with spending, interacted with organization type. Physician practice NGACOs in

markets with higher hospital concentration were not associated with spending reductions, unlike their counterparts in markets with lower hospital concentration.

- ▪ **Organizational structure and provider networks.** Average total spending reductions were similar for all three NGACO organization types: those affiliated with IDS/hospital systems, physician practice/hospital, and physician practices. Yet, the settings where spending reductions occurred differed by organizational affiliation, with NGACOs largely reducing spending for providers other than their own. Physician practice-affiliated NGACOs were likely to reduce spending in acute care hospital and outpatient facility settings, while hospital-affiliated NGACOs were likely to reduce professional services spending. Counter to findings from SSP, reductions for IDS/hospital system NGACOs grew over time, suggesting that these organizations may have improved and realized greater returns from their approaches after multiple years in the model. NGACOs with more years of Medicare ACO experience measured as organizational-level experience, or whose participating providers had more experience in a Medicare ACO- were associated with larger reductions in spending.
- ▪ **Aligned beneficiary populations.** NGACOs serving very high proportions of beneficiaries needing coordination of medical care with long-term services or social supports (such as beneficiaries with disability, duals, and low income beneficiaries) were associated with smaller spending reductions.
- ▪ **Model features elected.** NGACOs electing higher levels of financial risk and PBPs were associated with larger average spending reductions, consistent with what we have found in the evaluation to date.

The factors explored in this chapter explain almost half (47 percent) of the total variation in impacts on spending among the 62 NGACOs during the model's first four performance years. However, this analysis considers average performance and variation in patterns of performance. For this reason, it may not explain definitively why some NGACOs achieved spending reductions while others did not. NGACOs operating in varied market environments and with different structural characteristics have achieved spending reductions. Variation in patterns of NGACO performance may be understood by considering how factors work in combination to influence outcomes. We expect that NGACOs as a group may take multiple pathways to influence spending. Chapter 5 explores the impacts on spending associated with *combinations* of market context and structures through which NGACOs operate; in a future report, we plan to consider NGACO approaches to implementation and the likely influence of ongoing CMMI initiatives on model performance.

Chapter 5: Pathways to Medicare Spending Reductions: Contextual and Structural Factors

Key Findings

Participants' Success under Different Conditions

- Inefficiencies in market spending, organizational affiliation, experience, and the size and complexity of NGACOs' beneficiary populations are related to spending reductions. We identified five combinations of these factors that explain nearly half of the cases of Medicare spending reductions (49 of 104 NGACO-PYs).
- During PY1-PY4, NGACOs successfully reduced spending in both inefficient and efficient markets (based on per-capita Medicare spending prior to model launch). Spending reductions were more common in inefficient markets.
- Both physician practice- and hospital-affiliated NGACOs tended to reduce inefficiencies in utilization and spending outside their direct services.

Characteristics of Physician Practice NGACOs Successfully Reducing Parts A and B Spending

- Physician practice NGACOs more commonly reduced inpatient and outpatient utilization/spending in hospital settings.
- Physician practice NGACOs that reduced spending tended to have smaller provider networks and no acute care capacity.
- Those with larger beneficiary populations often operated in competitive hospital markets.
- Those with smaller beneficiary populations had prior experience in managed care and risk-based contracting.
- Smaller physician practice NGACOs reduced spending over all four years of the model.

Characteristics of Hospital-Affiliated NGACOs Successfully Reducing Parts A and B Spending

- NGACOs affiliated with an IDS or hospital system were more likely to reduce post-acute care spending and utilization, while physician-hospital partnerships reduced spending in inpatient and outpatient settings. Both types of ACOs saw reductions in professional service spending.
- Hospital-affiliated NGACOs that reduced spending tended to have more previous Medicare ACO experience, larger beneficiary populations, and larger provider networks with many specialists than other NGACOs.
- Hospital-affiliated NGACOs often realized spending reductions in the model's later years.

Spending Reductions under Different Levels of Risk

- Higher levels of financial risk were not required to reduce spending.
- Larger and more experienced NGACOs with less financial risk were also associated with reduced spending.

In Chapter 4, we saw that NGACOs operating in varied market environments and with different structural characteristics had achieved reductions in Medicare spending. Our analysis identified several factors related to market context, NGACO organizational characteristics, the aligned beneficiary population, and choice of model features—each individually associated with reductions in Medicare spending. This chapter explores the synergies among these factors to understand how NGACOs with different organizational and structural characteristics operating across various contexts, and employing diverse strategies, were able to reduce Medicare spending.

Guided by our evaluation's conceptual framework (**Exhibit 1.6**), we applied a comparative case study method—fuzzy-set qualitative comparative analysis (fsQCA)—to systematically group NGACOs based on their shared contextual and structural characteristics or factors. Under this analysis, a case was defined as a given NGACO in a performance year. Analysis of factors across each group of cases identified a set of causal pathways associated with reduced Medicare spending. We describe case-level insights to better understand how contextual and structural factors influenced implementation and outcomes for the NGACOs within each pathway.

Our fsQCA identified pathways that account for about half of the NGACO performance years (NGACO–PYs) that successfully reduced Medicare spending; it does not identify and describe all potential pathways that may have led to reduced Medicare spending. In addition, our analysis does not assess a pathway's likelihood of resulting in reduced Medicare spending. Given the complexity of the NGACO model and the myriad factors that might contribute to outcomes, our findings are not generalizable beyond the 49 cases identified in this assessment. Qualitative comparative analysis (QCA) findings cannot be interpreted using traditional statistical approaches, such as statistical correlation, because of (1) the complex association between the factors and the outcome, which is conditional on the presence or absence of other factors, and (2) the results do not explain all of the cases that were associated with spending reductions—only those that share common contextual and structural characteristics.

5.1 Approach

Our approach to comparative case study involved the following five analytic steps:

Determine the applicability of the QCA method to conduct a comparative case study analysis

(1) Identify key contextual and structural factors
(2) Identify causal pathways based upon shared contextual and structural factors that are sufficient for achieving reduction in Medicare spending
(3) Integrate quantitative and qualitative data to validate and interpret the causal pathways
(4) Complement the QCA findings with case studies to illustrate how an NGACO's context and organizational characteristics in each causal pathway influenced implementation and outcomes

Below, we provide a brief summary of the methodology and analytic decisions necessary for interpreting the findings. For a detailed description of each analytic step, please see Appendix B.

1. **Determine the applicability of the QCA method to understand causal pathways leading to a reduction in Medicare spending.** NGACOs operating in varied market environments and with different structural characteristics have reduced spending. In Chapter 4, we noted that reducing Medicare spending does not depend on any single causal factor. Reduced spending can occur under different circumstances and through different approaches, and the contexts and mechanisms associated with reduced spending differ from those associated with an absence of this outcome. The QCA method is well suited for identifying multiple mutually exclusive causal pathways leading to a given outcome. Each pathway represents a group of NGACOs with a meaningful combination of shared contextual and structural factors pursuing many implementation strategies.

2. **Identify cases and key contextual and structural factors.** We defined an NGACO performance year (NGACO-PY) as our unit of analysis, or case. This chapter uses NGACO-PY whenever referencing the performance years and NGACO when referring to the ACOs. Each year of participation in the model offers NGACOs an opportunity to select model features and implement strategies that may reduce Medicare spending. Considering each NGACO-PY as a distinct case allowed us to account for the dynamic nature of participation in the model and systematically assess how NGACO strategies and outcomes changed over time. The outcome measure was an NGACO's impact on total Medicare spending in a given performance year (i.e., an NGACO's DID estimate of percent impact on gross Medicare Parts A and B spending in each performance year [PY1-PY4]).

   Our analysis included seven contextual and structural factors used to stratify or group the NGACOs for analysis. These explanatory factors capture the market (context) settings in which NGACOs operate and the resources, capacity, and opportunities that NGACOs may leverage across different contexts to achieve the outcome of reduced spending. The factors were selected based on our evaluation theory of change (**Exhibit 1.6**), as well as a review of peer-reviewed literature, results from exploratory bivariate and subgroup analyses, case-level insights, data availability, and priorities identified by CMMI. See **Exhibit 5.1** for a summary of

the seven factors analyzed in combination to describe causal pathways. A summary follows that relates each factor to the evaluation's hypotheses and describes how it was operationalized. Our descriptions of the causal pathways also include several additional contextual, structural, and implementation factors to illustrate how context and organizational characteristics influenced implementation and outcomes; see Step 4, Exhibit 5.2.

Exhibit 5.1. Key Contextual (Market) and Structural Factors
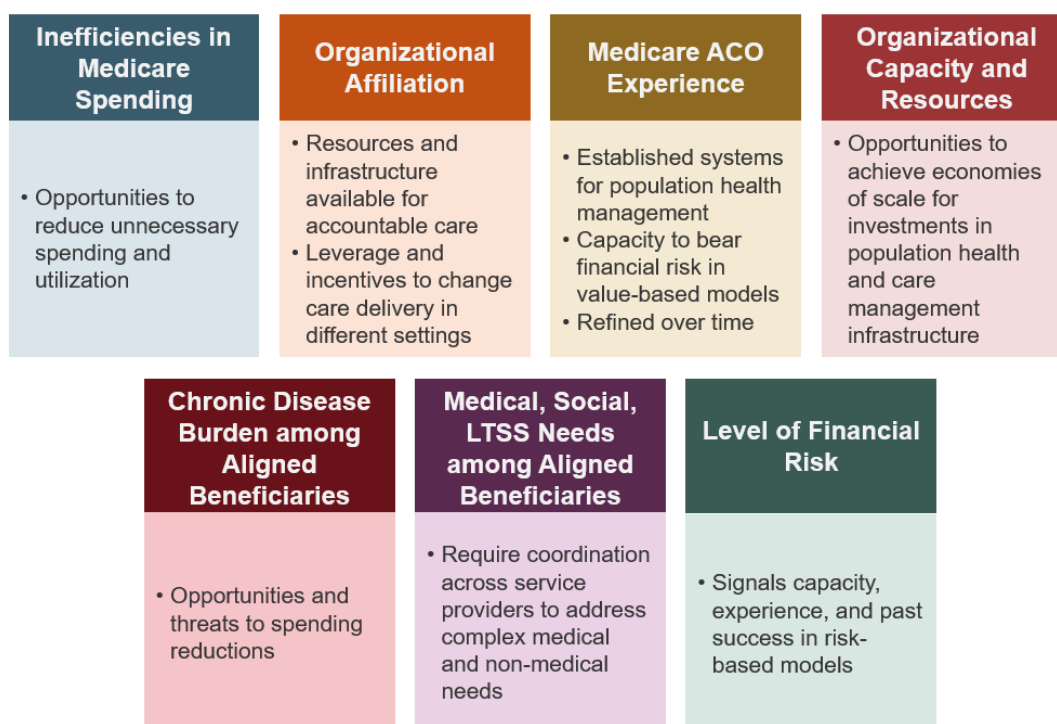
- *Medicare spending inefficiencies in the market.* Higher-than-average per capita Medicare spending, as determined by the standardized, risk-adjusted per capita Medicare Parts A and Part B spending in the NGACO market during the baseline period, signals that market inefficiencies in spending and utilization existed before an NGACO joined the model. Market-level inefficiencies present NGACOs with opportunities to reduce unnecessary spending and utilization by engaging providers and employing approaches to population health and care management that improve care delivery. NGACOs have been able to leverage provider networks and market competition to manage their beneficiaries' utilization and spending, even in lower-spending markets. There is an association between ACO formation and less concentrated physician markets, as well as moderate MA penetration, both of which contribute to ACO market efficiency.[55] Conversely, higher

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[55] Yan BW, Samson LW, Ruhter J, Zuckerman RB, Sheingold SH. Understanding Medicare ACO Adoption in the Context of Market Factors [published online ahead of print, 2020 Aug 10]. Popul Health Manag. 2020;10.1089/pop.2020.0060. doi:10.1089/pop.2020.0060.

provider density is associated with greater responsiveness to financial incentives, highlighting the different ways that ACO markets may facilitate savings.[56]

- *Organizational affiliation.* NGACOs were affiliated with either physician practices or hospitals, including IDS and physician-hospital partnerships. Organizational affiliation may influence the resources and infrastructure available for accountable care. For example, physician practice NGACOs may operate with multiple electronic health record (EHR) systems and have less in-house capacity for data analytics and care management, while hospital-affiliated systems are more likely to have single or integrated EHR systems. Each type of organization faces different challenges in facilitating data sharing and interoperability among providers in their networks. Greater functional and clinical integration, a feature common to larger, hospital-affiliated health systems, has been associated with increased alternative payment model participation, suggesting ACOs may likely begin within organizations (hospital-affiliated or physician practice-affiliated) that are already highly integrated.[57]
  - Organizational affiliation also influences the extent to which NGACOs are empowered or incentivized to change care delivery in different settings. For example, hospital-affiliated NGACOs have more control over care provided in their inpatient and outpatient facilities, including transitions of care from hospital to home or hospital to PAC. Physician practice NGACOs control care provided in their offices, as well as by the other providers to which they refer patients. Neither type of organizational affiliation has a clear incentive to reduce revenue associated with their own care settings. NGACOs must navigate carefully to achieve impact in spending areas that will reduce overall spending, while preserving the revenue within their networks. To date, Medicare ACO evaluations have not found strong evidence of hospital-affiliated ACOs achieving spending reductions; in past ACO models, organizational structure was an inconsistent predictor of performance.[58]
- *Medicare ACO experience.* Years of prior Medicare ACO (i.e., Pioneer, SSP, or NGACO) experience suggests that an NGACO has established systems for population health management and/or the capacity to bear financial risk in value-based models refined over time. Hospital participation in past ACO models is associated with prior experience with risk-based payment arrangements, advanced HIT, and location in higher-income and more competitive markets.[59] Moreover, prior experience may facilitate system integration, which itself predicts ACO formation, with system integration presenting an opportunity to catalyze savings.[60]

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[56] O'Neil B, Tyson M, Graves AJ, et al. The influence of provider characteristics and market forces on response to financial incentives. Am J Manag Care. 2017;23(11):662-667.

[57] Ouayogodé MH, Fraze T, Rich EC, Colla CH. Association of Organizational Factors and Physician Practices' Participation in Alternative Payment Models. JAMA Netw Open. 2020;3(4):e202019. Published 2020 Apr 1. doi:10.1001/jamanetworkopen.2020.2019.

[58] Ouayogodé MH, Colla CH, Lewis VA. Determinants of success in Shared Savings Programs: An analysis of ACO and market characteristics. Healthc (Amst). 2017;5(1-2):53-61. doi:10.1016/j.hjdsi.2016.08.002.

[59] Chukmaitov AS, Harless DW, Bazzoli GJ, Deng Y. Factors associated with hospital participation in Centers for Medicare and Medicaid Services' Accountable Care Organization programs. Health Care Manage Rev. 2019;44(2):104-114. doi:10.1097/HMR.0000000000000182.

[60] Auerbach DI, Liu H, Hussey PS, Lau C, Mehrotra A. Accountable care organization formation is associated with integrated systems but not high medical spending. Health Aff (Millwood). 2013;32(10):1781-1788. doi:10.1377/hlthaff.2013.0372.

