

FIRST ANNUAL REPORT

Next Generation Accountable Care Organization (NGACO) Model Evaluation

August 27, 2018

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In addition, NORC wishes to acknowledge the contributions and support of our partners at the **Actuarial Research Corporation, JEN Associates**, and Jon Christianson, Bryan Dowd, Roger Feldman, and Katie White of the **University of Minnesota**.

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FIRST ANNUAL REPORT

Next Generation (NG) Accountable Care Organization (ACO) Model Evaluation

IMPACT OF NGACO MODEL ON MEDICARE SPENDING AND BENEFICIARY OUTCOMES

Performance Year 1 (2016)

Prepared by NORC at the University of Chicago

2016 NGACOs, BY THE NUMBERS

18	Active NGACOs in 2016 ¹
15	NGACOs with prior Medicare ACO experience
31,070	NGACO network providers ²
775	NGACO network facilities
477,197	Beneficiaries aligned to NGACO participating providers

Impact measured using Medicare claims and difference-in-differences design:

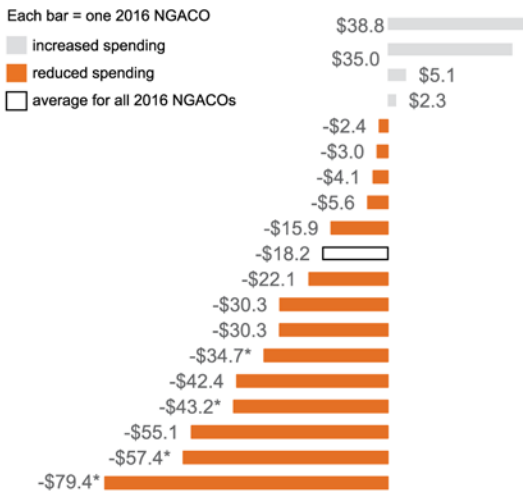
- beneficiaries aligned to 2016 NGACO participating providers vs. non-NGACO Medicare beneficiaries
- three baseline years and one performance year
- total Medicare spending, spending by care setting and service, four utilization measures, and four quality of care measures

GROSS REDUCTIONS IN SPENDING

Estimated gross reduction in Medicare spending = \$18.20 per beneficiary per month (PBPM)

2016 NGACOs are associated with 1.7% reduction in Medicare spending for aligned beneficiaries

Estimated aggregate reduction in Medicare spending = **\$100.09 million (2016)**



In \$ (dollars) PBPM
*Change in spending reaches statistical significance (p<0.10)

IMPROVED UTILIZATION & QUALITY OF CARE

Per 1,000 beneficiaries aligned to NGACO providers,

1.7 fewer	acute care hospital days per month	1.3% ↓
15.6 fewer	nonhospital evaluation and management visits per month	1.5% ↓
20.4 more	annual wellness visits per year	11.9% ↑

NET REDUCTIONS IN SPENDING

Estimated net reduction (2016) = estimated gross reduction (aggregate) minus CMS Shared Savings Payments = **\$62.12 million**

\$11.20	PBPM
1.1%	reduction in Medicare spending

CONTRIBUTORS TO REDUCED SPENDING

Decrease in spending in skilled nursing facility setting.

Four NGACOs accounted for more than half (~57%) of the reduction in Medicare spending associated with the NGACO Model.

¹ACOs with financial responsibility in the model as of April 1, 2016

²Includes both NGACO participating and preferred providers.

Executive Summary

Overview

Medicare Accountable Care Organizations [ACOs] are “groups of doctors, hospitals, and other health care providers and suppliers who come together voluntarily to provide coordinated, high-quality care at lower costs to their original Medicare patients.”¹ They are one of many value-based care programs developed by CMS since 2008 to reward health care providers with incentives tied to the quality of care delivered to Medicare beneficiaries.

The Next Generation ACO [NGACO] Model was launched in January 2016. NGACOs have nearly complete financial risk sharing (either 80 percent or 100 percent risk) and must take on downside risk (risk for losses), unlike predecessor ACO models including the Medicare Shared Savings Program and Pioneer models. In addition, there are no minimum savings or loss requirements. To make this level of risk attractive to prospective NGACOs, several features are offered that promise a greater ability to manage enrolled populations.² These features include prospective setting of financial benchmarks and prospective alignment of beneficiaries; optional non-Fee For Service [FFS] payment mechanisms (based on achieved savings) to support infrastructure development or population-based care; three optional benefit enhancements that waive certain Medicare requirements around SNF admissions, telehealth, and post-discharge home visits; and provisions for beneficiaries to voluntarily align with an NGACO and to receive an incentive for an annual wellness visit from an NGACO-affiliated provider.

NORC’s first annual report from our mixed methods evaluation of the NGACO Model presents initial descriptive and analytic findings for the 18 NGACOs that launched in 2016, were active for at least one quarter and were financially responsible in the model’s first performance year (PY1). Analysis of program documents, and of interviews and surveys with ACO leadership were conducted to identify organizational characteristics, NGACO model features selected for PY1 (2016), and selected market characteristics; and to describe early implementation experience. We measured impact using Medicare claims and a difference-in-differences [DID] design. Our analysis estimated the outcomes of the NGACO for the 477,197 beneficiaries aligned during 2016 to NGACO participating providers, compared with non-NGACO Medicare beneficiaries, over three baseline years and PY1. Claims-based measures included total Medicare spending, spending by care setting and service, four utilization measures, and four quality of care measures.

The evaluation is organized around questions in four domains: model features and approaches, model impact, variations in impact and replicability of model effects; and implementation experience. We hypothesize that the context within which an NGACO operates—including both policy and legal frameworks and market characteristics—influences NGACOs’ organizational structure and implementation experience, including the NGACO model features selected. Each NGACO’s approach

¹ Centers for Medicare & Medicaid Services. Next Generation ACO Model. <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/>. Accessed January 16, 2018.

² Centers for Medicare & Medicaid Services, CMS. Next Generation ACO Model request for applications. <https://innovation.cms.gov/Files/x/nextgenacorfa.pdf>. Accessed January 29, 2018.

also reflects the characteristics of affiliated providers and those of the Medicare beneficiaries aligned with the NGACO model through their providers. Both beneficiary characteristics and implementation experience contribute to NGACO model performance and prospects for sustaining and replicating the model.

What features characterize the 2016 NGACOs?

Fifteen of the 2016 NGACOs reported prior Medicare ACO experience, which ACO leaders describe as informing the choice of NGACO model options. ACOs with value-based contracting experience, including managed care experience (Medicare Advantage [MA] or commercial ACO) would be expected to achieve savings. In interviews, many NGACO leadership teams mentioned that participating in the model enabled them to build on prior experience with alternative payment models, with the NGACO model a logical next step in the organization's ongoing movement toward risk-sharing and value-based purchasing aligned to populations. Other motivations cited included enabling the ACO to stay competitive in order to attract physicians to their network and to derive further competitive advantage from NGACO model features.

Eleven of the 18 2016 NGACOs were integrated delivery systems (IDS), comprised of primary and specialty physicians and hospitals under a common ownership structure. The average 2016 NGACO served approximately 26,500 beneficiaries; while ACOs that were an IDS served more beneficiaries on average than did non-IDS ACOs, the diversity in size across IDS ACOs is notable. An IDS **may offer greater capacity to support care coordination and management across settings, as its organizational features (e.g., governance structure, health IT and analytics systems) may be less fragmented than non-IDS ACOs.** In addition, ACOs had more years of experience than did non-IDS ACOs.

On average, physicians represented more than half of each NGACO's governing board membership, which ranged in size from three to 21 members. Other members included hospital representatives, patients, and community providers. Main board responsibilities typically were oversight of finances and data analytics.

Most 2016 NGACOs chose to assume 80 percent risk and the fee-for-service (FFS) payment mechanism. ACO leaders reported choosing the more conservative risk-sharing option (rather than 100 percent risk) and payment arrangement, based on their previous experience with value-based purchasing and characterization of their organizational infrastructure as not yet adequate to support population-based payment.

The 2016 NGACOs' provider networks included 31,070 individual clinicians and 775 health care facilities. Over half (53 percent) of individual practitioners were participating providers—to which NGACO beneficiaries are aligned as a usual source of care—and 47 percent were preferred providers, who may be affiliated with one or more ACOs and do not have aligned beneficiaries. Primary care clinicians were the most common type of individual provider, accounting for almost one-third of both participating and preferred providers. Three-quarters of facilities were affiliated as preferred providers. Skilled nursing facilities [SNF] were the most common type of institutional provider. Within these overall trends, provider networks varied considerably across the 2016 NGACOs in composition, size, and breadth of affiliated practitioner specialties and facility types.

Network adequacy may be reflected in the balance of primary versus specialty care providers. ACO leaders noted that primary care providers are critical because of their focus on preventive care and comprehensive care management. Alternatively, referrals to specialists can be important for management of chronic conditions. Among network facilities, three-quarters were affiliated as preferred providers and SNFs were the most common type of institutional provider. NGACO leaders identified post-acute care settings, particularly SNFs, as one of the biggest opportunities to reduce total Medicare spending for their beneficiaries. In general, NGACOs developed their provider networks with consideration of a provider's electronic health record [EHR] capabilities, clinical performance, and experience with care management.

What are the characteristics of 2016 NGACO markets?

Considered geographically, many NGACOs have contiguous or overlapping markets and are concentrated in the Midwest (11 ACOs), with pockets in the Southeast (7 ACOs) and Northeast (4 ACOs). Measured in terms of hospital referral regions (HRRs), NGACO market areas range from two to 12 HRRs, with three being the typical number (mode) of HRRs spanned by an NGACO. NGACO markets in Southern California, Southern New England, and Illinois have the greatest number of Medicare beneficiaries. Populations within the markets vary in size from about 800,000 residents to more than 19 million, and the corresponding number of Medicare beneficiaries varies from about 166,000 to 3.1 million people. **On average, a 2016 NGACO served about 26,500 aligned beneficiaries (median of 24,219 beneficiaries).** However, NGACO size varied considerably, with NGACOs serving between 8,286 and 65,487 beneficiaries during PY1.

Medicare beneficiaries in NGACO markets have a greater disease burden (as measured by hierarchical condition category [HCC] risk score), compared with beneficiaries in non-NGACO markets, and are less likely to live in rural areas. NGACO market area beneficiaries resemble those in non-NGACO markets in terms of racial-ethnic composition and eligibility for Medicaid, although there is marked variation across the 2016 NGACOs.

Markets influence the availability of providers and partner institutions, including SNF and home health care agencies, as well as workforce available to implement home visit or telehealth waivers. In general, **health care provider markets served by 2016 NGACOs are comparable to non-NGACO markets,** in terms of the number of primary care physicians per 1,000 residents, the concentration of hospital markets (dominated by a few hospital systems), and standardized, risk-adjusted per-capita Medicare spending. However, there is substantial variation across 2016 NGACOs in these measures: the number of primary care physicians per 1,000 residents ranged from 56 to 99, nine NGACOs operated primarily in concentrated hospital markets, and Medicare spending ranged from \$8,556 to \$10,659 per capita.

These markets also have high penetration rates of Medicare Advantage [MA] plans and are more likely to be home to Medicare Shared Savings Program [SSP] and Pioneer ACOs, as well as Medicaid and commercial ACOs. Higher levels of market concentration may motivate organizations to join the NGACO model. As noted above, many NGACO leadership teams noted that participating in the model enabled them to leverage experience with alternative payment models.

How are the 2016 NGACOs implementing the model?

NGACOs typically employed staff to fill administrative, care management, and HIT/data analytics roles. Almost half of directly employed care managers and administrative staff were hired specifically to support the model. Of the five NGACOs that reported using contract staff, four were non-integrated delivery systems [IDSs] that may not have been able to leverage existing organizational staff.

Care management is a core focus, involving care coordination across providers and settings, care transitions, end-of-life care, and beneficiary engagement around self-management (e.g., through annual wellness visits [AWVs]). Most NGACOs have built on their existing care management infrastructure. NGACOs that were an IDS and those with former Medicare ACO experience leveraged their current capacity, adding staff and services and expanding to new settings and populations, typically medically complex beneficiaries or those with multiple comorbidities. Nearly all 2016 NGACOs address care transitions, especially related to skilled nursing facilities [SNF], with nine NGACOs using an evidence-based transition protocol. Interview and survey findings noted widespread use of centralized staff for care management, standardized processes and protocols, chronic disease management and medical programs, and care team expansion or integration. Services offered may reflect provider network composition, organizational characteristics, and/or available funding. For example, while many 2016 NGACOs addressed end-of-life care through beneficiary education and advance care planning, those that were an IDS were more likely to offer home-based palliative care and conversion of treatment plans into portable medical orders.

NGACO leadership noted the importance of expanding health information technology (HIT) and data analytic capacity to support the model. For NGACOs with previous Medicare SSP or Pioneer ACO experience, increasing this capacity was described as one of the biggest changes made in joining the NGACO model. The 2016 NGACOs use post-adjudicated claims and electronic clinical data to support model operations, typically integrating six or seven types of data and six different types of HIT. These data are used to target beneficiaries for care management, monitor performance (primarily financial, claims-based utilization, patient satisfaction or experience, and practice-based quality), forecast costs, and manage financial risk (e.g., likely shared savings or losses). About half of the NGACOs are interacting with at least nine distinct electronic health record [EHR] systems. Data sharing and interoperability among all providers was limited and were a priority for improvement. In addition, NGACO leaders reported developing HIT support for the benefit enhancements, including building systems to flag aligned beneficiaries.

Ten 2016 NGACOs reported fully implementing the SNF benefit enhancement, the most commonly elected of the three optional enhancements under the model. The SNF benefit waives the 3-day hospital stay required prior to a SNF admission under certain conditions, enabling Medicare payment. The predominance of this waiver service likely reflects a focus on post-acute care and related spending, as well as prior organizational or provider experience with SNF waiver services under Medicare Advantage [MA] or other ACO programs. NGACO staff reported fewer barriers to SNF waiver implementation, compared with prospects for either the telehealth waiver or the waiver for post-discharge home health services. Few 2016 NGACOs took up either telehealth or post-discharge home visit waivers, which were used mostly for a one time check following a hospitalization.

We observed a **nearly 12 percent increase in aligned beneficiaries with an AWW, relative to the comparison group**. This finding likely reflects a concerted focus by NGACOs on engaging beneficiaries in self-management by means of the AWW; in interviews, NGACO leadership described promoting AWWs as a unique chance to engage the larger population of lower-risk (e.g., non-hospitalized) Medicare beneficiaries.

NGACO-aligned beneficiaries typically had patterns of care reflecting greater in-network use relative to comparators. As a group, the 2016 NGACOs have higher proportions of revenue (total qualified evaluation & management visit [QEM] payments) generated by aligned beneficiaries (contract penetration) and beneficiaries receiving care inside their provider network (continuity of care). However, 37 percent of Medicare spending for NGACO-aligned beneficiaries occurs exclusively with providers outside the NGACO network and 47 percent reflects a mix of in and out of network providers (leakage). In addition, patterns of care for aligned beneficiaries varies markedly across the 2016 NGACOs.

Open, fee-for-service [FFS] networks challenged the 2016 NGACOs. Aligned beneficiaries enjoy the same unrestricted choice of providers as do those in traditional FFS Medicare, and NGACOs may have a limited ability to motivate beneficiaries to seek care in-network. Nearly half of the NGACOs identified prospective alignment as one of the most appealing features of the model; it allowed them to “know” their population, forecast ACO performance, and proactively manage their patient panel. Yet open networks may result in fragmented care and less ability for NGACOs to coordinate through participating or preferred providers, which may lessen the model’s impact on cost and quality of care.

How Did the 2016 NGACOs Perform in Their First Year?

We assessed the impact of NGACO incentives on gross Medicare spending, health services utilization, and quality of care for aligned Medicare beneficiaries in PY1 (2016). In addition, we estimated the net change in Medicare spending after accounting for shared savings payments made by CMS to 2016 NGACOs and shared losses recovered by CMS from NGACOs. Early findings suggests positive impacts of the NGACO model for its providers’ beneficiaries in the first year.

In PY1, 2016 NGACO providers *reduced spending* for their beneficiaries by \$100.08 million (1.7 percent). The estimated decrease in Medicare spending of -\$18.20 per beneficiary per month (PBPM) in PY1 is similar to the decrease noted in the first two years of the Pioneer ACO model and larger than the decrease noted for Medicare SSP ACOs in the early years.³ However, there was *wide variation in spending* across ACOs. Seven NGACOs showed Medicare spending point estimates exceeding -\$30 PBPM, while two showed point estimates exceeding +\$30 PBPM. Former Pioneer and SSP ACOs, as well as new ACOs with prior Medicare Advantage risk-sharing experience showed savings.

Most of the decline in spending could be attributed to reduced Medicare spending on post-acute care, most notably on spending in skilled nursing facilities (SNFs) that reached statistical

³ Nyweide DJ, Lee W, Cuerdon TT, Pham HH, Cox M, Rajkumar R, Conway PH. Association of Pioneer Accountable Care Organizations vs. traditional Medicare fee-for-service with spending, utilization, and patient experience. *JAMA* 2015; 313(21):2152–2161; McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early performance of accountable care organizations in Medicare. *New Engl, J Med.* 2016; 374 (24):2357–2366.

significance for three ACOs (-\$16.61 million, \$3.00 PBPM, or -3.1 percent). In addition, we found **reductions in the number of inpatient hospital days and nonhospital evaluation and management (E&M) visits per month (1.7 and 15.6 fewer per 1,000 aligned beneficiaries, respectively) and increases in the number of annual wellness visits (by almost 12 percent) among NGACO providers.**

Exhibit ES.1 presents summary findings about the estimated impact of the NGACO model on spending, utilization, and quality of care for all 2016 NGACOs. A difference-in-differences (DID) design and propensity score weighting were used to compare changes in claims-based outcomes for NGACO-aligned beneficiaries and a comparison group of similar beneficiaries receiving usual care before (baseline period of three years) and after (PY1) the model’s onset. Results are presented as DID impact and percentage impact for the NGACO group in PY1, relative to what would have happened to its beneficiaries if the model were not implemented. The DID impact and percentage impact are estimated from DID models that pooled all 18 NGACOs in the 2016 Class. We also denote the number of NGACOs with statistically significant and favorable findings, based on DID models that were estimated separately for each NGACO.

Exhibit ES.1. Estimated Impacts of 2016 NGACO Model on Medicare Spending, Utilization, and Quality in PY1

Outcome	Impact	Percentage Impact [§]	# of ACOs with Significant and Favorable Findings
FOR BENEFICIARIES OF NGACO PROVIDERS (18 ACOs)			
Total Medicare Spending (\$) (Parts A & B)	↓ Decrease	-1.7%	4
Utilization			
Acute Care Hospital admissions	NS	-0.6%	2
Acute Care Hospital days	↓ Decrease	-1.3%	1
Emergency department visits and Observation Stays	- \$	- \$	1
Evaluation and management visits (excluding those in acute care hospital and ED setting)	↓ Decrease	-1.5%	4
Quality			
Hospital Admissions for ambulatory care sensitive conditions	NS	2.5%	1
Unplanned 30-day hospital readmissions	NS	1.1%	-
Unplanned 30-day hospitalizations after skilled nursing facility discharge	NS	0.9%	-
Annual wellness visit	↑ Increase	11.9%	2
Spending Across Care Settings and Services			
Outpatient/Office	NS	-0.7%	2
Acute Care Hospital Setting	NS	-1.0%	2
Skilled Nursing Facility Setting	↓ Decrease	-3.1%	3
Other Post-Acute Care Setting	NS	-4.3%	2
Home Health	- \$	- \$	1
Hospice Setting	-\$	-\$	5
Durable Medical Equipment	NS	2.3%	-

NOTES: ↑ =Significance determined at p <0.1; ↑ significant increase; ↓ = significant decrease; NS = does not reach statistical significance; §significance; \$= impact not interpretable for 2016 NGACOs with DID design; percentage change relative to expected outcome for 2016 NGACOs, absent the NGACO model; decreases in measures of spending, utilization, and quality of care (with the exception of annual wellness visits) deemed to be favorable.⁴

⁴ Unplanned 30-day hospitalizations after SNF discharge includes unplanned direct transfers from SNFs to acute inpatient hospitals. Outpatient/office spending includes Part B facility and professional services for outpatient hospital care (including ED

Early findings show a significant reduction in Medicare Part A and B spending, totaling \$100.09 million. The estimated relative decrease was \$18.20 per beneficiary per month (PBPM) or 1.7 percent of the estimated average Medicare spending for NGACO beneficiaries in 2016, absent the model. We found statistically significant reductions in spending while a beneficiary is in the SNF setting. Reductions in total Medicare spending varied across ACOs, with four of the 18 ACOs accounting for more than half of the total estimated reduction (about 57 percent). Two new ACOs, one former Pioneer ACO and one former Medicare SSP ACO, showed significant spending reductions, suggesting that both former and new Medicare ACOs had opportunities for reducing Medicare spending under the model.

There was a significant relative reduction in inpatient hospital days and evaluation and management (E&M) visits (outside acute care hospital and ED settings). While the number of hospitalizations did not change, there appears to be a significant trend towards shorter hospital lengths of stay. NGACO providers' beneficiaries had 9,566 fewer estimated inpatient hospital days in 2016, or 1.7 fewer days per 1,000 beneficiaries per month (1.3 percent fewer). Beneficiaries of NGACO providers had 85,619 fewer estimated non-hospital E&M visits in 2016, or 15.6 fewer visits per 1,000 beneficiaries per month (1.5 percent fewer). While findings from other CMS models suggests that NGACOs' care coordination approaches may have offset some E&M use, further investigation is warranted.^{5,6}

There was a significant relative increase in beneficiaries receiving annual wellness visits (AWVs). Although CMS did not implement the coordinated care reward for beneficiaries receiving an AWV until 2017, analysis of Medicare claims found an increase of 9,756 NGACO beneficiaries having had AWVs in 2016, or 20.4 additional beneficiaries per 1,000 with visits, representing an increase of 11.9 percent.

Impact on measures of spending, utilization, and quality of care were favorable for most of 18 NGACOs in PY1, with few showing significant findings. Many NGACOs were developing their approaches to an evolving model in PY1, and described ongoing efforts to better adapt them to their beneficiaries, providers, and markets. Impacts may improve as these organizations learn and mature in the model. The four NGACOs that significantly reduced total Medicare spending, had favorable reductions in spending in at least one dimension of post-acute care (SNF or other post-acute care setting), in length of stay and spending in the acute care hospital setting, and spending in the hospice setting. All four NGACOs favorably reduced either spending or E&M visits in the outpatient/office, and three NGACOs favorably reduced home health spending. These favorable reductions did not necessarily have to reach statistical significance for there to be a significant reduction in total Medicare spending. Our findings

visits that do not result in acute care hospital stays), as well as professional services in office and home. Spending in acute care hospital setting includes facility and professional services rendered in acute care hospital stays. Spending in skilled nursing facility setting includes facility and professional services rendered during SNF stays. Spending in other post-acute care setting includes spending in long-term care hospitals, inpatient rehabilitation hospitals, and swing beds for rehabilitation, comprehensive outpatient rehabilitation facilities, and professional services rendered during days of other post-acute care use. Home health spending includes spending for home health services. Spending in hospice setting includes facility and professional services rendered during days of hospice use. Durable medical equipment spending includes Medicare Part B spending for DME supplies.

⁵ Dale, Stacy B., Arkadipta Ghosh, Deborah N. Peikes, Timothy J. Day, Frank B. Yoon, Erin Fries Taylor, Kaylyn Swankoski et al. "Two-year costs and quality in the comprehensive primary care initiative." *New England Journal of Medicine* 374, no. 24 (2016): 2345-2356.

⁶ Nyweide, David J., Woolton Lee, Timothy T. Cuerdon, Hoangmai H. Pham, Megan Cox, Rahul Rajkumar, and Patrick H. Conway. "Association of Pioneer Accountable Care Organizations vs. traditional Medicare fee for service with spending, utilization, and patient experience." *JAMA* 313, no. 21 (2015): 2152-2161.

suggest that there are multiple pathways across various care settings for ACOs to total lower Medicare spending.

We calculated a net reduction in Medicare spending totaling \$62.12 million from NGACOs in 2016, corresponding to a decrease of \$11.20 PBPM, or 1.1 percent. The evaluation defines net reduction as the estimated (gross) reduction in Medicare spending (\$100.09 million) less the shared savings payments CMS made to NGACOs in 2016 (\$37.97 million). While the evaluation uses a comparison group to assess impact, ACOs are rewarded under the model based on how actual Medicare spending for their aligned beneficiary population compares with a target expenditure level or “benchmark” for each ACO.⁷ CMS shares savings with ACOs that spend under the benchmark, while those that spend over the benchmark pay CMS a share of the loss.⁸ In 2016, CMS’ payments to NGACOs (after accounting for the losses recovered from ACOs) totaled \$37.97 million.⁹

Limitations constrain the interpretation of our analyses to date. Chief among them are the potential impact on modeling of the wide variation in Medicare spending among our study sample and the influence of spillover (ACO-affiliated providers delivering care to both aligned beneficiaries and comparators) and of other value-based purchasing models, including other CMMI initiatives.

What can we say about the NGACO model to date?

Providers who joined the NGACO model in 2016 (PY1) reduced Medicare Parts A and B spending for their beneficiaries by \$100.08 million (or \$18.20 per beneficiary per month [PBPM]), relative to spending for these beneficiaries absent the model. After accounting for shared savings payments made by CMS to 2016 NGACOs, the net spending reduction for Medicare was \$62.10 million (or \$11.20 PBPM). Reduced spending in one setting (skilled nursing facilities [SNF]) and reduced utilization in two settings (inpatient hospital days and outpatient evaluation and management [E&M] visits) may have contributed to the overall reduction in total Medicare spending.¹⁰ The number of NGACO beneficiaries with annual wellness visits (AWVs) increased, indicating improved quality of care. Four of the 18 NGACOs—a former Pioneer, a former SSP, and two new ACOs—showed decreases in Medicare spending that reached statistical significance ($p < 0.10$) and accounted for more than half of the total savings noted for the 2016 NGACOs.

Most 2016 NGACOs identified as an integrated delivery system [IDS] and reported prior value-based contracting experience, which appears to have informed the choice of NGACO model features. ACO leaders noted that **primary care providers are critical to value-based purchasing models** because of their focus on preventive care and comprehensive care management. **Alongside strong relationships**

⁷ This benchmark is based on the ACO’s previous year’s claims and quality data and is adjusted for the level of risk (health status) of the ACO’s beneficiary population and for regional variation in prices. For the full detail of the benchmarking methodology, see RTI International. *Next Generation ACO model benchmarking methods*. December 2015. Document number RTI.NGACO.METHODS.BNMRK.01.00.04. Available at <https://innovation.cms.gov/Files/x/nextgenaco-methodology.pdf>.

⁸ The shared savings/losses amounts take into account other factors, including the nature of the ACO’s risk arrangement (80% or 100% risk, plus the ACO’s elected savings/losses cap percentage, between 5% and 15%) and the reduction of shared savings payments by 2% due to sequestration.

⁹ The gross difference between the ACOs’ model benchmark and actual expenditures in 2016 was \$48.3 million.

¹⁰ Fewer inpatient hospital days may translate to fewer inpatient professional services, contributing to lower Medicare spending in the inpatient hospital setting

with providers and strategic composition of provider networks (e.g., to enable access to specialty care), partnerships with SNFs and other post-acute care facilities may be an important component to success.

Market characteristics likely play key roles in influencing NGACO organizational features, including the choice of NGACO model options, and NGACO implementation experience. Many 2016 NGACO markets include other Medicare and commercial ACOs and high penetration rates of Medicare Advantage [MA] plans. **All four NGACOs with statistically significant reductions in total Medicare spending are located in markets with higher MA concentration and two of the four have prior risk-sharing experience with MA.** Markets also influence the availability of providers and partner institutions, including SNF and home health care agencies, as well as workforce available to implement the model's three optional benefit enhancements.

Nearly half of the 2016 NGACO leaders identified prospective alignment and the optional benefit enhancements as model features that motivated them to join the model and represented competitive advantages. However, both features require supportive HIT and data analytics, as well as data exchange, and processes utilized by NGACOs to achieve these functions were likely to affect performance. Managing financial risk by tracking utilization and quality measures is a new, additional focus for most NGACOs. ACO leadership reported major challenges in achieving interoperability.

We observed consistency across the 2016 NGACOs in approaches to care management, including care coordination, care transitions, end-of-life supports, and beneficiary self-management (e.g., through annual wellness visits); organizations that were integrated delivery systems appeared to leverage internal resources to offer more extensive services, for example, in the area of advanced illness management.

Of the three optional benefit enhancements, **the SNF waiver was the most commonly implemented, by ten of the 2016 NGACOs. This may reflect a focus on post-acute care that appears to be associated with reduced spending while a beneficiary is in a SNF setting.** An overall reduction in SNF spending across the 2016 NGACOs reaches statistical significance, and SNFs are the most common institutional providers in NGACO networks. The three NGACOs with a significant reduction in Medicare spending in the SNF setting each had reported electing the SNF waiver.

Findings are limited by the scope of the evaluation to date. Analyses are for the first performance year (PY1, 2016) only, reflecting the availability of claims and administrative data and the early stage of primary data collection (e.g., surveys, interviews, site visits) planned as part of the evaluation. Results may change in PY2 as more data become available and as NGACOs have additional time to implement the model and refine their operations in light of experience. Finally, our mixed-methods linkage of data and findings across claims, survey, and qualitative analyses is in its early stages, with analyses based on these linkages pending; we anticipate presenting initial mixed-methods findings in NORC's second annual report to CMMI (fall 2018). Our preliminary findings are generating new exploratory hypotheses to be more fully tested as more data are collected, generated, and analyzed in the months and years to come.

Future Reports

Organizational characteristics and election of model features. We plan to explore how organizational and model features impact implementation and to describe how measures of networks such as the *composition of primary and specialty care providers, the composition and relationships across facility types, and provider turn-over* correlate with changes in performance. Organizational types used in this initial analysis to chart variation across NGACOs will be employed to explain the different capacities NGACOs can leverage to implement the model. In addition, we will also draw on survey and qualitative data to understand the strategies that ACOs use to reduce spending across care settings and how relationships and partnerships across the care continuum can improve performance.

Markets. Subsequent analyses will examine how the market concentration of ACOs and MA plans may impact performance. We will identify and account for the participation of NGACO and comparison beneficiaries in BPCI, CJR, and other CMS initiatives that are identifiable and may overlap with the NGACO model. In addition, we will continue to examine the effects of spillover and whether provider affiliation with ACOs across payer types can impact performance. We will also build on findings from our planned qualitative and survey data on the role of market characteristics (e.g., provider concentration, health IT interoperability), to understand how these are related to outcomes at the ACO level.

Implementation. We will consider the ability of NGACOs to expand and enhance data analytic capacity and the influence that this capacity may have on performance outcomes. The various applications of health IT through financial monitoring, supporting care transitions, or engaging beneficiaries, may provide different pathways to success. New data from future provider and beneficiary surveys may provide further insight on specific engagement strategies and their relative importance. We also plan to assess how beneficiary engagement strategies relate to patterns of care, and how configurations of engagement and care-seeking can impact NGACO performance. In addition, we will also examine how variation in beneficiary characteristics, primarily health status and chronic conditions, between ACOs, may be related to performance.