- *Organizational capacity and resources.* The size of NGACOs' aligned beneficiary populations provides opportunities for NGACOs to achieve economies of scale related to investments in population health and care management infrastructure. Historically speaking, ACO formation has tended toward more densely populated areas (i.e., urban locations) with greater penetration of managed care, as larger beneficiary populations with experience in managed care may allow for easier realization of economies of scale.[61]
- *Chronic disease burden of the aligned beneficiary population.* Chronic disease burden in an NGACO's beneficiary population, defined as the average number of chronic conditions across the NGACO's prospectively aligned beneficiary population, can provide both opportunities and threats to spending reductions. Costlier beneficiary populations with a higher disease burden provide NGACOs with opportunities to improve utilization and outcomes through data analytics, risk stratification, and care management. ACO administrators have targeted chronic disease management for complex populations, identifying compelling opportunities for savings through chronic disease management and preventive primary care.[62]
- *Medical, social, and long-term services and supports needs of the aligned beneficiary population* NGACOs serving larger proportions of beneficiaries who are dually eligible may require approaches that coordinate across service providers and address complex medical and non-medical needs; the proportion of beneficiaries who are dually eligible may be a proxy for the burden of social factors affecting outcomes.[63] ACOs serving a greater proportion of beneficiaries with disabilities have historically demonstrated greater ability to generate shared savings.[64]
- *Level of financial risk.* NGACOs selected both the type of risk (100 or 80 percent) and cap on the aggregate amount risk (5 to 15 percent of the benchmark) they would assume for shared savings and losses. NGACOs willing to assume more financial risk (measured jointly as the product of their risk type and risk cap) may signal that NGACOs have capacity, experience, and past success in risk-based models.

3. **Identify causal pathways based upon shared contextual and structural factors that are sufficient for achieving reduction in Medicare spending.** We used fsQCA—a set theory-based method—to identify contextual and structural factors necessary or sufficient to achieve reductions in Medicare spending. This method accommodates inclusion of continuous and ratio-scale variables to maximize the available information. The likelihood of an NGACO belonging to a group of NGACOs with a shared factor (e.g., NGACOs with prior Medicare ACO experience) or causal pathway is measured on a scale ranging from 0 to 1. We used a logistic transformation function to rescale[65] the outcome and all factors on a continuous and ratio

[61] Lewis VA, Colla CH, Carluzzo KL, Kler SE, Fisher ES. Accountable Care Organizations in the United States: market and demographic factors associated with formation. Health Serv Res. 2013;48(6 Pt 1):1840-1858. doi:10.1111/1475-6773.12102.

[62] Bagwell MT, Bushy A, Ortiz J. Accountable Care Organization Implementation Experiences and Rural Participation: Considerations for Nurses. J Nurs Adm. 2017;47(1):30-34. doi:10.1097/NNA.0000000000000433.

[63] Nerenz DR, Austin M, Deutscher D, Maddox KEJ, Nuccio EJ, Teigland C, Weinhandl E, Glance LG, Adjusting quality measures for social risk factors can promote equity in health care. Health Aff (Millwood). 2021;40(4):637-644. doi: 10.1377/hlthaff.2020.01764.

[64] Chukmaitov AS, Harless DW, Bazzoli GJ, Deng Y. Factors associated with hospital participation in Centers for Medicare and Medicaid Services' Accountable Care Organization programs. Health Care Manage Rev. 2019;44(2):104-114. doi:10.1097/HMR.0000000000000182.

[65] The fsQCA terminology refers to this step as calibration.

scale to standardize the distribution. Specific inclusion, crossover, and exclusion thresholds were set, based on the distributions of each factor and the outcome, to determine the shape of the logistic transformation function. The shape of the distribution informed the choice of thresholds; for most factors, the 5th, 50th, and 95th percentiles served as the thresholds, with attention to preserving the original shape of the distribution in the rescaled factors; see **Appendix G, Exhibit G.6** for more information about the choice of thresholds for the factors. We conducted sensitivity testing to confirm that the findings were robust to the choice of thresholds for each factor and the outcome.

Once factors had been rescaled, we conducted two analyses. The first was an analysis of necessity to assess whether the presence of a specific factor (contextual and structural) was necessary to reduce Medicare spending. Necessity was determined by assessing the likelihood of a factor being present in a group of NGACOs likely to have achieved the outcome of reduced Medicare spending. As expected, no single contextual or structural factor was identified as being necessary for achieving reduction in Medicare spending; see **Appendix B, Step 4** for additional detail.

Next, we analyzed sufficiency to identify casual pathways with the combination of contextual and structural characteristics sufficient to reduce Medicare spending. First, we constructed truth tables that included a row for every possible combination of the seven contextual and structural factors. NGACOs were assigned to each truth table row based on the likelihood of the NGACO having the combination of the key factors represented by a given row. Then, we applied the Quine-McCluskey algorithm—a logical minimization technique—to the truth table data to derive our final, simplified set of causal pathways, using pairwise matching of similar conjunctions; see **Appendix B, Step 5** for additional detail.

4. **Integrate quantitative and qualitative data to validate and interpret the causal pathways.** After using the seven contextual and structural factors to identify causal pathways, we used qualitative and quantitative data to identify additional distinguishing factors (related to NGACO context, structure, and implementation characteristics) that might explain each causal pathway. **Exhibit 5.2** summarizes the different factors we examined; see **Appendix G, Exhibit G.7** for more information about these data and their sources. For quantitative measures, we examined each factor's mean and density plot for (1) NGACO-PYs in a pathway and (2) all other NGACO-PYs not in the pathway to assess whether there were notable differences in their distributions. We first assessed patterns in Medicare spending by service area (e.g., hospital-based, PAC, and professional services). Then we analyzed qualitative data to identify implementation strategies that NGACOs in each pathway used, to consider how strategies may have led to the observed patterns in Medicare spending by service area. Next, we explored how the additional shared factors of the NGACOs in each causal pathway—such as the competitiveness of the health care market and characteristics of the NGACO provider network—differed across pathways. Case-level information was used to assess how these factors may have influenced NGACO provider engagement and care management strategies.

Exhibit 5.2. Additional Contextual, Structural, and Implementation Characteristics to Describe Causal Pathways

|		
Areas in which NGACOs achieved spending reductions	NGACO care management infrastructure and focus areas	Experience with value-based care at the organizational and market level
Extent to which hospital markets are concentrated or competitive	Size and composition of provider networks	Selection of payment mechanisms and risk levels
Extent to which providers take fee reductions in PBP mechanisms	Extent to which beneficiaries receive care from providers in the NGACOs' networks	

5. **Complement the QCA findings with illustrative case studies.** For each causal pathway, we synthesized the available qualitative data to develop case studies that illustrate how the environment in which an NGACO is operating influences implementation and outcomes. The case studies add detail about NGACOs' organizational structure, resources, and infrastructure that supports care management activities and the implementation activities that NGACOs have pursued to improve care delivery for beneficiaries.

In the rest of this chapter, we describe and interpret the five causal pathways identified in our fsQCA analysis. An illustrative case study is presented for each causal pathway.

5.2 Findings: Five Pathways to Spending Reductions

Five causal pathways comprising different combinations of the seven key contextual and structural factors explain nearly half of the cases of Medicare spending reductions in the NGACO Model, as of PY4. **Exhibit 5.3** shows the flow of the total number of NGACO-PYs in the analysis to those identified in one of the causal pathways.

**Exhibit 5.3.** NGACO-Performance Years (PYs) Identified in Causal Pathways
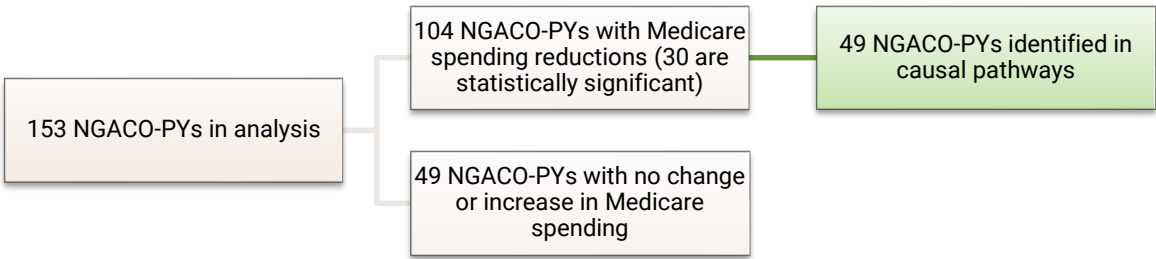
Of a total of 153 NGACO-PYs, 104 saw a reduction in spending, 30 of which represent statistically significant reductions. Forty-nine NGACO-PYs represent the five pathways.

> The cases identified are generalizable only to the NGACOs with the characteristics identified within their pathways, and the following results should not be used to infer attributes to ACOs outside of the 49 NGACO-PYs explained in this analysis.

Our evaluation's theory of change considers NGACOs as entities that operate within the dynamics of their markets and with the resources and capacity of their respective organizational structures. We found that in the four years of the NGACO model, spending reductions occurred in inefficient markets (those with high Medicare spending prior to NGACO model launch), as well as those that were more efficient (with lower Medicare spending). In addition, both physician practice and hospital affiliated-NGACOs reduced spending in both inefficient and efficient market contexts, though spending reductions in inefficient markets was the more common pathway for either type of organizational affiliation. Twenty-two hospital-affiliated NGACO-PYs and 27 physician practice NGACO-PYs were present in the identified pathways; see **Exhibit 5.4**.

Exhibit 5.4. Physician Practice and Hospital-Affiliated NGACOs Achieved Reductions in Medicare Spending in Both Inefficient and Efficient Markets
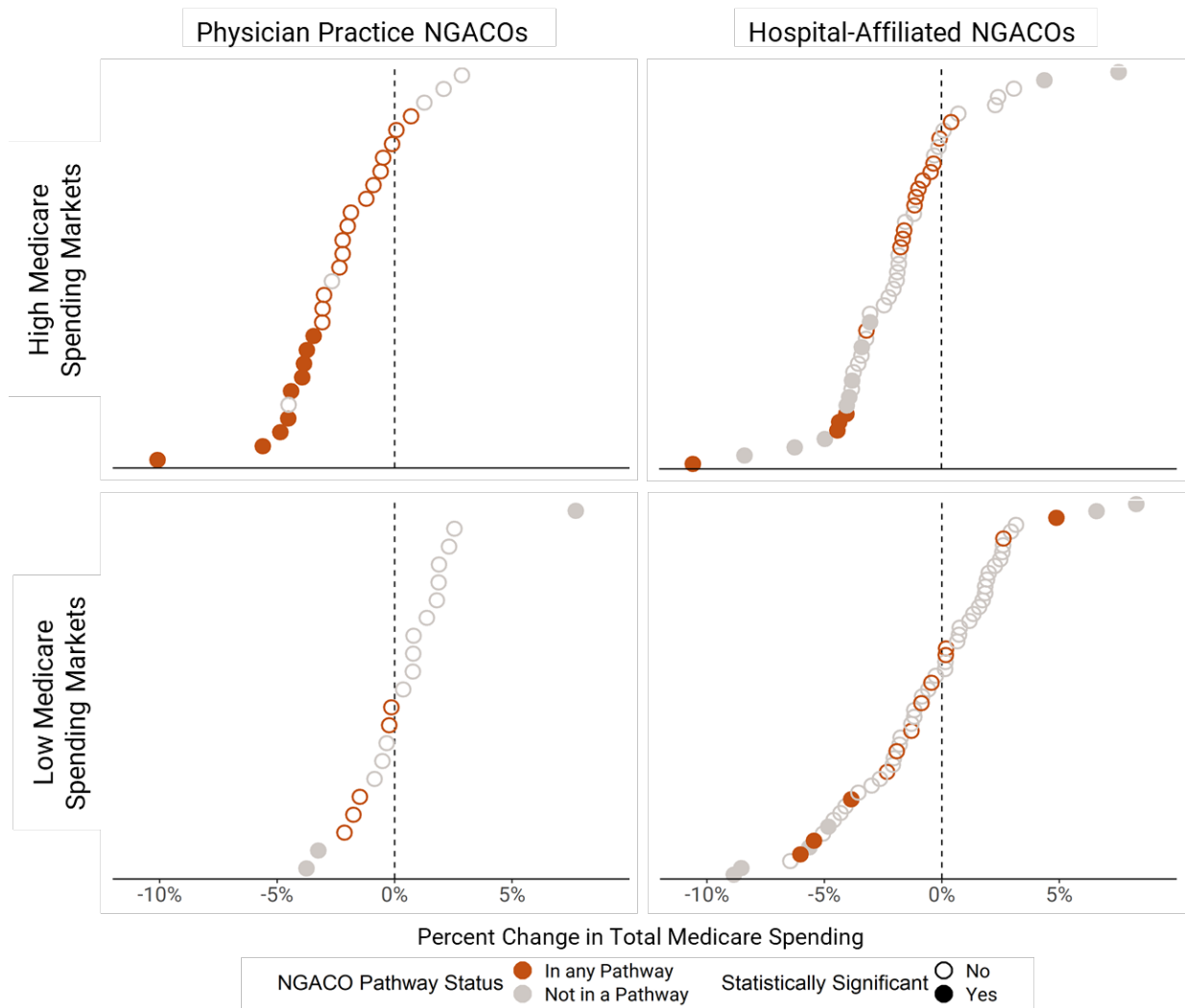
NOTES: Each symbol represents one NGACO performance year. Some NGACO-PYs with spending increases fell into the pathways. The QCA algorithm is run on all NGACO-PYs and the inclusion threshold is set to 0.9. The 0.9 threshold means the algorithm may capture 1 in 10 cases without the outcome of interest.
SOURCE: NORC analysis of claims data and CMS Geographic Variation Public Use File.

Exhibit 5.5 identifies the five identified causal pathways. Each pathway reflects shared contextual and structural factors of NGACOs. We stratified the pathways based on the key factors likely to influence an NGACO's implementation approach—market context (the relative efficiency of health care spending) and NGACO organizational affiliation. There are three causal pathways for NGACOs in high-spending markets: two for physician practice NGACOs and one for hospital-affiliated NGACOs (which include IDS and physician-hospital partnerships). There are two pathways for NGACOs in low-spending markets: one for physician practice NGACOs and one for hospital-affiliated NGACOs (which include IDS and physician-hospital partnerships).

Exhibit 5.5. Five Pathways to NGACO Impact on Gross Spending Reductions

	NGACO Characteristics			Aligned Beneficiary Characteristics	
	Larger Beneficiary Population	More Years Medicare ACO Experience	More Financial Risk in Model	Higher Chronic Disease Burden	Greater Proportion with Dual Eligibility
Market Context: Higher Medicare Spending Prior to Model Launch					
1. Physician Practice NGACOs	●	--	◔	◑	◑
2. Physician Practice NGACOs	◔	◑	--	◑	◔
3. Hospital-affiliated NGACOs	◕	●	○	●	◔
Market Context: Lower Medicare Spending Prior to Model Launch					
4. Physician Practice NGACOs	◔	◕	○	○	◑
5. Hospital-affiliated NGACOs	●	◕	○	◑	◔

SOURCE: NORC analysis of claims data and CMS Geographic Variation Public Use File, SSP and Pioneer data files, and Master Beneficiary Summary File.
Notes: Shading indicates extent to which each characteristic is prevalent among the group of NGACO-PYs in the pathway compared to other NGACO-PYs. Fuzzy-set QCA calibration was used to assess the distribution of NGACO-PYs in each pathway relative to all other NGACO-PYs. See Appendix B for additional details. -- indicates factor is not a component of pathway.