Impacts. Qualitative and survey findings will be integrated to understand how the implementation experience for NGACOs relates to variation in impacts. Our plans include a more fine-grained analysis of spending measures by category and supplementation of our claims-based quality metrics with measures based on beneficiary experience (Consumer Assessment of Healthcare Providers and Systems [CAHPS] surveys) and on clinical process and outcome measures (Group Practice Reporting Option [GPRO] registry). In addition, as more NGACOs join the model in 2017 and 2018, we anticipate greater numbers of observations, allowing us to analyze impacts for subgroups of beneficiary populations of NGACOs. In assessing the model over multiple performance years, we plan to explore the impacts of NGACO financial incentives (greater upside and downside risk) relative to a secondary comparison group of beneficiaries in SSP ACOs that assume only upside risk, as well as the potential mediating effect on providers and beneficiaries of joining and then disaffiliating from an NGACO. Finally, we will use Bayesian approaches to express estimated decreases in Medicare spending under NGACO incentives as probabilities of savings, for easier inference of impacts under the NGACO model.

Chapter 1: Introduction

In January 2016, the Center for Medicare & Medicaid Innovation (CMMI) in the Centers for Medicare & Medicaid Services (CMS) launched the Next Generation Accountable Care Organization (NGACO) model. The NGACO model is one of a series of initiatives to test the range of impacts of alternative payment models on the Medicare program, with a group of NGACOs scheduled to launch in 2016, 2017, and 2018, each for a period running through the end of December 31, 2020. In September 2016, CMMI selected NORC at the University of Chicago to conduct an independent evaluation of the NGACO model.

This is the first annual report on findings from NORC’s evaluation. It describes the NGACOs that launched the model in 2016 and considers implementation experience and outcomes for the first performance year (PY1).

1.1. Overview of the NGACO Model

CMMI defines Medicare Accountable Care Organizations (ACOs) as “groups of doctors, hospitals, and other health care providers and suppliers who come together voluntarily to provide coordinated, high-quality care at lower costs to their original Medicare patients.”¹¹ Medicare ACOs are one type of alternative payment model (APM) developed by CMS since 2008 designed to reward health care providers with incentive payments for the quality of care they give to people with Medicare.

The Next Generation ACO (NGACO) Model was launched in January 2016. Unlike other ACO models, the NGACO model includes **higher levels of shared financial risk and reward than predecessor ACO models**. NGACOs have near complete risk sharing and must take on downside risk (risk for losses). NGACOs select either 80 percent or 100 percent risk, both higher than those required in the Medicare SSP or Pioneer models. In addition, unlike other ACO models, there are no minimum savings or loss requirements. To make this level of risk attractive to prospective NGACOs, the model offers participating ACOs a prospectively determined population of beneficiaries and more predictable financial targets that incorporate both attainment and improvement in quality. This promises a greater ability to manage enrolled populations.¹² The specific features include the following:

- **NGACO performance is compared to a financial benchmark set prospectively at the beginning of a performance year (PY).** Use of a prospective target is intended to make it easier for an ACO to plan strategically to achieve the benchmark, in contrast with other ACO models where final data on performance targets are not known until after the year concludes.
- **Medicare beneficiaries aligned with an NGACO, for whom the NGACO is financially responsible, are identified prospectively** using a two-year look back of claims data prior to the start of a PY. This approach can help ACOs better target interventions to meet beneficiaries’ needs, in contrast with most SSP models, where beneficiaries are known only after the year concludes.

¹¹ Centers for Medicare & Medicaid Services. Next Generation ACO Model. Accessed January 16, 2018. <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/>

¹² Centers for Medicare & Medicaid Services. CMS. Next Generation ACO Model request for applications. <https://innovation.cms.gov/Files/x/nextgenacorfa.pdf>. Accessed January 29, 2018.

- **In addition to the typical claims-based alignment, beneficiaries may opt for voluntary alignment to an NGACO.** Voluntary enrollment can prove challenging to implement but offers a means to encourage closer and more conscious engagement of beneficiaries with an NGACO and its goals. In 2017, NGACOs also had the ability to offer beneficiaries a \$25 reward for receiving an annual wellness visit from NGACO providers.
- **2016 NGACOs could choose one of three forms of payment – traditional fee-for-service (FFS), FFS with the addition of a per-beneficiary per month fee that could be used for infrastructure development, or a population based payment intended to engage providers.** These arrangements are to be recouped out of achieved savings and are not available to Medicare SSP ACO participants (Tracks 1 and 2).
- Finally, **for the NGACO model, there are three optional benefit enhancements,** to provide flexibility in admissions to skilled nursing facilities (SNFs), the delivery of telehealth care, and post-discharge home visits. These enhancements are made possible by conditional waivers of certain Medicare payment requirements, in contrast with other ACO models that have fewer such waivers available.

2016 Next Generation ACOs

Eighteen ACOs were active for at least one quarter in the first performance year (PY1), and as a result, were financially responsible for performance under the Model’s terms. See Exhibit 1.1 for a list of ACO names and headquarter locations. Although 21 ACOs joined the model in 2016, three withdrew before they incurred any financial responsibility—Regal Medical Group, River Health ACO, and WakeMed—leaving a total of 18 that are the focus of this evaluation.¹³ The 18 ACOs include one that withdrew at the end of PY1 (OSF HealthCare System), and one that withdrew at the end of the first quarter of PY2 (Prospect ACO CA). Twenty-eight additional ACOs began in PY2 of the model (i.e., 2017), though two of these ACOs left the model at the end of 2017 and five left in early 2018.

Exhibit 1.1. 2016 NGACOs

ACO Organization Name	Abbreviation	Location
Accountable Care Coalition of Southeast Texas Inc.	ACCST	Houston, TX
Baroma Accountable Care, LLC*	Baroma	Miami, FL
Beacon Health, LLC	Beacon	Brewer, ME
Bellin Health DBA Physician Partners, Ltd.	Bellin	Green Bay, WI
Cornerstone Health Enablement Strategic Solutions, LLC	CHESS	High Point, NC
Deaconess Care Integration	Deaconess	Evansville, IN
Henry Ford Physician Accountable Care Organization	Henry Ford	Detroit, MI
MemorialCare Regional ACO, LLC	MemorialCare	Fountain Valley, CA
Lifeprint (Optum) Accountable Care Organization, LLC	Optum	Phoenix, AZ
OSF HealthCare System [§]	OSF	Peoria, IL
Park Nicollet Health Services	Park Nicollet	St. Louis Park, MN
Pioneer Valley Accountable Care, LLC	Pioneer Valley	Springfield, MA
Prospect ACO CA, LLC [§]	Prospect	Los Angeles, CA

¹³ Four additional organizations were accepted to the model but withdrew prior to the start PY1 in 2016.

ACO Organization Name	Abbreviation	Location
Steward Integrated Care Network, Inc.	Steward	Boston, MA
ThedaCare ACO LLC	ThedaCare	Appleton, WI
Triad HealthCare Network, LLC	Triad	Greensboro, NC
Trinity Health ACO Inc.	Trinity	Wilmington, DE
Iowa (UnityPoint) Health Accountable Care	UnityPoint	West Des Moines, IA

NOTES: This list does not include two ACOs that withdrew from the model before April 1, 2016 (the first quarter of PY1). [§]Participant withdrew from the model after more than one quarter of PY 2016 and did not have financial responsibility for 2016. ^{§§} Participant withdrew from the model in PY 2017 and did have financial responsibility for 2016. *Baroma Accountable Care, LLC officially changed their name to UniPhy ACO after PY1.

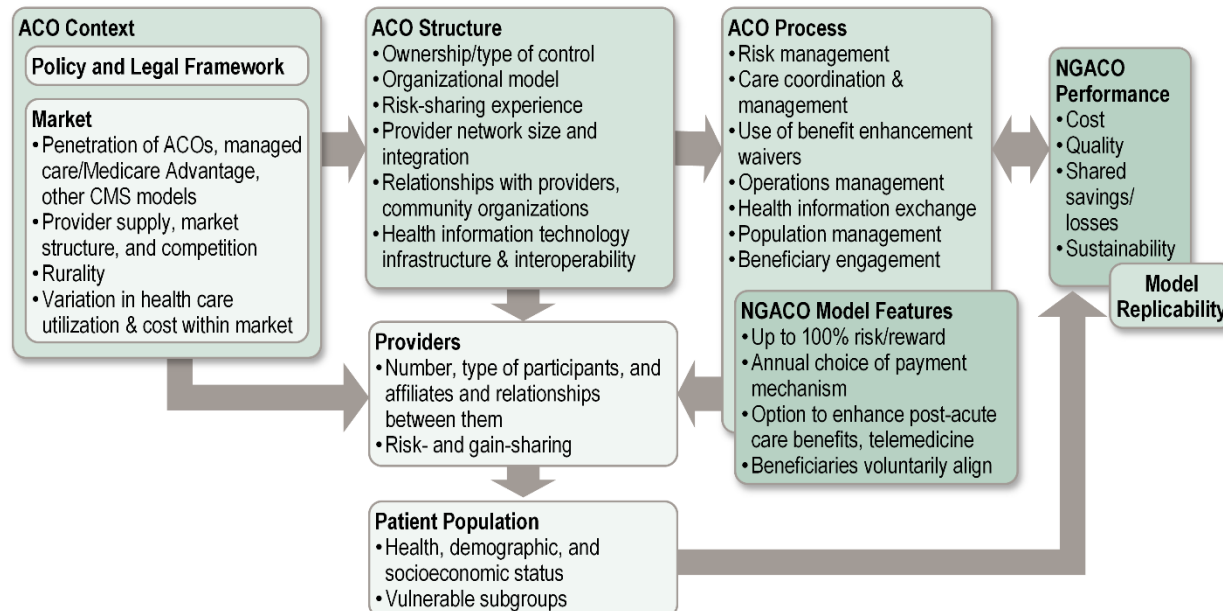
1.2. Overview of the NGACO Model Evaluation

Our approach to the multiple year evaluation of the NGACO model has distinct levels, reflecting the complexity of the program and the research questions to be addressed. We analyze both primary and secondary data to characterize: (1) the structure of NGACOs; (2) the contexts in which they operate; (3) their activities and implementation experience; (4) the impact or performance outcomes of NGACOs relative to Medicare cost, utilization, quality, and beneficiary health and experience; and (5) prospects for sustainability, replicability, and scalability of the model. Our assessment of impact uses a quasi-experimental study design—comparing outcomes for beneficiaries aligned with NGACO providers with a comparison group of beneficiaries receiving usual care (that is, from non-ACO FFS Medicare providers). The conceptual framework that informs our understanding of the NGACO model, and that organizes our approach to evaluation, is described below and includes the following constructs: the ACO context, its structure (e.g., organizational characteristics), provider networks, patient (beneficiary) population, the implementation process (e.g., ACO activities, NGACO model features chosen), performance (including sustainability), and prospects for replication.

Conceptual Framework

Based on existing literature and findings to date from evaluations of previous ACO models, including the Medicare Shared Savings Program [SSP] and Pioneer ACO Model, we have developed a conceptual framework to describe the functioning of the NGACO model; see Exhibit 1.2 below. At a high-level, we hypothesize that the context within which an NGACO operates—including both policy and legal frameworks and market characteristics—influences the NGACO’s organizational structure and implementation experience, including the NGACO model features selected. An NGACO’s approach also reflects the characteristics of affiliated providers and those of Medicare beneficiaries aligned with the NGACO model through their providers. Both beneficiary characteristics and implementation experience contribute to an NGACO’s performance and the prospects to sustain and replicate the model. We elaborate below on the relevance of these concepts to analyze NGACO model performance on cost and quality.

Exhibit 1.2. Conceptual Framework, NGACO Model Evaluation



Context: The characteristics of the external environment (policy, legal and market) in which the NGACO is forming and operating can influence its structure (e.g., its organizational type, resources available, provider networks), its choice of model features, and its performance.¹⁴ ACOs participating in the NGACO model may tailor their organizational and delivery system transformation to fit their local context and choose model features and benefit enhancements that reinforce their approach. Contextual characteristics associated with NGACO formation and performance include socio-demographic characteristics of the population, structure and composition of the local insurance and health care market, level of market competition, cooperation between stakeholders, presence and focus of local multi-stakeholder initiatives, and relevant state-level regulations.¹⁵

ACO Structure, Providers, and Processes: NGACOs’ organizational structure and the care management, quality improvement and financial management processes they implement are critical to their performance and are inevitably influenced and shaped by the context in which NGACOs operate. Characteristics such as ACO size, breadth, and scope of services; integrated delivery system status; leadership type; physician performance management; and payment reform experience are anticipated to

¹⁴ Fisher, E. S., Shortell, S. M., Kreindler, S. A., Van Citters, A. D., & Larson, B. K. (2012). A framework for evaluating the formation, implementation, and performance of accountable care organizations. *Health affairs*, 31(11), 2368-2378.

¹⁵ Our review is based on the following articles: Fisher ES, Shortell SM, Kreindler SA, Van Citters AD, and Larson BK. "A framework for evaluating the formation, implementation, and performance of accountable care organizations." *Health Affairs* 31, no. 11 (2012): 2368-2378; Lewis VA, Colla CH, Carluzzo KL, Kler SE, and Fisher ES. "Accountable care organizations in the United States: market and demographic factors associated with formation." *Health Services Research* 48, no. 6 pt1 (2013): 1840-1858; Ouayogodé MH, Colla CH, and Lewis VA. "Determinants of success in Shared Savings Programs: An analysis of ACO and market characteristics." In *Healthcare*. Elsevier, 2016; Yasaitis LC, Pajeroski W, Polsky D, and Werner RM. "Physicians’ participation in ACOs is lower in places with vulnerable populations than in more affluent communities." *Health Affairs* 35, no. 8 (2016): 1382-1390; and Yeager VA, Zhang Y, and Diana ML. "Analyzing determinants of hospitals’ accountable care organizations participation: a resource dependency theory perspective." *Medical Care Research and Review* 72, no. 6 (2015): 687-706.

play a role;¹⁶ however, evidence to date on the specific ACO features and approaches that affect performance has been limited. Higher baseline spending and providers' payment reform experience have predicted ACO savings.¹⁷ Providers' integration with acute care providers (e.g., via ownership or by being part of an integrated delivery system) has revealed no advantage.¹⁸ Qualitative research finds that organizational factors such as leadership and culture, cooperation among ACOs and hospitals, and the leveraging of health information technology/population analytics/workforce capabilities to monitor beneficiaries across the care continuum may have facilitated positive outcomes.^{19,20}

Provider networks are both a feature of NGACOs' organizational structures, as well as the result of market characteristics and NGACOs' provider engagement processes. We expect that the extent to which NGACO beneficiaries receive care within the NGACO provider network affects the ability of the ACO to manage cost and optimize resources, with the assumption that the entire network of providers is operating under the same incentives.

Patient Population: We expect the sociodemographic and health characteristics of aligned beneficiaries will have implications for an NGACO's approach to care management services, level of beneficiary engagement, and ultimately, opportunities to improve quality of care and reduce spending. For example, NGACOs serving beneficiaries with high levels of disease burden may incur greater-than-average health expenditures and more opportunities to improve quality of care and reduce spending.

ACO Model Features: CMS experience with two previous Medicare ACO models—Medicare SSP and Pioneer—informed NGACO model design features, in particular the need for flexibility in payment and benefit design, prospective information on beneficiaries and performance targets, and increased levels of risk. CMS evaluations of SSP and Pioneer ACOs reported encouraging but mixed evidence on the impact of shared savings payment models on reducing costs and improving quality.²¹ ACOs in both models improved quality of care, with the Pioneer ACOs also reducing the use of low-value services.²² While

¹⁶ Shortell SM, Wu FM, Lewis VA, Colla CH, Fisher ES. A taxonomy of accountable care organizations for policy and practice. *Health Serv Res.* 2014; 49(6): 1883–1899.

¹⁷ Ouayogode M, Colla C, Lewis V. Determinants of success in shared savings programs: An analysis of ACO and market characteristics. Presentation given at AcademyHealth; June 26, 2016, Boston, MA.

¹⁸ McWilliams JM, Chernew ME, Landon BE, Schwartz AL. Performance differences in year 1 of Pioneer accountable care organizations. *New Engl J Med.* 2015; 372(20): 1927–1936; Introcaso D, Berger G. MSSP year two: Medicare ACOs show muted success. *Health Affairs Blog.* <https://www.healthaffairs.org/doi/10.1377/hblog20150924.050753/full/>. Published September 24, 2015. Accessed January 24, 2018.

¹⁹ L&M Policy Research, 2015.

²⁰ White KM, Knutson D, Abraham J, Zeglin J, Timmel M, Johnson H, Grude L. Case comparative analysis of select market-based Pioneer accountable care organizations: An in-depth exploration of first year experiences of comparable organizations participating in Pioneer ACO in select markets. <http://www.medpac.gov/docs/default-source/contractor-reports/case-comparative-analysis-of-select-market-based-pioneer-accountable-care-organizations.pdf?sfvrsn=0>. Published July 30, 2014. Accessed January 24, 2018.

²¹ L&M Policy Research, LLC. Evaluation of CMMI accountable care organization initiatives. Pioneer ACO evaluation findings from performance years one and two. <https://innovation.cms.gov/Files/reports/PioneerACOEvalRpt2.pdf>. Published March 10, 2015. Accessed January 16, 2018; Centers for Medicare & Medicaid Services. Medicare ACOs provide improved care while slowing cost growth in 2014. <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-08-25.html>. Published August 25, 2015. Accessed January 24, 2018.

²² Centers for Medicare & Medicaid Services (CMS). Medicare ACOs continue to improve quality of care, generate shared savings. <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Press-releases/2015-Press-releases-items/2015-08-25.html>. Published August 25, 2015. Accessed January 24, 2018; Schwartz AL, Chernew ME, Landon BE, McWilliams, JM. Changes in

cost savings were attributed to reductions in high-cost services (such as inpatient, hospital outpatient, and post-acute care) and a concomitant shift to office-based care,²³ savings in both programs were not widespread. In addition, cost savings seemed to diminish for ACOs that entered the program in later years, suggesting further limitations in the calculations of financial benchmarks.²⁴ In line with results from other Medicare ACO models, we consider the impact on performance that may be due to NGACO's distinct model features related to the percent risk assumed by ACOs, payment mechanisms, and voluntary alignment.

Summary: Evidence to date suggests that ACOs' success (i.e., meeting cost and quality targets that result in a shared savings payment from CMS) depends on complex interactions among contextual, organizational, and provider-related factors. Aspects of the model's financial incentives (e.g., risk-sharing options, prospective benchmarking and alignment, payment options) and the availability of new resources (e.g., benefit enhancements, annual wellness visit payment) under the NGACO model are anticipated to explain performance.²⁵ Our conceptual framework reflects the roles and interactions of NGACOs' contexts, organizational structures, care improvement and financial management processes, and the model features selected, which are expected to evolve over the course of this initiative and as the NGACOs learn from experience and work to provide higher-value care for Medicare beneficiaries.

Research Questions

This report presents descriptive and analytic findings from NORC's evaluation of the NGACO model for the NGACOs that launched in 2016, for one performance year. Using our conceptual framework as a guide, this report addresses four fundamental research questions, which encompass multiple secondary questions, related to the organizations, their providers, and their aligned Medicare beneficiaries on four domains. These questions are as follows:

- What features characterize the 2016 NGACOs?
- What are the characteristics of 2016 NGACO markets?
- How are the 2016 NGACOs implementing the model?
- How did the 2016 NGACOs perform in their first year?

We anticipate that answers to these questions provide the foundation for development of refined hypotheses about the model, to be tested as the evaluation adds data on future classes of NGACOs and future performance years. Over the course of the evaluation, our analyses will become increasingly integrated and our interpretation of NGACO performance will be through a mixed-methods lens, as we aim to generate knowledge about the various pathways through which ACOs may or may not succeed, and fulfill their promise to deliver value-based care.

low-value services in year 1 of the Medicare Pioneer accountable care organization program. *JAMA Intern Med.* 2015; 175(11): 1815–1825.

²³ McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early performance of accountable care organizations in Medicare. *New Engl J Med.* 2016; 374(24): 2357–2366.

²⁴ McWilliams et al., 2016; L&M Policy Research, 2015.

²⁵ Next Generation ACO Model Driver Diagram, provided by CMMI.

1.3. Organization and Content of First Annual Report

As noted above, this is the first of a series of annual, summative reports to be prepared as part of NORC’s evaluation of the NGACO model. Exhibit 1.3 offers a visual guide to this report. We present evaluation findings generally following the order of the conceptual framework, ending with an emphasis on initial claims-based evidence of the model’s impact to date. Following this introductory chapter, the report presents descriptions of the organizational characteristics, market areas, and implementation experiences of the ACOs that entered the model in 2016, followed by findings about NGACOs’ performance, based on Medicare claims.

Exhibit 1.3. Visual Guide, First Annual Report, Evaluation of the NGACO Model

Chapter 2: Organizational Characteristics	Chapter 3: Market Characteristics	Chapter 4: Model Implementation	Chapter 5: Performance	Chapter 6: Summary
<ul style="list-style-type: none"> • Motivation to join NGACO Model • Organizational type and size • Governance structure • Model feature selections • Types of providers and affiliations 	<ul style="list-style-type: none"> • Geographic distribution of markets • Populations in market areas • Health care provider markets • Health care insurance markets 	<ul style="list-style-type: none"> • Workforce and organizational capacity • Approaches to care improvement • Data analytics and health IT • Benefit enhancements • Annual Wellness Visits • Patterns of care 	<ul style="list-style-type: none"> • NGACO model impact on Medicare spending, utilization, and quality for all 2016 NGACOs • NGACO model impact on Medicare spending, utilization, and quality for each 2016 NGACOs • Net Impact of 2016 NGACOs on Medicare Spending • Discussion and limitations 	<ul style="list-style-type: none"> • Summary of main findings • Plans for future research

- *What features characterize the 2016 NGACOs?* Chapter 2 presents descriptive findings regarding the organizational characteristics of the 2016 NGACOs, those of their affiliated providers, and the model features selected by the NGACOs, identified using administrative and claims data. We begin to explore the influence of NGACO aligned financial incentives (e.g., prospective benchmarking) and related resources (e.g., availability of benefit enhancements) on the decision by ACO leaders to join the model, analyzing the first wave of NORC’s NGACO Leadership Survey (2017), and in-depth qualitative interviews with NGACO leaders.
- *What are the characteristics of 2016 NGACO markets?* Chapter 3 adds descriptive findings related to the context in which the 2016 NGACOs operate, using data on provider (hospital) concentration, patterns of insurance coverage, and population demographics.
- *How are the 2016 NGACOs implementing the model?* Chapter 4 gives an overview of implementation experience for the 2016 NGACOs, based on program data and NORC survey findings. We describe the range and prevalence of workforce staffing arrangements, care management approaches, uses of health IT and data analytics, selection of optional benefit enhancements, and patterns of care for aligned beneficiaries.
- *How did the 2016 NGACOs perform in their first year?* Chapter 5 presents Medicare claims-based findings on the impact of the NGACO model in a pooled analysis of all 18 2016 NGACOs and analyses of each of the 18 NGACOs. We used a difference-in-differences (DID) analytic approach

based on Medicare claims for beneficiaries attributed to 2016 NGACO providers or organizations, relative to a weighted group of Medicare FFS beneficiaries in the same geographic area who were not aligned with an NGACO or any other Medicare ACOs, and who were understood to have received “usual care.” Results are presented for spending (total Medicare spending and spending across each of seven care settings and categories of service), four measures of utilization, and four measures of quality of care. In addition, we calculated the net reduction in Medicare spending after accounting for CMS’s shared savings payments to NGACO in 2016.

- Chapter 6 provides a synthesis of evaluation findings to date. Future NORC reports to CMMI will continue to examine and test the hypotheses generated by the evaluation.

Limitations

There are several important limitations to the findings presented in this report. The scope includes only analyses for 2016 (PY1) for the NGACO model, reflecting the availability of claims (for beneficiaries and comparators, at baseline and for PY1) and administrative enrollment data. Results may change in PY2 as additional data become available and as NGACOs have additional time to implement changes and work to reduce costs while maintaining or improving quality. During PY1, both experienced and new ACOs were implementing Next Generation features for the first time (e.g., higher level of risk, voluntary beneficiary alignment), with some as-yet-to-be defined time period focused on becoming fully operational on their planned interventions and related tasks.

In addition, our evaluation is early in the process of primary data collection. For this report, primary data sources included one survey of NGACO leadership (n=15), review of NGACO applications, and one set of baseline telephone interviews with NGACO leadership teams (n=16). Finally, our mixed-methods linkage of data and findings across claims, survey, and qualitative analyses is in its early stages, with analyses based on these linkages pending; we anticipate presenting initial mixed-methods findings in NORC’s second annual report to CMMI (fall 2018). Our preliminary findings are generating new exploratory hypotheses to be more fully tested as more data are collected, generated, and analyzed in the months and years to come. Given that market and organizational characteristics, including history, likely impact performance in future reports, we will integrate many of the descriptive measures in this report into analytic models that assess how features, processes, and motivations affect outcomes as well as underpin the scalability and replicability of the model.

Chapter 2: What Features Characterize the 2016 NGACOs?

2.1. Chapter Overview

An ACO’s organizational features can influence its preferred level of risk and payment mechanisms, as well as its approaches and resources for care improvement activities, formation of provider networks, and other outcomes oriented processes. Understanding organizational and network features will allow NORC to analyze how they relate to model outcomes in future analyses. In this chapter, we describe the organizational characteristics of the 2016 Next Generation Accountable Care Organizations (NGACOs), focusing on 2016 NGACOs’ motivations to join the model, organizational type and size, payment reform experience, governance structure, model features chosen, and provider network composition. Exhibit 2.1 summarizes key findings regarding NGACO features.

Exhibit 2.1. Summary of 2016 NGACO Organizational Features

Features	Key Findings
Prior Experience in Value-Based Care	<ul style="list-style-type: none"> Almost all 2016 NGACOs had prior ACO and value-based contract experience; IDS ACOs had more years of experience than non-IDS ACOs. NGACO leadership described joining the model to continue value-based work and fulfill broader organizational care priorities, to stay competitive and attract physicians, and to take advantage of NGACO model features.
Organizational Type and Size	<ul style="list-style-type: none"> 11 of the 18 2016 NGACOs identify as integrated delivery systems (IDS), which typically comprise primary and specialty physicians and hospitals under a common ownership structure. The average 2016 NGACO served approximately 26,500 beneficiaries; While IDS ACOs served more beneficiaries on average than non-IDS ACOs, the diversity in size of the IDS ACOs was notable.
Governance Structure	<ul style="list-style-type: none"> Physicians represented more than half of NGACO governing board membership, with numbers on each board ranging from 0 to 14. The boards’ main responsibilities were overseeing finances and data analytics.
Model Features Selected	<ul style="list-style-type: none"> As of midyear for PY1, 15 of 18 NGACOs had selected the 80-percent shared risk option. Experience with prior risk-based contracting informed decisions about this option. Four of 18 NGACOs selected a 15-percent cap on savings or risk and 11 selected a 5-percent rate. Nine of 18 NGACOs selected the traditional FFS payment mechanism, seven selected the FFS plus monthly infrastructure payments [MIP], and two chose the population-based payment [PBP] mechanism.
Provider Networks	<ul style="list-style-type: none"> NGACO networks included 31,070 individual practitioners; 53 percent were participating and 47 percent were preferred providers. Primary care clinicians were the most common type of individual provider (accounting for almost one-third of both participating and preferred providers). 775 institutions or facilities were also included in 2016 NGACO networks; three-quarters of which were affiliated as preferred providers. SNFs were the most common type of institutional provider.

Data and Methods

Throughout this chapter, we draw on data from the NGACO Leadership Survey, administrative and claims data, and semi-structured telephone interviews with leadership. The survey was fielded in

September 2017 with the leadership teams of the 2016 NGACOs (n=15 responding NGACOs).²⁶ Where noted, survey findings are supplemented by a systematic review and analysis of program documentation provided to the Centers for Medicare & Medicaid Services (CMS) by the 2016 NGACOs, including their applications, and thematic analysis of NORC’s first round of semi-structured telephone interviews with the 2016 NGACO leadership teams (n=16 individual or small group semi-structured interviews with a total 69 participants) and quantitative analysis (n=18 NGACOs). The technical details of data sources and methods are described in the appendices to this report (see Appendix E: Survey Methods and Appendix F: Qualitative Methods). In addition, this chapter presents a descriptive analysis of NGACO provider network composition using Medicare claims and administrative data and NGACO programmatic data. The technical details of these methods are described in the appendices to this report (see Appendix D: Quantitative Methods and Analysis for quantitative methods applied to claims, administrative enrollment, and program model data).

2.2. Prior Experience in Value-Based Care and Joining the NGACO Model

In semi-structured telephone interviews, NGACO leadership articulated three major reasons for joining the model:

1. Continuing value-based work and fulfilling broader organizational priorities
2. Staying competitive
3. Valuing the Next Generation model’s features

Prior experience with value-based care contracts led many ACOs to join the NGACO. All 2016 NGACOs had prior experience with commercial or publicly funded value-based care contracts such as Pioneer ACO, SSP, and MA, and most had prior experience managing populations. Several NGACOs mentioned in the leadership interviews that participating in the NGACO model was a logical next step in the organization’s evolution of risk-based/value-based arrangements. Of the 18 ACOs participating in the model in 2016, 15 previously participated in a Medicare ACO program,²⁷ while 3 became Medicare ACOs for the first time. Among those with prior experience as an ACO, eight participated in the SSP, six in the Pioneer model, and one in Pioneer first and then SSP. A couple of NGACOs reported during semi-structured telephone interviews that their respective organizations had laid the groundwork for NGACO participation by pre-identifying beneficiaries likely to be attributed to NGACO in the transition from the Pioneer ACO model or Medicare SSP.

In terms of aligning with specific organizational goals, one NGACO with few value-based contracts reported that the model could help them reach their goal of having 75 percent of revenue paid through value-based care payments by 2020. Another NGACO noted that “in order to make some of the programs sustainable, we [the organization] needed to go to a higher level of risk, and we felt comfortable based on

²⁶ The survey was administered to only the 16 NGACOs active in the model as of the survey launch in September 2017 (OSF withdrew at the end of December 2016, and Prospect withdrew at the end of June 2017). One NGACO did not fill out a survey. One NGACO filled out a partial survey, therefore reporting samples vary from n=14 to n=15.

²⁷ Of the 15 ACOs previously participating in a Medicare ACO program, only 11 ACOs had experience based on a single former Medicare ACO and were therefore included in organization analysis (see Chapter 3). The remaining four ACOs with prior Medicare ACO experience were comprised of multiple SSP or Pioneer ACOs during the evaluation baseline period.

our history and track record moving into a higher level of risk.” Others mentioned that board members and leadership encouraged proactive experimentation in value-based care.

Several NGACOs stated that value-based care was the future of health care. One NGACO noted “the original [fee-for-service, or FFS] world is coming to an end ... and we [the NGACO] need to be able to operate in this world.” Various NGACO leaders expressed that the model was an opportunity to help them to get in early and learn, stay on the cutting edge of population health, and transition to the next stage of financial models in health care.

The need to stay competitive enough to attract highly qualified or experienced physicians away from other Medicare ACOs in their market motivated many ACOs to join the NGACO model. For example, one NGACO reported that its decision to participate was in part due to all competitors in its market moving toward risk-sharing, while another reported that its providers asked to take on more financial risk. Another NGACO stated,

“Just to stay in a competitive environment, we decided to enroll in Next Gen because if you want to attract physicians, [as an NGACO, I could say,] ‘I want to give you a bigger percent of a pie than a percent of a pie that CMS took half of. A lot of these doctors, their motivation is that we can do quality reporting for them, we can help coordinate care for their patients, and provide a monetary incentive as well.’”