The pathways for physician practice NGACOs include one for larger NGACOs and two for smaller NGACOs; one pathway is for NGACOs that tend to be less experienced and operating in higher-spending Medicare markets, while the other includes more experienced NGACOs operating in lower-spending Medicare markets. The pathways for hospital-affiliated NGACOs tend to include larger and more experienced Medicare ACOs. The pathways for larger NGACOs—whether they are physician practice or hospital-affiliated—tend to include NGACOs that are serving beneficiary populations with more chronic conditions. . The pathways for physician practice NGACOs include beneficiary populations with both more and fewer complex needs, including social needs. Four of the five pathways included NGACOs that assumed lower financial risk; none included higher levels of financial risk as a condition for reduced spending.

The sections below present an in-depth description of each pathway. We detail service areas where spending was reduced and provide additional market context, such as Medicare ACO and Medicare Advantage (MA) presence and hospital market competition. Characteristics of organizational structure are described, including the size and composition of provider networks, the extent to which aligned beneficiaries receive care within the NGACO's network, and the selection of model features. In addition, we summarize key aspects of care management infrastructure and care delivery. Each description concludes with a case study that illustrates how

specific NGACOs exemplified the context, organizational characteristics, and approaches characteristic of the pathway to reduce Medicare spending.

5.2.1 Larger Physician Practice NGACOs in High-Spending Markets

The NGACO-PYs in this pathway are larger, physician practice NGACOs operating in less efficient markets, with higher per capita Medicare spending prior to the start of the Model. They served larger beneficiary populations that either had more complex conditions (higher chronic disease burden and / or social needs) or served beneficiaries with less complex needs. The pathway includes both experienced and inexperienced NGACOs with varying degrees of their revenue at risk for savings and losses than other NGACOs in the model; see **Appendix G, Exhibit G.1** for the complete set of findings.

There are seven NGACO-PYs in this pathway:

- ACCC (2017)*
- Atrius (2017, 2018, 2019)
- Monarch (2017)*
- Primaria (2018, 2019)

NGACO-PYs marked with an asterisk are no longer participating in the model.

Overall Patterns in Spending. These larger physician practice NGACOs in higher spending markets tended to have larger reductions in acute care, outpatient, and SNF facility spending than all other NGACOs. NGACOs in this pathway had a mixed impact on professional services spending. **Exhibit 5.6** below presents four density plots that depict the percent impact by category of spending for NGACO-PYs in the pathway and those not in the pathway.
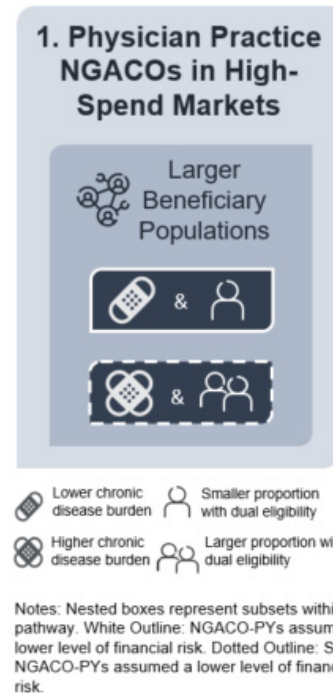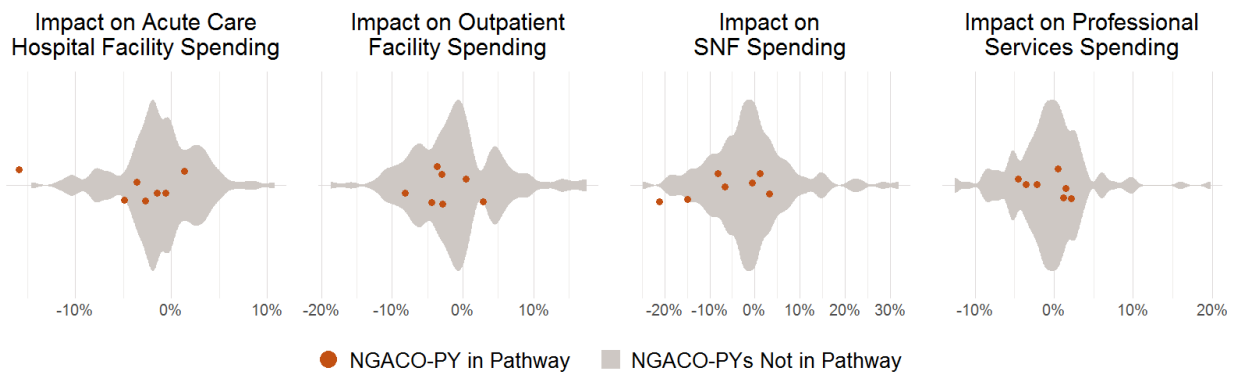
Exhibit 5.6. Larger Physician Practice NGACOs in High-Spending Markets: Percent Impact for Selected Spending Outcomes
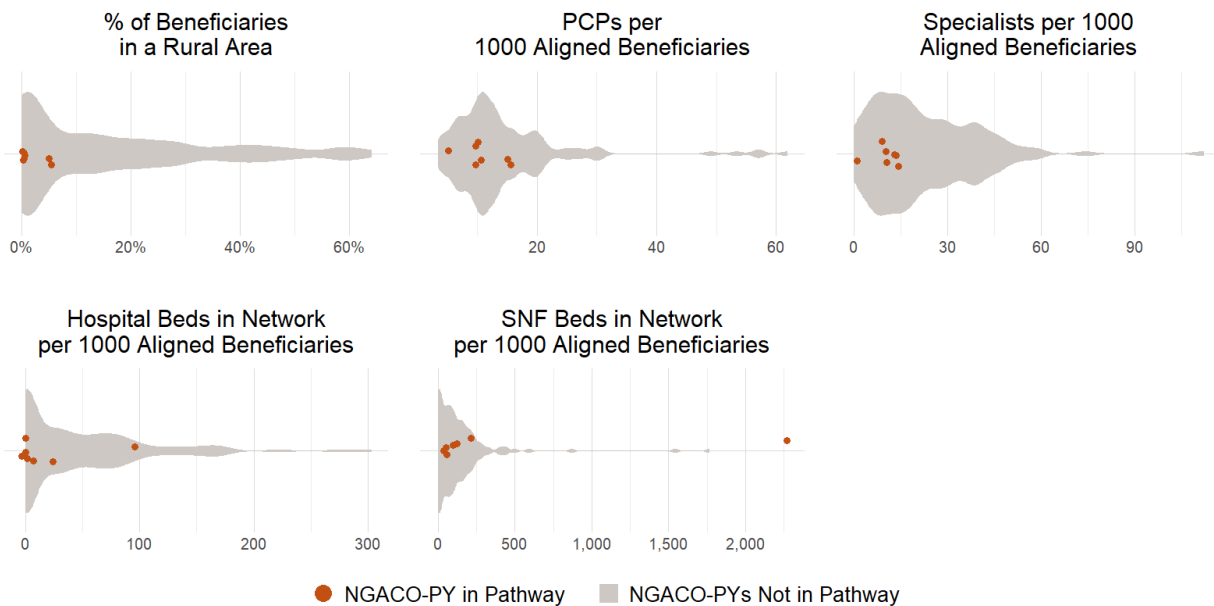

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

Market Context and Organizational Structure. NGACOs in this pathway operated in markets with less efficient Medicare spending; see **Appendix G, Exhibit G.1** for complete set of findings. Their beneficiary populations tended to be in urban or suburban areas. Although these NGACOs served larger beneficiary populations, the size of the physician network (primary care providers [PCP] and specialists per 1,000 beneficiaries) tended to be smaller compared with all other NGACOs. The NGACOs in this pathway were led by physician groups; however, two of the NGACOs had hospitals in their networks and the other two NGACOs had other types of relationships with hospitals (i.e., other risk-based contracts, parent company partnerships, preferred status). Some had extensive SNF networks, including one NGACO that contracted with three large companies that own multiple SNFs in the region. **Exhibit 5.7** presents five density plots that depict, for NGACO-PYs in the pathway and those not in the pathway, the percentage of beneficiaries in a rural area and the number of PCPs, number of specialists, number of hospital beds, and number of SNF beds in network, all per 1,000 aligned beneficiaries.

Exhibit 5.7. Larger Physician Practice NGACOs in High-Spending Markets: Selected Market Context and Organizational Structure Characteristics

● NGACO-PY in Pathway   ▉ NGACO-PYs Not in Pathway

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.

SOURCE: NORC analysis of NGACO provider data linked to CMS Provider of Service files, and Master Beneficiary Summary File linked to Health Resources and Services Administration (HRSA) Federal Office of Rural Health Policy data files.

Risk and Payment Mechanism Selections. The more experienced NGACOs in this group elected FFS or FFS-plus-infrastructure payments and 100-percent risk levels. The two less experienced NGACOs elected PBPs with SNFs and home health agencies taking fee reductions, as well as 80- or 100-percent risk; see **Appendix G, Exhibit G.1** for complete set of findings.

Care Management and Care Delivery Focus. These larger, physician practice NGACOs followed beneficiaries through the continuum of care, focusing on beneficiaries at high risk for hospitalization or readmission. NGACO care management staff interacted with beneficiaries in person—in clinics, hospitals, and SNFs, and through home visits. NGACO staff engaged with beneficiaries at different points in the care continuum, with an emphasis on care transitions; this engagement facilitated the ability to guide beneficiaries to the most appropriate settings for inpatient, outpatient, and post-acute care. These approaches may have contributed to the relatively larger reductions in ED visits and observation stays for these NGACOs compared with other NGACOs. The large Medicare ACO presence throughout their markets suggests an underlying orientation toward care coordination across settings that would support these efforts.

The literature corroborates this hypothesis; greater alternative payment model adoption is observed within pre-integrated health systems that may already foster strong care coordination.[66]
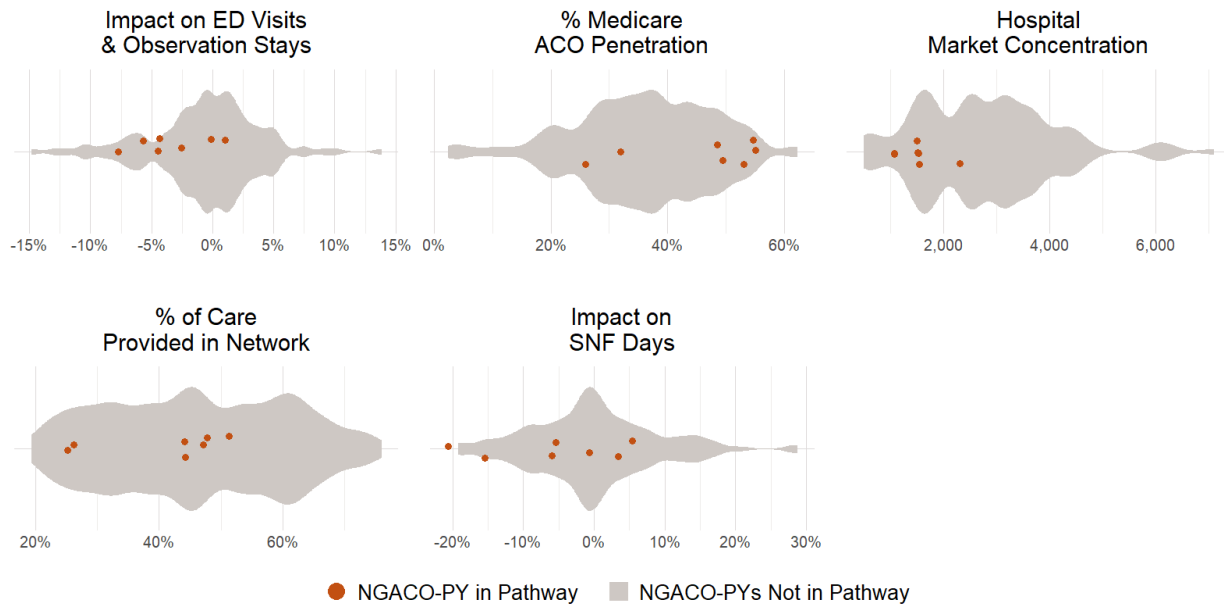
These large physician practice NGACOs appear to be acting on opportunities to reduce hospital costs; with little hospital capacity in their own networks, they made efforts to connect with hospitals to manage care for their aligned beneficiaries. Since their hospital markets tended to be competitive (HHI < 1500), these NGACOs may have had multiple potential partners, but the competitive environment also meant that their beneficiaries would have more options to receive care outside the NGACO provider network. Among this group, beneficiaries received more care outside of the NGACO's network, with 26 to 48 percent receiving care from the NGACO's providers (a measure known as the stickiness of aligned beneficiaries).

NGACOs in this group succeeded in connecting NGACO staff with discharge planners and ED case managers to coordinate care transitions, despite the percentage of beneficiaries receiving more care outside of the NGACO's network. The NGACO with the stickiest beneficiaries was able to standardize transitional care management programs across providers under a single service line; see case study on Atrius for more information. Gaining access to hospitals' EHR data was a critical challenge for these NGACOs; however, most received information about beneficiaries through ADT (admission, discharge transfer) feeds from hospitals and/or through arrangements with state health information exchanges.

In addition, these NGACOs directed resources toward engaging SNFs and managing PAC utilization. **Exhibit 5.8** shows that most NGACO-PYs in this pathway, and two in particular, decreased beneficiaries' length-of-stay in SNFs compared with all other NGACO-PYs. Pathway NGACOs employed strategies such as embedding their care management staff or deploying staff to conduct rounds in SNFs. This allowed them to deliver education to SNF staff on issues such as the SNF 3-day rule waiver and palliative care; to meet in person with beneficiaries to plan discharge or to coordinate hospital-SNF transitions; and facilitate information exchange with the NGACO.

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[66] Chukmaitov AS, Harless DW, Bazzoli GJ, Deng Y. Factors associated with hospital participation in Centers for Medicare and Medicaid Services' Accountable Care Organization programs. Health Care Manage Rev. 2019;44(2):104-114. doi:10.1097/HMR.0000000000000182

Exhibit 5.8. Larger Physician Practice NGACOs in High-Spending Markets: Selected Care Management and Care Delivery Focus Characteristics

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.

SOURCE: NORC analysis of claims data, American Hospital Association data, and Medicare Beneficiary Summary File linked to Master Database Management File.

ATRIUS HEALTH

Market Context: Atrius Health has been practicing value-based payment for about six decades in Massachusetts, a state that is a national leader in state-level market reform with broad scale adoption of risk-based contracting. Atrius Health participated in the

> *"The more alignment that there is with the hospitals and providers' systems … the more helpful it is for us to get their attention. We may [represent] as little as 5% and as much as 20% of any hospital's discharges. On an overall basis if they're impacted and incented the same way we are, the easier it is to see improvements and to move harder and faster than we could on our own."*

Pioneer ACO Model. The market remains competitive and focused on value-based payment, with limited system concentration and considerable Medicare Advantage penetration. Atrius saw reductions in total Medicare spending of 2-3 percent in each of the three model years and reductions in utilization in a range of settings.

Population: The NGACO population represents some of the most vulnerable patients served by Atrius Health. Atrius saw significant growth in their Medicaid population, going from 23,000 at program launch to 32,000 at the time of interview. Atrius expanded its commercial risk contract to its first commercial PPO plan with Blue Cross Blue Shield of Massachusetts, and now holds their largest commercial risk population. Leadership estimates 5-10 percent growth in additional risk patients as a result of growth in the state Medicaid population and adoption of BCBS PPO risk.

NGACO Structure: Atrius Health is the Northeast's largest independent, nonprofit, multispecialty medical group practice, with 871 employed PCPs (physician and non-physician) and 448 specialists in 50 practices; it operates as a "whole TIN ACO" under one tax ID. The NGACO has strategic affiliation agreements with community and tertiary hospitals and uses its subsidiary, the VNA Care, for home care and hospice services. Atrius Health works with a network of 29 preferred SNFs.

HIT and Data Analytics: Beginning with participation in Pioneer and continuing with NGACO, Atrius Health has invested heavily in data analytics infrastructure to support care delivery and managing the total cost of care "outside the four walls of Atrius Health." As a large multispecialty group practice, Atrius Health has developed methods for exchanging data and coordinating care across settings, leveraging its warehouse with integrated clinical and claims data. In addition, they worked with a data analytic consultant to compare Medicare performance metrics against local hospitals. Although the medical group relies on a single EHR, the NGACO uses point-to-point Web portals, HL7-based feeds, PatientPing, and health information exchanges to work with multiple institutions, providers, and hospitals on separate EHRs, including SNFs.

Care Delivery: Atrius Health's population health management strategy is implemented in physician offices and through its expanded care management staff, which numbered 80 in 2018. Some of their key population health programs and interventions, such as patient-centered care, spread to the NGACO from existing Medicare quality improvement programs. Across all patient populations, including the NGACO, population health managers, nurses, and medical assistants form a team that enables the physician or advanced clinician to work closer to top of license. Care delivery is facilitated by high-quality patient information and focuses on engaging beneficiaries across the continuum. Despite some physician resistance, Atrius has expanded use of the AWV, which has led to standardization across the system in screening older patients for depression and falls risk. Leadership commented on the AWV:

> *"We think that when we can get folks in for the annual wellness visit, we're more likely to make sure that we've accurately assessed all of their health conditions…I think the coordinated care reward incentivized patients who might not have otherwise come in, so it enhanced our outreach."*

Care managers have referred NGACO beneficiaries to a number of longstanding care management programs, including in PAC settings.

Atrius Health has focused efforts on increasing beneficiary access to after-hours urgent care, especially on evenings and weekends, providing some in-person access 365 days per year. A nurse telecom team with advanced practice clinicians can triage beneficiary needs overnight, prescribing medications, linking patients to an on-call physician, and scheduling next-day appointments. Atrius Health has seen significant reductions in ED utilization during the three model performance years of 2.5 percent; 4.3 percent; and 5.7 percent, respectively, which may reflect this enhanced access to care. The NGACO also saw reductions in outpatient spending in both PY2 and PY3 (by 2.8 percent and 3.6 percent, respectively), due to reductions in E&M visits.

PRIMARIA ACO , LLC (PRIMARIA)

"The attribution up front was a huge factor, when you're seeing 20 percent churn every quarter. [In MSSP it's] hard to stay on top of patients, so the prospective attribution made a big difference, also the waivers—especially the 3-day [SNF] waiver"

Market Context: Primaria serves 29 diverse counties in Indiana. With four large health systems and two other NGACOs in the market, Primaria leadership acknowledged the competition and have been focused on maximizing gains from their employed physician network. Because Indiana is not a Certificate of Need state, there are many SNF beds in the area.

Population: Primaria serves approximately 30,000 beneficiaries. When Primaria entered the NGACO model, they were already serving almost 250,000 value-based patients under other commercial and public contracts, which comprised about 50 percent of their total patient population. Leadership notes that within Indiana there is a high rate of smoking and obesity, and this increases population complexity. One of Primaria's served counties has among the lowest socioeconomic status in the state, which further increases complexity.

NGACO Structure: Primaria is a network of individual practices, which are all part of a medical group associated with a large nonprofit health system. The NGACO does not include any independent practices. The NGACO has a partnership with a population health management company and two minor stakeholders, including an insurer. While leadership acknowledged some competition for primary care physicians, its 50 PCP practice locations have been able to add providers and expand. Leadership noted that they have a collaborative relationship with hospitals in the area, which they attribute to most hospitals in the area being part of an ACO.

HIT and Data Analytics: Primaria realized early on that they could take advantage of a unified EHR network and close working relationships with local hospitals. With all providers on the same EHR, communication and collaborative patient care planning by a care management team has been easy to implement. Data analytics supported the network practices and care managers. The NGACO also receives ADT feeds from the state health information exchange, i.e., daily ADT from hospitals outside the network, as well as a feed from SNFs through PatientPing.

Care Delivery: Primaria developed three care management programs for beneficiaries: 1) a dedicated coordination program focusing on high-risk beneficiaries (the top 10 percent at risk for future utilization); 2) a chronic condition management program (for patients with 2 or more chronic diseases who may not be classified as high risk); and 3) a transitional care management program. The Primaria care navigation team consists of over 75 registered nurses (RNs), licensed practical nurses (LPNs), clinical social workers, dietitians, pharmacists, and medical assistants (MAs) that are embedded in most of Primaria's office practices throughout central Indiana. A nurse care manager provides overall coordination of care; a care

coordinator (MA or LPN) coordinates the multidisciplinary team; and a resource coordinator connects patients to resources to address a broad range of non-medical needs and barriers. Leadership noted that the AWV has helped engage their beneficiaries, with office visits facilitating enrollment in care navigation. In PY4, the NGACO focused on reducing admissions, readmissions, as well as ED visits. Primaria saw a significant 7.7 percent decrease in ED visits.

The NGACO also focused on PAC, working closely with SNFs and expanding its home visiting programs. Primaria used PBPs with SNFs, starting with 11 partner SNFs in 2019. All preferred SNFs have a PAC case manager on site; other SNFs may have a PAC manager that visits or phones, providing a "daily touch" to all admitted NGACO beneficiaries. Advanced practice nurses, one physician, RNs, licensed social workers, and resource coordinators conduct home visits. Initially, Primaria conducted home visits only with high-risk patients; since that time, the NGACO has adapted the program to anybody who cannot come in for an appointment. The focus on SNFs translated to a significant decrease in SNF spending achieved through reductions in both stays and SNF days (14.8 percent and 20.9 percent, respectively).

5.2.2 Smaller Physician Practice NGACOs in High-Spending Markets

The NGACO-PYs in this pathway are physician practice NGACOs that reduced spending while operating in less efficient markets, with higher per capita Medicare spending prior to the start of the Model. They tended to serve smaller beneficiary populations with higher chronic disease burden. A subset of these NGACOs, with fewer years of ACO experience, also served beneficiaries that were more likely to have complex social needs. Another subset, also with fewer years' ACO experience, served beneficiary populations that were, on average, less complex. NGACOs in this pathway were neither more nor less likely to have high levels of financial risk for savings and losses; see **Appendix G, Exhibit G.2** for a complete set of findings.

There are 15 NGACO-PYs in this pathway:

- ACC of TN (2018, 2019)
- Accountable Care Options (2017, 2018, 2019)
- ACCST (2016, 2017, 2018, 2019)
- CHESS (2016)
- NatACO (2017)*
- Optum (2016)*
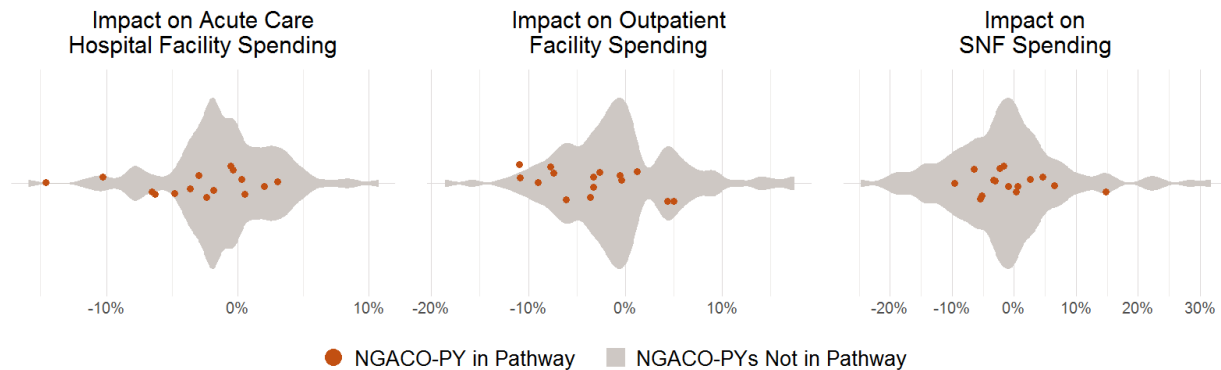- Primary Care Alliance (2018, 2019)
- Uniphy (2017)*

NGACO-PYs marked with an asterisk are no longer participating in the model.

Overall Patterns in Spending. These physician practice NGACOs reduced total Medicare Parts A and B spending, primarily through reductions in hospital-based spending. Specifically, the majority of NGACOs in this pathway had a larger impact on reductions in acute care and outpatient facility spending compared with other NGACOs. **Exhibit 5.9** presents three density plots that depict the

percent impact by category of spending for NGACO-PYs in the pathway and those not in the pathway.

Exhibit 5.9. Smaller Physician Practice NGACOs in High-Spending Markets: Percent Change for Selected Spending Outcomes
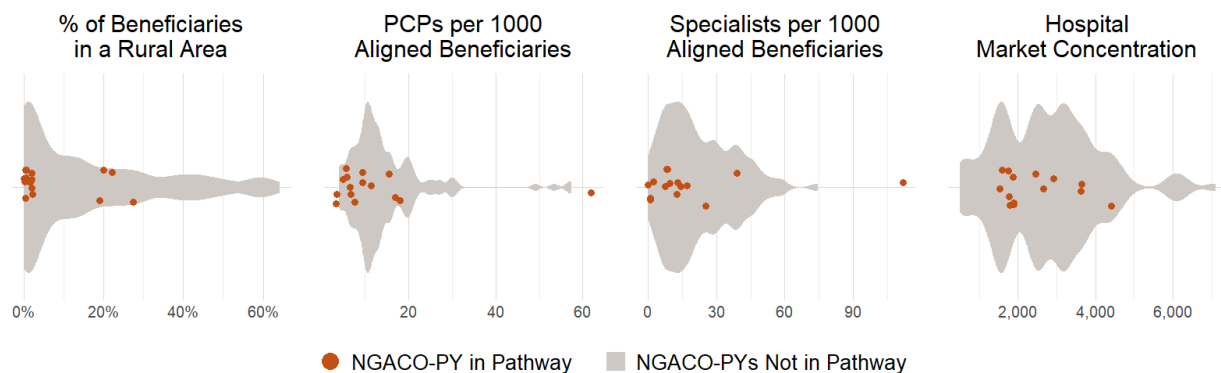

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

Market Context and Organizational Structure. These smaller, less experienced physician practice NGACOs operated in markets with inefficient Medicare spending prior to the start of the model; see **Appendix G, Exhibit G.2** for complete findings. Some served rural populations, but most were in urban or suburban markets. Their beneficiary populations tended to have a high chronic disease burden; with some exceptions, most NGACOs did not serve large proportions of beneficiaries who were dually eligible (≤20 percent). Although these NGACOs are led by physicians, they had fewer PCPs and specialists per 1,000 aligned beneficiaries in their networks compared with NGACOs not in the pathway. Their hospital markets were predominantly moderately concentrated (HHI ~1500 – 2500), and some were highly concentrated. **Exhibit 5.10** presents four density plots that depict the percent of beneficiaries in a rural area, the numbers of PCPs and specialists per 1,000 aligned beneficiaries, and hospital market concentration for NGACO-PYs in the pathway and those not in the pathway.

Exhibit 5.10. Smaller Physician Practice NGACOs in High-Spending Markets: Selected Market Context and Organizational Structure Characteristics

% of Beneficiaries in a Rural Area | PCPs per 1000 Aligned Beneficiaries | Specialists per 1000 Aligned Beneficiaries | Hospital Market Concentration

● NGACO-PY in Pathway   ▬ NGACO-PYs Not in Pathway

NOTES: These exhibits contrast the distribution of the NGACO-PY in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PY that are not in the pathway. The orange dots represent each of the NGACO-PY that are included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of NGACO provider data linked to CMS Provider of Service files, Master Beneficiary Summary File linked to HRSA Federal Office of Rural Health Policy Data files, and American Hospital Association data.

Risk and Payment Mechanism Selections. The smaller physician practice NGACOs in this pathway were more likely to have selected PBPs than other NGACOs, with their preferred providers more likely than participating providers to accept fee reductions. Over half of the NGACO-PYs in this pathway (10 NGACO-PYs) selected PBPs, which may reflect their experience with MA and value-based payment in commercial plans (see discussion below on care management and care delivery). While for two NGACO-PYs 38-45 percent of participating providers accepted fee reductions, nine NGACO-PYs in this group had 3-75 percent of their preferred providers accepting fee reductions. Many of these NGACOs (12 NGACO-PYs) also chose the 100 percent risk level. The overall amount of risk these smaller physician practice NGACOs assumed for shared savings and losses spanned the full range, from 4 to 15 percent; see **Appendix G, Exhibit G.2** for complete findings.