Some 2016 NGACO leaders noted that physicians were attracted to participate since within CMS value-based care programs, NGACO is an Advanced Payment Model (APM) alternative to the Merit-based Incentive Payment System (MIPS) reporting requirements. Implementing MIPS is a challenge for small and solo practices that lack the administrative resources to assist with the quality reporting burden of the program. Participating in an APM such as the NGACO model would release physicians from direct reporting requirements under MIPS, as the ACO would manage the quality reporting to CMS as an APM.

In addition to the opportunity to increase shared savings, many NGACOs explained that new NGACO model features made it more attractive than prior Medicare ACO models. In particular, they reported being motivated to join NGACO because of the prospective alignment of beneficiaries and the inclusion of additional benefit enhancements.

Many NGACOs noted that prospective alignment of beneficiaries was a significant factor influencing their organization’s decision to move from prior Medicare ACO models to NGACO. With prospective alignment, the NGACO has a better understanding of their population by knowing exactly which beneficiaries they will be accountable for at the start of the performance year as opposed to the end, as with retrospective assignment under SSP Track 1; beneficiaries were attributed prospectively under Pioneer but retrospectively under SSP. Prospective alignment was not only attractive to organizational leadership but to physicians as well.

Finally, a few NGACOs mentioned that the benefit enhancements were a compelling factor in their decision to join the NGACO model. Several NGACOs reported that both leadership and physicians were interested in the waivers and thought they would be worthwhile. The waivers allow the NGACOs to take new approaches in providing care to their patients, and, as one NGACO noted, “When you have waivers,

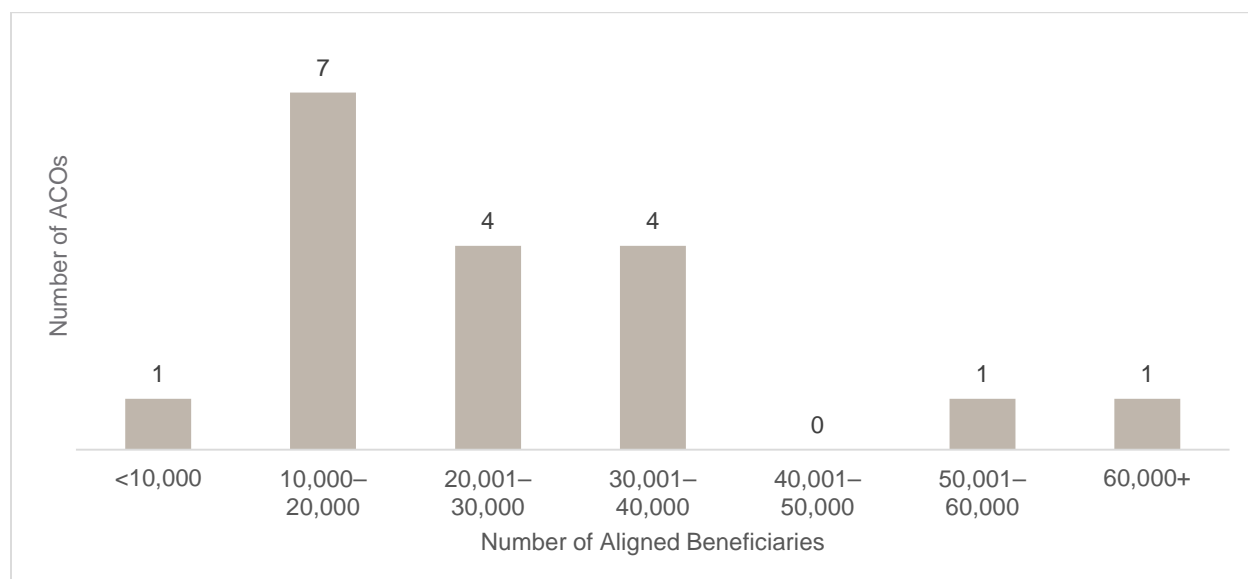
you can do more with your patient population than you can when you're following the traditional Medicare benefits.”

2.3. Organizational Type and Size

More than half of 2016 ACOs identify as an integrated delivery system (IDS). For the purposes of this report, IDS ACOs are defined as those that have a common overarching ownership entity and coordinate care across hospitals and practices, as opposed to non-IDS ACOs, which have made contractual relationships to do so (e.g., independent practice associations, medical group practices). Eleven of eighteen NGACOs are classified as an IDS, based on responses to NORC’s survey and a systematic review of NGACO applications and information available on their websites.

The NGACOs who joined the model in 2016 served 477,197 Medicare beneficiaries overall in the first year; the average NGACO served 26,511 beneficiaries (24,219 median). The number of aligned beneficiaries across the 2016 NGACOs ranged from 8,286 beneficiaries to 65,487 (see Appendix J: Exhibits to Support Chapter 2, Exhibit J.1). As illustrated in Exhibit 2.2, seven NGACOs served between 10,000 and 20,000 beneficiaries, and eight served between 20,000 and 40,000 beneficiaries. These figures are in line with data collected via the National Annual ACO Survey, which showed that Medicare ACO contracts tended to be smaller than commercial ACO contracts, serving approximately 30,000 versus 60,000 lives, respectively;²⁸ however, the average number of NGACO-aligned beneficiaries is lower than the average number in the final year of the Pioneer model (n=35,594).

Exhibit 2.2. Number of Beneficiaries, 2016 NGACO Organizational Features, Performance Year 1



²⁸ de Lisle K, Litton T, Brennan A, Muhlestein D. The 2017 ACO survey: What do current trends tell us about the future of accountable care? Health Affairs. <https://www.healthaffairs.org/doi/10.1377/hblog20171021.165999/full>. Published October 4, 2017. Accessed January 16, 2018.

In aggregate, NGACOs served three percent of total Medicare beneficiaries in all markets. This number varied across ACOs. Ten ACOs served three percent or fewer Medicare beneficiaries in their respective markets, with the lowest share at one percent. Seven ACOs served 4 percent or more of the Medicare beneficiaries in their markets, with the largest share at 19 percent.

IDS ACOs reflected more diversity in size than did non-IDS. IDS ACOs served an average of 28,486 aligned beneficiaries (20,988 median), compared to non-IDS ACOs' average of 23,407 (27,447 median). However, there was considerable variation within the IDS ACO group, which included both the smallest NGACO (8,286 beneficiaries) and the largest (65,487 beneficiaries). The range among non-IDS ACOs in 2016 was narrower (range: 13,281 to 33,903).

IDS NGACOs had more years of experience in value-based care than did non-IDS NGACOs. Among the 14 reporting NGACOs, IDS ACOs had an average of eight years of value-based contract experience, most typically consisting of MA experience, while non-IDS ACOs had an average of almost four years of experience. Similarly, IDS ACOs had an average of almost six years of any type of ACO-specific experience (e.g., commercial or Medicare), while non-IDS ACOs had around two years of experience.

2.4. Governance Structure

NGACO governing boards are predominantly comprised of physicians. For the 14 reporting NGACOs, governing boards ranged from three to 21 members and were composed of physicians, hospital representatives/executives, patients/consumers, and community service providers.²⁹ Physicians accounted for approximately 55 percent of each NGACO's board membership, on average, regardless of organizational type. However, on average, there are slightly more hospital representatives on the boards of IDS NGACOs when compared with non-IDS NGACOs. Conversely, non-IDS NGACOs reported slightly higher percentages of patients or consumers. While the governing board composition provides some initial insight into the NGACO leadership, site visits and interviews will allow for additional detail in subsequent reports.

Main responsibilities of governing boards include overseeing finances and data analytics. All 15 reporting NGACOs indicated that their governing board is responsible for overseeing NGACO finances and data analytics on beneficiary costs, utilization, and quality. Most have board members involved in defining the mission (n=13), overseeing management of ACO staff (n=11), and overseeing ethics and regulatory compliance (n=13). In seven NGACOs, members of the board select the chief executive officer, design provider networks, and maintain contracts, while in four NGACOs, board members maintain government contracts. Only one NGACO has members of the board conduct peer-to-peer reviews with providers who are not fully engaged in supporting the care coordination team and management of beneficiaries.

²⁹ NGACO participants or their designated representatives must control 75 percent of the governing body. In addition, all NGACOs must have a Medicare beneficiary and consumer advocate on their governing boards. Two ACOs did not provide information about their governing board, and two ACOs left the model demonstration before these survey data were collected.

2.5. NGACO Model Features Chosen by Participants

In each performance year, an NGACO selects model features related to risk selection and payment mechanisms. Most NGACOs participating in the model in 2016 opted for the 80-percent shared risk option and the traditional fee-for-service (FFS) payment mechanism; see Exhibit 2.3 below.

Exhibit 2.3. Model Features Selected by 2016 NGACOs, Performance Year 1

NGACO	Characteristics		Risk and Payment Selection		
	Prior Medicare ACO	Organizational Type	Risk (%)	Cap on Savings/Losses (%)	Payment Mechanism
ACCST †	SSP	Non-IDS	80	10.0	FFS
Baroma †	SSP	Non-IDS	80	5.0	PBP
Beacon§	Pioneer	Non-IDS	80	5.0	FFS+MIP
Bellin	Pioneer	IDS	80	15.0	FFS
CHESS †	SSP	Non-IDS	100	15.0	FFS+MIP
Deaconess	SSP	Non-IDS	80	5.0	FFS
Henry Ford	N/A	IDS	80	5.0	FFS+MIP
MemorialCare †	N/A	IDS	80	5.0	FFS
Optum (Lifeprint)	N/A	Non-IDS	100	15.0	FFS+MIP
OSF§	Pioneer	IDS	80	5.0	FFS
Park Nicollet	Pioneer	IDS	80	10.0	FFS
Pioneer Valley	SSP	Non-IDS	80	5.0	FFS+MIP
Prospect§ †	SSP	IDS	80	5.0	FFS+MIP
Steward †	Pioneer	IDS	80	5.0	PBP
ThedaCare	Pioneer	IDS	80	5.0	FFS
Triad	SSP	IDS	100	15.0	FFS
Trinity †	SSP	IDS	80	6.5	FFS+MIP
UnityPoint (Iowa)	Pioneer, SSP	IDS	80	5.0	FFS

NOTES: SSP = Medicare Shared Savings Program, IDS = integrated delivery system, non-IDS = other organizational types that include networks of physicians / independent physician associations, physician-hospital organizations, group practices; MIP = monthly infrastructure payments; FFS = fee for service; PBP = population-based payment.

§ 2016 NGACOs that dropped out of the model.

† These ACOs made a one-time, mid-year switch to their risk sharing rate and/or payment mechanisms.

Risk Selection

Most 2016 NGACOs opted for the 80-percent shared risk option. Initially, seven of the 18 NGACOs selected the 100-percent, full-risk option but took advantage of the one-time, mid-year opportunity to reduce to shared risk. Consequently, 15 NGACOs selected shared risk (80-percent option), and three NGACOs selected full performance risk (100-percent option) by the end of the year.

- Experience with prior risk-based contracting informed NGACO decisions about the risk-sharing option.** Two of the three NGACOs that selected the full performance risk arrangement were previously in the SSP program; the other was not previously in a Medicare ACO. In telephone interviews, leaders at NGACOs with strong performance in prior outcomes-based contracts expressed confidence that they would perform well in the NGACO model, which encouraged selection of the higher risk agreement. Some NGACOs initially selected full performance risk; however, when CMS

gave NGACO's a chance to change within the first half of the first performance year, most switched to the 80-percent risk track. Some based this decision on variation or fluctuation in the quarterly benchmark performance reports and/or the sense that the model was still in development and, was thus potentially riskier than initially anticipated.

- **Savings and losses cap.** Four of eighteen NGACOs selected a 15-percent cap on savings or risk, and eleven selected a 5-percent cap. The 5-percent cap protects ACOs from losses more than the 15-percent cap; however, it also limits the amount an ACO can earn in shared savings. Some NGACOs adjusted the savings and losses cap downward after realizing the challenge of influencing cost, utilization, and quality. An NGACO that adjusted the cap downward in the first performance year and then slightly increased it later in the year described its motivation as “[not] leaving money on the table or taking on any excess risk.”

Payment Mechanisms

Most 2016 NGACOs selected the traditional FFS payment mechanism. Of the three available payment mechanisms in 2016, nine of 18 NGACOs selected the FFS payment mechanism; seven selected the FFS plus monthly infrastructure payments (MIP), and two chose the population-based payment (PBP) mechanism. A fourth payment mechanism (all-inclusive population-based payment) became available to NGACOs starting in the second program year, and we will track whether any NGACOs switch to that method.

- **FFS option.** In interviews, several NGACOs said they chose the FFS option because they did not have the infrastructure in place for PBP. Several NGACOs noted that they chose FFS payment because it aligns with existing cash flow mechanisms. One NGACO noted that it would require a lot of work from partners to create alternative financial accounting mechanisms for PBP.
- **FFS + MIP option.** Some NGACOs that selected this option saw it as an opportunity to invest in infrastructure that would allow them to ultimately pass on more risk to their participating and preferred providers through alternative payment models. One NGACO discussed selecting this option in PY1 and transitioning to PBP in PY2. Some NGACOs expressed that they were “not ready for PBP,” (e.g., lacked infrastructure to handle claims payments or provider buy-in). Another NGACO explained, “Hospitals and physicians are still going to do fee for service because that’s what keeps the lights on and the payments during the year and then only 18 months later will there [be] any bonus they might or might not get.” Another NGACO noted that PBP would require new ways of handling claims payment; this NGACO reported it will use the infrastructure payment to develop and fund more staff to develop this new handling system.
- **PBP option.** Interviewed leaders at NGACOs gave a variety of explanations for selecting this option; for example, it allows them to: (i) give physicians more flexibility, as payments cover administrative and care coordination costs; (ii) control post-acute costs through its use with skilled nursing facilities and home health; or (iii) learn more about how PBP works (e.g., how reimbursement comes in, fee structure) with a subset of providers.

2.6. Provider Networks: Types of Providers and Affiliations

The composition of NGACO provider networks may affect cost, utilization, and quality outcomes associated with the model, and NGACOs must balance several considerations as they form their networks. For example, an NGACO's performance depends on the ability of its providers to improve their performance on cost and quality. Performance also relies on the extent to which an ACO's provider network is adequate for their beneficiaries' needs and that all providers in their network are held accountable to providing high quality care efficiently. To a lesser extent, it depends on being able to influence beneficiary care-seeking behaviors, as all Medicare FFS beneficiaries, including those aligned to ACOs, may obtain care from any Medicare provider they choose. They are not restricted by referrals or authorizations from the ACO or CMS to particular networks or providers. NGACOs must also balance the use of incentives to their provider network with the potential for losses. Depending on their final performance, some providers may benefit from the incentives offered in an ACO model, while others may lose.

In this section, we present the analysis of claims and administrative data to describe the composition of the 2016 NGACOs' provider networks—that is, the individual practitioners and institutions that have formal affiliations with an NGACO to provide care to NGACO beneficiaries. We describe the general breakdown of providers (individual practitioner or institution) by specialty, facility type, and the nature of their affiliation with the NGACO (participating or preferred providers). We also highlight variation in provider composition across NGACOs.

The NGACO model allows for two possible types of affiliations for providers with NGACOs: participating and preferred providers.

Participating providers are individual practitioners and facilities to which NGACO beneficiaries are aligned and that CMS considers to be usual sources of care. These providers are either alignment-eligible individual practitioners or facilities or suppliers. Per model rules, all participating providers share financial responsibility for furnishing care to aligned beneficiaries. Primary care practitioners must have an exclusive relationship with their NGACO and not participate in other Medicare ACO programs, while specialists may work with multiple ACOs. Alignment eligibility is determined by CMS and includes the following types of providers:³⁰

- primary care practitioners, who are either primary care physicians in general medicine, family medicine, internal medicine, geriatric medicine or non-physician primary care providers (limited to nurse practitioners and physician assistants)
- selected specialists in cardiology, neurology, pulmonary disease, nephrology, endocrinology, rheumatology, hematology/oncology, medical oncology, surgical oncology, gynecological oncology, radiation oncology, or neuropsychiatry
- critical access hospitals (CAHs)
- federally qualified health centers (FQHCs)
- rural health clinics (RHCs)

³⁰ RTI International. *Next Generation ACO model benchmarking methods*. December 2015. Document number RTI.NGACO.METHODS.BNMRK.01.00.04. Available at <https://innovation.cms.gov/Files/x/nextgenaco-methodology.pdf>.

Preferred providers, on the other hand, may operate across multiple Medicare ACOs. While NGACOs are not required to have preferred providers, preferred providers enable an NGACO to extend its network by supplementing and complementing the types of care that participating providers deliver to its attributed beneficiaries. Preferred providers can be individual practitioners or facilities affiliated with provider organizations. In addition to the types of providers that can be participating providers, preferred providers may include the following:

- physician practices
- acute and long-term care hospitals
- skilled nursing facilities (SNFs)
- home health agencies (HHAs)
- hospices
- ambulatory surgical centers

Exhibit 2.4 shows the different NGACO model functions that correspond to each type of affiliation. Like participating providers, preferred providers may take part in the NGACO benefit enhancements and capitated arrangements with NGACOs via population-based payments (PBPs) and all-inclusive population-based payments (AIPBPs). However, unlike with participating providers, beneficiaries are not aligned to preferred providers, and preferred providers are not responsible for reporting quality data through the NGACO. The implication is that the preferred providers’ performance is only indirectly reflected in the NGACOs’ performance data by means of an association between the care they provide to NGACO beneficiaries and the NGACOs’ performance measures.

Exhibit 2.4. 2016 NGACO Model Functions, by Type of Provider Affiliation

Function	Provider Affiliation	
	Participating	Preferred
Eligible for ACO shared savings	X	X
Capitated arrangements (PBP, AIPBP)	X	X
Benefit enhancements/waivers (3-day SNF, telehealth, post-discharge home visit)	X	X
Coordinated care reward	X	X
Alignment of beneficiaries	X	
Quality reporting through ACO	X	

NOTES: AIPBP = all-inclusive population-based payments; PBP = population-based payment; SNF = skilled nursing facility.

SOURCE: CMS, CMMI “Next Generation ACO Model Open Door Forum.” January 31, 2017. Available at <https://innovation.cms.gov/Files/slides/nextgenaco-overviewloi-slides.pdf> accessed January 22, 2018.

Individual Practitioners and Their Specialties

Individual practitioners making up the 2016 NGACO networks include 31,070 individual practitioners; 53 percent were participating (n=16,443) and 47 percent were preferred (n=14,627) providers. They cover a number of specialty areas that differ somewhat by their affiliation as participating or preferred provider. As shown in Exhibit 2.5, the individual practitioners represent the following broad specialties:³¹

³¹ Technical Appendix J (Exhibits to Support Chapter 2), Exhibit J.2, describes the categorization of provider specialty into meaningful groups used in NGACO evaluation. The MD-PPAS categories were used to group the taxonomy code for individual

- primary care (e.g., general practice, family practice, internal medicine)
- medical (e.g., cardiology, endocrinology, medical oncology)
- surgical (e.g., surgical oncology)
- psychiatry (e.g., neuropsychiatry)
- obstetrics and gynecology (e.g., gynecological oncology)
- hospital-based (e.g., radiation oncology)
- non-physician practitioners (e.g., nurse practitioner, physician assistant)

Participating practitioners were most often primary care providers. More than half of participating practitioners were either primary care physicians (30 percent) or nurse practitioners or physician assistants (25 percent). Across NGACOs, the proportion of participating non-physician practitioners (nurse practitioners and physician assistants) varied considerably, with the highest at 53 percent and lowest at less than 1 percent (see Appendix J: Exhibits to Support Chapter 2, Exhibits J.3 and J.4 which specify the proportion of the participating provider network by specialty type). Nearly one quarter (24 percent) of participating providers were medical or surgical specialists, though this ranged across ACOs from 5 to 95 percent of participating providers.

In telephone interviews, NGACO leaders suggested that primary care providers perform well in value-based care models because their focus on preventive care and care management aligns with the goals of the NGACO. They noted that primary care providers typically have more interest in performing in ways rewarded by the NGACO model than do specialists, who stand to lose financially from a reduction in costly services. Since specialists were typically less influential on patients' use of preventive medicine for which the ACO would be held accountable, some NGACOs reported that they did not want to have patients aligned to the ACO through their specialists. Some NGACO leaders even felt that the specialists may end up competing with primary care providers for beneficiaries' annual wellness visits, which may run counter to the NGACOs' efforts to connect beneficiaries with primary care physicians. Still, some NGACOs included specialists important to the Medicare population as participating providers including cardiologists, gastroenterologists, urologists, oncologists, and those addressing musculoskeletal conditions and orthopedics. Further, they sought specialists who were willing to coordinate care with participating primary care providers and encouraged primary care providers to refer their patients to such specialists.

All but two NGACOs had preferred providers in their networks. The use of preferred providers to complement the participating providers varied across NGACOs, as noted below and shown in Appendix J (Exhibits to Support Chapter 2), Exhibits J.5 and J.6.

- **Approximately one-third of preferred providers were non-physician practitioners.** Preferred non-physicians are more varied than their participating counterparts, which are limited to nurse practitioners and physician assistants. Preferred non-physicians include chiropractors, optometrists,

practitioners reported on the National Plan and Provider Enumeration System into the broad specialty classification provided in [CMS MD-PPAS documentation](#). If a practitioner's specialties spanned more than one broad category, we applied MD-PPAS rules to classify each of these physicians into only one broad specialty: (1) Primary care overrides obstetrics-gynecology and general surgery, (2) medical specialty overrides primary care, (3) surgical specialty overrides all of the above, (4) obstetrics/gynecology overrides all of the above except for primary care, (5) hospital-based specialty overrides all of the above, and (6) psychiatry overrides all of the above.

podiatrists, psychologists, audiologists, physical therapists, occupational therapists, registered dietitians, clinical social workers, and clinical nurse specialists. Across NGACOs with a preferred provider network, the proportion of preferred non-physicians varied, with the highest at 62 percent while the lowest had none (in one NGACO).

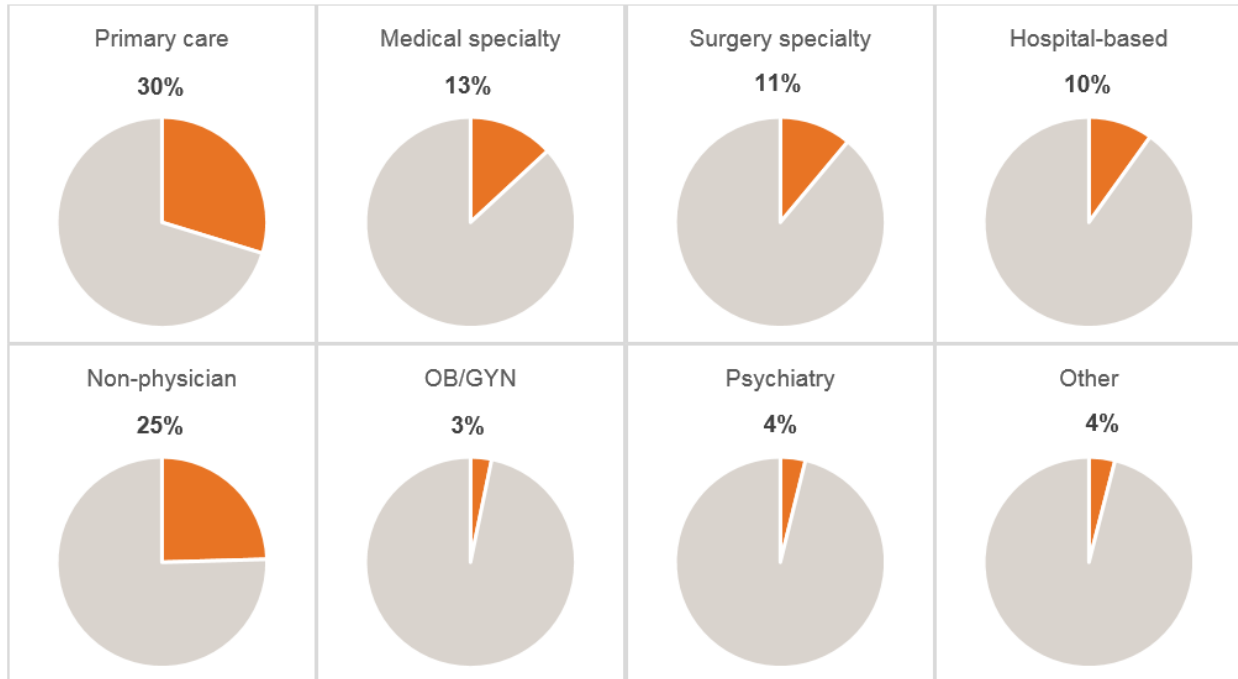
- **One-quarter of preferred providers were medical or surgical specialists.** There was significant variation across NGACOs, with the range of specialists from 5 percent to 95 percent of preferred providers. NGACOs with fewer specialists in their preferred networks also tended to have more preferred primary care physicians to supplement the provision of care for their aligned beneficiaries.
- **Hospital-based practitioners were included in networks as participating providers (10 percent) and preferred providers (14 percent).** However, the proportion of hospital-based participating providers varied across NGACOs, with the highest at 22 percent and some NGACOs having none. We did not observe similar variation in hospital-based preferred providers across NGACOs.

Provider network composition varied according to whether the NGACO identified as an integrated delivery system (IDS) for some types of providers. IDS NGACOs were significantly more likely to have physicians with surgical specialties (13 percent for IDS, 7 percent for non-IDS) and hospital-based physicians as participating providers (11 percent for IDS, 8 percent for non-IDS).³² However, the proportion of participating providers who were primary care specialists was similar for IDS (30 percent) and non-IDS NGACOs (31 percent).

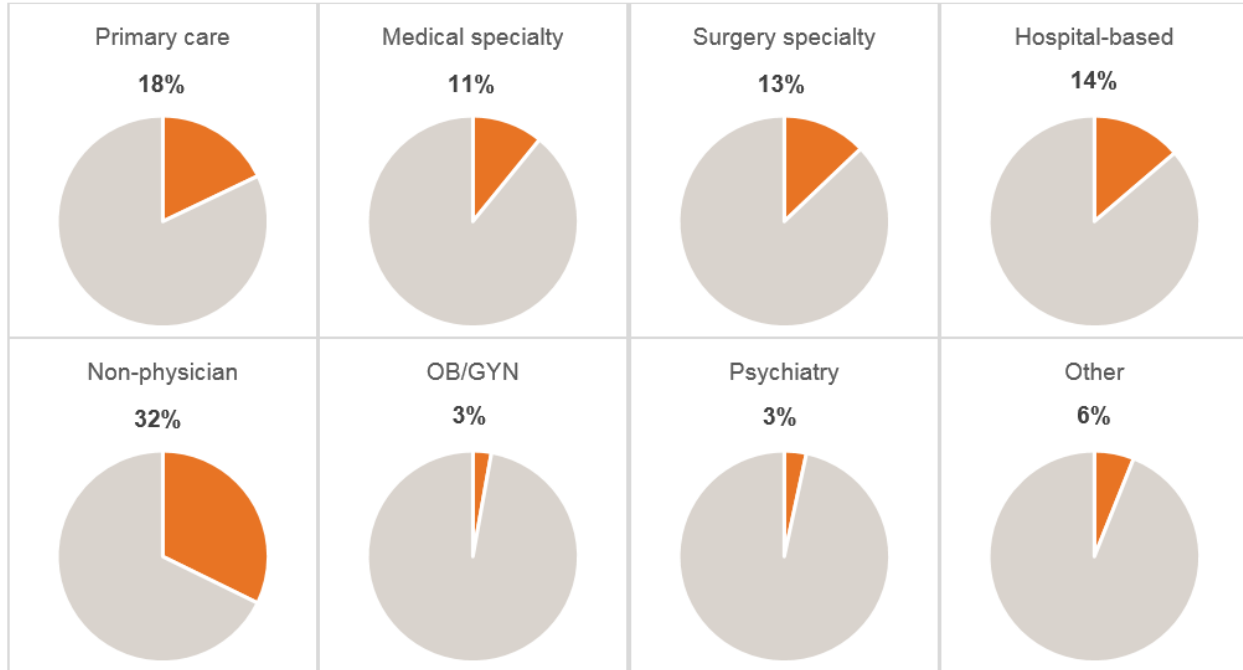
³² We explored whether the proportion of hospital-based physicians (according to MD-PPAS broad specialty) differs by organization type (whether an ACO is IDS or not based on the classification reported on ACO organizational characteristics; see Appendix J, Exhibit J.4. Testing the difference in two group proportions, we found a statistically significant difference at the $\alpha=0.05$ level. We conclude that the proportion of participating providers who are hospital-based physicians differs by organization type ($p<0.000$); IDS' tend to have more hospital-based physicians compared with non-IDS ACOs.

Exhibit 2.5. Participating and Preferred Individual Practitioners in 2016 NGACOs, Performance Year 1

Participating Providers by Broad Specialty



Preferred Providers by Broad Specialty



SOURCE: NORC analysis of administrative and claims data. 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 \(Appendix L.1\)](#). See Technical Appendix D (Quantitative Methods and Analysis) for more information.

Participating providers can be employed or independent. Six NGACOs reported in our survey that some of their primary care providers are employees of the ACO. Two NGACOs reported all of their primary care providers are employees, and three stated that all are independent. IDS ACOs were more likely than others to have primary care providers who are employees, suggesting these providers are employees of the IDS (or one of its provider organizations) of which the ACO is a part. In non-IDS ACOs (e.g. independent practice associations), primary care providers are more likely to be contracted.

Electronic health record (EHR) capabilities, physician performance, and care management experiences inform the building of an NGACO’s provider network. In our semi-structured telephone interviews with NGACO leaders, they shared insights into their strategies for creating their provider networks. Besides medical specialty, NGACOs considered other criteria for inclusion in their networks, such as the presence or absence of an EHR in the provider’s practice and the provider’s quality scores, spending, and cooperation with care management services. NGACO leadership also discussed the importance of accurately identifying NGACO providers (through a combination of national provider identification and tax identification numbers) so that they could be sure to include providers engaged with the NGACO model and not carry the responsibility of those who were not affiliated either as a participating or preferred provider.

Provider performance has been taken into account by NGACOs, reflected by how NGACOs decide to share financial risk. Among 15 NGACOs responding to the survey, eight reported passing financial risk to at least one type of provider. Broken out by provider type, six NGACOs pass financial risk to hospitals, six pass risk onto participating providers, and two pass risk onto SNFs. NGACOs that passed on risk tended to do so among multiple types of providers: five of six NGACOs that pass financial risk onto participating providers also pass risk to hospitals. Six of the eight NGACOs that pass on risk are IDS ACOs.

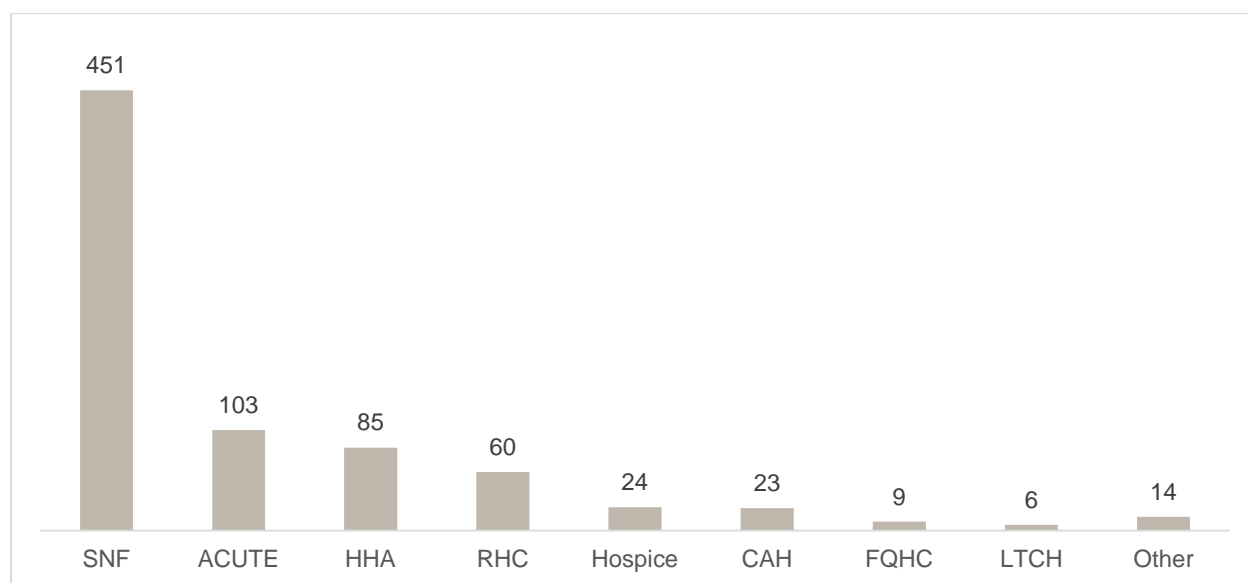
Types of Institutions and Facilities

In addition to individual practitioners, 775 institutions or facilities were included in 2016 NGACO networks, three-quarters of which were affiliated as preferred providers. The average number of institutional providers was 43, with a wide range from 0 to 174 institutions per NGACO. Exhibit 2.6 shows the breakdown of institutional providers / facilities by type. A more detailed breakdown by NGACO is in Appendix J (Exhibits to Support Chapter 2), Exhibit J.7. Highlights are as follows:

- **SNFs were the most common type of institution, comprising well over half of the institutional providers in NGACO networks (58 percent).** On average, NGACOs had 25 SNFs in their networks, but there was a wide range of variation. For example, two NGACOs had no SNFs in their networks, while one had 109.
- **The predominance of SNFs in NGACO networks reflects the importance the NGACOs put on managing post-acute care costs.** NGACO leaders participating in telephone interviews suggested that reducing SNF costs is one of the biggest opportunities to reduce the total cost of care or Medicare spending for their beneficiaries. This priority is also reflected in NGACOs’ uptake of the three-day SNF waiver benefit enhancement (see Chapter 4).

- **Acute care hospitals were included in the networks of 13 NGACOs, representing 13 percent of the 2016 institutional providers.** On average, NGACOs had 6 hospitals in their networks; some had up to 19.
- **Nine NGACOs included HHAs in their networks, comprising 11 percent of the 2016 institutional providers.** While the average number of HHAs was five, three NGACOs had significantly more in their networks (10 to 35 agencies).
- **A few NGACOs had CAHs (n=6), RHCs (n=3), and FQHCs (n=2) in their networks.** These tended to be participating institutional providers and indicate the reach of their networks to rural and low-income Medicare beneficiaries and dual eligible Medicare-Medicaid beneficiaries.

Exhibit 2.6. Institutional Providers in 2016 NGACO Provider Networks in Performance Year 1, by Type of Facility



NOTE: Acute = acute care hospital; CAH = critical access hospital; FQHC = federally qualified health center; HHA = home health agency; LTCH = long-term care hospital; RHC = rural health clinic; SNF= skilled nursing facility. Other = end-stage renal disease facility, hospital (type unknown), community mental health center, and facility of unknown type.

SOURCE: NORC analysis of NGACO provider files from Program Analysis Contractor, linked to CMS Provider of Service File. See Technical Appendix D (Quantitative Methods and Analysis) for more information.

2.7. Summary

In this chapter, we demonstrate that organizational features vary considerably across the ACOs that entered the Next Generation model in 2016. We have also shown that NGACOs vary greatly in their provider network composition, in terms of size and breadth of affiliated (participating and preferred) practitioner specialties and facility types. This variation begins to provide some context for understanding the claims-based findings presented in Chapter 5.

In interviews, many NGACO leadership teams mentioned that participating in the model enabled them to build on prior experience with value-based care, making the NGACO model a logical next step in the organization’s ongoing movement toward risk-sharing and value-based purchasing aligned to populations. For some organizations, joining the NGACO model was described as a means to

compete successfully for providers in markets increasingly characterized by risk-sharing and the opportunity for shared savings. The model's prospective alignment of beneficiaries and three benefit enhancements (SNF, post-discharge home visit, and telehealth waivers) represented additional competitive advantages.

Most 2016 NGACOs identify as an IDS, which typically comprise primary and specialty physicians and hospitals under a common ownership structure. While IDS ACOs served more beneficiaries on average than non-IDS ACOs, the diversity in size of the IDS ACOs was notable. The average 2016 NGACO served approximately 26,500 beneficiaries.

NGACO governing boards ranged in size from 3 to 21 members and were composed of physicians, hospital representatives/executives, patients/consumers, and community service providers. Across the 2016 class of NGACOs, physicians make up over half of the governing board. The 2016 NGACO governing boards are typically responsible for overseeing finances and data analytics.

In terms of finances for the first performance year, most 2016 NGACOs chose to assume 80 percent risk and the FFS payment mechanism. Prior experience and infrastructure with risk-based contracting appears to have informed payment mechanism choices of NGACO model options. NGACO leadership reported choosing the FFS payment mechanism because they lacked the infrastructure to handle PBPs.

Among 2016 NGACOs in the first performance year, primary care clinicians were the most common type of individual provider (accounting for almost one-third of both participating and preferred providers) and SNFs were the most common type of institutional provider (making up over half of all facility providers). Within these overall trends, provider networks vary considerably from NGACO to NGACO in composition, size, and breadth of affiliated (participating and preferred) practitioner specialties and facility types. Although it was premature to analyze the importance of preferred providers, we note that this unique model feature requires sufficient attention with regard to the purpose and goal of preferred providers, and how ACOs leverage preferred providers in delivering care for their aligned beneficiaries. We will continue to explore the role and value of provider networks, including preferred providers, in future reports.

Network adequacy may be reflected in the balance of primary versus specialty care providers. One-quarter of providers (both participating and preferred) were medical or surgical specialists, with much variation across NGACOs (from 5 percent to 95 percent). In interviews, NGACO leaders noted that primary care providers perform well in value-based care models because their focus on preventive care and comprehensive care management aligns with NGACO model goals; leaders observed that primary care providers typically have more interest in performing in ways rewarded by the NGACO model than do specialists, who may lose financially from a reduction in costly services. Alternatively, referrals to specialists can play an important role in management of chronic conditions. Overall, NGACOs developed their provider networks with consideration of a provider's EHR capabilities, clinical performance, and experience with care management.

In Chapter 3, we explore selected aspects of markets and populations served by the 2016 NGACOs. We begin to identify variation across the NGACOs that may be relevant for understanding implementation of the model and performance outcomes.

Chapter 3: What Markets and Populations do the 2016 NGACOs Serve?

3.1. Chapter Overview

Market conditions, or the characteristics of the environment in which the NGACO is forming and operating,³³ can influence its structure (e.g., its organizational type, resources available, provider networks, etc.), its choice of model features, and its performance. Market characteristics associated with NGACO formation and performance include socio-demographic characteristics, structure and composition of the local insurance and health care market, level of market competition, cooperation between stakeholders, presence and focus of local multi-stakeholder initiatives, and relevant state-level regulations.³⁴ In this chapter, we describe market characteristics of Next Generation Accountable Care Organizations (NGACOs) that entered the model in 2016. A better understanding of market features will allow NORC to analyze how they relate to model outcomes in future reports.

Exhibit 3.1 summarizes key findings regarding NGACO market characteristics.

Exhibit 3.1. Summary of 2016 NGACO Market Characteristics in Performance Year 1

Characteristic	Key Findings
Geographic Distribution of Market Areas	<ul style="list-style-type: none"> ■ The market areas range from 2 to 12 hospital referral regions (HRRs), with 3 being the typical number (mode) of HRRs spanned by an ACO.
Population Characteristics of Market Areas	<ul style="list-style-type: none"> ■ Rurality varies considerably within and between NGACO market areas. ■ Medicare beneficiaries in NGACO market areas have a greater disease burden than other market areas nationally. ■ The racial-ethnic composition of Medicare beneficiaries varies across NGACO markets. ■ 2016 NGACO markets vary considerably in the proportions of Medicare beneficiaries eligible for Medicaid.
Characteristics of Health Care Provider Markets	<ul style="list-style-type: none"> ■ Availability of primary care providers varies across NGACO markets. ■ NGACOs operate primarily in concentrated hospital markets. ■ Standardized, risk-adjusted Medicare spending per capita in NGACO markets is comparable to that of non-NGACO markets.
Characteristics of Health Care Insurance Markets	<ul style="list-style-type: none"> ■ NGACOs operate in markets with a high Medicare Advantage penetration rate. ■ Commercial and Medicaid ACO initiatives are more likely to be in NGACO markets.

³³ Fisher, E. S., Shortell, S. M., Kreindler, S. A., Van Citters, A. D., & Larson, B. K. (2012). A framework for evaluating the formation, implementation, and performance of accountable care organizations. *Health Affairs*, 31(11), 2368-2378.

³⁴ Our review is based on the following articles: Fisher ES, Shortell SM, Kreindler SA, Van Citters AD, and Larson BK. "A framework for evaluating the formation, implementation, and performance of accountable care organizations." *Health Affairs* 31, no. 11 (2012): 2368-2378; Lewis VA, Colla CH, Carluzzo KL, Kler SE, and Fisher ES. "Accountable care organizations in the United States: market and demographic factors associated with formation." *Health Services Research* 48, no. 6 pt1 (2013): 1840-1858; Ouayogodé MH, Colla CH, and Lewis VA. "Determinants of success in Shared Savings Programs: An analysis of ACO and market characteristics." In *Healthcare*. Elsevier, 2016; Yasaitis LC, Pajeroski W, Polsky D, and Werner RM. "Physicians' participation in ACOs is lower in places with vulnerable populations than in more affluent communities." *Health Affairs* 35, no. 8 (2016): 1382-1390; and Yeager VA, Zhang Y, and Diana ML. "Analyzing determinants of hospitals' accountable care organizations participation: a resource dependency theory perspective." *Medical Care Research and Review* 72, no. 6 (2015): 687-706.

Data and Methods

Throughout this analysis, we draw on data from multiple market data sources including the American Community Survey, 2011–2015, 5-Year Estimates, the American Hospital Survey 2014, and the CMS Public Use File Hospital Referral Regions Tables 2014 among others. See Technical Appendices D (Quantitative Methods and Analysis) and K (Exhibits to Support Chapter 3) for more information on data sources.

The operational definition of a local market area differs across the literature and includes geographic units such as counties, metropolitan statistical areas,³⁵ hospital service areas,³⁶ and hospital referral regions (HRRs).³⁷ In this report, we use the HRR as the geographic unit that defines each NGACO's market area and consider an NGACO's market area as including any HRR with more than one percent of its Medicare beneficiaries aligned to the NGACO.³⁸ See Appendix K (Exhibits to Support Chapter 3) for more information on our definition of market area.

The findings presented in this chapter describe characteristics of the markets in which NGACOs formed and exist relative to other markets nationally. Characteristics of NGACO markets (18 ACOs across 73 HRRs) are described relative to all other health care markets in the country. As the number of NGACOs is small, we use the threshold of greater than one standard deviation from the mean across non-NGACO markets to highlight notable market characteristics of a particular NGACO. Exhibit 3.2 summarizes key findings.

3.2. Geographic Distribution of Market Areas

The 2016 NGACO markets include 73 hospital referral regions (HRRs). In 22 of the 73 NGACO market HRRs, over 5 percent of Medicare beneficiaries residing in these markets were aligned to an NGACO. As shown in the map in Exhibit 3.3, NGACO markets are concentrated in the Midwest (11 ACOs), with pockets in the Southeast (7) and Northeast (4). Eastern Texas and Arizona each have one NGACO, and southern California has two. In general, the markets include both urban and rural areas. Most include at least one urban area; in the Northeast, almost all are urban.

The market areas range from two to 12 HRRs, with three being the typical number (mode) of HRRs spanned by a 2016 NGACO. Exhibit 3.2 shows market areas, including adjoining and overlapping HRRs. In most cases, market areas consist of contiguous HRRs, with the exception of one NGACO that spans 12 HRRs in five states (Illinois, Michigan, New Jersey, Ohio, and Pennsylvania). Eleven NGACOs have at least one HRR that overlaps with another NGACO market. The two California NGACOs share the same market, and four pairs of NGACOs have partially overlapping areas.

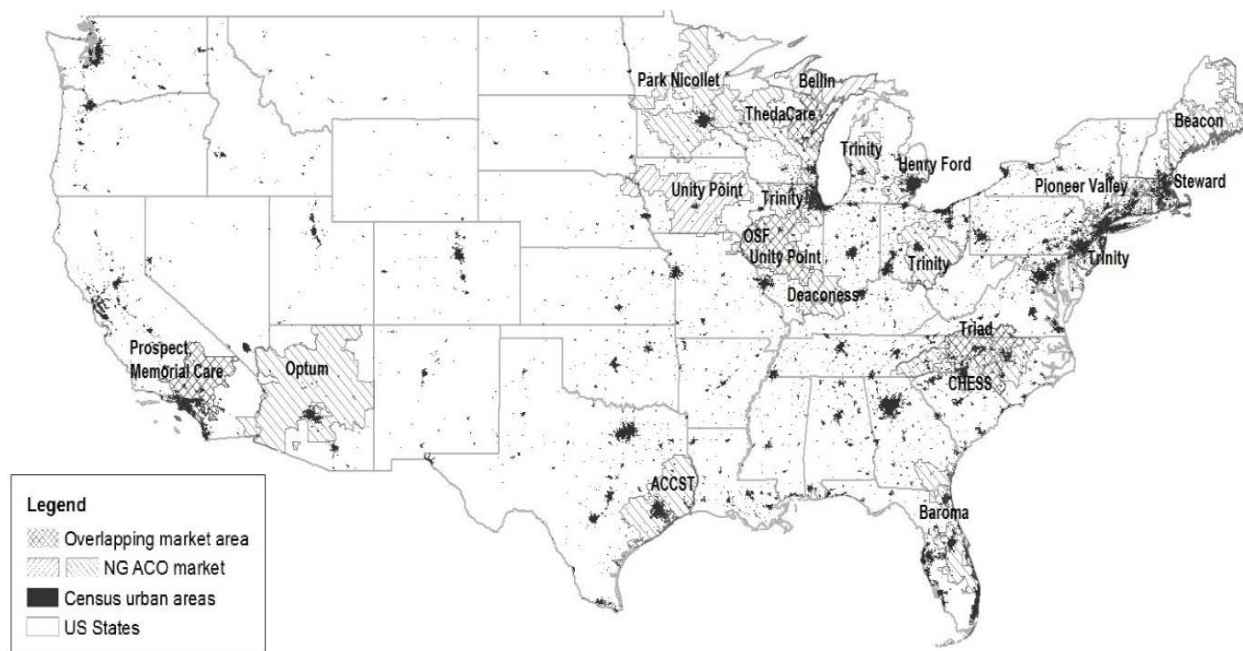
³⁵ Yeager et al., 2015.

³⁶ Lewis et al., 2013.

³⁷ Ouayogodé et al., 2017.

³⁸ For one 2016 NGACO (Deaconess) the market area was defined as hospital referral regions with more than 0.5% of its aligned beneficiaries to allow for drawing a sizable comparison group of non-ACO beneficiaries.

Exhibit 3.2. Geographic Distribution of Market Areas, 2016 NGACOs in Performance Year 1



NOTES: Each NGACO market is defined as one or more hospital referral regions (HRRs); each HRR includes at least one percent of the aligned beneficiaries of that NGACO.

SOURCE: NORC analysis of NGACO beneficiary file 2016 from Program Analysis Contractor; American Community Survey, 2011–2015, 5-Year ZIP code tabulation area-level estimates cross-walked to HRRs.

NGACO markets in southern California, southern New England, and the state of Illinois have the greatest number of Medicare beneficiaries. Population sizes within the markets vary from about 800,000 residents to over 19 million, and the corresponding number of Medicare beneficiaries from about 166,000 to 3.1 million; see Exhibit 3.3 below. NGACO markets in the Midwest had the highest proportion of Medicare beneficiaries aligned to NGACOs; see supporting data in Technical Appendix K (Exhibits to Support Chapter 3).

Exhibit 3.3. Market Areas and Population Characteristics, 2016 NGACOs in PY1

NGACO	Number of HRRs per NGACO market	Population Size (N)	Number of Medicare Beneficiaries (N)	Number of FFS Medicare Beneficiaries (N)	Number of NGACO Aligned Beneficiaries in 2016 (N)
ACCST	2	7,276,625	887,262	527,532	13,391
Baroma	4	11,653,097	2,135,635	1,141,494	27,449
Beacon	2	1,461,749	325,304	249,052	14,714
Bellin	3	1,025,750	212,399	113,655	8,286
CHES	4	4,624,394	824,835	496,831	13,281
Deaconess	2	808,046	166,401	132,554	31,442
Henry Ford	5	4,771,502	852,174	524,037	20,988
MemorialCare [§]	3	16,670,253	2,109,546	846,853	19,453
Optum	3	5,215,596	833,471	491,738	29,671
OSF	4	2,313,645	451,466	337,434	36,668
Park Nicollet	2	4,383,249	696,410	294,696	14,428

NGACO	Number of HRRs per NGACO market	Population Size (N)	Number of Medicare Beneficiaries (N)	Number of FFS Medicare Beneficiaries (N)	Number of NGACO Aligned Beneficiaries in 2016 (N)
Pioneer Valley	3	3,038,447	543,706	369,838	33,903
Prospect [§]	3	16,670,253	2,109,546	846,853	13,799
Steward	3	6,951,507	1,187,858	875,902	36,463
ThedaCare	5	4,132,497	728,061	419,772	15,857
Triad	4	3,439,357	672,157	392,860	29,035
Trinity	12	19,332,371	3,117,928	2,206,469	52,882
UnityPoint	6	3,283,074	619,352	493,588	65,487

NOTES: [§]MemorialCare Regional ACO and Prospect ACO CA share the same market. Each NGACO market is defined as one or more hospital referral regions (HRRs); each HRR includes at least one percent of the aligned beneficiaries of that NGACO. Averages are unweighted.

SOURCE: NORC analysis of American Community Survey, 2011–2015, 5-Year Estimates.

3.3. Population Characteristics of Market Areas

Compared with non-NGACO markets, those served by 2016 NGACOs are distinctive with respect to population characteristics, which has implications for model impacts. For example, racial and ethnic minorities disproportionately experience high rates of disease, inferior quality of care, and reduced access to care.³⁹ NGACOs located in markets with higher proportions of minority beneficiaries may have more opportunities to improve quality of care and reduce spending. In addition, NGACOs located in markets with high levels of disease burden may have greater-than-average health expenditures and more opportunities to improve quality of care and reduce spending. See Technical Appendix K (Exhibits to Support Chapter 3), Exhibit K.1 for supporting data and analyses.

Rurality varies considerably within NGACO market areas. For markets in which NGACOs operate, only 12 percent of the population reside in rural areas. By comparison, 27 percent of the national population, on average, lives in a rural area. The proportion of residents in rural areas varied considerably between NGACO markets, ranging from less than 1 percent to 53 percent. This observation is consistent with the pattern observed for where ACOs in general are more likely to form.

Racial-ethnic composition of Medicare beneficiaries residing in NGACO markets resembles that of Medicare beneficiaries more generally. With a few exceptions, the racial-ethnic composition of Medicare beneficiaries in NGACO markets is comparable to that of non-NGACO markets. Four NGACO markets have a lower percentage of racial-ethnic minorities (4–7 percent) compared with non-NGACO markets (20 percent). One NGACO market shared by two NGACOs has a significantly higher percentage of racial-ethnic minorities (41 percent) than non-NGACO markets.

Medicaid-eligibility rates for Medicare beneficiaries residing in NGACO markets resembles that of Medicare beneficiaries more generally. For most NGACOs, the Medicaid eligibility rate of Medicare beneficiaries is comparable to that of non-NGACO markets. With 27 to 34 percent of Medicare beneficiaries eligible for Medicaid in their respective markets, four NGACOs are higher than the non-NGACO market average of 20 percent. The lowest Medicaid eligibility rate among NGACO markets is 10 percent.

³⁹ <https://www.cms.gov/About-CMS/Agency-Information/OMH/Downloads/OMH-CMS-MMD-Tool-Overview.pdf> .

Medicare beneficiaries residing in NGACO market areas have a greater disease burden than other market areas. The average Centers for Medicare & Medicaid Services (CMS) hierarchical condition category score—a measure of disease burden and health care utilization—of 10 NGACO markets is higher than the disease burden and health care utilization of the average Medicare beneficiary.⁴⁰

3.4. Characteristics of Health Care Provider Markets

As noted in Chapter 1, we hypothesize that health care provider market characteristics influence the organizational characteristics of NGACO and their provider networks. The extent to which NGACOs can influence their beneficiaries' care-seeking behavior in turn reflects the ability of the NGACO to create provider networks that attract beneficiaries, given that beneficiaries may obtain care from any provider they choose. Patterns of care are important because providers in the network have an incentive to provide care in a manner that lowers costs while maintaining or improving quality. More competitive markets may motivate the formation of ACOs, while less competitive markets may influence quality of care, care coordination, and the degree to which aligned beneficiaries seek care within the provider network. The 2016 NGACOs provider markets are comparable to non-NGACO markets; however, there is variation across the NGACO markets. See Technical Appendix K (Exhibits to Support Chapter 3) for supporting data and analyses.

Primary care resources vary across NGACO markets. On average, the number of primary care physicians per 1,000 residents is comparable between NGACO and non-NGACO markets (75 and 73, respectively). However, there is considerable variation within NGACO markets (see Appendix K: Exhibits to Support Chapter 3, Exhibits K.2 and K.3). Relative to other NGACO markets, three NGACO markets have significantly higher number of physicians per 1,000 residents (90 to 99). The lowest rate among NGACO markets is 56 physicians per 1,000 residents.

NGACOs operate primarily in concentrated hospital markets. Nine NGACOs are in highly concentrated markets, dominated by one or a few hospital systems (see Appendix K: Exhibits to Support Chapter 3, Exhibits K.2 and K.4).⁴¹ Only three NGACOs operate in competitive hospital markets. Notably, two NGACOs operate in market areas with complete overlap. The remaining NGACOs are located in moderately concentrated markets. Although, on average, the NGACOs are located in concentrated hospital markets (Herfindahl-Hirschman Index [HHI] = 3,039), the level of market concentration is comparable to the average degree of hospital market concentration in non-NGACO markets (HHI = 3,286).

Standardized risk-adjusted, per capita Medicare spending in NGACO markets (\$9,638) is comparable to that of non-NGACO markets (\$9,519). Two NGACOs operate in markets with notably

⁴⁰ Hierarchical condition category HCC risk scores are derived from demographic and diagnostic data in Medicare enrollment and claims files. The risk score represents the case-mix of the NGACO beneficiary population. The average risk score is set at 1.0; beneficiaries with scores greater than that are expected to have above-average spending, while those with scores below the average are likely to have lower-than-average spending

⁴¹ The Herfindahl-Hirschman Index (HHI), a commonly accepted measure of market concentration is used to measure hospital market competitiveness. We consider a market with an HHI $\leq 1,500$ to be competitive, an HHI of 1,500 to 2,500 to be moderately concentrated, and an HHI $\geq 2,500$ to be highly concentrated.

higher average spending than non-NGACO markets. One market has lower average spending than non-NGACO markets (see Appendix K: Exhibits to Support Chapter 3, Exhibit K.2).

3.5. Characteristics of Health Care Insurance Markets

Characteristics of health care insurance markets may reflect the experience of organizations and providers. For example, High MA enrollment may be associated with greater care management experience among providers and, consequently, may influence performance. Additionally, higher Medicare SSP/Pioneer penetration rates and a greater number of commercial or Medicaid ACO initiatives within NGACO markets may be associated with greater risk experience among providers.

NGACOs operate in markets with high Medicare Advantage (MA) and Shared Savings Program (SSP)/ Pioneer ACO penetration rates. Over two-thirds of Medicare beneficiaries residing in NGACO markets were enrolled in an MA or ACO plan prior to the formation of NGACOs, compared with 55 percent of Medicare beneficiaries in non-NGACO markets. (In Appendix K: Exhibits to Support Chapter 3, Exhibit K.5 shows the distribution of the penetration rates of Pioneer/SSP ACOs and MA plans across NGACO and non-NGACO HRRs.) Three NGACO markets have MA enrollment rates that are almost twice as high as the non-NGACO markets (58–60 percent vs. 33 percent). Five NGACO markets have ACO enrollment rates that are significantly higher than the non-NGACO markets (38–47 percent vs. 22 percent). Market characteristics during the period prior to NGACO formation were dynamic and evolving. For example, the MA penetration rate between 2013 and 2016 increased by almost 6 percent, with 4 NGACOs experiencing an increase of over 10 percent.

Commercial and Medicaid ACO initiatives are more likely to be located in NGACO markets.

Although NGACO markets comprise only 20 percent of HRRs (of the 306 HRRs nationally), about 44 percent of all commercial ACO initiatives are located in NGACO HRRs (see Appendix K: Exhibits to Support Chapter 3, Exhibit K.5). Four NGACO markets have ongoing Medicaid ACO initiatives. Three NGACO markets have no commercial or Medicaid ACO initiatives. During telephone interviews, most 2016 NGACOs reported prior value-based contracting experience, making the NGACO model the next logical next step in the organization's ongoing movement toward risk-sharing and value-based purchasing.

3.6. Summary

In this chapter, we demonstrate that market characteristics vary considerably across the 2016 starters. This variation begins to provide some context for understanding the claims-based findings presented in Chapter 5.

NGACO markets differ greatly in terms of number of overall population size, number of Medicare beneficiaries, and market area size. NGACO markets in southern California, southern New England, and the state of Illinois have the greatest number of Medicare beneficiaries. Market areas range from 2 to 12 HRRs, with 3 being the typical number (mode) of HRRs spanned by a 2016 NGACO.

Medicare beneficiaries in NGACO market areas have a greater disease burden (as measured by HCC risk scores) than do those in non-NGACO markets and are less likely to live in rural areas.

Across two other population characteristics—racial-ethnic composition and Medicaid eligibility—beneficiaries in NGACO market areas resemble beneficiaries in non-NGACO markets.

Although NGACOs operate primarily in concentrated hospital markets, there is substantial variation across 2016 NGACOs in these health care provider market measures. Health care provider markets served by 2016 NGACOs are comparable overall to non-NGACO markets, in terms of number of primary care physicians per 1,000 residents; the concentration of hospital markets; and standardized, risk-adjusted per capita Medicare spending.

2016 NGACOs operate in concentrated healthcare insurance markets, typically where other ACO models have been implemented. Many 2016 NGACOs have contiguous or overlapping markets and are concentrated in the Midwest. These markets have high penetration rates of Medicare Advantage (MA) plans. In addition, these markets are more likely to be home to SSP/Pioneer ACOs, as well as Medicaid and commercial ACOs.

Prior experience with managed care and ACO models and presence of common incentives across patient populations may motivate organizations to join the NGACO model. Most NGACOs reported having prior value-based contracting experience.

In Chapter 4, we explore selected aspects of early implementation experience to begin to identify key contributors to differences seen among 2016 NGACOs in performance outcomes that relate to how the model has been operationalized.

Chapter 4: How are the 2016 NGACOs Implementing the Model?

4.1. Chapter Overview

In this chapter, we describe the first-year implementation experience for the Next Generation Accountable Care Organizations (NGACOs) that entered the model in 2016. We describe NGACOs' workforce related to its administration, care management, and data analytics. We describe the care improvement approaches, such as widespread use of centralized staff for care management, standardized processes and protocols, and care team expansion or integration through which ACOs sought to move the needle on cost, quality, and utilization. We also consider NGACOs' capacity in terms of health information technology (IT) and data analytics, and the degree to which NGACOs had the ability to forecast their beneficiary populations' risk score and financial spending in order to achieve positive financial outcomes through risk-bearing contracts.

Further, we assess the extent to which NGACOs implemented optional benefit enhancements and promoted Annual Wellness Visits (AWVs), which we hypothesize provide effective channels for ACOs to engage beneficiaries and assess their needs. Lastly, we present an analysis of claims and administrative data to assess the extent to which aligned beneficiaries receive care in their NGACO provider networks. Medicare beneficiaries' unrestricted choice of providers presents a challenge to NGACOs that may result in fragmented care, as NGACOs may be less able to coordinate care if beneficiaries seek care outside their ACO's participating and preferred provider networks; this in turn may diminish the model's impact on cost and quality. Understanding implementation experience will inform future analyses of how variations in implementation relate to outcomes.

Data and Methods

As in previous chapters, this chapter draws on data from the NGACO Leadership Survey and semi-structured telephone interviews with leadership. In addition to these data sources, the patterns of care analysis in this chapter presents a descriptive analysis of Medicare claims and administrative data and NGACO programmatic data. See Technical Appendix D (Quantitative Methods and Analyses), Appendix E (Survey Methods), and Appendix F (Qualitative Methods) for more information.

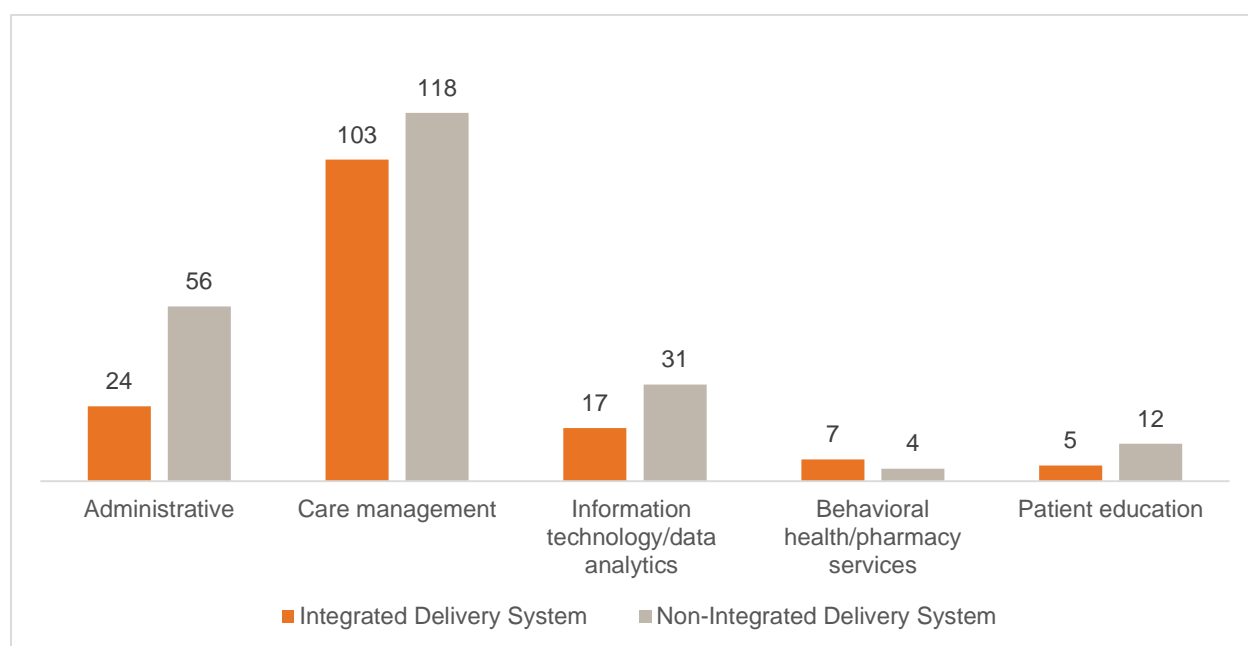
4.2. Workforce

In this section, we describe the workforce and staff the NGACOs employed to primarily administer the ACO, manage their provider networks, provide care management, and perform data analytics. Thirteen of fifteen NGACOs reported hiring staff to fulfill requirements of the NGACO model. In some cases, ACOs noted that these changes were part of broader population health efforts undertaken by a parent organizations rather than specifically for the model. However, NGACOs hired and directly employed thirty-eight percent of their care management staff and forty percent of their administrative staff specifically for the model. Below, we summarize the types and number of staff that were employed or hired by NGACOs (see Appendix H: Survey Frequency Tables). As illustrated in Exhibit 4.1, NGACOs

reported employing care management staff in greatest total numbers (n=221), followed by administrative staff (n=80). NGACOs hired and employ relatively few behavioral health and pharmacy services staff.