Care Management and Care Delivery Focus. These smaller physician practice NGACOs implemented a variety of care management approaches to prevent hospitalizations and readmissions. Concentrated hospital markets may have limited the NGACOs' bargaining capacity and may have presented a challenging environment for partnering with hospitals to address hospital-based and PAC utilization; leadership for one NGACO stated that "hospitals are not in the business of helping ACOs succeed…it's still 1960, it's still heads and beds when the day is done." Beneficiaries in these NGACOs tended to receive more of their care outside of the NGACO's network, suggesting the NGACOs had little control over where their beneficiaries received care; see **Exhibit 5.11**. Despite these barriers, this group of NGACOs focused on strategies that included transitions of care, home visits or telemonitoring in homes, and in-clinic or in-hospital interactions with beneficiaries. Their efforts to address access to ambulatory care and post-discharge follow up may have contributed to reductions in utilization of hospital services, particularly in the outpatient facility setting.
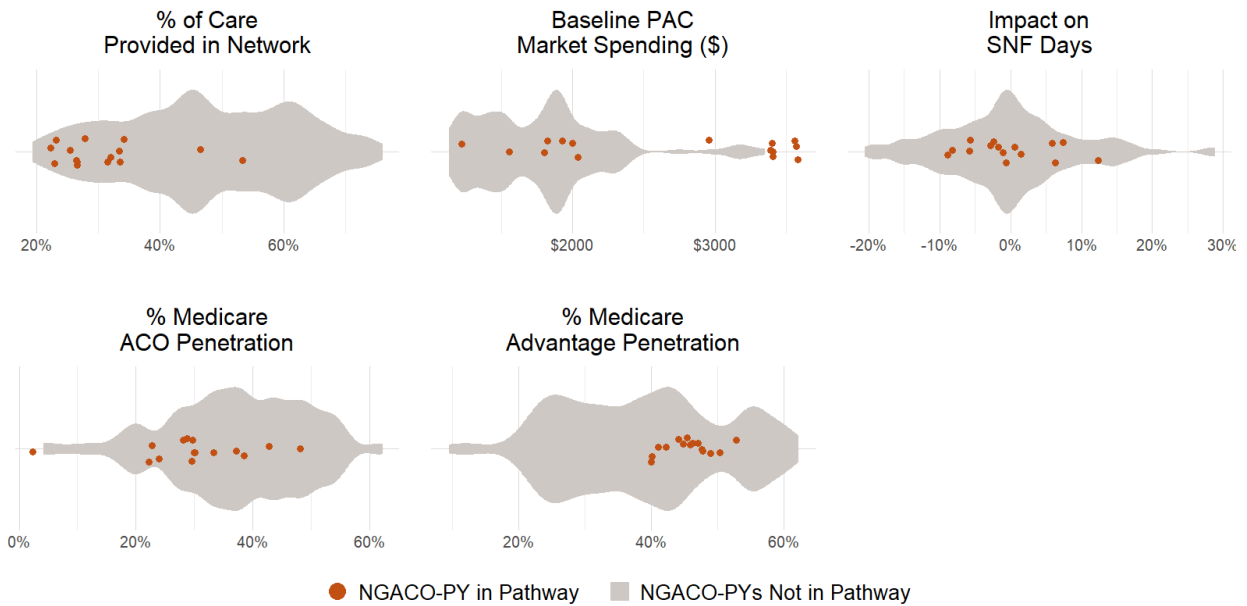
The impact on PAC spending and utilization for these NGACOs is mixed. **Exhibit 5.11** shows higher-than-average baseline PAC spending in the market, which signals potential opportunities for these NGACOs to address inefficiencies in the PAC market. However, challenges with engaging hospitals may have deterred NGACOs in this group from focusing on interventions designed to reduce SNF stays or otherwise target SNF spending and utilization; see **Exhibit 5.11** for impact on SNF days. In addition, the NGACOs reported challenges engaging SNFs due to issues such as lack of access to SNF EHR systems or lack of eligible SNFs that met star-rating thresholds.

This group includes NGACOs with limited prior Medicare ACO experience, including two with no prior ACO experience, reflecting the generally smaller Medicare ACO footprint in their markets; see **Exhibit 5.10** and Appendix G, Exhibit G.2 for complete findings. However, as a group and regardless of ACO experience, these NGACOs have tapped many years of experience in managed care delivery and risk-based contracts in MA and commercial plans. As one executive leader explained:

> *These physicians have been involved in risk and value-based [care] for so many years, there wasn't really a need to create MSSP and another business model from scratch. It was really in the physician's mind, another way for them to manage a subset of their population in a way [they had] for managed care for so many years. Next Generation ACO gave them even more of an ability to be prospective in the contract.*

Most of the NGACOs in this pathway have multiple EHR systems operating in their networks; however, most had access to their practitioners' EHR data, and many were able to use workarounds to access patient data. For example, two NGACOs used a separate, centralized system (e.g., a separate EHR, a proprietary data platform) to collect patient information. Another NGACO had direct access via login capability to most of the EHR systems used by network providers. Most were able to get information on aligned beneficiaries' hospital admissions and discharges through ADT or manual notifications but may not have had access to complete records from the hospitalization.

Exhibit 5.11. Smaller Physician Practice NGACOs in High-Spending Markets: Selected Care Management and Care Delivery Focus Characteristics

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.

SOURCE: NORC analysis of claims data, CMS Geographic Variation Public Use File, and Medicare Beneficiary Summary File linked to Master Database Management File.

ACCOUNTABLE CARE OF SOUTHEAST TEXAS (ACCST)

Market Context: The independent physicians who formed ACCST faced increasing market consolidation in Houston that included hospital system acquisition of most small practices. ACCST uses PBP and started at 80 percent risk, shifting to 100 percent risk

> *This group of physicians is really interested in having the ability to remain independent or as a small group….They want to be in control of the administrative cost structure and to engage in value-based medicine…all have come together under a single umbrella so they can cross-pollinate those practices and also take care of a larger population.*

in the second year. ACCST achieved reductions in total Medicare spending of between 2 and 4.5 percent in all four model PYs.

Population: ACCST described its aligned beneficiary population as having considerable social needs because of Texas Medicaid policies. Texas is not a Medicaid expansion state; the state has a higher income eligibility threshold, with fewer Medicaid enrollees and fewer dually eligible Medicare beneficiaries, compared with other states.

NGACO Structure: ACCST is a physician-owned, nonprofit health corporation. The ACO comprises three large patient-centered medical home (PCMH) primary care clinics and associated independent single and multispecialty groups. ACCST contracts with Collaborative Health Systems, LLC (CHS) to provide administrative and management services to the NGACO, including data analytics and beneficiary engagement. ACCST as an organization has relatively little Medicare ACO experience, but its PCPs came to the model with seven years of Medicare value-based and ACO experience (e.g., MA and SSP). Past experience was a significant factor in the decision to participate in the NGACO model. *"We [have practiced] with those physicians with a pool sharing [incentive structure]…They are accustomed to having the revenue and benefit costs lined up with their members."* ACCST employs market managers who go into provider offices and review financials and quality metrics. ACCST has contracts with SNF, home health, and other ancillary providers in the Houston market, many of which are interested in risk-sharing and elected fee reductions.

HIT and Data Analytics: ACCST recognized that comprehensive, regular data were central to management of the Medicare population; their initial focus was on increasing access to timely data. *"When you can get data every week and get the physician the outlier patients and get them it ASAP and give them trends in close to real time, they can change their workflow to be able to take these patients in, makes sense clinically and financially."* Developing NGACO HIT infrastructure and data analytics was a challenge for ACCST. ACCST's network providers used over 42 different EHRs. For available data, ACCST created a risk stratification process model that includes clinical and social determinants of health data.

Care Delivery: ACCST relies on population health management and a high-touch care management style, utilizing embedded as well as centralized care management staff. Face-to-face touches are a key aspect of care management and involve sending care managers bedside and patient advocates into homes. ACCST's social workers connect qualified beneficiaries to services, such as transportation or vision. In addition, ACCST collaborates with partner SNFs, using an SNFist to manage NGACO beneficiaries who are admitted. A focus on beneficiaries may have helped ACCST realize consistent reductions in several measure areas, including PAC spending, outpatient spending, home health and hospice spending, acute care stays, SNF stays, and readmissions.

5.2.3 Hospital-Affiliated NGACOs in High-Spending Markets

The NGACO-PYs in this pathway are affiliated with hospital systems and operated in less efficient markets, with higher per capita Medicare spending prior to the start of the Model. They include IDS and physician-hospital partnerships and tended to serve larger beneficiary populations with complex conditions. They tended to be more experienced Medicare ACOs and generally opted to subject a smaller proportion of their revenue at risk for savings and losses; see **Appendix G, Exhibit G.3** for the complete set of findings.

There are 14 NGACO-PYs in this pathway:

- Arizona (2018, 2019)
- CHESS (2018)
- Deaconess (2019)
- Indiana U (2018, 2019)
- MPACO (2018)*
- Steward (2016, 2017, 2018, 2019)
- Torrance (2019)
- Trinity (2018, 2019)

3. Hospital-affiliated NGACOs in High-Spend Markets

Larger Beneficiary Populations + More ACO Experience

> Years

Higher chronic disease burden   Larger proportion with dual eligibility

Notes: Nested boxes represent subsets within the pathway. White Outline: NGACO-PYs assumed a lower level of financial risk.

NGACO-PYs marked with an asterisk are no longer participating in the model.

Overall Patterns in Spending. These hospital-affiliated NGACOs reduced Medicare Parts A and B spending through a mix of reductions in hospital and PAC spending, and to a lesser extent in professional services. The IDS NGACOs tended to see reductions in SNF or other PAC spending while physician-hospital partnerships saw reductions in acute care and outpatient facility spending. **Exhibit 5.12** presents four density plots that depict the percent impact by category of spending for NGACO-PYs in the pathway and those not in the pathway.

Exhibit 5.12. Hospital-affiliated NGACOs in High-Spending Markets: Percent Impact on Selected Spending Outcomes
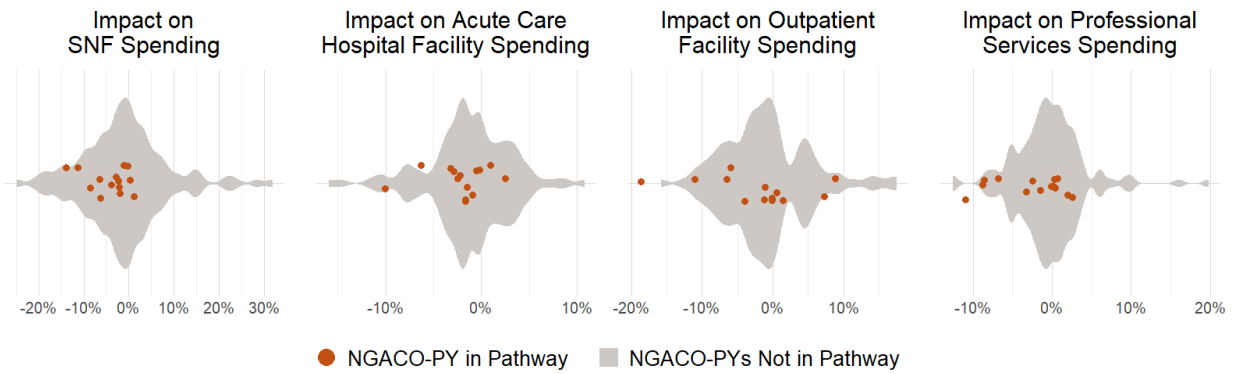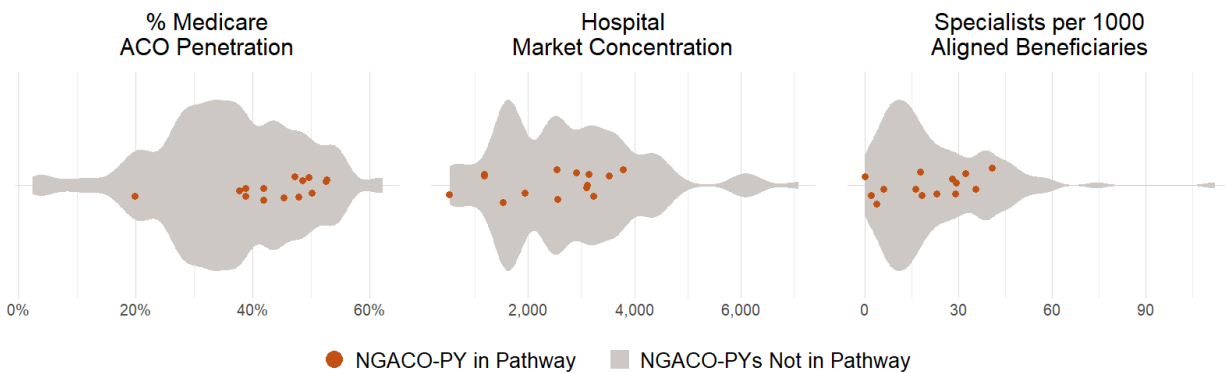

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

Market Context and Organizational Structure. NGACOs in this pathway were affiliated with hospitals/health systems, including an academic medical center, a local nonprofit hospital, and regional and national health systems. Their hospital markets tended to be moderately to highly concentrated (HHI ~1500 – 3800). For some NGACOs, the hospital market dynamic spurred practitioner turnover with competitors, and another found the market dynamic to be more collaborative. Given their previous Medicare ACO experience, some of these NGACOs utilized the provider networks formed under prior Medicare ACO models. The majority of these NGACOs had larger provider networks, with relatively more specialists in their networks. **Exhibit 5.13** presents three density plots that depict Medicare ACO penetration in the market, hospital market concentration, and the number of specialists per 1,000 aligned beneficiaries for NGACO-PYs in the pathway with those not in the pathway.

Exhibit 5.13. Hospital-Affiliated NGACOs in High-Spending Markets: Selected Market Context and Organizational Structure Characteristics

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
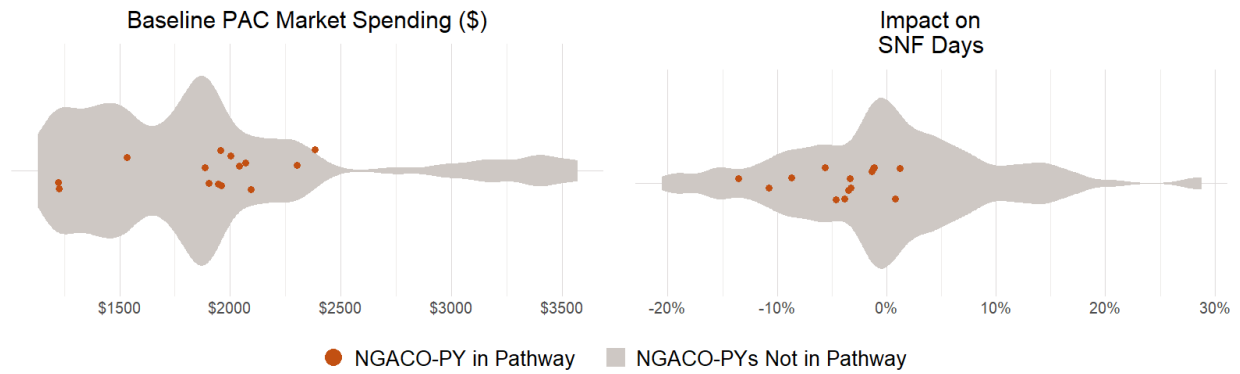
SOURCE: NORC analysis of American Hospital Association data, Medicare Beneficiary Summary File linked to Master Database Management File, and NGACO provider data linked to CMS Provider of Service files.

Risk and Payment Mechanism Selections. With a mean risk index of 4.7 percent, NGACOs in this group were not likely to have large shares of their NGACO-related revenue at risk for shared savings and losses; see Appendix G, Exhibit G.3 for complete findings. Just one NGACO (for three years of the model) had providers participating in PBPs, which served as a lever to engage SNF partners and motivate them to address length of stay, readmissions, cost per case, and quality metrics.

Care Management and Care Delivery Focus. NGACOs in this pathway supported population health through their health informatics and data analytic capabilities, with both existing systems and new investments made under NGACO. They leveraged their IT infrastructure to support communication across the care team on care plans, medication management, clinical history, and SDOH. These investments may have contributed to reduction in inpatient spending for these NGACOs. As noted earlier, some of the larger, more experienced NGACOs had relatively larger proportions of aligned beneficiaries who were dually eligible. Nearly half of the NGACOs in this group had or were planning to create specific programs to address SDOH.

Exhibit 5.14 shows that baseline PAC market spending for most of these NGACOs was relatively high. NGACOs within the pathway focused on decreasing SNF days and improving quality of care in SNFs, which included strategies such as holding regular meetings with SNF frontline staff, developing a SNF collaborative, or actively managing care for beneficiaries in SNFs. The NGACOs' investments in the SNF setting may have contributed to reduced length of stays in SNFs, as shown in **Exhibit 5.14**

Exhibit 5.14. Hospital-affiliated NGACOs in High-Spending Markets: Selected Care Management and Care Delivery Focus Characteristics

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.

SOURCE: NORC analysis of claims data, CMS Geographic Variation Public Use File, and NGACO provider data linked to CMS Provider of Service files.

ARIZONA CARE NETWORK (ACN)

Market Context: ACN is an IDS operating in Maricopa County, a competitive, advanced value-based market.

> *We want to make sure that we have the right provider groups that have bought in and are willing to change their practices…*

Faced with competition from Medicare Advantage for providers and from six other MSSP ACOs, ACN leadership described its application and entrance into NGACO as a prestigious opportunity for the organization. ACN was ready to transition around 2016 when QPP went into effect and was poised to excel under the NGACO model. *"There were a number of things … going on with ACN, with its history and with its arrangements that have demonstrated a continuing, improving and more sophisticated ability to manage the arrangements, and we're seeing…the foundation really paying off."* ACN considered taking on 100-percent risk, but the ability to elect 80-percent risk with a smaller corridor of 5 percent (versus 15 percent) was seen as providing ample opportunity for shared savings. ACN was successful, reducing Medicare spending by 1.9 percent and 1.6 percent in PY2 and PY3, respectively, and another 1 percent in PY4. The NGACO achieved these savings with declines or modest increases in all categories of spending except DME, for a reduction of $100-$200 PBPY.

Population: ACN's NGACO population is higher risk, and many suffer from congestive heart failure, diabetes, or social isolation and depression. Because Arizona has a large snowbird population, ACN sees many older beneficiaries who are caregivers with limited health literacy and as a result, may experience difficulties navigating the health care system. The care coordination staff reports that as ACN builds trust with aligned beneficiaries, members of the NGACO population are receptive, more than other managed populations, and benefit from home visits and care management.

NGACO Structure: ACN has a large network representing the full continuum of care, comprising primary care and specialty physicians, 15 acute care and specialty hospitals along with SNF, home health agencies, and palliative care and hospice settings. For the NGACO, ACN refined the network using data analytics and governing board input, reducing their TINs, and focusing on bringing in PCPs and specialists who are ready for change. *"Building understanding in the network – we wanted to get the PCP ready…to make sure that they were going to buy in and be essential."* ACN relies on a high-touch physician engagement approach with quality consultants and pod meetings.

HIT and Data Analytics: Under NGACO, ACN has focused on expanding and integrating its IT and data— their "strongest technology stack." They added a Chief Information Officer and used data analytic capacity to ensure real-time data are available for care managers and providers. *"Our approach is to try and take all our arrangements and run analytics based on claims data, feeds from the HIE, from labs, and so forth, and … have a top-sided look at here are the care gaps, here's the actionable items that we can deploy."*

Care Delivery: ACN has expanded and refined its approach to care management across the continuum, initially using health information exchange and in-hospital care management/coordination to focus on transitions of care. ACN honed its approach to care management during the first two years to maximize use of RNs, social workers, navigators, and coaches. *"We want to interact, even on-site, [or] telephonically, so they know we are available and want to reach out to them. We move with [the] continuum of care, and can visit when in PAC. We will do a home visit."* The population health department developed a "Concierge Line," a one-stop call center for beneficiaries, providers, family, or caregivers. ACN continued to change the model, settling on having an RN assess beneficiary needs and assignment to the right level of population health staff, such as a social worker or navigator. Acute care spending has declined by a modest 0.6 percent.

5.2.4 Physician Practice NGACOs Operating in Low-Spending Markets

The NGACO-PYs in this pathway are physician practice NGACOs that reduced spending while operating in more efficient markets, with lower per capita Medicare spending prior to the start of the Model. NGACOs in this pathway tended to serve smaller beneficiary populations that had fewer chronic conditions, but a subset of these NGACOs served beneficiaries that were more likely to have social needs. NGACOs in this pathway generally opted to subject a smaller proportion of their revenue at risk for savings and losses; see **Appendix G, Exhibit G.4** for the complete set of findings.


There are five NGACO-PYs in this pathway:

- CareMount (2018, 2019)
- HCP (2017, 2018)
- Hill (2017)*

NGACO-PYs marked with an asterisk are no longer participating in the model.

Overall Patterns in Spending. These physician practice NGACOs achieved modest reductions in total Medicare spending. NGACOs in this pathway did not achieve this outcome by targeting a specific service area. For example, NGACOs that decreased professional services spending largely saw increases in hospital-based (acute care and outpatient) spending. **Exhibit 5.15** below presents four density plots that depict the percent impact by category of spending for NGACO-PYs in the pathway and those not in the pathway.

Exhibit 5.15. Physician Practice NGACOs in Low-Spending Markets: Percent Change for Selected Spending and Utilization Outcomes
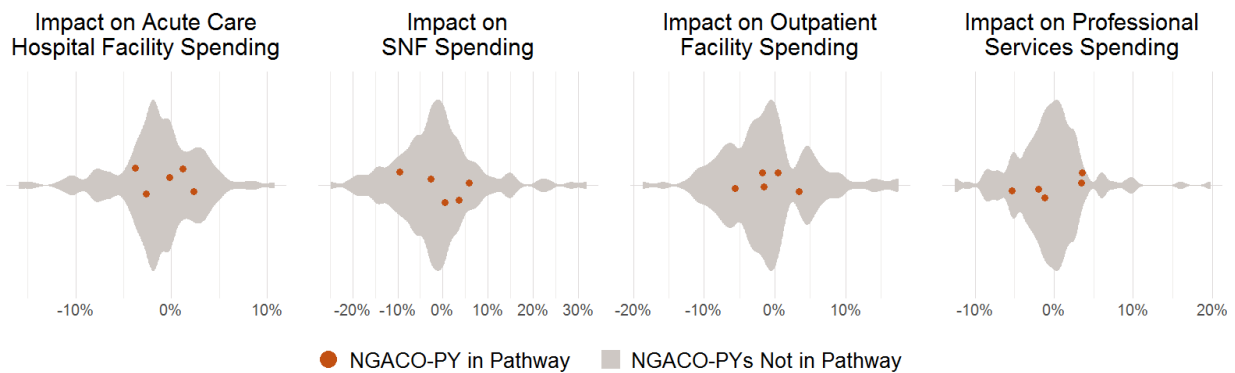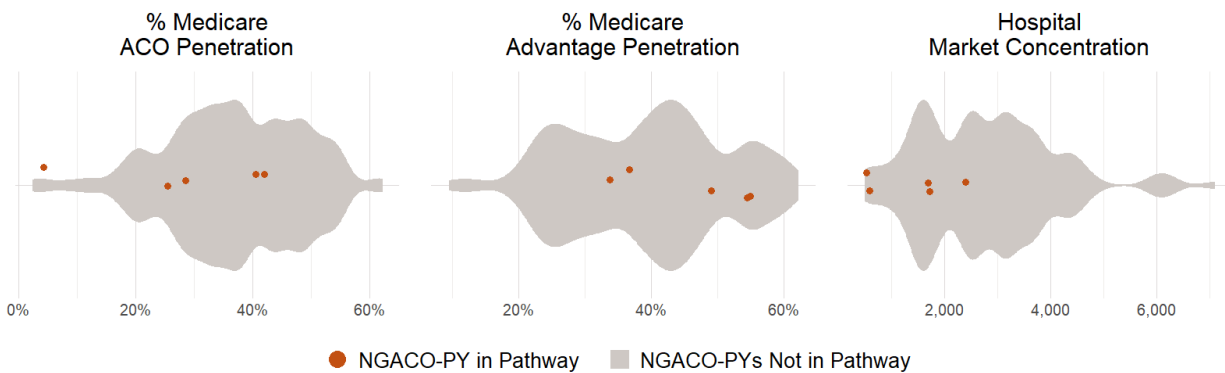

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway with NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

Market Context and Organizational Characteristics. These physician practice NGACOs operated in markets with lower per capita Medicare spending, providing fewer opportunities to further reduce Medicare spending. Since their hospital markets tended to be competitive, these NGACOs may have had more options to collaborate with hospitals. The presence of providers with experience in managed care and risk-based contracting may have mitigated the limited Medicare ACO experience of some NGACOs in this pathway. One inexperienced NGACO partnered with a management organization, or ACO enabler.[67] **Exhibit 5.16** presents three density plots that depict the percent Medicare ACO penetration, percent MA penetration, and hospital market concentration of NGACO-PYs in the pathway and those not in the pathway.

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[67] For more on the roles of management organization partners as ACO enablers see:
https://www.healthaffairs.org/doi/10.1377/hlthaff.2017.1025

Exhibit 5.16. Physician Practice NGACOs in Low-Spending Markets: Selected Market Context Characteristics
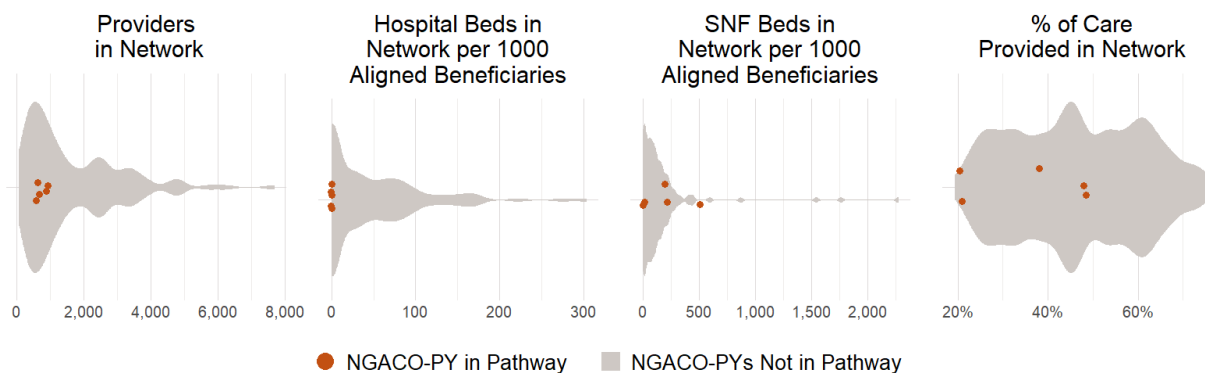

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of American Hospital Association data, Medicare Beneficiary Summary File linked to Master Database Management File.

As shown in **Exhibit 5.17**, the provider networks in this group of physician practice NGACOs tended to be smaller. They had no hospitals in their networks but did have cooperative relationships with hospitals for specific programs or initiatives (i.e., embedded discharge staff, engagement on length of stay), consistent with operating in more competitive hospital markets. Despite not having hospital beds in their networks, some of the NGACOs had large numbers of SNF beds in the network. However, the lack of in-network hospitals challenged their ability to capture beneficiaries upon discharge to encourage the use of in-network or preferred SNFs; see **Exhibit 5.17**. One of the NGACOs noted that the value proposition of reducing admission and readmission was hard to make to hospitals. Another NGACO was more successful in making the case with one of their preferred hospitals participating in PBPs. The beneficiaries aligned to these NGACOs received much of their care outside the NGACOs' provider networks, when compared with all other NGACOs; this finding is not surprising, given the smaller networks and lack of acute care capacity within the networks.

Exhibit 5.17. Physician Practice NGACOs in Low-Spending Markets: Selected Organizational Characteristics

NGACO-PY in Pathway   NGACO-PYs Not in Pathway

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data, and NGACO provider data linked to CMS Provider of Service files.

Risk and Payment Mechanism Selections. These physician practice NGACOs in low-spending markets assumed lower financial risk. While two chose the 100 percent financial risk, their risk indexes were 4 to 6 percent at risk for shared savings and losses. Two of the NGACOs started the model with FFS payments and switched to PBP in PY4.[68] For one of these NGACOs, none of its participating providers took fee reductions but 15 percent of its preferred providers took fee reductions. The third NGACO in this pathway selected FFS-plus-infrastructure payments.

Care Management and Care Delivery Focus. The NGACOs in this pathway had beneficiary populations with fewer chronic conditions, yet all had robust multidisciplinary care management teams that included social workers. Data analytics and EHR tools underpinned their care management approaches, and one NGACO incorporated SDOH into their risk stratification model. All NGACOs in this group increased the number of AWVs. Similar to impacts on spending, NGACOs in this group had mixed impacts on SNF and acute care utilization; this finding is consistent with the general lack of hospitals and limited number of SNFs in-network among these NGACOs. **Exhibit 5.18** presents five density plots that depict the percent impact on number of beneficiaries with AWVs, the number of tests, the number of acute care stays, the number of SNF stays, and the number of SNF days for NGACO-PYs in the pathway and those not in the pathway,
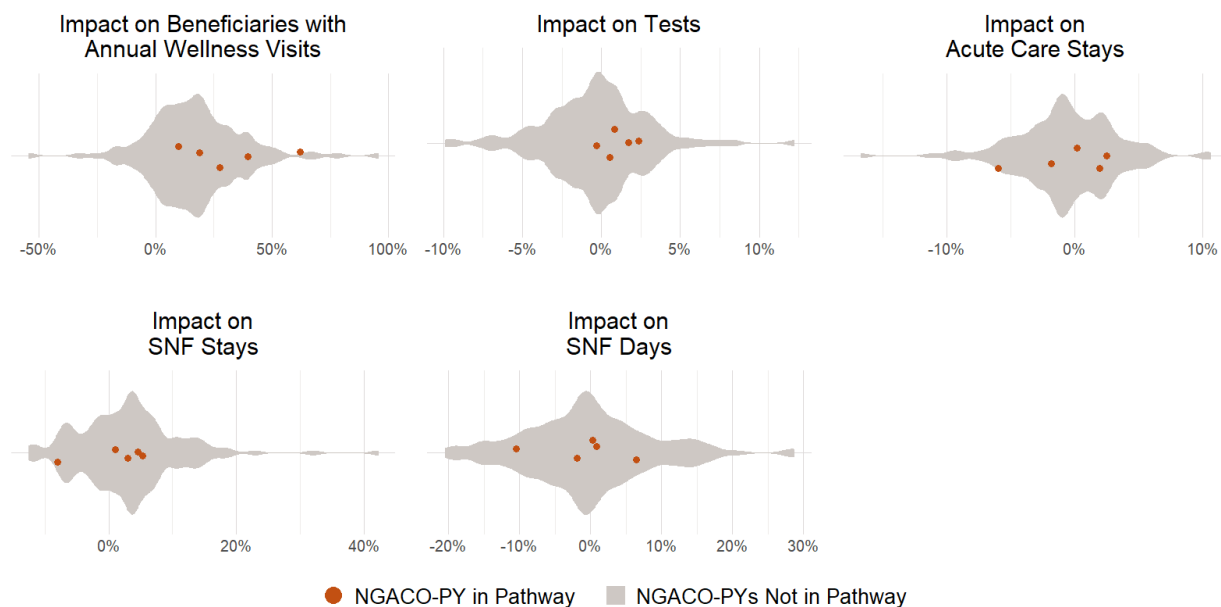
These NGACOs expanded their HIT and data analytics capacity, whether entering the model as experienced Medicare ACOs building on existing infrastructure or partnerships with experienced care management organizations. Two former SSP and Pioneer ACOs made investments to expand their analytic and financial staff to meet NGACO model needs; one applied tools, such as

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[68] While two NGACOs included in this pathway switched to PBP in PY4, only one of the NGACOs fell into this pathway in PY4 specifically (the second NGACO did not achieve spending reductions in PY4 and therefore not included in any pathway discussed in this chapter).

their provider feedback reports and staffing models for care management developed for its HMO, for its NGACO population. The new NGACO partnered with an ACO enabler as an equal operating and financial partner and leveraged its risk-sharing experience, care management approach, and IT infrastructure. In addition to infrastructure investments, all three NGACOs developed workarounds, such as using discharge planners in place of care coordination software, to mitigate continued HIT communication gaps caused by the lack of interoperability between practices and unaffiliated hospitals.