Five of 15 surveyed NGACOs indicated they use contracted staff (e.g., care management, pharmaceutical). Notably, four of these NGACOs were non-IDS NGACOs, organizations that did not have their parent organization’s staff to leverage. No clear patterns emerged regarding types of contracted staff, and NGACOs reported contracting staff across all workforce categories. Four of the five NGACOs reported contracting with one to three types of staff, and one reported contracting with all staff types except behavioral health providers.

Exhibit 4.1. Staff Types Directly Employed for 2016 NGACOs in Performance Year 1, by Organization Type



NOTES: Thirteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected. This does not include participating and preferred providers.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

Most NGACO leaders reported building their internal data analytics workforce for the model, yet still require more staff and resources for this purpose. In the survey, only 3 of 13 NGACOs reported having sufficient staff to handle their current data collection, processing, and analytic needs. Many NGACOs employed a variety of strategies to meet their data needs, including hiring more full-time trained candidates (n=5) or engaging consultants or other third parties to assist with analytics (n=3) or data collection and processing (n=1). Through interviews, we learned that some NGACOs that contracted with vendors to perform data analytics did not always have good results and switched vendors in a performance year, and some NGACOs that tried to build their own systems were not always successful. Those with existing data analytics teams reported that they had to learn how the NGACO model uses claims data or quality measures compared with prior models. One NGACO leader explained, “I don’t think I would have been comfortable if we hadn’t been in the [SSP] program that we were in before, because, frankly, a hospital accounting department or finance department doesn’t understand how this

works.” Former SSPs reported that the biggest change they made when transitioning to NGACO was to increase their data analytics capacity; they largely attributed this to the shift from retrospective to prospective alignment, and the ability to use data to drive care management and provider engagement efforts toward areas of concern among aligned beneficiaries.

4.3. Approaches to Care Improvement

We surveyed NGACO leaders about the strategies and activities they are implementing to improve care provided to their beneficiaries, the beneficiary populations they are targeting for these activities, and the types of staff administering them. Our inquiry focused on four areas of care improvement: (1) care management, including beneficiaries’ self-management of conditions; (2) care transitions; (3) end-of-life care; and (4) interventions to address social determinants of health. In this section, we summarize these survey findings to describe the extent to which NGACOs are implementing various care improvement activities. We integrate key themes we identified from semi-structured telephone interviews with NGACO leaders on their experiences with these activities, including challenges they encountered in their implementation and potential ways to overcome them (see Appendix H: Survey Frequency Tables).

Care Management

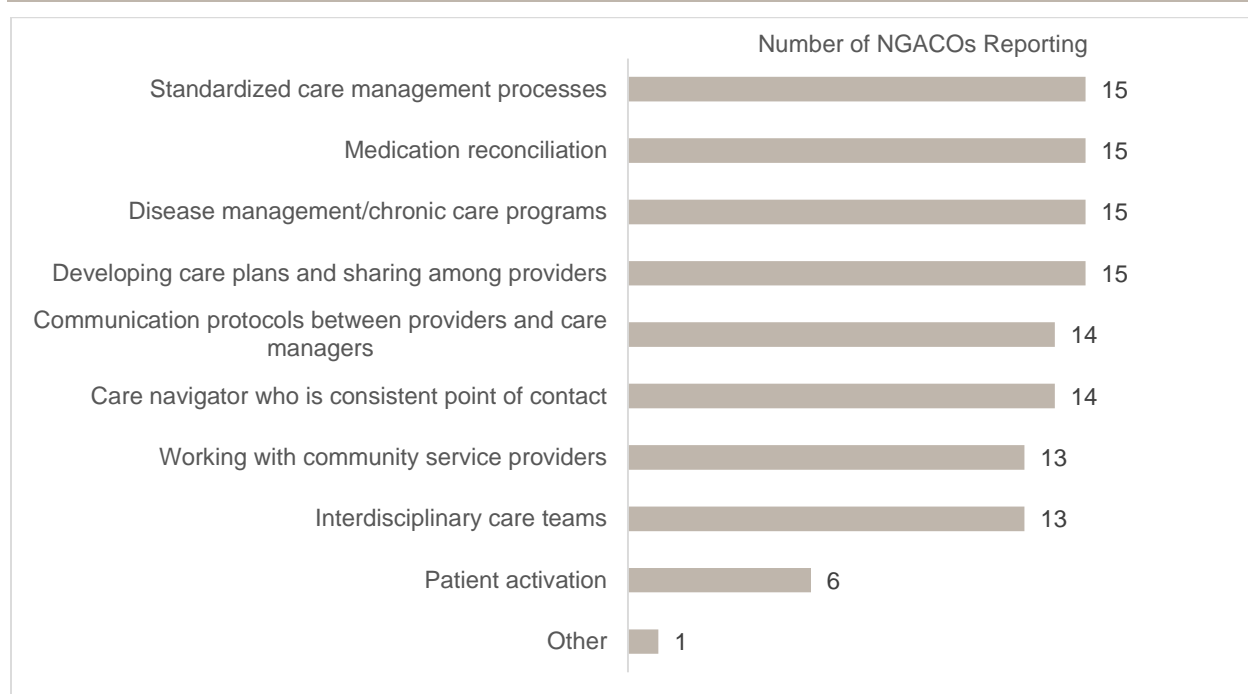
The majority of NGACOs are engaged in a number of care management activities. Most (n=13) have a centralized staff for care management at one administrative or clinical site that serves numerous participating and preferred providers; some delegate care management staff onsite to one or more practices. Many NGACO leaders explained during telephone interviews that they drew upon existing care management infrastructure for the NGACO model, adding staff and services and expanding to new settings and new populations. Care management programs are a central feature of managed care and an increasingly common component of integrated delivery systems (IDSs) and patient-centered medical homes. Most participating organizations had developed such programs for patients with public and private insurance coverage prior to joining the NGACO model. Leadership from one ACO described that implementation of the NGACO model entailed “scaling the program for a larger, slightly sicker population,” or using and expanding on existing case management or care coordination services for complex patients or patients with multiple comorbidities.

In this section, we summarize the types of care management activities NGACOs are implementing and the associated challenges, as revealed through surveys and semi-structured telephone interviews with NGACO leaders (see Exhibit 4.2). Because 2016 was the first year of NGACO implementation analyzed for this report, it was too early to discuss how NGACOs overcame challenges or assessed the success of related strategies (see Appendix H: Survey Frequency Tables).

Care management efforts involve the implementation of standardized processes and protocols, disease management and medication programs, and care team expansion or integration. All 15 NGACOs responding to the survey reported that they have standardized care management processes and care plans that are shared among providers. Additionally, all NGACOs reported providing chronic disease management programs and medication reconciliation. Fourteen NGACOs reported having communication protocols between providers and care managers as well as having a care manager or navigator who is a consistent point of contact for patients and physicians. Most collaborated with community service

providers and used multidisciplinary care teams, while only six NGACOs focused on patient activation. Among the few NGACOs that reported not engaging in certain care management activities, one NGACO reported that it did not use interdisciplinary care teams, position a care manager or navigator as a point of contact, or work with community service providers.

Exhibit 4.2. Care Coordination and Care Management Activities of the 2016 NGACOs in Performance Year 1



NOTES: Fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before the survey was fielded.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

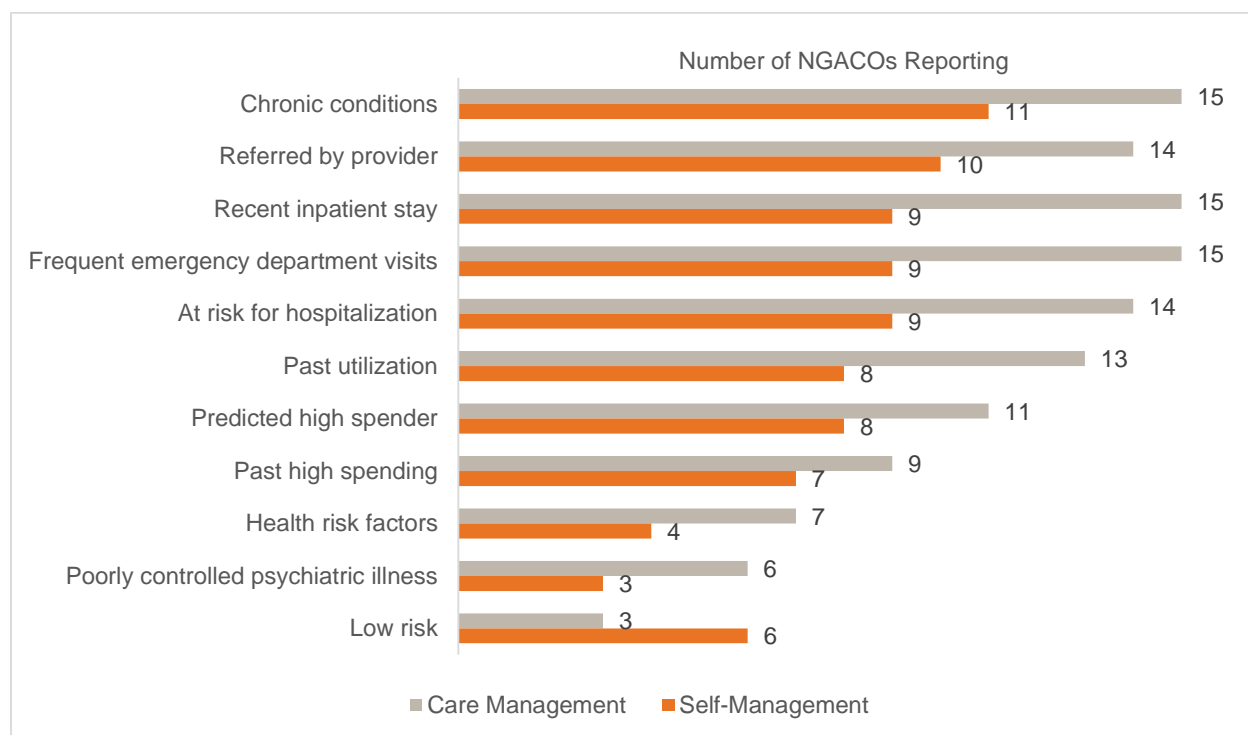
Almost all NGACOs conduct activities to engage patients in self-management of their illness, but most activities are centered on contacting patients about AWWs (n=13). About half of NGACOs reported activities such as encouraging self-tracking of health (n=7), or patient education programs (n=5). Patient support groups were reported by two NGACOs. During semi-structured telephone interviews, some NGACOs noted that when they engage beneficiaries at critical points of care, such as in the emergency department (ED) or during discharge from the hospital, beneficiaries are receptive to education about their care options and self-management.

A wide range of staff are involved in NGACOs' care management efforts. Almost all NGACOs are using interdisciplinary care teams, with care navigators or care managers often serving as a primary point of contact for beneficiaries and providers. In most cases, both IDS and non-IDS NGACOs directly employ their care managers (n=10), though two non-IDS NGACOs contract staff to perform care management. NGACOs directly employ anywhere from 2 to 50 care managers; about half employ 15 or fewer. Furthermore, 10 NGACOs reported hiring anywhere between 2 and 18 of these care managers specifically to fulfill requirements of the NGACO model.

Registered nurses and social workers are the most common type of staff implementing care management activities; notably, several NGACOs also used community health workers to work with beneficiaries on self-management. Providing care management and supporting patients in self-management are considered ways of influencing beneficiary engagement in behaviors that may improve health outcomes and ultimately reduce utilization and costs. Overall, NGACOs reported that each type of staff was more involved in care management than self-management activities, particularly advanced practice providers, pharmacists, and physicians.

During telephone interviews, NGACO leaders described using data-driven approaches to focus their efforts on high-risk populations and patients who have high health care utilization. All NGACOs are targeting their care management services toward patients with chronic conditions, frequent ED visits, and recent inpatient stays (see Exhibit 4.3). A few NGACOs are also targeting low-risk or healthy patients. Some are targeting beneficiaries with specific conditions, such as heart failure or diabetes, or those with comorbidities, and then further refining their care management for additional conditions or specialties. A few NGACOs explained that staff works together to identify patients needing care management. Recognizing that physicians have insight into patient needs, one NGACO identifies its highest-risk patients and asks physician practices to advise on whether and how to engage individuals via outreach efforts. Another NGACO targeted outreach on conditions or needs assessed by a clinical care coordinator.

Exhibit 4.3. Number of 2016 NGACOs Targeting Beneficiaries for Care Management and Self-Management in Performance Year 1



NOTES: Fifteen NGACOs responded to the question about care management; twelve NGACOs responded to the question about self-management. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

Care Transitions

For almost all the NGACOs, improving the coordination and management of care transitions is a priority. Many NGACO leaders reported during telephone interviews that post-acute care is one of the biggest contributors towards cost, and there are opportunities to reduce post-acute care costs from the time NGACO beneficiaries are identified as needing post-acute care through to the decision about which post-acute care provider is most appropriate. In this section, we summarize the types of care transition activities NGACOs are implementing and their associated challenges, as revealed through semi-structured telephone interviews with NGACO leaders and the survey (see Appendix H: Survey Frequency Tables).

Nearly all NGACOs are addressing the coordination and management of care transitions. All 15 NGACOs responding to the survey are working to improve handoffs to SNFs, with the majority using an evidence-based transition protocol (n=9), such as the Coleman model,⁴² Project Re-Engineered Discharge (RED),⁴³ or Project Better Outcomes by Optimizing Safe Transitions (BOOST).⁴⁴ Most NGACOs reported performing medication reconciliation post-discharge (n=14).

Additionally, many NGACO leaders discussed how they expanded care teams to include post-acute care coordinators and care team members whose duties include performing rounds in skilled nursing facilities (SNFs) and conducting home visits. A majority of NGACOs reported in the survey that social workers serve on discharge planning teams (n=12). NGACOs coordinate the delivery of a variety of human services (n=12), such as meals, transportation, or assistance with activities of daily living, and/or health services (n=11), such as medical equipment and occupational or physical therapy. A majority conduct post-discharge home visits, though not necessarily as part of the post-discharge home visit waiver which allows for these visit to be conducted with a lower degree of physician oversight than normally required (n=10).

Most NGACOs have processes for a member of the care management team to meet in person with the beneficiary prior to discharge (n=12) or to educate and engage families and caregivers about what to look for during the transition (n=11). Actively tracking beneficiaries' appointments and status post-discharge is another common care transition activity for the NGACOs. For example, most NGACOs report that they (i) meet with beneficiaries by phone within 72 hours after discharge (n=13), (ii) try to ensure that appointments with primary care providers are set within five days after discharge (n=11), and (iii) monitor beneficiaries for a defined period post-discharge (n=12). Some track specialist referrals (n=6). Few NGACOs reported using event notifications or telemedicine to support care transitions or communication with home health nurses (e.g., to assess transitions to home settings).

While NGACOs have a number of care transition activities in place, in semi-structured telephone interviews, some NGACOs noted that the inability to identify their NGACO beneficiaries when they seek care in hospitals outside of their network is a challenge for managing care transitions. Many have

⁴² The Care Transitions Program. <https://caretransitions.org/about-the-care-transitions-intervention/>. Accessed January 28, 2018.

⁴³ Agency for Healthcare Research and Quality. Re-Engineered Discharge (RED) Toolkit. <https://www.ahrq.gov/professionals/systems/hospital/red/toolkit/index.html>. Accessed January 28, 2018.

⁴⁴Society of Hospital Medicine. Project BOOST Mentored Implementation Program. <http://dev.hospitalmedicine.org/BOOST>. Accessed January 28, 2018.

developed tools and processes (dashboards identifying patients, authorization tools, transition lists, or state health information exchanges) to identify such beneficiaries during this critical time.

NGACOs also recognized the challenge of building post-acute care networks, particularly when patients are admitted to hospitals outside of their networks (see Chapter 2 for more information on post-acute care providers).

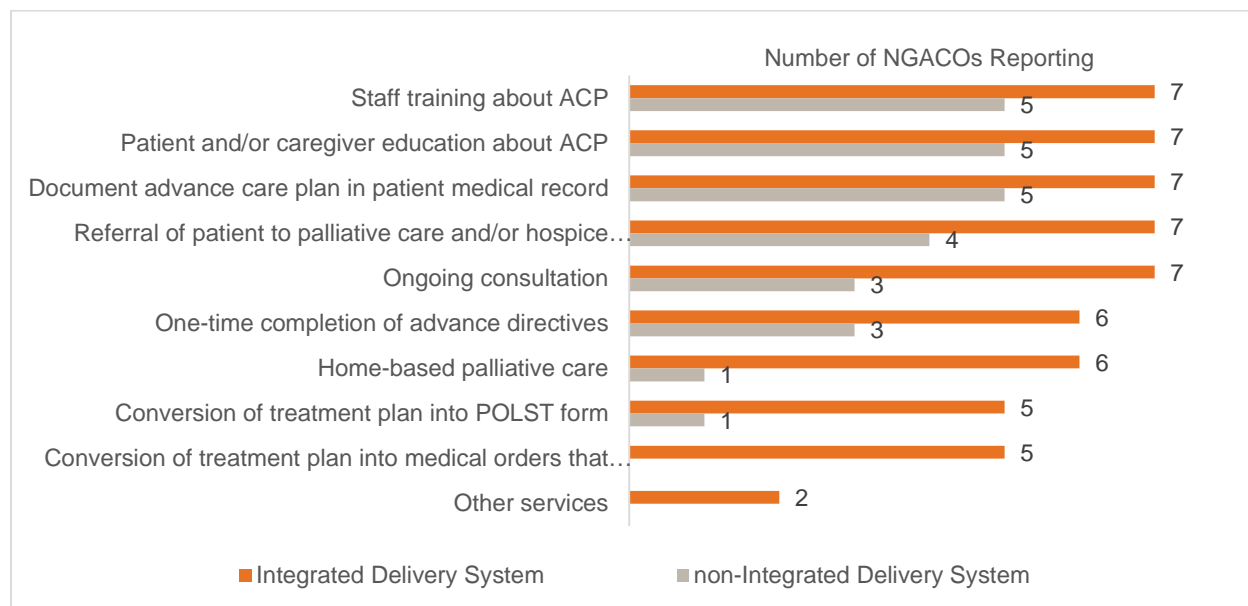
End-of-Life Care

NGACOs recognize the value of patient engagement on issues related to end-of-life care, specifically around advance care planning, palliative care, and hospice. While the number of services vary among the NGACOs, all offer at least one end-of-life service (see Appendix H: Survey Frequency Tables).

All NGACOs address end-of-life care. The most common end-of-life care activities involve education about, and documentation of, advance care planning. These activities include educating staff, patients, and caregivers about advance care planning as well as documenting advance care plans in patient medical records and conducting ongoing consultations with patients about advance directives. Other activities NGACOs reported include one-time completion of an advance directive (n=9), home-based palliative care (n=7), physician orders for life-sustaining treatment (n=6), and medical orders that are portable and accessible (n=5).

More IDS NGACOs reported offering specific end-of-life services than non-IDS NGACOs (e.g., one-time completion of advance directives, referral of patients to palliative care or hospice settings, training staff around advance care planning). Specifically, five IDS NGACOs convert treatment plans to portable and accessible medical orders whereas no non-IDS NGACOs reported this activity. Similarly, six IDS NGACOs offer home-based palliative care, and one non-IDS NGACO reported offering this service. See Exhibit 4.4.

Exhibit 4.4. End-of-Life Care Activities Offered by 2016 NGACOs in Performance Year 1



NOTES: Fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected. ACP = advanced care planning, POLST = physician orders for life-sustaining treatment.

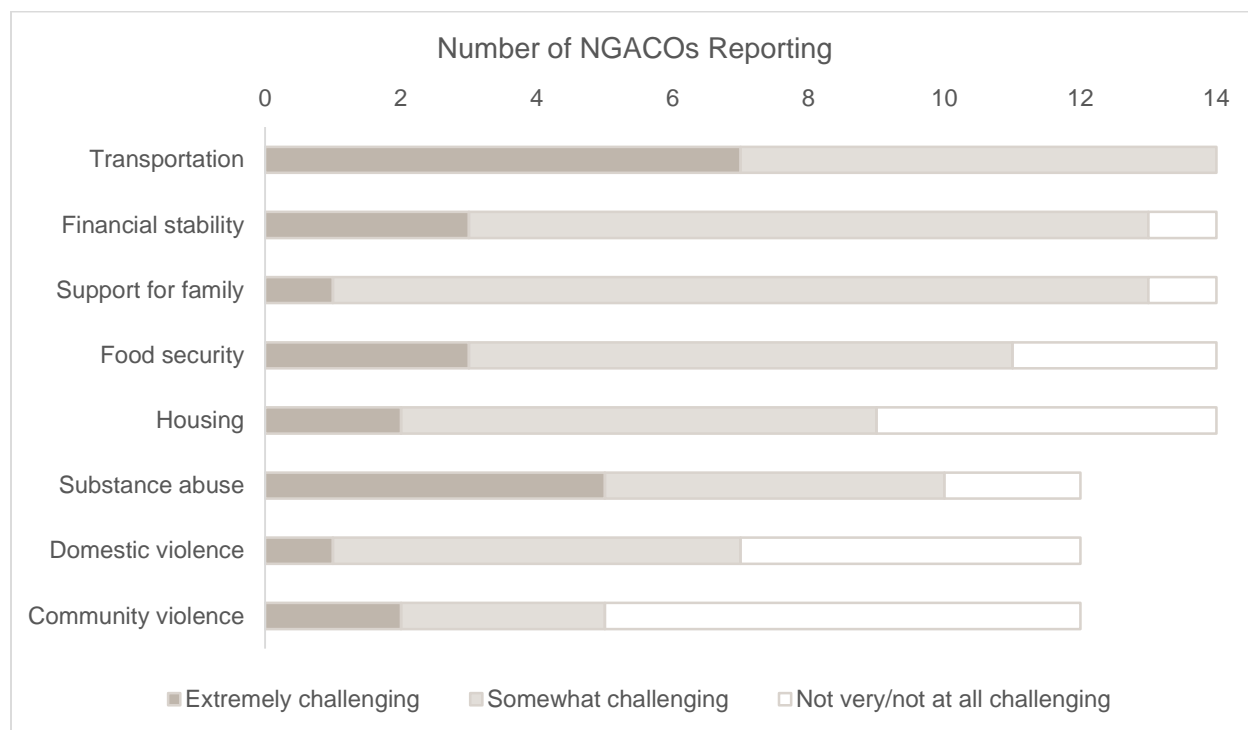
SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

Unlike with the other types of care management activities, physicians are involved in end-of-life care activities at almost all of the NGACOs, though registered nurses and advanced practice providers are also commonly involved.

Social Determinants of Health

ACOs report that a number of social determinants present challenges to improving their beneficiaries’ health. As illustrated in Exhibit 4.5, NGACOs most frequently identified transportation and substance abuse as “extremely challenging.” Most NGACOs are addressing social needs through in-house interventions or through partnerships with community-based organizations. At this time, fewer ACOs are engaging in partnerships with local businesses, such as taxi or ride-share companies or grocery stores. When reporting on barriers to addressing beneficiaries’ social needs, almost half of NGACOs noted that lack of funding (which may include funding for state-level programs and community-based organizations) posed the biggest challenge, while the rest of NGACOs reported the top barriers as lack of community support, provider expertise, or staff time.

Exhibit 4.5. Extent to Which Social Determinants Challenge 2016 NGACOs Efforts to Improve Health Outcomes in Performance Year 1



NOTES: Fourteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected. Categories with less than 14 ACOs reporting contain missing responses or responses of “not applicable” from ACOs.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

4.4. Data Analytics and Health IT

In this section, we focus on the types of data and health IT systems NGACOs are using to support accountable care activities, specifically managing patient populations, monitoring performance, and managing financial risk. We also discuss challenges associated with health IT and data analytics and leaders’ perceptions of the impact of health IT on health care cost, utilization, and quality at their NGACO (see Appendix H: Survey Frequency Tables). Overall, building data analytics capacity was a challenge for many NGACOs. Several described a slow ramp-up period or learning curve that required investments of time and resources. In future reports we will further explore how NGACOs intended to overcome data analytics challenges or assess the success of related strategies.

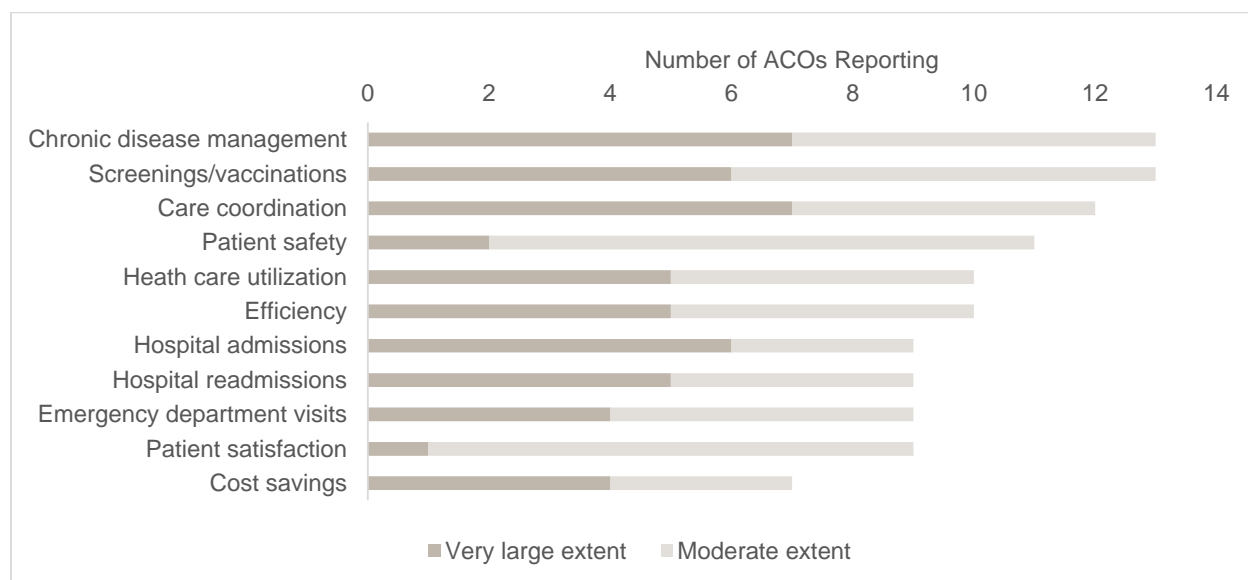
Managing Patient Populations

ACOs integrate numerous data sources to support their activities. In the survey, fourteen NGACOs reported using post-adjudicated claims data supplied by CMS claims feeds and most use electronic clinical data to support NGACO activities. A majority use state or disease registry data and/or patient-reported data (n=9 and n=8, respectively). Fewer than half use pre-adjudicated administrative, financial, or billing data (n=6). The use of data from remote monitoring devices is less common (n=3). On average, NGACOs integrate six or seven types of data, with Medicare claims, pharmacy, primary care, laboratory,

and specialty care data being the most common. Two NGACOs reported integrating 10 types of data for analysis, including behavioral health, hospice, home health, private insurer claims, and Medicaid claims data. Three NGACOs reported integrating fewer types of data; they combined Medicare claims with one or two of the following: private insurer claims, pharmacy, home health, or primary care data.

NGACOs rely on data analytics to identify gaps in care, manage care transitions, and support post-discharge programs. Numerous NGACOs reported that health IT has improved care coordination, chronic disease management, hospital admissions, and screening and vaccinations “to a very large extent.” NGACO leaders noted in semi-structured telephone interviews that they use information systems and data to identify their beneficiaries in hospital (inpatient or ED) or primary care settings for targeted care management. Twelve NGACOs reported in the survey that they know in real time (or near real time) about at least half of inpatient admissions occurring among their aligned beneficiaries. NGACOs commonly use health IT to identify high-risk or high-cost beneficiaries (n=13) and to coordinate care (n=13). NGACOs also use health IT to support programs such as those targeting high-cost, high-risk patients (n=11) and programs that facilitate disease management (n=9) and medication management (n=9). While six non-IDS NGACOs reported using health IT for many of the same functions as IDS NGACOs, they differed in several areas. IDS NGACOs were more likely to use health IT to (1) inform programs to track adherence to evidence-based clinical care guidelines (n=7 for IDS NGACOs, n=1 for non-IDS NGACOs); (2) inform disease management programs (n=7 for IDS NGACOs, n=2 for non-IDS NGACOs); and (3) address high-cost/high-utilization patient populations (n=8 for IDS NGACOs, n=3 for non-IDS NGACOs). Many NGACOs also noted that health IT has moderately or largely improved patient safety, health care utilization, and efficiency (See Exhibit 4.6).

Exhibit 4.6. Extent to Which Health IT has Improved 2016 NGACOs Functions in Performance Year 1

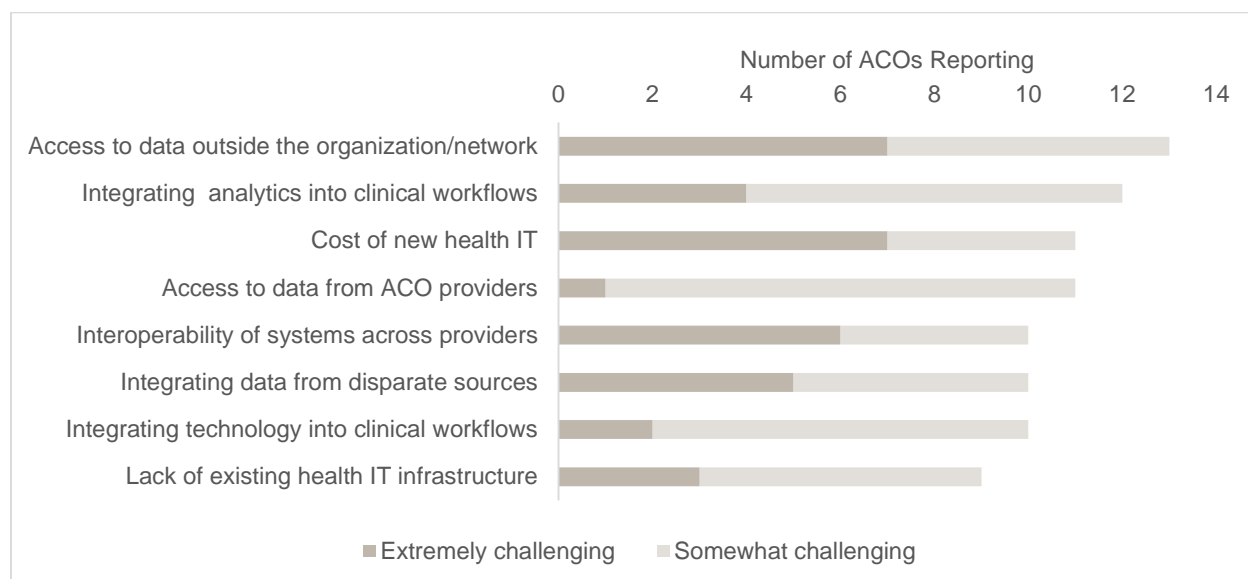


NOTES: Fourteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

NGACOs reported that gaining access to data outside their organization or network, interoperability among providers in the network, and the cost of health IT were extremely challenging (see Exhibit 4.7). Approximately half of the 2016 NGACOs reported in the survey that nine different EHRs were in use within the NGACO, and semi-structured telephone interviews suggested that in some cases even more are in use among their providers.⁴⁵ Many NGACOs explained that having multiple EHRs and lack of interoperability within their NGACO network prevent effective information exchange for care coordination, quality improvement, and performance improvement. In addition, consolidating and integrating data across multiple EHR platforms is a challenge. Several NGACOs noted that their providers’ EHR capabilities were also an issue. For example, while their EHR systems could produce registries, they could not distinguish levels of risk, identify high-cost patients, produce real-time reminders, or track patients across a continuum. At least one NGACO required all providers in their NGACO to adopt a single EHR platform, which has ensured relative ease in rolling out strategies to engage providers and collecting data from the EHR.