SNF spending and utilization reductions varied among this group. The NGACOs that reported developing broad SNF networks and focusing on targeted initiatives, such as reducing SNF length of stay and transitions or discharge coordination within these partnerships, reduced SNF spending and utilization. Their strategies included adding new hospital discharge coordinators and SNF coordinators to focus on transitional and post-acute costs or adding an SNF transitions program to their preexisting care management approach.

Exhibit 5.18. Physician Practice NGACOs in Low-Spending Markets: Selected Care Management and Care Delivery Focus Characteristics

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

CAREMOUNT

Market Context: CareMount, a large physician-owned multispecialty group practice in the Hudson Valley of New York, describes their market as competitive with large integrated delivery systems expanding from New York City into their service area. CareMount entered the model after evaluating its experience as an MSSP

ACO and MA provider. MACRA was also an impetus, given the number of specialists in the group. With only two years left in the NGACO model when they started, CareMount was focused on its benchmark and on achieving savings. The NGACO reduced total spending by 0.2 percent in PY3 and 1.5 percent in PY4.

> *We created custom templates in our NextGen EHR both [to] run AWVs (Annual Wellness Visits) and what we call the health maintenance template and our health maintenance template can be accessed at any visit so physicians can clearly understand where gaps exist for patients… We know that physicians do a great job when patients join the office – we want to build programs that outreach to patients – reaching out to patients either by text or by email pushing education to them in order to better engage them.*

Population: CareMount serves many retirees and describes their aligned beneficiaries as generally having low hierarchical condition category (HCC) risk scores (an average of 1.1 conditions) and not having dual eligibility. However, their service area encompasses patients with varied socioeconomic status, from very high to very low income.

NGACO Structure: CareMount employs over 425 physicians from 40 different specialties and almost 100 advanced practice professionals under a single TIN. The almost 280 physician shareholders agreed to invest MACRA bonus payments to support investment in infrastructure for the NGACO, saying, "*That's how we finance an independent group and create runway for takeoff on this model.*" The NGACO's Market Leads work with medical directors to educate physicians about the model and share data, emphasizing appropriate coding documentation, quality metrics, and gaps in care, such as missing AWVs.

HIT and Data Analytics: CareMount developed the capacity and HIT infrastructure to enter NGACO under MSSP, using their MSSP data to conduct financial and strategic planning to predict their ability to reduce costs relative to their benchmark. All of its providers are on a single EHR. CareMount made robust changes to build out its data analytics team and to learn how to monitor costs and focus on documentation and coding, including on HCC and ICD10. The EHR ties data analytics with AWVs, which feed into risk stratification for care management. Outpatient spending decreased for CareMount by 1.6 percent in PY3 and 5.2 percent in PY4.

Care Delivery: CareMount emphasizes collaborative team-based care with embedded care coordinators, each of whom is responsible for approximately 3,000 beneficiaries. The NGACO has discharge planners within high-volume hospitals, and over 500 RNs and LPNs are employed as outpatient case managers, inpatient case managers, field or telephonic nurses, or home health coordinators.

5.2.5 Hospital-affiliated NGACOs in Low-Spending Markets

The NGACOs-PYs in this pathway are hospital-affiliated NGACOs operating in more efficient markets, with lower per capita Medicare spending prior to the start of the Model. They include IDS and physician-hospital partnerships and tended to be larger and have more Medicare ACO experience. They served larger beneficiary populations that either had more chronic conditions or were less likely to be dually eligible than all other NGACOs. These NGACOs generally opted to subject a smaller proportion of their revenue at risk for savings and losses; see **Appendix G, Exhibit G.5** for the complete set of findings.

There are are eight NGACO-PYs in this pathway:

- Carilion (2019)
- UNC (2018, 2019)
- UnityPoint (2018, 2019)
- Triad (2019)
- Pioneer Valley (2017, 2018)

Overall Patterns in Spending. These large hospital-affiliated NGACOs reduced Medicare Parts A and B spending, primarily through reductions in outpatient facility and SNF spending. Some NGACOs in this group also reduced professional services spending. **Exhibit 5.19** below presents three density plots that depict the percent impact by category of spending for NGACO-PYs in the pathway and those not in the pathway.

Exhibit 5.19. Hospital-affiliated NGACOs in Low-Spending Markets: Selected Spending Outcomes
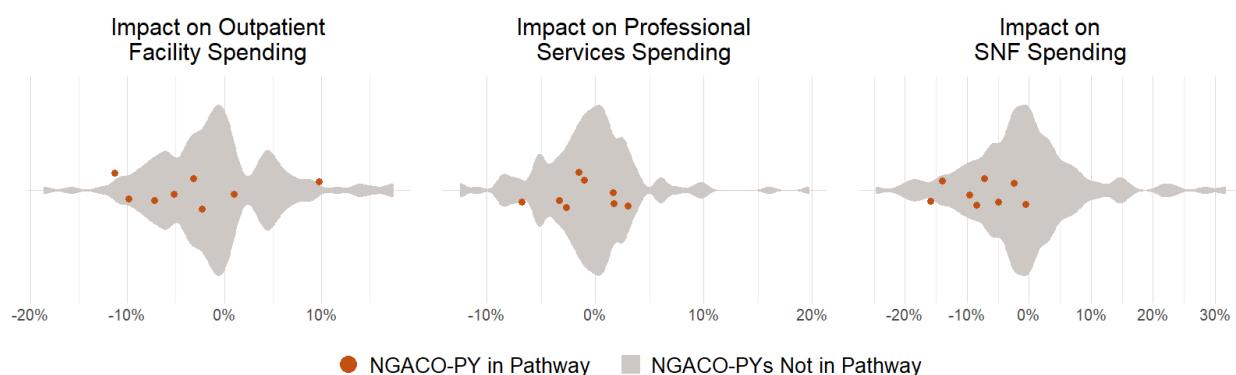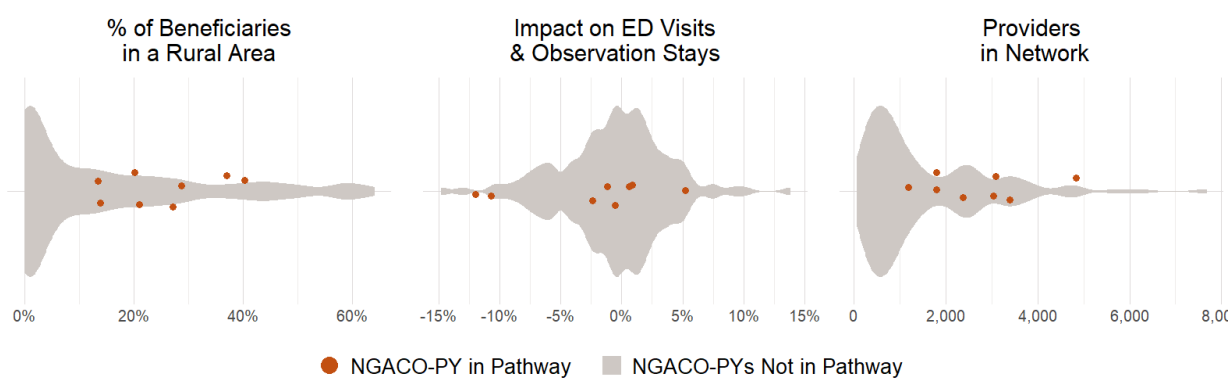

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

Market Context and Organizational Structure. NGACOs in this pathway operated in marginally more efficient health care markets; on average, their standardized, risk-adjusted per capita Medicare spending was lower than other NGACOs; see Appendix G, Exhibit G.5 for complete findings. The NGACOs in this pathway served relatively more rural markets when compared to other NGACOs; see **Exhibit 5.20** below. The hospital-affiliated NGACOs in this pathway were large, tended to have more Medicare ACO experience, and operated in highly concentrated hospital markets (HHI: 2500 – 6241). An IDS served as the lead entity for three of five NGACOs in this pathway. They had a larger aligned beneficiary population and provider network than the other two NGACOs.

Exhibit 5.20. Hospital-affiliated NGACOs in Low-Spending Markets: Selected Market Context, Organizational Structure Characteristics, and Utilization

SOURCE: NORC analysis of claims data, NGACO provider data linked to CMS Provider of Service files, and Master Beneficiary Summary File linked to HRSA Federal Office of Rural Health Policy Data files.
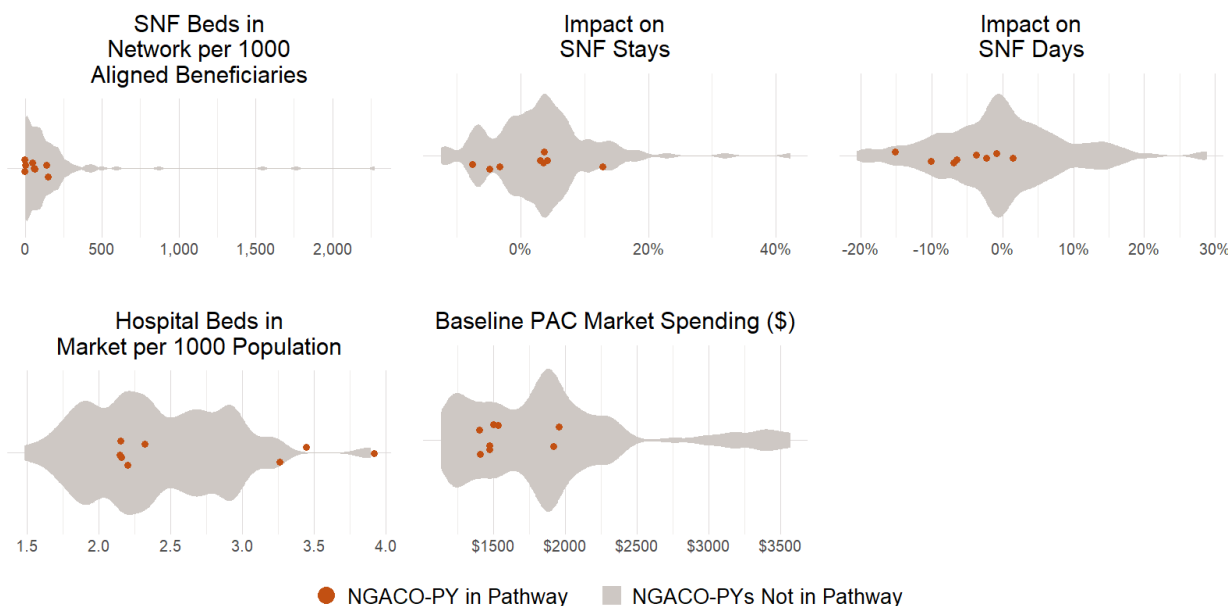**NOTES**: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.

Most NGACOs in this pathway had five or more years of prior ACO experience. The organizational resources and infrastructure, economies of scale, and prior experience may have contributed to the reduction in gross Medicare spending for these hospital-affiliated NGACOs despite being located in relatively efficient health care markets. For example, one NGACO was able to raise a sizable amount of capital to fund development of infrastructure needed to manage the clinical and financial risk associated with participating in a CMS ACO model.

The capacity of SNF beds relative to the size of the aligned beneficiary population was lower for NGACOs in this pathway when compared with other NGACOs. The lower capacity of SNF beds in the NGACO provider network may incentivize NGACOs to optimize SNF service utilization for its aligned beneficiaries by shortening SNF length of stays. In contrast, the higher hospital bed capacity of the NGACOs' markets may have served as a disincentive for achieving significant reductions in potentially avoidable hospitalizations. See **Exhibit 5.21** below for density plots that depict the number of SNF beds in network per 1,000 aligned beneficiaries; the percent impact on

SNF stays and SNF days; and hospital beds in market per 1,000 population for NGACO-PYs in the pathway with those not in the pathway,

Exhibit 5.21. Hospital-affiliated NGACOs in Low-Spending Markets: Selected Market Context and Utilization Related to SNFs

NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data, NGACO provider data linked to CMS Provider of Service files, and Medicare Data on Provider Practice and Specialty (MD-PPAS).

Risk and Payment Mechanism Selections. These NGACOs have a higher rate of participation in PBPs, as measured by providers who voluntarily opted for fee reductions to facilitate PBPs for the NGACO. This may indicate a more engaged provider network. SNFs and home health agencies in the provider networks of these NGACOs opted for PBPs. These providers were willing to be engaged partners in the ACO network because they viewed the ACO as a critical referral source. NGACO leverage over the SNFs in the network may have facilitated reductions in SNF spending despite operating in a relatively efficient PAC market.

Care Management and Care Delivery Focus. For NGACOs in this pathway, reduction in outpatient spending was a key means for impact. Most of the NGACOs in this pathway reduced outpatient utilization by reducing ED/observation stays (**Exhibit 5.20**) and imaging, tests, and procedures (**Exhibit 5.22**). Besides reducing ED/observation stays, NGACOs in this group dedicated resources toward managing outpatient care and services through a variety of mechanisms such as training for primary care physicians to better identify care management services for patients, balancing expectations between primary care physicians and specialists, and using technology solutions such as PatientPing to assist outpatient care managers with transition management.

The NGACOs also discussed managing transitions by contacting beneficiaries after discharge, to bridge potential gaps with primary or specialty care. One NGACO also embedded case managers in the ED at two of its largest hospitals. Four NGACOs focused on both high-risk and rising/moderate risk patients, while one NGACO only focused on high-risk beneficiaries; it is possible that this focus beyond the highest-risk patients meant that care management teams were directing lower risk beneficiaries to appropriate outpatient services or lowering outpatient utilization for non-emergencies.

Since these NGACOs served relatively more rural markets, their care management strategies relied on a mix of telephonic engagement and care management staff embedded in practices to ensure coverage across rural areas. The leadership and care management staff of one of the NGACOs noted that operating in a rural area influenced their decision to prioritize curbing ED utilization; some of the rural practices in the market relied on the ED to provide afterhours care. The care managers relied on telephonic engagement to minimize the cost and burden of travel.