Exhibit 4.7. Health IT and Analytic Challenges to Meeting 2016 NGACOs Goals in Performance Year 1



NOTES: Fourteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

NGACOs have varying capacities and interests in identifying NGACO beneficiaries at the point of care. Two NGACOs described the point of care as being payer-neutral, with one stating, “Anything that takes place at the point of care is the same for all patients, between payers.” Among those interested in identifying NGACO beneficiaries at the point of care, one NGACO reported being unable to flag NGACO beneficiaries in its EHRs, which made it challenging for its providers to proactively reach out to and intervene with high-risk patients. Another created a registry of its NGACO patients that fed into a dashboard and reminder systems within its EHR to help identify those patients. One NGACO used its

⁴⁵ In NORC’s ACO Leadership Survey, two NGACOs did not provide information about EHRs, and two NGACOs left the model demonstration before these survey data were collected.

registry to create alerts that signal when NGACO patients are admitted to the hospital or visit the ED. Seven of fourteen NGACOs responding to the NGACO survey identified prospective alignment as being the most helpful feature of the NGACO model in terms of achieving their goals, because it allows NGACOs to stratify beneficiaries based on risk and potentially identify them at the point of care.

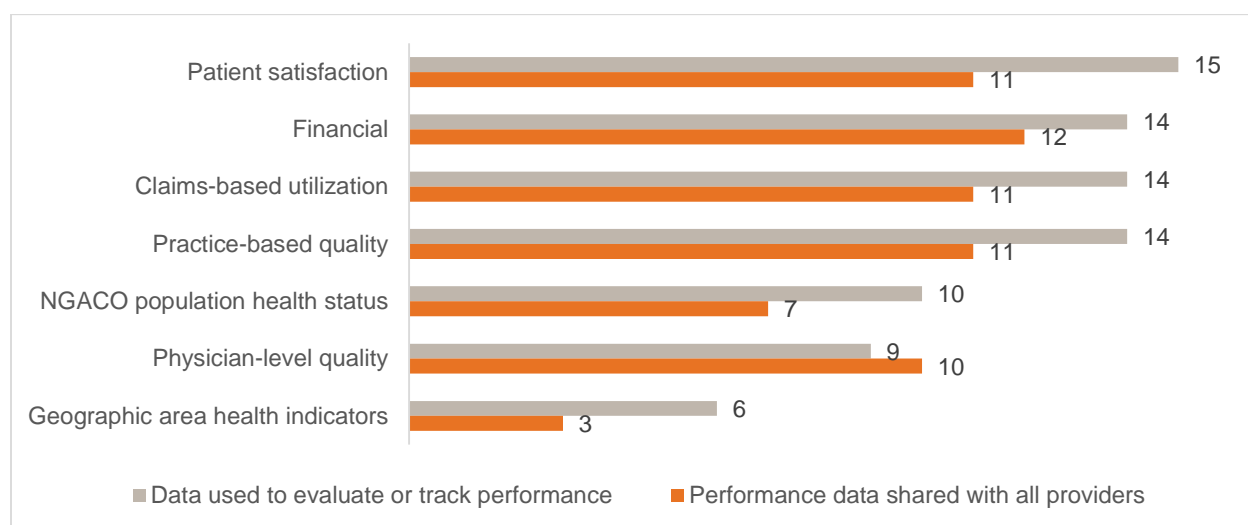
Monitoring Performance

The ability of NGACOs to internally track and monitor their participants’ performance may influence the engagement of their providers and their approaches to care delivery. One way that ACOs have sought to influence the behavior of their partner providers is by providing them with information on their individual performance.

NGACOs track performance data primarily in four areas: financial, claims-based utilization, patient satisfaction or experience, and practice-based quality. See Exhibit 4.8. More than half also track physician-level quality and clinical data on the health status of the NGACO population. Financial data are tracked monthly (n=13), with three NGACOs reporting that they examine financials quarterly. Utilization, quality, and population health tend to be tracked monthly, although some NGACOs look at these data on a quarterly basis. Patient satisfaction tends to be monitored annually (n=9).

The 15 NGACOs that responded to the survey varied with regard to the number of performance indicators they shared with their providers. While one NGACO reported it did not share any performance data with its providers, 10 NGACOs reported sharing four or more indicators. The most commonly shared indicators are financial measures, claims-based utilization measures, patient satisfaction measures, and quality measures (at the clinic or physician-level).

Exhibit 4.8. Number of 2016 NGACOs That Track and Share Performance Indicators in Performance Year 1



NOTES: Fifteen NGACOs responded to the question about tracking performance data; fourteen out of fifteen NGACOs responded to the question about sharing data with providers. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected. Two NGACOs that reported not tracking physician-level quality measures reported sharing these data with all providers. Only one reporting NGACO does not share data with providers.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

Two NGACOs reported that they share all seven performance indicators listed in Exhibit 4.8 with providers, including population health status of NGACO beneficiaries and health indicators of the geographic area served. Three NGACOs reported sharing only patient satisfaction indicators plus two of the following types of measures: financial, utilization, and quality.

NGACO leaders noted in semi-structured telephone interviews that they share data with providers through reports and dashboards, often integrated into the EHR. Survey results aligned with this finding, as 10 of 14 reporting NGACOs typically share these data with providers at an aggregate level for the NGACO. About half of the NGACOs do, however, share individual provider (n=7) and practice-level data (n=7). When they do, the NGACOs share comparison data for similar providers or practices, as appropriate.

Managing Financial Risk

Twelve of fourteen NGACOs reported using information systems to track utilization as a way to manage financial risk, though almost all NGACOs use multiple processes to accomplish this goal. Most NGACO leaders shared during semi-structured telephone interviews that they face the challenge of not knowing their Medicare beneficiaries' or populations' risk score and spending in advance to inform their financial forecasts and strategies. NGACOs cited problems obtaining comprehensive or adequate data to accurately forecast their expenses. One NGACO noted that, due to the claims lag, the NGACO is "looking in the rear-view mirror. We have enough tools to look back and say what happened, and the only thing we're trying to forecast is our HCC [hierarchical condition category] model. Our platform is built on a risk score model, and we're using that to identify the potential risk score based on that claim." Still another NGACO described a shared sentiment among NGACOs that data lags and large forecasting swings based on estimates from CMS data complicated managing financial risk:

"Although we do get claims data, we don't necessarily get 100-percent claims data. We get [claims] run-out, fluctuation of spend[ing] quarter to quarter. We just don't have good modeling in place to see current versus expected spend[ing]."

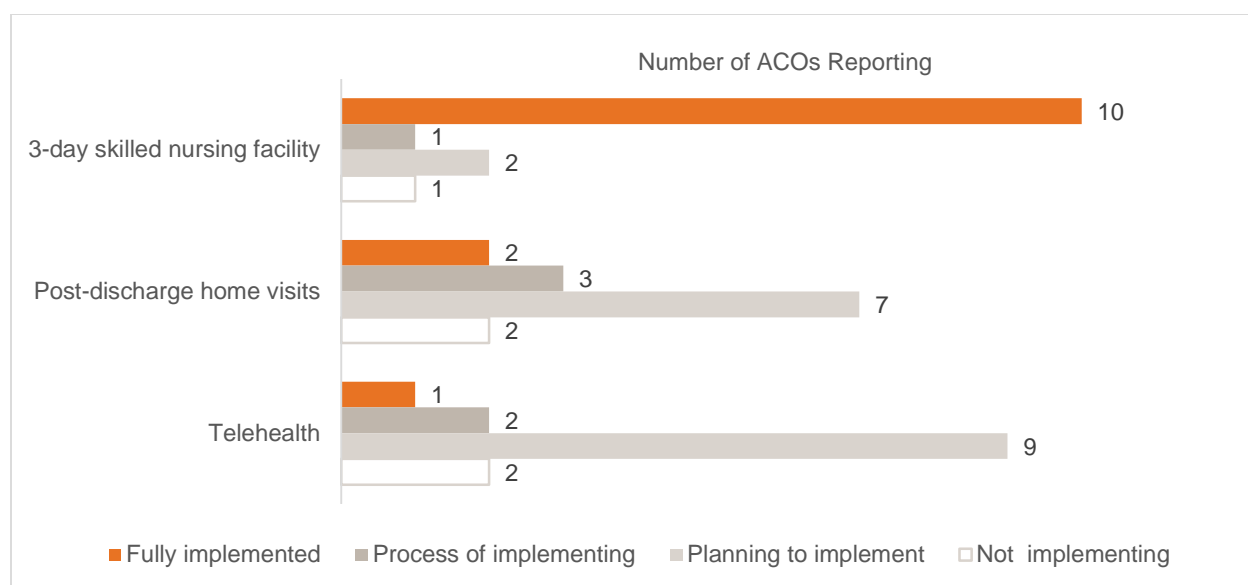
Other NGACOs cited timeliness of data from CMS as a strength of this model compared with past models. At the same time, NGACOs have experienced challenges associated with the initial benchmark, beneficiary churn, and quarterly volatility based on estimates from the CMS data. Further, NGACOs were accustomed to receiving analytics and support from their Medicare Advantage contracts as opposed to generating it themselves. To more accurately forecast risk, NGACOs are using outside data and consulting firms to make initial estimates. NGACOs reported costly investments to conduct feasibility studies and better understand risks and opportunities.

Despite these challenges, many NGACOs leaders interviewed with previous experience in the SSP and Pioneer models generally preferred the NGACO model. They cited greater satisfaction with attributes of the NGACO model overall, including the risk score, stability of the benchmark, and delivery of monthly financial data. Additionally, although NGACO leaders acknowledged the need to accurately track expenses, a couple were less concerned about their performance in this model in the short term, because their organizations reported being committed to increasing participation in value-based payment systems as part of their long-term organizational strategy.

4.5. Benefit Enhancements

CMS benefit enhancements are defined as “waivers of certain Medicare service rules, and initiatives intended to assist [NGACOs] in improving care for and engagement of their beneficiaries.”⁴⁶ Benefit enhancements are optional, though as illustrated in Exhibit 4.9, most NGACOs have implemented, are in the process of implementing, or plan to implement them. In the first year of the model, the three-day SNF waiver was the most widely implemented. The one NGACO that reported not implementing the waiver had started to implement it but discontinued because claims of patients who needed long-term care rather than 3-day SNF waiver services were being paid by CMS without the ACO’s authorization—in other words, the ACO lacked control over which patients could use the waiver. Slightly more NGACOs had implemented or were in the process of implementing the post-discharge home visits waiver than the telehealth expansion waiver; however, these were at most one-third of the 2016 NGACOs. Still, at least half of the NGACOs planned to implement either or both of these benefit enhancements in future years.

Exhibit 4.9. Number of 2016 NGACOs Implementing Benefit Enhancements in Performance Year 1



NOTES: Fourteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected.

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

We summarize in this section the activities NGACOs have undertaken to implement the enhancements and note barriers they encountered with respect to their implementation.

Benefit Enhancement Implementation Activities

Survey data indicated that implementation activities were similar across NGACOs implementing any benefit enhancement. Most NGACOs that had implemented or were planning to implement benefit

⁴⁶ Centers for Medicare & Medicaid Services. Next Generation ACO Model. <https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/>. Accessed January 28, 2018.

enhancements developed management plans, including standards and protocols, and were providing education and technical assistance to their providers. Those implementing the SNF waiver were also developing partnerships with facilities. NGACOs' approaches to providing oversight of the SNF admissions varied, with three having a dedicated waiver care coordinator, three having an inpatient care coordinator, two having physicians provide oversight, and one having its NGACO care coordinator fill this role.

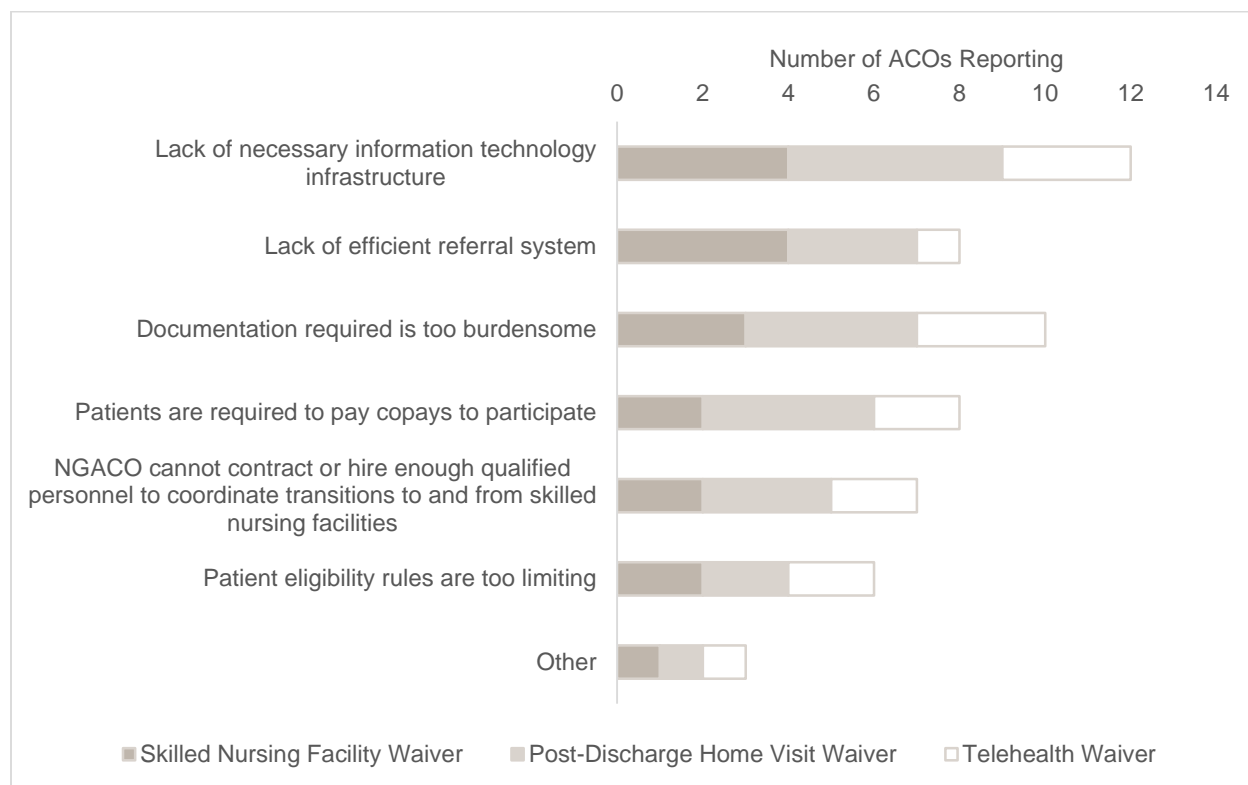
Other commonly cited implementation activities around the benefit enhancements included building systems to assess aligned beneficiary eligibility (for the benefit) and establishing data analytic capacity to monitor performance. Each was reported by approximately three-quarters of NGACOs implementing the waivers. For the SNF waiver, several NGACO leaders underscored during telephone interviews the importance of having systems in place to identify when NGACO beneficiaries are admitted to the hospital or visit an ED, particularly when those visits occur outside of the NGACO network. In such cases, the NGACOs seek to influence discharge planning, including SNF referrals.

Establishing committees or leadership teams to oversee waiver implementation was more common among NGACOs implementing the home visit or telehealth waiver than the SNF waiver. This is not surprising, as many NGACOs had previously used the SNF waiver as part of Medicare Advantage contracts; therefore, involvement of leadership or committees may have already been established prior to the Next Generation model and did not require additional lift once ACOs joined the model.

Challenges to Benefit Enhancement Implementation

NGACO leaders indicated during telephone interviews that administrative burden and challenges to implementation were significant for each of the benefit enhancements (see Exhibit 4.10). Those NGACOs implementing the SNF waiver reported relatively fewer barriers to implementation compared with those implementing either the home visit or the telehealth waivers (see Appendix H: Survey Frequency Tables). For example, NGACO leaders identified challenges implementing the telehealth or home visit waivers due to lack of efficient referral systems and IT infrastructure which could have reduced what NGACO leaders felt was burdensome and time-consuming for staff to document delivery of care (e.g., documentation of physical, financial, social, safety assessments during home visits). In the telephone interviews, NGACO leaders also felt that integrated data sources within the EHR would be necessary to complete and report on home visits under the waiver. Those implementing the SNF waiver may not experience these as challenging because of prior experience with the SNF waiver under Medicare Advantage or other ACO initiatives.

Exhibit 4.10. Challenges among 2016 NGACOs Implementing Benefit Enhancements in Performance Year 1



NOTES: Fourteen out of fifteen NGACOs responded to this question. One NGACO did not respond to the survey, and two NGACOs left the demonstration model before these data could be collected

SOURCE: NORC analysis of data from 2016 NGACO Leadership Survey.

During telephone interviews, NGACO leaders noted challenges with the SNF waiver around authorization. These included establishing robust processes for identifying beneficiaries eligible to transfer directly to the SNF from the hospital or ED as well as processes to ensure authorization for the beneficiary to receive benefits under the waiver only if the beneficiary did not require the inpatient stay. Some NGACOs found these processes lacking or difficult to implement and different from those found in Medicare Advantage.

In telephone interviews, NGACO leaders also described numerous challenges with implementing the home visit waiver, which relaxes the requirements for physician supervision but still maintains the requirement that the services be rendered by a licensed clinician. Many ACOs faced shortages of nurse practitioners or physician assistants in local markets. Another challenge was integrating this particular type of home visit as part of a broader post-acute care strategy; for some ACOs, their established home visit programs used registered nurses, whose service was not covered by the benefit. There was inconsistent understanding across the ACOs around the requirements of the waiver. ACO leaders described challenges at the provider practice level including concerns around compliance, billing, and documentation, and overall determined that implementation “had too much burden” and “wasn’t worth the lift.” Some ACOs also identified the beneficiary co-payment requirement as a challenge.

With respect to the telehealth expansion waiver, NGACOs expressed doubt during telephone interviews about providers' or beneficiaries' readiness or willingness to accept a telehealth visit. They also underscored the challenges associated with the infrastructure and cost required to implement the service without information on the return of that investment.

4.6. Annual Wellness Visit

Annual Wellness Visits (AWVs), introduced in 2012, allow coverage of a yearly visit to develop or update a beneficiary's personalized prevention plan. AWVs are independent from evaluation and management (E&M) coded visits, which are "medically necessary," and yearly routine physicals, which are not covered by Medicare. AWVs allow beneficiaries to discuss family and medical history, preventive care, and medications with doctors who are regularly involved in providing their care. AWVs are available to all Medicare Part B enrollees, and are not an enhancement specific to NGACO. However, they are a benefit that is currently utilized by a relatively low portion of the eligible population. The model incentivizes the completion of the AWV with a \$25 Care Coordination Reward paid directly by CMS to beneficiaries starting in the second performance year (2017).

NGACOs are actively promoting AWVs. NGACO leaders viewed these visits as an opportunity for providers to engage aligned beneficiaries who may not have otherwise come for a visit. In addition to developing or updating the prevention plan to improve beneficiary self-management, NGACO leaders perceived the AWV as an effective and more personal way to educate beneficiaries on the NGACO and available services. NGACOs report that they are encouraging providers to talk to beneficiaries about the AWV when they are in the office for another visit (n=14) and when they call them to schedule appointments (n=11) and to give beneficiaries written materials about the AWV (n=9). In telephone interviews, some NGACOs said starting in 2017 they are promoting the \$25 Care Coordination Reward that CMS pays to beneficiaries for completing an AWV; some reported engaging with beneficiaries by drafting beneficiary notification letters and preparing for beneficiary questions.

Discussed in more detail in Chapter 5, we found that the number of AWVs increased among beneficiaries in the NGACO group, relative to beneficiaries in the FFS comparison group (See Appendix L: Exhibits to Support Chapter 4, Exhibit L.1). We observed a nearly 12 percent increase in aligned beneficiaries who had an AWV. This increase may reflect the concerted focus by NGACOs described here.

4.7. Beneficiaries' Patterns of Care

NGACO beneficiaries' patterns of care—that is, the extent to which aligned beneficiaries receive care from NGACO providers—will be an important mediating measure in understanding the impact of the NGACO model on cost, utilization, and quality of care. Beneficiaries' care-seeking behavior is influenced in part by the extent to which NGACOs providers refer beneficiaries to other providers within the network; NGACO provider networks are suitable to beneficiaries; and beneficiaries are aware of and committed to the NGACO concept. Care-seeking is also influenced by the fact that all Medicare fee-for-service (FFS) beneficiaries, including NGACO-aligned beneficiaries and the beneficiaries identified as comparators in our analyses (see Appendix D: Quantitative Methods and Analysis for information on the

selection of the comparison group), can obtain care from any provider they choose. These beneficiaries may be unaware that they are in an NGACO or which providers are in an NGACO.

To examine beneficiary patterns of care in this context, we analyzed claims and administrative data to assess the extent to which aligned beneficiaries receive care in their NGACO's provider networks. We examined three measures of the extent to which aligned beneficiaries received care through their respective NGACO provider networks as observed in the first performance year of the 2016 NGACOs based on claims and administrative data. The three patterns of care measures are as follows:

- **Contract penetration:** The proportion of participating providers' Medicare FFS E&M revenue (measured as total paid qualified evaluation and management [QEM] visits) generated by the aligned beneficiary population. This measure shows the extent to which providers are focused on their aligned populations. Greater contract penetration enhances incentives for ACOs to implement systemic changes that affect all of the Medicare beneficiaries they serve.⁴⁷
- **Continuity of care:** The proportion of QEM visits that NGACO beneficiaries made to the participating providers to which they were aligned, out of all QEM visits made by NGACO beneficiaries in a year.⁴⁸ If the NGACO model fosters the building of provider networks that succeed in managing care for aligned beneficiaries, then this measure of continuity can be understood as an indicator of whether NGACO beneficiaries' primary care providers are indeed their usual sources of care. Greater continuity of care also gives the NGACO more control over cost and quality, making it easier for it to hold participating providers accountable.
- **Leakage:** The extent to which NGACO beneficiaries receive care from providers other than the providers affiliated with the NGACO to which they are aligned.⁴⁹ Higher leakage may weaken an NGACO's ability to manage care for aligned beneficiaries and may increase the cost of coordinating care; while lower leakage may render it challenging to ACOs to incentivize reduced spending if it negatively affects the revenue stream of providers in the network. We assessed leakage by considering Medicare spending on a broad range of services that represent a significant portion of total expenditures, that is, calculated as the proportion of payments for part A and select part B claims made to NGACO aligned beneficiaries that on the services provided by non-NGACO providers. In order to consider a broad range of services that represent a significant portion of total expenditures, we included participating and preferred providers.

This analysis provides the foundation for future analyses in which we will examine the association of NGACO beneficiaries' patterns of care with improved outcomes in terms of cost, utilization, and quality of care. We will also expand our analysis of provider engagement strategies related to referrals and keeping patients within an NGACO provider network through our provider survey, site visits and follow-up interviews. See Appendix D (Quantitative Methods and Analysis) for more information about how these measures were computed.

⁴⁷ McWilliams JM, Chernew M, Dalton JB, Landon BE. Outpatient care patterns and organizational accountability in Medicare. *JAMA Intern Med.* 2014; 174(6):938–945.

⁴⁸The continuity measures are calculated using the Usual Provider Continuity Index (see Saultz JW. Defining and measuring interpersonal continuity of care. *Ann Fam Med.* 2003;1(3):134–143; and Jee SH, Cabana MD. Indices for continuity of care: A systematic review of the literature. *Med Care Res Rev.* 2006;63(2):158–188), modified at the organizational level, as the proportion of visits furnished by respective ACOs out of all evaluation and management visits.

⁴⁹ McWilliams et al., 2014.

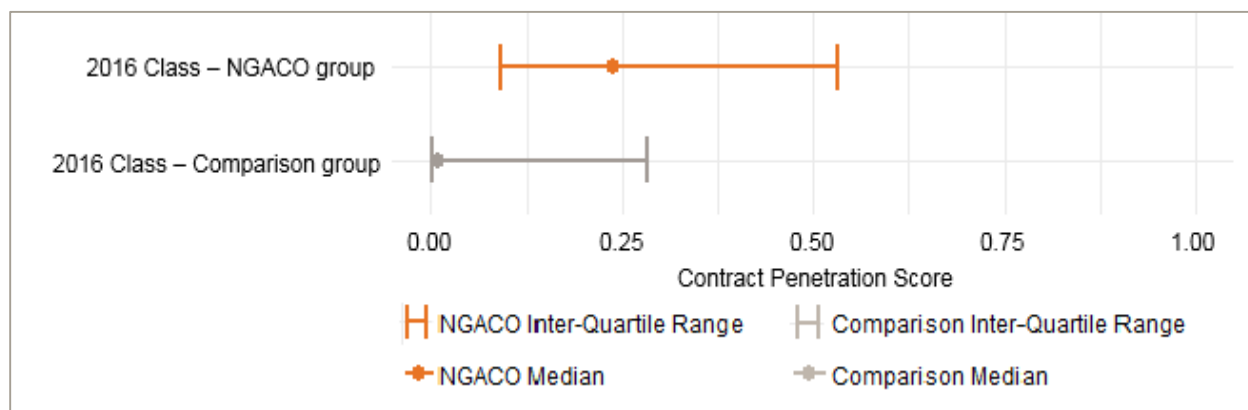
Results

As a whole, the 2016 NGACOs had more favorable scores than the comparison group on measures of contract penetration, continuity of care, and leakage of services to out-of-network providers. There was considerable variation across NGACOs on all of these measures, detailed in Appendix L (Exhibits to Support Chapter 4, Exhibits L.2 through L.4).

Contract Penetration

Twenty-four percent of the 2016 NGACO participating providers' Medicare FFS revenue from paid QEM visits was generated from care provided to NGACO-aligned beneficiaries. This compares with less than one percent of non-ACO providers' QEM revenue generated in care delivery for NGACO beneficiaries in the comparison group. Exhibit 4.11 depicts the extent of contract penetration, comparing NGACO-aligned beneficiaries (orange line) to the comparison group of Medicare FFS beneficiaries, whose usual care is provided outside of ACO arrangements (gray line).

Exhibit 4.11. Proportion of Revenue Generated by their Respective Aligned Beneficiaries, 2016 NGAGOs vs. Comparison Group in Performance Year 1



NOTES: The contract penetration measure is presented as a median score (dot) and interquartile range (where 50% of the contract penetration scores are dispersed). Contract penetration values range from zero (no revenue generated by aligned beneficiaries during the first performance year) to one (all revenue generated by aligned beneficiaries), with increasing scores indicating greater contract penetration.

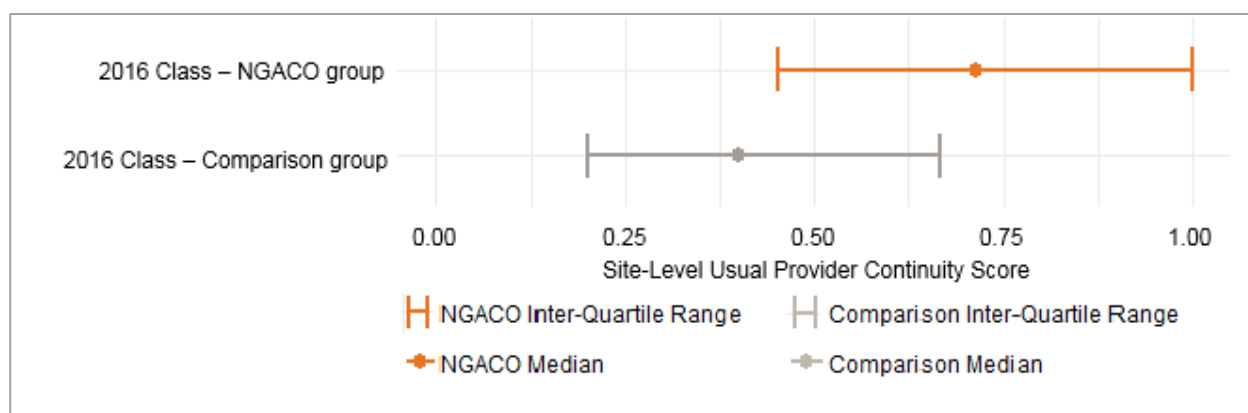
SOURCE: NORC analysis of paid 2016 FFS institutional and non-institutional E&M claims, CMS Chronic Condition Data Warehouse. Available at <https://www.ccwdata.org/web/guest/home>.

NGACOs' contract penetration shows that services provided to their aligned beneficiaries comprised a larger share of revenue for NGACO providers than they do for other beneficiaries attributed to non-ACO providers in the comparison group. In other words, NGACO providers devoted more of their care to their attributed population than non-ACO providers. In addition, NGACOs varied in their contract penetration, as median contract penetration ranged from a low of 0.08 (i.e., less than one percent of revenue is from aligned beneficiaries) to a high of 0.70 (70 percent of revenue is from aligned beneficiaries). See Appendix L (Exhibits to Support Chapter 4, Exhibit L.4), for a breakdown of contract penetration scores by NGACO and their comparison groups.

Continuity of Care

Seventy-one percent of aligned beneficiaries’ paid QEM visits were within their respective NGACO provider networks, compared with forty percent of the comparison group’s (i.e., 40 percent of comparison group beneficiaries’ paid QEM visits were to the non-ACO providers to which they were aligned in our analysis). Exhibit 4.12 below depicts the extent of continuity in QEM visits, comparing the experience of NGACO-aligned beneficiaries (orange line) with that of the comparison group of beneficiaries (gray line).

Exhibit 4.12. Beneficiaries Receiving Care inside Their Respective Provider Networks, 2016 NGAGOs vs. Comparison Group in Performance Year 1



NOTES: The continuity of care measure is presented as a median score (dot) and interquartile range (where 50% of the continuity scores are dispersed). Continuity values range from zero (no visit to the aligned organization during the first performance year) to one (all visits made to the aligned organization), with increasing scores indicating greater continuity of care.

SOURCES: NORC analysis of paid 2016 FFS institutional and non-institutional E&M claims, CMS Chronic Condition Data Warehouse. Available at <https://www.ccwdata.org/web/guest/home>.

All of the 2016 NGACOs outperformed their respective comparison groups on continuity of care; however, continuity of care varied across NGACOs, with median scores ranging from a high of 1.0 (i.e., all QEM visits were provided in network) to a low of 0.4 (40 percent of QEM visits were provided in network). See Appendix L (Exhibits to Support Chapter 4, Exhibit L.2), for a breakdown of continuity of care scores by NGACO and comparison groups.

Leakage

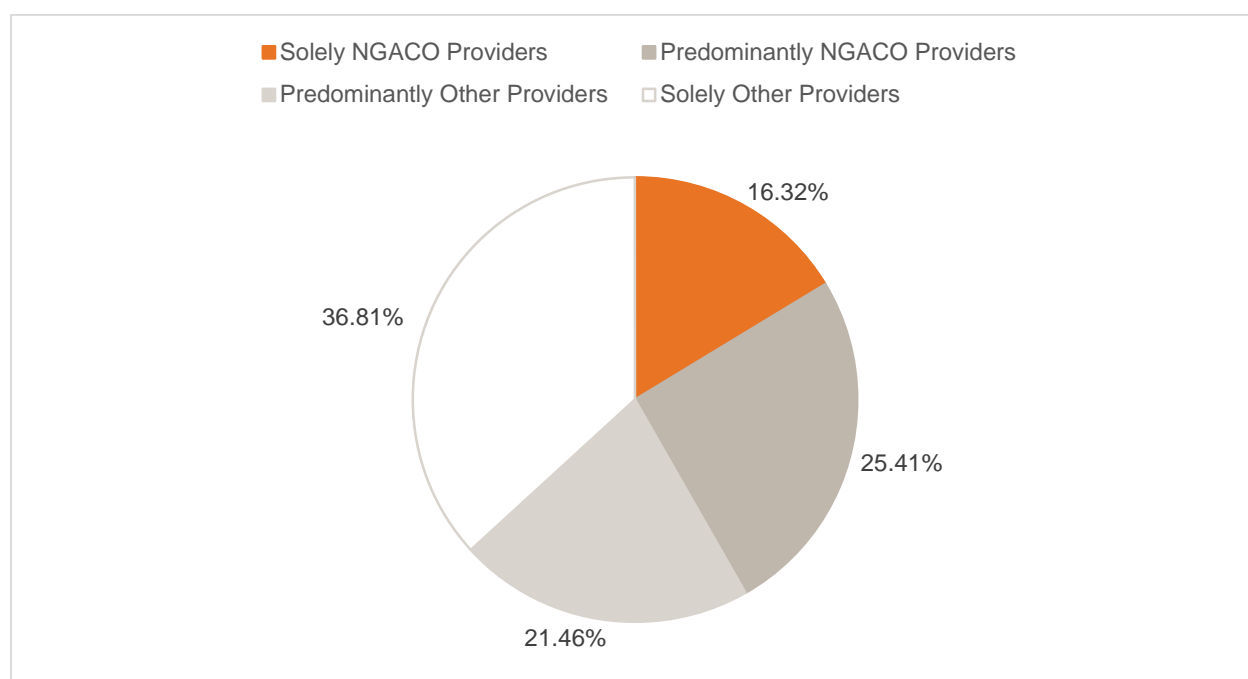
While 16 percent of Medicare spending (for Part A and selected Part B services) for NGACO-aligned beneficiaries occurs exclusively within the NGACOs’ provider networks, there is considerable leakage outside of these networks. Taking into account a broad range of services that represent a significant portion of total expenditures (i.e., all Medicare Part A claims and Part B claims for procedures, E&M visits, imaging, and chemotherapy), and even when NGACO preferred providers are considered in the network, more than half of Medicare spending for aligned beneficiaries occurs with providers who are outside of their respective NGACO provider networks. Exhibit 4.14 below shows the extent of leakage for aligned beneficiaries. Specifically, 16 percent of Medicare spending for NGACO-aligned beneficiaries occurred exclusively within the network (indicated as “solely NGACO providers” in the pie chart). By comparison, 37 percent of Medicare spending for NGACO-aligned beneficiaries was

exclusively for services provided by non-NGACO providers (indicated as “solely other providers” in Exhibit 4.13). The remaining 47 percent was due to services received from a mix of in-network and out-of-network providers. Twenty-five percent of spending for NGACO-aligned beneficiaries was predominantly (at least half) inside the network, while 21 percent was predominantly outside the network.

In telephone interviews, NGACO leaders described their lack of control in incentivizing or encouraging beneficiaries to seek care within the network, and noted the challenges to coordinating and managing care when beneficiaries seek services outside of NGACO networks. As one NGACO leader put it:

“Freedom of choice is so engrained in our culture, as it should be, but sometimes that gets in the way of trying to educate a patient in terms of going to a preferred provider SNF. That is in our control, but it’s a very difficult shift to make.”

Exhibit 4.13. Percentage of Medicare Spending for Services Provided to NGACO Beneficiaries Occurring with NGACO vs. Other Providers, 2016 NGACOs in Performance Year 1



SOURCES: NORC analysis of paid 2016 FFS institutional and non-institutional claims, CMS Chronic Condition Data Warehouse. Available at <https://www.ccwdata.org/web/guest/home>.

The leakage measure lends support for concerns raised in telephone interviews with NGACO leaders that NGACOs are held accountable for care their aligned beneficiaries receive from providers outside the NGACO network, while they have no control over tests, referrals, and services—duplicate, unnecessary, or otherwise—that may be performed by out-of-network providers. The fact that NGACOs have limited mechanisms to steer beneficiaries to providers in their NGACO network presents a challenge in attempting to control leakage. Beneficiaries in an ACO located in a “snowbird” (i.e., northern) state who travel south for a significant period during the year naturally seek care outside the ACO’s network. Two NGACOs expressed a desire for the NGACO model to include more beneficiary incentives to align beneficiaries or encourage them to seek services from the NGACO. Others suggested that the model could benefit from using prior authorization or utilization review tools found in Medicare Advantage. One

NGACO is piloting a “concierge” approach, in which the NGACO will select a subset of beneficiaries who are receiving care outside of the network and offer them an easier way to schedule appointments within the network.

While leakage suggests NGACOs may not have control over all of the care its beneficiaries receive, it might also signal that NGACO networks may rely on providers whose services are affected by efforts to reduce total spending. We will continue to explore the importance of leakage in NGACO outcomes throughout this evaluation, aided by social network analysis to explore how patterns of relationships between beneficiaries and providers can facilitate or constrain system functions and capacities of an ACO. See Appendix L (Exhibits to Support Chapter 4, Exhibit L.3) for a breakdown of leakage scores by NGACO.

4.8. Summary

Early qualitative and survey findings on implementation experience highlight a common set of shared approaches to care improvement, challenges of adding new staff, and similar frustrations around the needs for greater health IT capacity. In addition, the overall experience with benefit enhancements (waivers) is somewhat shared, with greater uptake of the SNF waiver and little uptake of either the post-discharge home visit or telehealth waivers. In terms of our initial analysis of beneficiaries’ patterns of care, we have shown that NGACOs’ measures suggested higher levels of contract penetration and continuity of care and less leakage than the comparison group, and there is variation across NGACOs on these measures.

NGACO staff were mostly employed to fill administrative, care management, and IT/data analytics roles. A little less than half of directly employed care management staff and administrative staff were hired specifically for the model. NGACOs reported employing care management staff in greatest total numbers but hired and employ relatively few behavioral health and pharmacy services staff. Of five NGACOs that reported using contracted staff, four are non-IDS organizations that we hypothesize did not have organizational staff to leverage.

Five of 15 reporting NGACOs indicated they use contracted staff (e.g., care management, pharmaceutical). Notably, four of these NGACOs were non-IDS NGACOs, again, organizations that may not have had organizational staff to leverage. No clear patterns emerged regarding types of contracted staff, and NGACOs reporting contracting staff across all workforce categories. Four of the five NGACOs reported contracting with one to three types of staff, and one reported contracting with all staff types except behavioral health providers.

Care management is a core focus for NGACOs, involving care coordination across providers and settings and engagement of beneficiaries around self-management (e.g., through AWVs), as well as care transitions. Many NGACO leaders explained during telephone interviews that they built on existing care management infrastructure for their NGACO model, adding staff and services and expanding to new settings and new populations, typically for more medically complex patients or those with multiple comorbidities. Nearly all 2016 NGACOs are addressing care transitions, particularly related to SNFs, with nine NGACOs using an evidence-based transition protocol. In interviews, many NGACO leaders described expanding care teams to include post-acute care coordinators and care team members whose duties include performing rounds in SNFs and conducting home visits. The types of services

offered may also reflect organizational characteristics or available funding streams. For example, many 2016 NGACOs address end-of-life care through beneficiary education and documentation of an advance care plan. However, IDS NGACOs are more likely to offer specific end-of-life services, such as home-based palliative care and conversion of treatment plans into portable medical orders, than non-IDS NGACOs.

The ability to gather, use, and share near-real-time data, both inside and outside the NGACO and its provider networks, achieving interoperability, and building data analytics capacity present significant challenges. About half of the 2016 NGACOs are interacting with at least nine distinct EHR systems. The ACO model is an amalgamation of different types of entities (hospitals, medical groups, SNFs), making a functional, overarching platform critical to success. The 2016 NGACOs use post-adjudicated claims and electronic clinical data to support model operations, typically integrating six or seven types of data and six different types of health IT. These data are used to target beneficiaries for care management, monitor performance, forecast future needs, and manage financial risk (i.e., likely shared savings or losses). In addition, the 2016 NGACOs make available an average of five consumer-facing health IT tools, including Web portals, patient notifications and reminders, electronic prescriptions, and personal health records. NGACOs, even those with previous experience as Pioneer or SSP ACOs, saw a need to increase analytics capacity when joining the NGACO model. One measure of the management challenges in implementation is reflected in the sheer complexity around EHRs and health IT.

NGACOs share performance indicators with providers (e.g., financial or claims-based utilization measures) to encourage provider engagement. The most commonly shared indicators are financial measures, claims-based utilization measures, patient satisfaction measures, and quality measures. NGACO leaders noted in semi-structured telephone interviews that they share data with providers through reports and dashboards, often integrated into the EHR. Some NGACOs are sharing data with providers at an aggregate level for the NGACO while others share individual provider and/or practice level data.

The NGACO model couples organizational responsibility for downside risk with prospective alignment of beneficiaries (unlike the retrospective alignment used with earlier ACO models), making the need to expand and enhance data analytics capability even more critical and time-sensitive. Managing financial risk by tracking utilization and quality measures is a new, additional focus for most NGACOs. In interviews, leadership teams noted that lags in access to claims and not knowing populations' risk score and financial spending in advance inhibit the ability to forecast spending. Almost all ACOs raised concerns about the benchmark and the difficulty for efficient organizations to improve over time. In addition, there were concerns related to risk adjustment and reconciliation processes (i.e., capping of risk scores at three percent). Despite these challenges, NGACOs have expressed satisfaction with the model's risk score, stability of the benchmark, and delivery of monthly financial data. Many NGACO leaders with past Pioneer or Medicare SSP experience said they preferred the NGACO model, particularly the risk score model, stability of the benchmark, and more timely (monthly) delivery of financial data from CMS.

The SNF waiver was the most commonly implemented of the three NGACO model benefit enhancements. Ten NGACOs reported implementing the SNF waiver, and another three NGACOs described being in the process of implementing the waiver. In interviews, many NGACO leaders

described expanding care teams to include post-acute care coordinators and care team members whose duties include performing rounds in SNFs and conducting home visits.

NGACO staff implementing the SNF waiver reported relatively fewer barriers to implementation compared with that for either the home visit or the telehealth waiver. This may reflect prior organizational or provider experience with the SNF waiver under Medicare Advantage or other ACO programs. For NGACOs implementing the SNF waiver, challenges were identified around authorization, related to establishing robust processes for identifying eligible beneficiaries and confirming eligibility (i.e., that an inpatient stay was not required). Some NGACOs found these processes lacking or difficult to implement or different from those associated with Medicare Advantage.

Few 2016 NGACOs took up either the home visit or telehealth waivers, although two-thirds of ACO survey respondents noted that they did conduct post-discharge home visits. For both of these beneficiary enhancements, NGACO leaders report challenges related to labor shortages (lack of nurse practitioners or physicians in local markets) or a mismatch with established home visit programs that use registered nurses; a perceived lack of beneficiary readiness to accept the waiver benefit (in the case of telehealth) and integration of waiver services more generally into post-acute care strategies; and the need to build new data infrastructure for billing and reporting—to meet CMS specifications—without a clear return on investment.

The rise in AWWs may reflect concerted efforts by ACOs to promote the visits. We observed a nearly 12 percent increase in aligned beneficiaries who had an AWW. This increase may reflect a concerted focus by NGACOs; in interviews, NGACO leadership described a focus on patient self-management of their conditions and contacting beneficiaries to engage them around the AWW. Most said that they are promoting the AWWs as one of the only opportunities to engage beneficiaries.

NGACO-aligned beneficiaries generally had patterns of care reflecting greater in-network use relative to comparators. As a group, the 2016 NGACOs have higher proportions of revenue (total QEM payments) generated by aligned beneficiaries (contract penetration) and beneficiaries receiving care inside their provider network (continuity of care). However, a sizable proportion of Medicare spending for NGACO beneficiaries occurs exclusively with providers outside the NGACO network (37 percent) or from a mix of in and out of network providers (47 percent). Aligned beneficiaries' patterns of care vary markedly across NGACOs. Assessing patterns of care is important, as concerns have been raised regarding NGACO model features that may undermine NGACO performance by hindering efforts to organize care.⁵⁰ These concerns include the extent to which (1) aligned beneficiaries are aware of or committed to the NGACO concept, (2) the NGACOs can control the providers that their aligned beneficiaries visit, and (3) NGACO providers can identify and secure relationships with other providers in the community.

One of the distinguishing features of the NGACO model is prospective alignment, in which ACOs are aware of their aligned beneficiaries. Nearly half of the 2016 NGACOs identified prospective alignment as one of the most appealing features of the NGACO model; it allowed them to “know” their population and thus project ACO performance and proactively manage their patient panel. NGACOs find that FFS open

⁵⁰ McWilliams et al., 2014.

networks present challenges, as beneficiaries aligned to the NGACO enjoy the same unrestricted choice of providers as those in traditional FFS Medicare. Open networks may result in fragmented care and less ability for NGACOs to coordinate through participating or preferred providers, potentially lessening their ability to impact cost and quality.⁵¹ In interviews, NGACO leaders described challenges to care coordination and continuity of care when beneficiaries seek services outside of NGACO networks and observed their limited ability to motivate beneficiaries to seek care in-network.

In Chapter 5, we explore 2016 NGACOs' performance in PY1 based on Medicare claims analysis to assess the model's impact on total Medicare spending, utilization, and quality of care.

⁵¹ McWilliams et al., 2014; Pham HH, Schrag D, O'Malley AS, Wu B, Bach PB. Care patterns in Medicare and their implications for pay for performance. *New Engl J Med.* 2007;356(11):1130–1139; van Walraven C, Oake N, Jennings A, Forster AJ. The association between continuity of care and outcomes: A systematic and critical review. *J Eval Clin Pract.* 2010;16(5):947–956.

Chapter 5: How Did the 2016 NGACOs Perform in Their First Year? Impact of the Model on Spending, Utilization, and Quality of Care in 2016

5.1. Chapter Overview

Have the 2016 NGACOs reduced Medicare spending, improved health services utilization, or influenced the quality of care, relative to a comparison group? In this chapter, we present our initial analysis of Medicare claims data on impacts of the NGACO model in its first performance year (PY1), across all 2016 NGACOs (pooled analysis) and for each of the 18 NGACOs with financial responsibility for their aligned beneficiaries in PY1. First, we provide a summary discussion of the study design, including the data and the identification of the NGACO and comparison population, the analytic approach using propensity score methods, and the DID model specification (see the Technical Appendix D, Quantitative Methods and Analysis, for comprehensive detail on the study design and methods). We then present results of the analyses on the impact of the NGACO model on Medicare Part A and B (gross) spending, health services utilization, and quality of care and spending by health care settings and service type, for the pooled analysis, followed by NGACO-level results. Next, we show how findings from this evaluation align with the performance of the NGACOs against their benchmarks set by CMS, the benchmarks which determine whether an NGACO accrued shared savings payments. We then turn the discussion to some additional analytic considerations and limitations of our analyses, including the potential impacts of spillover of NGACO care into the comparison population. This latter point is necessary to understand whether our estimates may understate (or overstate) possible effects from the model. Should comparison beneficiaries receive a substantial amount of care from NGACOs, then we have reason to consider our estimates to be conservative.⁵²

5.2. Study Design and Methods

Using a quasi-experimental difference-in-differences (DID) study design, we evaluated the impact of the NGACO model on select measures of Medicare spending, utilization, and quality of care.^{53,54} In the DID design, we estimate the impact of the NGACO incentives (treatment effect) by comparing changes in outcomes for NGACO-aligned beneficiaries and a comparison group of beneficiaries receiving usual care before (a baseline period of three years, 2013 to 2015) and after (performance period) the onset of the model's incentives. The comparison beneficiaries were propensity-score weighted across all NGACOs for the pooled analysis and for each NGACO in the NGACO specific analysis on domains of beneficiary demographic and health characteristics, ZIP code level characteristics, and HRR indicators to be similar to those in the NGACO group and within the same market. We used Medicare claims from 2010 through

⁵² We also build on the Pioneer Evaluation which examined spillover albeit with a different approach. Pioneer ACO Evaluation Findings from Performance Years One and Two. L&M Policy Research, LLC, March 2015.

⁵³ Nyweide DJ, Lee W, Cuerdon TT, Pham HH, Cox M, Rajkumar R, Conway PH. Association of Pioneer Accountable Care Organizations vs. traditional Medicare fee-for-service with spending, utilization, and patient experience. *JAMA* 2015; 313(21): 2152–2161.

⁵⁴ McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early Performance of Accountable Care Organizations in Medicare. *N Engl J Med* 2016; *Medicine* 374(24):2357–2366.

2016, obtained from CMS’s Chronic Conditions Data Warehouse (CCW) Virtual Research Data Center (VRDC) and linked to other programmatic files and secondary data sources to construct the analytic variables and outcome measures. Exhibit 5.1 shows the key outcomes and measures in the propensity score and DID models; see Technical Appendix D (Quantitative Methods and Analysis) for more information, including covariate and outcome measurement, propensity score methods, and DID estimation.

Exhibit 5.1. Key Outcome Measures and Explanatory Variables for the DID Models

	Measures
Outcome Measures	<ul style="list-style-type: none"> ■ Total Medicare spending (Parts A and B), in dollars per beneficiary per month ■ Four measures of Part A and Part B Medicare spending while patient is in a care setting: acute care hospitals (ACH), skilled nursing facilities (SNF), other post-acute care (including inpatient rehabilitation facilities, long-term care hospitals, comprehensive outpatient rehabilitation facilities, and swing beds), and hospice ■ Three measures of spending associated with: home health services, durable medical equipment, and Part B outpatient/office spending§ ■ Four utilization measures (per 1,000 beneficiaries per month): acute care hospital admissions, ACH days, emergency department visits including observation stays, and nonhospital evaluation and management visits (which excludes E&M visits delivered in acute care hospital and ED) ■ Four binary measures of quality (per 1,000 beneficiaries per year): hospitalization for ambulatory care-sensitive conditions, unplanned 30-day hospital readmissions, unplanned 30-day hospital admissions after discharge from SNF, and annual wellness visits.
Beneficiary Characteristics	<ul style="list-style-type: none"> ■ Demographics: age, gender, race/ethnicity, dual eligibility, Part D coverage ■ Health status: number and type of chronic conditions, end-stage renal disease, disability, death ■ Community characteristics: rurality, number of alignment-eligible providers within 10 miles per 1,000 population within 10 miles, ZIP-code socioeconomic status (median income, percentage of population below poverty, percentage with high school and college education)
Market Area	<ul style="list-style-type: none"> ■ Indicator variable for each hospital referral region (HRR)†

NOTES: §Part B outpatient/office spending includes facility and professional services for outpatient hospital care (including ED visits that do not result in acute care hospital stays) as well as professional services in office and home. †Hospital Referral Regions are defined by CMS and are broad geographic areas (there 306 in total) and are based on where Medicare patients receive tertiary-level care, specifically, major cardiovascular procedures. This evaluation defines an NGACO and comparison group market area based on the HRR’s that contain at least 0.5% of the aligned beneficiary population. Because medical spending and practice culture vary by HRR, we control for differences across HRRs in our DID models.

Identification of alignment-eligible providers in baseline and performance years. As mentioned above, the baseline period (pre-intervention) is 2013 (BY3), 2014 (BY2), and 2015 (BY1) and the performance period (post-intervention) is 2016 (PY1). For the treatment group, we identified NGACO participating providers using data from the Program Analysis Contractor. For the comparison group, we identified providers who were eligible to be aligned to an NGACO in each analytic year. Alignment-eligible providers were identified as practitioners within practices (TIN-NPI combinations), or in the case of federally qualified health centers, rural health clinics, and critical access hospitals, practitioners within these facilities (CCN-NPI combinations).⁵⁵ The alignment-eligible practitioners had selected primary care or specialist designations.⁵⁶

⁵⁵ FQHCs, RHCs and CAH2s were identified based on the billing codes 77, 71, and 85, respectively on outpatient claims.

⁵⁶ Primary care practitioners included those with specialty codes 01, 08, 11, 38, 50, 97. Specialists included those with specialty codes 06, 13, 29, 39, 46, 66, 83, 86, 90, 91, 92, and 98.

Creation of treatment and comparison groups. The treatment group in PY1 consists of the beneficiary population for whom 2016 NGACOs and their aligned providers were financially responsible. The comparison group comprises Medicare FFS beneficiaries residing in the NGACO market areas who were eligible but were not aligned to an NGACO or any other Medicare ACO provider, in the respective baseline or performance year. Comparison beneficiaries are aligned to alignment-eligible providers unaffiliated with any Medicare ACO (per the NGACO model’s alignment rules). We refer to the comparison beneficiaries as those receiving usual care. In both the treatment and comparison groups, beneficiaries in our analysis were limited to those residing in NGACO market areas and who were aligned to the NGACO or comparison providers for at least 30 days in the baseline or performance years. See Exhibit 5.2 below for a summary of treatment and comparison groups.

In determining the population of interest for the baseline years, we identified the beneficiaries whose utilization for that year would have resulted in alignment to the PY1 panel of providers. We used this same baseline—those beneficiaries aligned to PY1 providers—for each year included in the evaluation, as a consistent method for setting the baseline for all NGACOs (both new ACOs and those with prior experience as an SSP or Pioneer). This method is similar to that employed to set the benchmark spending targets for NGACOs but uses a three year baseline, while the benchmark approach uses one year (2014) as its baseline. See Technical Appendix D (Quantitative Methods and Analysis) for more information on our approach to creating these two different sets of beneficiaries.

Exhibit 5.2. NGACO and Comparison Groups in Baseline (BY) and Performance (PY) Years

NGACO Group	BY3–BY1 (2013–2015)	PY1 (2016)
Treatment Group		
All NGACOs	Beneficiaries attributed to PY1 participating providers in respective BYs using NGACO model alignment rules, situated in NGACO market areas, and aligned for at least 30 days in the year	Beneficiaries attributed to participating providers in PY1 using NGACO model alignment rules, situated in NGACO market areas, and aligned for at least 30 days in the year
Comparison Group		
Medicare FFS beneficiaries receiving usual care	Beneficiaries in NGACO market areas attributed to providers unaffiliated with any Medicare ACO in respective BYs using NGACO model alignment rules and aligned for at least 30 days in the year	Beneficiaries in NGACO market areas attributed to providers unaffiliated with any Medicare ACO in PY1 using NGACO model alignment rules and aligned for at least 30 days in the year

Propensity score weighting. To ensure that beneficiaries in the comparison group are similar to those in the NGACO group with respect to observed beneficiary characteristics, we estimated propensity score models (using separate models for the cohort and for each NGACO) with beneficiaries’ demographic, disease burden, and geographic characteristics. We weighted the comparison group beneficiaries by the odds of their predicted probability of being aligned to an NGACO, with the weights scaled so that they sum to the same sample size as the NGACO group, and included these weights in our DID models. This approach to propensity score weighting allows us to estimate the average treatment effect of the NGACO model for its’ beneficiaries (average treatment effect on the treated).⁵⁷ See Technical Appendix D

⁵⁷ Stuart, Elizabeth A. "Matching methods for causal inference: A review and a look forward." *Statistical science: a review journal of the Institute of Mathematical Statistics* 25, no. 1 (2010): 1.

(Quantitative Methods and Analysis) for more information on our approach to propensity score estimation and weighting and our approach to DID estimation. See Technical Appendix G (Comprehensive Quantitative Results) for more information about beneficiary characteristics prior to weighting and characteristics for each ACO after weighting.

Test of parallel trends. A key assumption of our DID estimation is that changes in outcomes from the baseline to the performance period would have been similar in the NGACO and comparison group in the absence of the NGACO model (parallel trends). As described in Appendix D (Quantitative Methods and Analysis), we tested whether trends in outcomes between the NGACO and comparison group were significantly different ($p < 0.05$) between BY3 (2013) and BY1 (2015). For instances in which the assumption of parallel trends failed, we considered our impact estimates to be uninterpretable because we could not establish a reliable counterfactual for the NGACO group.

Net impact of financial performance. In addition to estimating the gross impact of NGACO incentives in reducing Medicare Parts A and B spending, we used publically available data on the financial performance of the NGACOs to calculate the net impact of the NGACO model in offering Medicare savings, after considering shared savings payments by Medicare to NGACOs in 2016.

Characteristics of NGACO-Aligned and Comparison Group Beneficiaries

Exhibit 5.3 presents descriptive characteristics of the PY1 NGACO aligned beneficiaries and a propensity score-weighted comparison group.⁵⁸ In the exhibit, the baseline columns report the characteristics of NGACO and comparison groups in the three BYs (2013–2015), while the PY1 columns reflect the characteristics of the two groups in the first year of the NGACO model (2016). The relative change is the difference between the two groups in the two periods, calculated as PY1 difference minus baseline difference between the two groups. Beneficiaries in the NGACO group and the weighted comparison group in the baseline and performance periods are similar with respect to demographic characteristics, months of enrollment, chronic conditions,⁵⁹ community-level characteristics,⁶⁰ and most market-level⁶¹ characteristics. Although NGACO beneficiaries are in ZIP codes with higher incomes, the difference is not meaningfully large.

In addition, these descriptive findings indicate differences between treatment and comparison groups in market concentration and in overlap with selected value-based reform initiatives, as follows:

⁵⁸ Using Medicare claims on the Chronic Conditions Data Warehouse (CCW), we were able to align 98.5 percent of beneficiaries determined by Program Analysis Contractor (PAC) as aligned to the 18 NGACOs in PY1, as of January 1, 2016. PAC is the entity responsible for estimating performance results that are used to set the benchmark for financial reward or reimbursement. Our study sample was further limited to 94.3 percent of the PAC's prospectively aligned NGACO PY1 beneficiary population situated in NGACO markets, and further to 80.2% of the beneficiary population who were aligned to NGACOs for at least 30 days in PY1.

⁵⁹ Our propensity score models include variables for 60 chronic condition indicators available from the CCW. In Exhibit 5.3, we highlight the proportion of NGACO and comparison beneficiaries with 10 chronic conditions most expensive to Medicare. Source: Erdem E, Prada SI, Haffer SC. Medicare payments: How much do chronic conditions matter? *Medicare Medicaid Res Rev* 2013; Review, 3(2). Available at https://www.cms.gov/mmrr/Downloads/MMRR2013_003_02_b02.pdf. Accessed January 26, 2018.

⁶⁰ Community-level characteristics are defined according to the beneficiary's ZIP code or ZIP code tabulation area.

⁶¹ Market-level characteristics are defined according to the beneficiary's hospital referral region.

- Market concentration.** Compared to baseline years, both NGACO and comparison beneficiaries in PY1 were in more concentrated or less competitive HRRs with respect to hospital competition. In PY1 the NGACO beneficiaries were in HRRs with relatively higher hospital concentration than the comparison beneficiaries. While NGACO markets are comprised of HRRs, there may be modest differences in how NGACO and comparison beneficiaries are distributed across HRRs in the market. We control for differences across HRRs in our analyses.
- Overlap with other Medicare ACO or CMS value-based reform initiatives.** About two-thirds of baseline treatment group beneficiaries (beneficiaries whose utilization in the baseline period would have aligned them to the PY1 panel NGACO providers) were, in fact, aligned to either Pioneer or SSP ACOs during this time.⁶² The comparison group beneficiaries in the baseline period were not in any Medicare ACO. In PY1, the comparison group beneficiaries were not in any Medicare ACO based on the NGACO model’s prospective alignment rules. However, 2.5 percent of the comparison group beneficiaries were aligned by CMS to SSP ACOs based on the program’s retrospectively alignment rules. These comparison beneficiaries obtained most of their qualified E&M visits from SSP providers during PY1.⁶³ Beneficiaries in both groups were not participants in CMS’s Comprehensive End-Stage Renal Disease (ESRD) Care model. Less than one percent of beneficiaries aligned with an NGACO or comparators in either period participated in five other selected CMS value-based reform initiatives that include shared savings, suggesting that that our analysis may have reliably measured the impact of the NGACO model.⁶⁴

Exhibit 5.3. Descriptive Characteristics of 2016 NGACO and Propensity Score-Weighted Comparison Beneficiaries (Pooled Analysis)

Variable	Baseline Period (2013–2015)		Performance Period (PY1) (2016)		Relative Change
	NGACO	Comparison	NGACO	Comparison	
Number of beneficiaries	1,258,004	1,239,476	477,197	471,712	N/A-
Total person-months	14,432,542	14,384,819	5,491,979	5,479,500	N/A-
Variables Included in Propensity Score Models					
Mean months of alignment (± SD)	11.5 ± 2.0	11.6 ± 1.8	11.5 ± 1.9	11.6 ± 1.8	0.0
Mean age (years ± SD)	73.2 ± 12.3	73.2 ± 12.3	73.2 ± 12.0	73.2 ± 12.1	0.0
Gender (%)					
Male	42.2	42.2	42.5	42.4	0.1
Race/Ethnicity (%)					
White	84.2	84.6	84.6	84.8	0.2**
Black	6.9	6.8	6.7	6.7	-0.1
Hispanic	5.8	5.5	5.1	5.0	-0.1**
Asian	1.7	1.7	1.6	1.7	0.0
Other	1.4	1.4	1.9	1.9	0.0
Disability/ESRD (%)					
Disability	14.6	14.5	14.1	14.2	-0.2
ESRD	1.1	1.1	1.0	1.0	0.0

⁶² This finding reflects how we constructed the baseline counterfactual for the NGACO group. Many providers who joined the NGACO model in the performance period were in other Medicare ACOs in the baseline period.

⁶³ Based on the timing of SSP’s final retrospective alignment these beneficiaries were included in the analyses presented in this report. We will exclude them from analyses in future reports.

⁶⁴ We examined participation in the following programs: Financial Alignment Demonstration, Independence at Home, Comprehensive Primary Care, Multi-Payer Advanced Primary Care, and Comprehensive End-Stage Renal Disease Care model.