All NGACOs with prior ACO experience noted that they applied lessons from Medicare SSP and other value-based models to NGACO implementation. NGACOs built on care management programs in place for Medicare SSP, investing in analytics to identify high-risk beneficiaries or gaps in care (given NGACO's prospective alignment feature); scaling up care management programs (e.g., home-based physician care delivery); and developing and strengthening partnerships and coordination with PAC.

The leadership of these large NGACOs noted that having multiple sites enabled them to pilot care management programs. Four of the NGACOs discussed piloting programs or initiatives focused on outpatient and PAC services. These programs covered services such as integrated behavioral health, telehealth, urgent care, palliative care, ambulatory care documentation of patients with chronic obstructive pulmonary disease (COPD), pharmacy, home visits, paramedicine, and PAC utilization and home health.

The NGACOs in this pathway also reduced PAC utilization by reducing the intensity of SNF services; see **Exhibit 5.21**. They had dedicated staff that rounded in SNFs. Most NGACOs in this group reported providing education to SNFs around NGACO goals and processes (e.g., discharge), SNF days, and readmissions. NGACOs received notifications about SNF admissions via software such as PatientPing, Cortex Two, and ADT notifications from system facilities. Two NGACOs utilized tools to calculate SNF days based on EHR and psychosocial data.

Exhibit 5.22. Hospital-affiliated NGACOs in Low-Spending Markets: Selected Utilization Outcomes (Imaging Services, Tests, and Procedures)
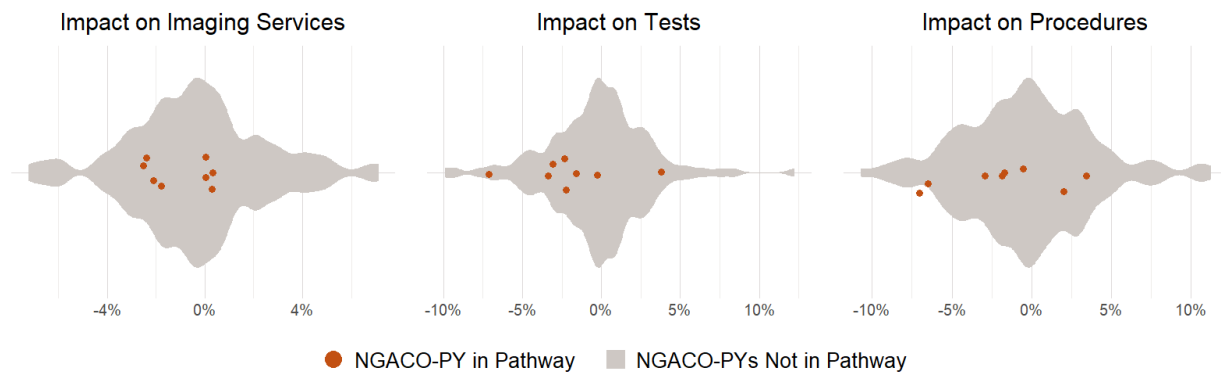
NOTES: These exhibits contrast the distribution of the NGACO-PYs in the pathway to NGACO-PYs that are not in the pathway. The gray shaded area represents the density plot for the NGACO-PYs that are not in the pathway. The orange dots represent each NGACO-PY included in the pathway. To communicate the distributions visually, the portions of the density plot on both sides of the x-axis mirror each other. We jittered the orange dots over the y-axis for the same reason; the y-axis for the orange dots has no interpretive significance.
SOURCE: NORC analysis of claims data.

CARILION CLINIC

> *Now while that patient is in front of them, they can talk to them about the care management program. [The snapshot in the EHR] is a way for them during the inpatient visit to encourage the patient to engage—the care management programs are the best way to change patient behaviors and help them understand their disease.*

Market Context: Carilion Clinic, an IDS based in Botetourt County, Virginia, is the dominant provider serving a large footprint that encompasses rural areas of three states, Virginia, West Virginia, and North Carolina. Carilion experienced success in MSSP and value-based care when it elected to enter the NGACO model. Nonetheless, leadership faced some provider resistance to taking on greater risk under the model. Carilion described how they leveraged NGACO to "nudge" the system into a greater focus on delivering value, by increasing care management, reducing readmissions and using data and information to inform care delivery. Carilion was able to reduce total spending in PY2 and PY4, with a modest increase of 0.1 percent in PY3, by reducing outpatient facilities and SNF spending in all three years and in PY4, reducing other PAC spending by 11 percent.

Population: Carilion used its prospective data to risk-stratify all aligned beneficiaries. About 10 percent or 4,500 beneficiaries qualified for complex care management.

NGACO Structure: Carilion's network includes primary care and specialty physicians, seven hospitals, and home health. The NGACO developed close relationships with 17 SNFs to deliver care under the model. All physicians in the employed group are in the network with over 700 physicians; 140 are primary care and about 500-600 are specialists. Given the large number of specialists, the NGACO created a Specialty Council and co-management agreements between specialists and primary care to manage overlaps among aligned beneficiaries. As a result, almost all the IDS' Medicare patients were aligned to Carilion. In 2018, they added several small practices to the network. With a focus on individual communication, Carilion shares quality metrics and engages practices in addressing gaps in care.

Leadership noted, *"You have much better adherence when you go up to people individually and let them know they're not in compliance rather than addressing a room."*

HIT and Data Analytics: Carilion leveraged its sole EHR and views this as a key to success. Carilion brought in a consultant/vendor to provide data analytics, including risk stratification for targeting high-risk beneficiaries. At the outset, leadership commented: *"We see that as our greatest strength. We are on a single EMR, so we can hardwire things…so that, we think, gives us a lot more ability to turn the ship…" (i.e., transform care delivery).* Carilion continued to invest in their informatics, adding a banner and snapshot to the EHR so that physicians knew when NGACO patients were risk-stratified into a care management program.

Care Delivery: Carilion has implemented a population health approach using telephonic care management extensively for all beneficiaries. Working in a rural area influenced the NGACO's care management strategies. Initially, Carilion was challenged to curb ED utilization in areas where there were few urgent care centers for after-hours care, but they achieved a significant reduction in PY2 (4 percent). Carilion worked closely with SNFs, embedding care managers and sharing monthly facility scorecards, resulting in a significant reduction in PY4 SNF days and a reduction in SNF stays.

5.3 Summary

In this chapter, we expanded our analysis beyond individual factors associated with estimated impacts on gross Medicare spending to consider how combinations of factors might explain NGACOs' spending outcomes in the model's first four performance years. We used QCA to array cases by explanatory factors for NGACOs that reduced Medicare spending in a given performance year (with a case being one NGACO-PY); explanatory factors comprised shared characteristics related to market contexts, organizational structures, and aligned beneficiary populations. Our analysis showed that NGACOs with different structures and operating in different contexts reduced spending.

NGACOs affiliated with physician practices or hospitals (IDS or physician-hospital partnerships) achieved spending reductions in both efficient (low per capita spending) and inefficient (high per capita spending) Medicare markets. Across types of organizational affiliation, NGACOs reduced spending in areas that did not directly impact their primary revenue streams. For example, physician practice NGACOs tended to reduce spending in both acute care and outpatient facilities and in either SNFs or other PAC facilities. In contrast, hospital-affiliated NGACOs tended to reduce spending in SNFs, other PAC facilities, and outpatient and professional services. Among NGACOs that reduced spending, the physician practice NGACOs tended to operate in moderately concentrated or competitive hospital markets, while the hospital-affiliated NGACOs operated in highly concentrated hospital markets.

Larger NGACOs, whether affiliated with a physician practice or hospital, typically were more experienced Medicare ACOs, with established health IT and care management infrastructure that became the foundation for model implementation. Even smaller, less experienced physician practice NGACOs had tools and resources from other value-based care endeavors that could be applied to NGACO implementation and that enabled partnerships with firms providing needed population health and care management technology. The smaller physician practice NGACOs

reduced spending all four years of the model, while hospital-affiliated NGACOs reduced spending in the model's later years. Hospital-affiliated NGACOs were involved in testing different care management programs under the model, and the reductions achieved in later years suggest that larger NGACOs, with more established systems, may benefit from a longer time horizon..

Our analysis of NGACOs that share different combinations of market and structural characteristics explains approximately half of the cases of spending reductions during the model's four performance years. The cases reveal the diversity found among NGACOs that reduced Medicare spending. Results are not generalizable beyond the cases that we assessed, and it is likely that additional factors not included in this analysis, including those that are difficult to measure, contributed to NGACO spending reductions. For future reports, we plan to conduct analyses to examine shared characteristics of NGACOs that did not achieve spending reductions in the model.

Chapter 6: Discussion

The NGACO model saw gross spending model-wide decline by 2.0 percent in PY4, a greater decline than observed in PY3 or PY2, and cumulatively, gross spending declined by 1.2 percent. As in previous performance years, the largest spending reductions occurred with SNF and other PAC spending, reflecting the focus of NGACOs on building relationships with SNFs to coordinate care transitions. For the first time since the model's inception, NGACOs reduced acute care spending, the largest category of Medicare spending. However, after accounting for shared savings and CCR payouts, the NGACO model increased total Medicare expenditures by a statistically insignificant 0.7 percent in PY4 and, cumulatively, by a statistically significant 0.4 percent.

A mismatch between CMS financial benchmarking and NGACO experience with spending impacts may explain modest model-wide spending reductions and net spending increases. CMS calculates financial performance relative to national benchmarks, while our model evaluation compared NGACO performance on spending and utilization measures relative to a matched comparison group. As noted in Chapter 3, one-third of NGACOs had discordant financial and evaluation results. Some of the NGACOs with discordant results left the model because of financial losses even though they reduced gross spending, while others remained in the model with financial gains even though they increased gross spending.

Variation in performance across NGACOs may also contribute to modest model-wide gross spending reductions and increased net spending. Approximately one-quarter of the NGACOs that ever participated in the model achieved cumulative spending reductions, while one NGACO significantly increased gross spending, and the remainder had statistically insignificant or uninterpretable impacts. NGACOs that lowered spending did so in three categories that account for the highest percentage of Medicare costs—acute care hospital, outpatient facility, and professional services. On average, the NGAGOs that reduced spending shared the following characteristics: 1) operating in markets with higher per capita Medicare spending; 2) prior experience with Medicare ACOs at the organizational and provider levels; 3) serving beneficiaries with greater clinical needs and fewer social needs like low income or disability; and 4) selecting higher levels of risk and PBP arrangements. However, no single factor explains NGACO model performance through the fourth performance year.

Our evaluation used qualitative comparative analysis (QCA) to identify combinations of factors that together create pathways to reduced Medicare spending. Our conceptual framework guided assessment of market, organizational, provider, beneficiary, model feature, and implementation-related factors that may, in distinctive combinations, explain differences in NGACO outcomes. Several findings from the QCA are consistent with model-wide findings; however, there remain opportunities for NGACOs to achieve spending reductions regardless of market efficiency, ACO experience, beneficiary needs, and risk arrangement selected.

Three out of five pathways to gross spending reductions occurred in markets with high per capita Medicare FFS spending. This finding confirming our hypothesis that NGACOs in more expensive (i.e., less efficient) markets had greater opportunity to achieve savings. Most NGACOs that lowered spending were represented in the three pathways. They included physician practice-affiliated NGACOs with larger beneficiary populations; physician practice-affiliated NGACOs with less ACO experience and/or smaller beneficiary populations; and hospital-affiliated NGACOs with more ACO experience and/or larger beneficiary populations. Notably, less experienced physician practice-affiliated NGACOs with less complex beneficiary populations achieved spending reductions.

There are two pathways to spending reductions for NGACOs in markets with low per capita Medicare FFS spending. Physician practice-affiliated NGACOs in these markets were able to lower costs when: 1) they served smaller beneficiary populations with fewer chronic conditions and were more likely to be dually eligible, or 2) they had more Medicare ACO experience and less complex beneficiary populations. Hospital-affiliated NGACOs were able to achieve spending reductions in low-cost markets when they had large beneficiary populations.

Exhibit 6.1. Summary of Pathways to Gross Spending Reductions

Larger Physician Practice NGACOs in High-Spending Markets (4 NGACOs)	Physician Practice NGACOs in High-Spending Markets with Smaller Beneficiary Populations and/or Less Experience (8 NGACOs)	Physician Practice NGACOs in Low-Spending Markets with Smaller Beneficiary Populations or More Experience (3 NGACOs)

Hospital-affiliated NGACOs in High-Spending Markets with Larger Beneficiary Populations and/or More Experience (8 NGACOs)	Larger Hospital-affiliated NGACOs in Low-Spending Markets (5 NGACOs)

None of the five pathways associated with reduced gross spending pointed to the need for NGACOs to take on higher levels of risk. Our previous evaluation report demonstrated that NGACOs that took on 100 percent risk had greater spending reductions than did those that took on 80 percent risk. However, risk level appears to be less important when considered in combination with other factors.

All NGACOs on the successful pathways shared a dedication to data analytics for population health management. Our previous evaluation report noted how NGACOs leveraged prospective alignment lists and invested in data analytic infrastructure to risk stratify patients and identify opportunities for care management. In this report, we documented how NGACOs that reduced spending built HIT systems and equipped providers and care managers with actionable

information on their patients. These findings underscore the importance of making data available to APM participants, to move to a population-wide health prevention and management.

NGACOs affiliated either with hospitals or with physician practices can achieve spending reductions under favorable conditions at the market, provider, and beneficiary levels. This finding represents a departure from previous evaluations, which have found advantages for physician-led ACOs. NGACOs tend to reduce spending in different categories based on their organizational affiliation. Physician practice-affiliated NGACOs are more likely to reduce acute care spending, and hospital-affiliated NGACOs are more likely to reduce spending on professional services. NGACOs may not incentivize spending reductions in categories that cut into their bottom line revenue; however, there are opportunities to lower cost, regardless of organizational affiliation.

Our evaluation has three important limitations.

The pathways that we have identified account for approaches to improving quality and reducing spending, but we have yet to fully explore implementation approaches and incorporate them into our analyses. As a result, our current evaluation does not address relationships between specific implementation strategies and spending. NGACOs that do not fall within the identified pathways may have used similar approaches to NGACOs within the pathways, with less success, reflecting unmeasured aspects of implementation. We plan to conduct additional analyses that incorporate implementation approaches for our final evaluation report to refine the pathways identified to date.

■ The five pathways capture only half of the NGACO-years with spending reductions, indicating that our evaluation to date has not accounted for all factors that contribute to NGACO performance. In our final report, we will explore additional factors, such as the coexistence of other CMMI initiatives in a given market, which may contribute to NGACOs' ability to achieve spending reductions.
■ We are unable to determine the relative importance of the individual factors identified as associated with spending reductions. Certain factors may explain more variance in outcomes than others; however, changes in a particular factor do not necessarily contribute more or less to a change in outcome, particularly when combinations of factors work in concert to affect performance. To date, our evaluation findings allow us to observe general patterns among NGACOs that achieved spending reductions but do not allow us to identify precisely which factor(s) are most important.

Despite these limitations, our evaluation provides valuable insights into how NGACOs are responding to incentives under the model; how they are targeting different areas of utilization and spending and how such targeting varies by organizational affiliation; and what factors at the market, structural, and model feature levels are generally associated with spending reductions.