Variable	Baseline Period (2013–2015)		Performance Period (PY1) (2016)		Relative Change
	NGACO	Comparison	NGACO	Comparison	
Coverage (%)					
Any dual eligibility	21.5	21.8	19.9	20.5	-0.4***
Any Part D coverage	71.3	71.8	74.9	75.8	-0.4***
Chronic Conditions					
Mean number of chronic conditions (± SD)	5.0 ± 3.5	5.4 ± 3.7	5.2 ± 3.6	5.5 ± 3.9	0.0
Alzheimer's/dementia (%)	8.9	9.3	8.5	8.9	0.0
Chronic kidney disease (%)	17.1	17.3	19.6	19.8	0.0
COPD (%)	11.3	11.4	11.3	11.4	0.0
Congestive heart failure (%)	12.9	13.2	12.5	12.8	0.0
Diabetes (%)	28.8	28.7	28	28	0.0
Ischemic heart disease (%)	28.1	28.2	26.6	26.7	0.0
Depression (%)	18.1	18.3	19.1	19.3	0.0
RA/OA (%)	32.2	32.4	32.8	33	0.0
Stroke/TIA (%)	3.8	3.8	3.6	3.7	0.0
Cancer (%)	9.1	9.2	9.1	9.2	-0.1
Mortality (%)					
Death in reference period	4.1	4.9	4.0	4.8	0.0
Community Characteristics					
Median income (\$ ± SD)	58,291 ± 22,348	58,605 ± 23,574	59,559 ± 23,022	59,717 ± 24,192	156.9**
Below poverty line (% ± SD)	13.4 ± 8.7	13.2 ± 8.6	13.4 ± 8.6	13.3 ± 8.6	-0.1**
Bachelor's degree or higher (% ± SD)	29.0 ± 15.5	29.1 ± 16.1	30.1 ± 15.7	30.1 ± 16.2	0.1
Rurality (%)	19.3	19.4	19.1	19.3	-0.1
Alignment-eligible providers (per 1,000 population ± SD)‡	1.7 ± 1.0	1.7 ± 1.0	1.9 ± 1.1	1.9 ± 1.2	0.0
Variables Excluded from Propensity Score Models					
Hospital Referral Region (HRR) Characteristics					
ACO penetration rate (% ± SD)	34.9 ± 20.3	35.0 ± 20.4	56.6 ± 16.5	56.7 ± 16.6	0
Medicare Advantage penetration rate (% ± SD)	31.1 ± 15.0	31.2 ± 15.0	34.7 ± 15.2	34.9 ± 15.2	-0.1*
Hospital HHI (± SD)	2,604 ± 1,838	2,634 ± 1,862	2,966 ± 2,095	3,024 ± 2,142	-28.4***
Practice HHI (± SD)	436 ± 419	437 ± 419	487 ± 427	490 ± 429	-1.6
Hospital beds (per 1,000 ± SD)	2.7 ± 0.5	2.7 ± 0.5	2.6 ± 0.5	2.6 ± 0.5	0.0
Alignment-eligible providers (per 1,000 population ± SD)	1.4 ± 0.3	1.4 ± 0.3	1.5 ± 0.4	1.5 ± 0.4	0.0
Participation in Medicare ACOs (%)					
NGACO	0.0	0.0	100.0	0.0	N/A-
Pioneer/SSP ACO	62.6	0.0	0.0	2.5	N/A-
Comprehensive ESRD Care	0.0	0.0	0.0	0.0	N/A-
Participation in Other CMS Initiatives (%)					
Financial Alignment Demonstration	0.0	0	0.0	0.0	N/A-
Independence at Home	0.0	0.1	0.0	0.1	N/A-
Comprehensive Primary Care	0.6	0.5	0.0	0.51	N/A-
Multi-Payer Advanced Primary Care	0.0	0.01	0.0	0.0	N/A-

NOTES: p<0.1* p<0.05**, p<0.01***. COPD = chronic obstructive pulmonary disease; ESRD = end-stage renal disease; HHI = Herfindahl-Hirschman Index, a measure of the degree of market concentration or competition (higher HHI means more concentrated market, while lower HHI means more competitive market); SSP = Medicare Shared Savings Program; OA = osteoarthritis; RA = rheumatoid arthritis; SD = standard deviation; TIA = transient ischemic attack. ‡This is the alignment eligible providers per 1000 persons based on the total population (not restricted to the Medicare population).

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Appendix D (Quantitative Methods and Analysis) for a complete table of data sources.

5.3. Impact of NGACO Model on Medicare Spending, Utilization, and Quality of Care for 2016 NGACOs (Pooled Analysis)

In this section we present NGACO model impacts in PY1 for all 18 2016 NGACOs considered together (pooled analysis).⁶⁵ We report *aggregate* impact estimates for all NGACO-aligned beneficiaries served in PY1; this is the per-beneficiary impact, multiplied for all beneficiaries in the NGACO model (in the pooled model) or in a specific NGACO (for the ACO-level analyses) in PY1. Since the aggregate estimates are not comparable across NGACOs, we also show estimates using units that enable comparison of NGACOs with each other, as well as with other CMS initiatives. These units include per-beneficiary-per-month (PBPM) for spending measures, utilization count measures per 1,000 beneficiaries per month, and binary quality-of-care measures per 1,000 beneficiaries per year. In addition, estimates are expressed as percentages, based on the expected outcome for the treatment group in 2016 absent the NGACO model. See Technical Appendix G (Comprehensive Quantitative Results) for supporting analyses, including the adjusted baseline and PY1 means for outcome measures in the pooled and ACO-level DID analysis.

As noted earlier, where trends are statistically significantly different across BYs (violation or failure of parallel trends test), we cannot establish a reliable counterfactual for the NGACO group; as a result, impact estimates cannot be interpreted with a sufficient degree of understanding.⁶⁶ Therefore, our evaluation of the NGACO model's impact is limited to those outcomes for which NGACO-affiliated and comparator providers were performing similarly (parallel) in trend across the baseline period.⁶⁷ We assessed whether NGACO providers were able to improve these outcomes for their beneficiaries in PY1, under the influence of NGACO model incentives.

Exhibit 5.4 presents the aggregate and standardized impact estimates and the corresponding 95-percent confidence intervals (CIs). We consider relative decreases in all measures to be favorable, except for annual wellness visits [AWVs].⁶⁸ See Technical Appendix G (Comprehensive Quantitative Results) for the NGACO and comparison groups' adjusted means in the BYs and PYs for each outcome.⁶⁹ For the pooled analysis, we describe findings that are significant and those that are not interpretable.⁷⁰

Total Medicare Spending (Pooled Analysis)

- **Significant relative decline in total Medicare spending.** NGACO providers reduced Medicare spending for their beneficiaries by an estimated **\$100.09 million in PY1**. The estimated relative

⁶⁵ Appendix D (Quantitative Methods and Analysis) details our approach to specifying these DID models and reporting impact estimates.

⁶⁶ We test whether trends in outcomes from 2013 to 2015 were parallel between the NGACO and comparison groups.

⁶⁷ The NGACO and comparison providers could differ in levels of the outcomes for their beneficiaries across the baseline years but are required to have similar trends for the outcomes, in keeping with the assumption of parallel trends.

⁶⁸ It is important to note that reduction in some utilization measures, such as nonhospital E&M visits, beyond an optimal level might be inappropriate and could result in an accompanying increase in ED use, hospital use, ACSC hospitalizations, and 30-day readmissions.

⁶⁹ The adjusted means were predicted after estimating the DID model. Please see Appendix D: Quantitative Methods and Analysis for details on our post-estimation approaches.

⁷⁰ All results that cannot be interpreted and that are not significant for the pooled analysis are mentioned only due to their relative importance; we do not describe such results in the ACO-level analyses.

decline in Medicare spending was **\$18.20 PBPM** or 1.7 percent of the estimated average Medicare spending for NGACO-aligned beneficiaries in 2016 absent the model. This relative reduction reflects a decrease in average spending for the NGACO group (-\$14.20 PBPM) and an increase in average spending for the comparison group (+\$4.00 PBPM) from the BYs to PY1.⁷¹

Utilization (Pooled Analysis)

- **No significant relative change in the number of acute care hospital admissions in PY1.**
- **Significant relative reduction in acute care hospital days.** Beneficiaries aligned to NGACO providers had 9,566 fewer inpatient hospital days in 2016 compared with non-ACO beneficiaries, or 1.7 fewer days per 1,000 beneficiaries per month, corresponding to about one percent fewer-than-expected inpatient days. Both NGACO and comparison groups saw a decrease in inpatient hospital days from the BYs to PY1 but the decrease was greater for NGACO beneficiaries.
- **Significant relative reduction in nonhospital E&M visits.** Beneficiaries aligned to NGACO providers had 85,619 fewer visits in 2016 or 15.6 fewer visits per 1,000 beneficiaries per month, corresponding to a 1.5-percent relative drop in nonhospital E&M visits. This relative reduction reflected a decrease in average number of visits for the NGACO group and an increase in average number of visits for comparators from the BYs to PY1.
- **Results for emergency department (ED) visits cannot be interpreted,** because trends for this outcome between the NGACO and comparison groups in the baseline period were not parallel.⁷² Beneficiaries aligned to NGACO providers had a significant relative reduction in ED visits in 2015, relative to 2013 ($p < 0.05$). But going from the BYs to PY1, the NGACO group had a relatively higher trend for ED visits (including observation stays).

Quality of Care (Pooled Analysis)

- **Significant relative increase in beneficiaries receiving annual wellness visits (AWVs)** ($p < 0.05$). As previewed in Chapter 4, a total, 9,756 more aligned beneficiaries had AWVs in PY1 or about 20 additional beneficiaries per 1,000, corresponding to an increase of nearly 12 percent in beneficiaries with AWVs. Both NGACO and comparison groups saw an increase in numbers of beneficiaries with AWVs from the BYs to PY1, but the increase was greater for aligned beneficiaries.
- No significant relative change for PY1 in the likelihood of ambulatory care sensitive condition (ACSC) hospital admissions, 30-day unplanned hospital readmissions, or unplanned hospitalizations within 30 days of discharge from a SNF.

⁷¹ See Exhibit G.20 in Technical Appendix G (Comprehensive Quantitative Results) for depiction of this trend in Medicare spending for the NGACO and comparison groups.

⁷² See Exhibit G.23 in Appendix G (Comprehensive Quantitative Results) for a depiction of trends in the ED visits measure for NGACO and comparison groups.

Exhibit 5.4. Estimated Impact of 2016 NGACOs on Medicare Spending, Utilization, and Quality of Care in PY1 (Pooled Analysis)

Outcome	Impact Estimate	95% CI	Impact (%)
Aggregate Impact			
Total Medicare Spending	-\$100,088,326**	-\$182,152,102, -\$18,024,551	-1.7
Utilization			
Acute care hospital admissions	-899	-2,516, +717	-0.6
Acute care hospital days	-9,566**	-19,001, -131	-1.3
ED visits including observation stays	- §	- §	- §
Nonhospital E&M visits	-85,619**	-152,486, -18,752	-1.5
Quality			
ACSC hospital admissions	396°	-79, +870	2.5
Unplanned 30-day hospital readmissions	684	-920, +2,288	1.1
Unplanned 30-day hospitalizations after SNF discharge	625	-1,435, +2,685	0.9
AWV	9,756**	904, 18,608	11.9
Impact, Measured at Beneficiary Level			
Total Medicare spending (PBPM)	-\$18.2**	-\$33.2, -\$3.3	-1.7
Utilization (per 1,000 beneficiaries per month)			
Acute care hospital admissions	-0.2	-0.5, +0.1	-0.6
Acute care hospital days	-1.7**	-3.5, 0	-1.3
ED visits including observation stays	- §	- §	- §
Nonhospital E&M visits	-15.6**	-27.8, -3.4	-1.5
Quality (per 1,000 beneficiaries)			
ACSC admissions	0.8°	-0.2, +1.8	2.5
Unplanned 30-day hospital readmissions	1.4	-1.9, +4.8	1.1
Unplanned 30-day hospitalizations after SNF discharge	1.3	-3.0, +5.6	0.9
AWV	20.4**	1.9, +39.0	11.9

NOTES: p<0.2°, p<0.1* p<0.05**, p<0.01***. The estimated relative change is from DID models. Aggregate impact is the estimated relative change for 5,491,979 beneficiary-months (477,197 beneficiaries) of alignment to NGACOs in PY1 (2016). § Impact is reported as the estimated relative change per beneficiary per month (PBPM, for spending), per 1,000 beneficiaries per month (for utilization), or beneficiaries per 1,000 (for quality). We report percentage impact relative to expected outcome for the NGACO group in 2016 absent the NGACO model. The percent impact is the same for the aggregate and per beneficiary, since the percent is a relative to the whole. ACSC = ambulatory care sensitive condition; AWV = annual wellness visit; ED = emergency department; Nonhospital E&M = evaluation and management visits excluding those in acute care hospital and ED; SNF = skilled nursing facility. Unplanned 30-day hospitalizations after SNF discharge includes unplanned direct transfers from SNFs to acute care hospitals. §Impact not reported because outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis) for a complete table of data sources

Impact of NGACO Model on Medicare Spending across Care Settings and Types of Services (Pooled Analysis)

To understand the influences on Medicare spending for aligned beneficiaries, we present impact estimates for Medicare spending across care settings and for different types of services; See Exhibit 5.5 below. Spending includes both professional and facility services. We report impacts both as aggregate and per-beneficiary-per-month (PBPM) and note that impact estimates for Medicare spending across settings

summed up to less than the impact estimate for total Medicare spending (-\$14.7 PBPM vs. -\$18.2 PBPM) due to differences in how spending measures were modeled.⁷³

We found the following impacts for the NGACO group in PY1:

- **Significant relative decline in Medicare spending in the SNF setting** ($p < 0.05$) of \$3.0 PBPM for beneficiaries aligned to 2016 NGACO providers, corresponding to three percent lower than expected spending in the SNF setting. Both NGACO and comparison groups saw decreases in SNF spending from the BYs to PY1, but the decrease was greater for aligned beneficiaries. SNFs are the most common institutional providers in NGACO provider networks. This reduction may be related to ACO efforts to engage with SNFs as part of their broader post-acute care strategy, including use of the SNF 3-day waiver. The three ACOs with a significant reduction in Medicare spending in the SNF setting had implemented the waiver. However, one ACO that saw a significant increase in SNF setting spending (Bellin) also implemented the waiver.
- **No significant relative decline in Medicare spending for other post-acute care, acute care hospital, and outpatient/office settings or durable medical equipment spending** for aligned beneficiaries.
- **Impacts on Medicare spending in home health and hospice settings cannot be interpreted** because trends were not parallel.⁷⁴ NGACO-aligned beneficiaries had a significant relative decline in spending for hospice and home health in 2015, relative to 2013. Going from the BYs to PY1, the NGACO group had a relatively lower trend in home health and hospice spending.⁷⁵

⁷³This discrepancy reflects differences in how spending was modeled. A log-linked gamma distribution was empirically determined to be appropriate for total spending and outpatient/office spending that were more skewed by high spenders, while two-part models with log-linked Poisson distribution (for positive spenders) were empirically determined to be appropriate for other categories of Medicare spending that were relatively less skewed (after accounting for non-spenders). For more details please see Appendix D (Quantitative Methods and Analysis).

⁷⁴ See Exhibits G.21 and G.22 in Technical Appendix G (Comprehensive Quantitative Results) for depiction of trends in home health and hospice spending, respectively, for NGACO and comparison groups.

⁷⁵ A decrease in spending in the home health for NGACO group and increase in spending in the hospice setting for the comparison group, drove the relative lower trend in spending within these two settings for the NGACO group from BYs to PY1.

Exhibit 5.5. Estimated Impact of 2016 NGACOs on Medicare Spending across Care Settings and Types of Services in Performance Year 1 (Pooled Analysis)

Outcome	Impact Estimate (\$)	95% CI (\$)	Impact (%)
Aggregate Impact (\$)			
Total Medicare Spending	-\$100,088,326**	-\$182,152,102, -\$18,024,551	-1.7
Outpatient/office	-15,226,982	-45,628,743, +15,174,778	-0.7
Acute care hospital setting	-21,658,529°	-52,377,462, +9,060,403	-1.0
SNF setting	-16,609,600**	-32,063,169, -1,156,032	-3.1
Other post-acute setting	-10,815,451	-29,444,379, +7,813,477	-4.3
Home health	- \$	- \$	- \$
Hospice setting	- \$	- \$	- \$
DME	2,719,430°	-1,303,743, +6,742,603	2.3
Impact (PBPM) (\$)			
Outpatient/office	-2.8	-8.3, +2.8	-0.7
Acute care hospital setting	-3.9°	-9.5, +1.7	-1.0
SNF setting	-3.0**	-5.8, -0.2	-3.1
Other post-acute setting	-2.0	-5.4, +1.4	-4.3
Home health	- \$	- \$	- \$
Hospice setting	- \$	- \$	- \$
DME	0.5°	-0.2, +1.2	2.3

NOTES: $p < 0.2^\circ$, $p < 0.1^*$, $p < 0.05^{**}$, $p < 0.01^{***}$. Impact estimate is the estimated relative change from difference-in-differences models. Aggregate impact is the estimated relative change for 5,491,979 beneficiary-months (477,197 beneficiaries) of alignment to NGACOs in PY1 (2016). We report percentage impact relative to expected spending for the NGACO group in 2016 absent the NGACO model. Impact estimates for Medicare spending across settings summed up to less than the impact estimate for total Medicare spending (-\$14.7 PBPM vs. -\$18.2 PBPM) due to differences in how spending measures were modeled; see Technical Appendix D (Quantitative Methods and Analysis) for more details. [§]Impact not reported because outcome failed parallel trends test across first and last BY, between NGACO and comparison group. CI = confidence interval; DME = durable medical equipment; SNF = skilled nursing facility; other post-acute care settings includes inpatient rehabilitation facilities, long-term care hospitals, comprehensive outpatient rehabilitation facilities, and swing beds).

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis), for a complete table of data sources

5.4. Impacts of NGACO Model on Aligned Beneficiaries of Providers in Each 2016 NGACO

In this section, we summarize NGACO model impacts in PY1 for each NGACO individually. As with the pooled estimates presented above, our impact estimates are reported in aggregate, as well as using units that enable comparisons across NGACOs and with other CMS initiatives. See Technical Appendix D (Quantitative Methods and Analysis) for more information about our use of ACO-level DID models. In contrast to the pooled analysis, for this ACO-level analysis we describe only significant findings at ($p < 0.1$).

Total Medicare Spending (by NGACO)

Impacts on Medicare spending in PY1 varied across the 18 2016 NGACOs. Exhibit 5.6 presents the estimated impact on Medicare spending for each NGACO in PY1, expressed in dollars PBPM and as a percentage. We also show the impact for all 2016 NGACOs to note how each NGACO performed relative to its peers; the wide confidence intervals reflects the spread of the data, with many low values and few

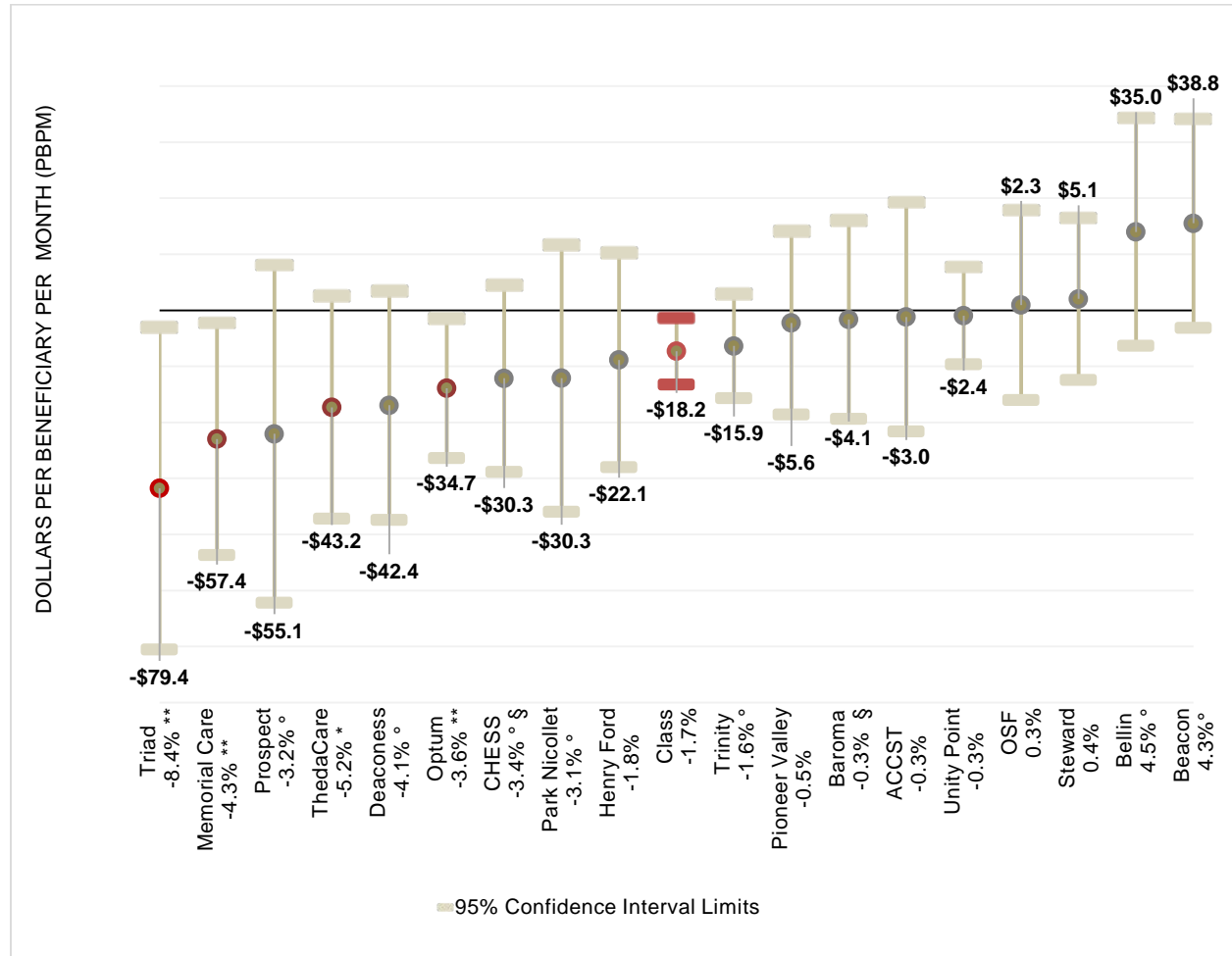
very high values. Estimates of aggregate impact are presented in Exhibit 5.7, expressed in millions of dollars. While ten of the NGACOs demonstrated lower spending, these observations did not reach statistical significance, which may be because the comparison group also improved performance.

We found the following impacts for specific NGACOs in PY1 (2016):

- **Significant relative decline in total Medicare spending for four NGACOs** ($p < 0.1$). Beneficiaries aligned to providers in Triad (-\$79.4 PBPM, -8.4 percent), MemorialCare (-\$57.4 PBPM, -4.3 percent), ThedaCare (-\$43.2 PBPM, -5.2 percent), and Optum (-\$34.7 PBPM, -5.2 percent) experienced significant declines in spending relative to their comparison populations.⁷⁶ These results reflect a decrease in average spending for these NGACOs from baseline to PY1, while comparison groups had an increase (Triad), smaller decrease (MemorialCare, Optum), or no change (ThedaCare). These four ACOs contributed to more than half the aggregate savings (\$57.89 million) noted for all 2016 NGACOs (\$100.01 million). Beneficiaries aligned to providers in 12 NGACOs had either non-significant relative decreases or non-significant relative increases in total Medicare spending ($p < 0.1$).
- Impact on Medicare spending for two NGACOs (CHESS and Baroma) cannot be interpreted because trends in baseline spending were not parallel. Both NGACOs had been ACOs in the BYs.

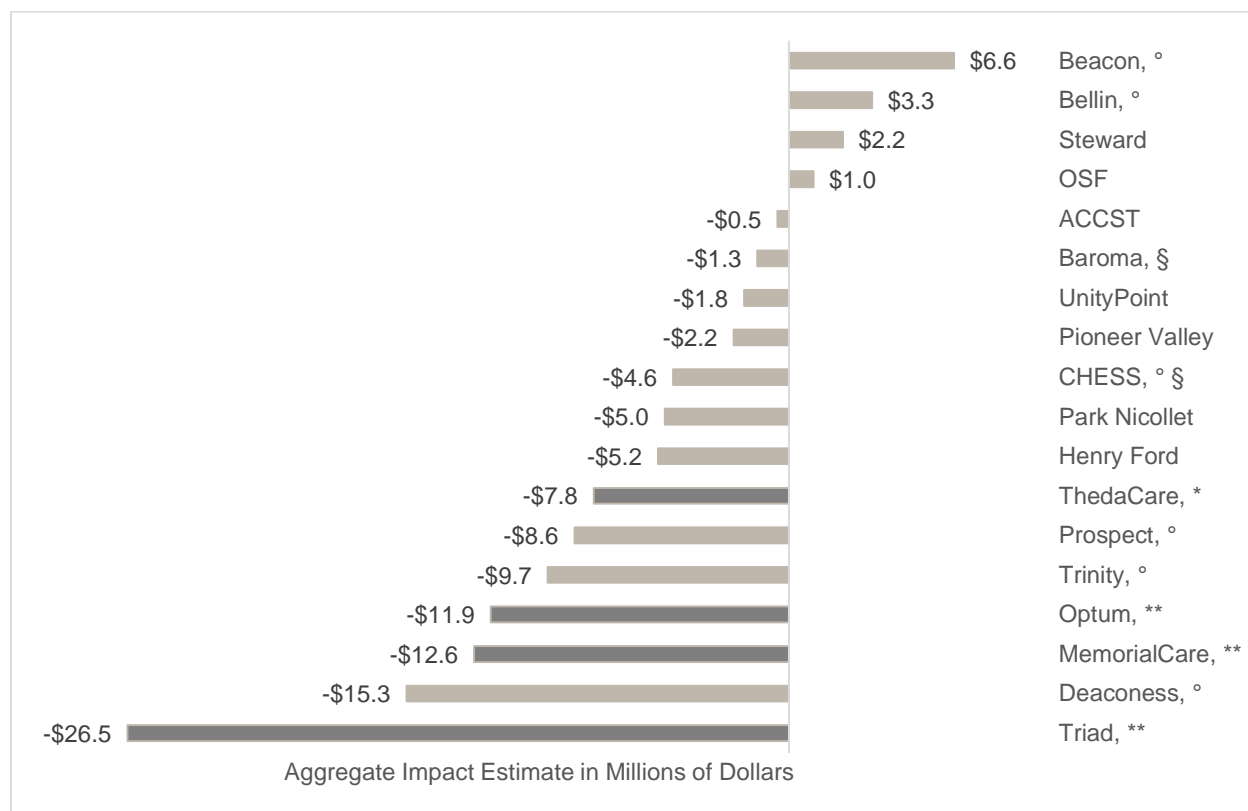
⁷⁶ Triad was a former SSP ACO, ThedaCare was a former Pioneer ACO, and both MemorialCare and Optum were new ACOs that started the NGACO model in 2016.

Exhibit 5.6. Impact of 2016 NGACOs on Medicare Spending in PY1 (by NGACO)



NOTES: $p < 0.2$, $p < 0.1$ * $p < 0.05$ **, $p < 0.01$ ***. Impact estimate PBPM is the estimated relative change in spending from DID models, relative to a comparison group of non-ACO beneficiaries. We report percentage impact relative to expected Medicare spending for the NGACO group in 2016 absent the NGACO model. Orange bar indicates impact estimate for all 2016 NGACOs together (from pooled analysis). § Outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group. SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis) for a complete table of data sources.

Exhibit 5.7. Estimated Aggregate Impact of 2016 NGACOs on Medicare Spending in PY1 (by NGACO)



NOTES: p<0.2°, p<0.1* p<0.05**, p<0.01***. Aggregate impact is the estimated relative change for spending from DID models for all NGACO beneficiaries in 2016, relative to a comparison group of non-ACO beneficiaries. We report percentage impact relative to expected Medicare spending for the NGACO group in 2016 absent the NGACO model. § Outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group. Cohort impact (\$100m) was excluded due to graph scale.

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis) for a complete table of data sources.

Utilization (by NGACO)

We found marked variation in impacts on utilization for beneficiaries aligned to NGACO providers in 2016 NGACOs for PY1; see Exhibit 5.8 below. Impacts are reported per 1,000 beneficiaries per month and also expressed as a percentage of the expected outcome for 2016 NGACOs, absent the model. For each measure, we identified NGACOs with significant (p<0.1) and interpretable relative decreases or increases in utilization—highlighted in Exhibit 5.8—and those with results that were significant but could not be interpreted because changes in the measure in the BYs were not parallel between NGACO-aligned beneficiaries and comparators (i.e., failure of the parallel trends test). We consider decreases in utilization to be favorable and increases in utilization to be unfavorable.

Acute Care Hospital Admissions

- **Significant relative decrease** in PY1 for beneficiaries aligned to Henry Ford’s providers (-1.2 per 1,000 beneficiaries per month, 3.1 percent lower than expected) and Optum’s providers (-1.1 per 1,000 beneficiaries per month, -5.4 percent lower than expected).
- Relative changes in acute care hospital admissions for Baroma in PY1 cannot be interpreted because baseline trends for this outcome were not parallel.

Acute Care Hospital Days

- **Significant relative decrease** in PY1 for beneficiaries aligned to Henry Ford’s providers (-14.2 per 1,000 beneficiaries per month, 7.3 percent lower than expected).
- A relative decrease in acute care hospital days for Pioneer Valley in PY1 cannot be interpreted because baseline trends for this outcome were not parallel.

ED Visits Including Observation Stays

- **Significant relative decrease** in PY1 for beneficiaries aligned to Prospect’s providers (-3.2 per 1,000 beneficiaries per month, 7.9 percent lower than expected) and to Pioneer Valley’s providers (-1.9 per 1,000 beneficiaries per month, 3.6 percent lower than expected).
- **Significant relative increase** in PY1 for beneficiaries aligned to Beacon’s providers (4.1 per 1,000 beneficiaries per month, 6.5 percent higher than expected).
- A relative increase in ED visits for Baroma in PY1 cannot be interpreted because trends for this outcome in the baseline period were not parallel.

Nonhospital E&M Visits

- **Significant relative decrease** in PY1 for beneficiaries aligned to providers with OSF (-32.2 per 1,000 beneficiaries per month, 2.9 percent lower than expected), ThedaCare (-22.1 per 1,000 beneficiaries per month, -2.6 percent lower than expected), Deaconess (-34.6 per 1,000 beneficiaries per month, -3.7 percent lower than expected), and Triad (-42.7 per 1,000 beneficiaries per month, -4.2 percent lower than expected).
- Relative changes in E&M visits for seven NGACOs (Beacon, CHESS, Henry Ford, Pioneer Valley, Trinity, Bellin, and UnityPoint) in PY1 cannot be interpreted because baseline trends for the outcome were not parallel.

Exhibit 5.8. Estimated Impact of 2016 NGACOs on Utilization in PY1

NGACO	Acute Care Hospital Admissions (per 1,000 beneficiaries per month)			Acute Care Hospital Days (per 1,000 beneficiaries per month)			ED Visits including observation stays (per 1,000 beneficiaries per month)			Nonhospital E&M Visits (per 1,000 beneficiaries per month)		
	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)
2016 Class	-0.2	-0.5, +0.1	-0.6	-1.7**	-3.5, 0	-1.3	- \$	- \$	- \$	-15.6**	-27.8, -3.4	-1.5
ACCST	0.2	-1.1, +1.5	0.8	-0.1	-8.8, +8.6	-0.1	0.7	-1.3, +2.7	1.5	- \$	- \$	- \$
Baroma	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	- \$	-1.9	-16.9, +13.1	-0.1
Beacon	0.7	-0.5, +1.9	3.4	4.0	-4.0, +12.1	3.8	4.1***	1.3, 6.9	6.5	- \$	- \$	- \$
Bellin	-1.0°	-2.4, +0.4	-4.8	-5.5°	-13.6, +2.6	-6.6	-1.4	-4.6, +1.9	-2.5	- \$	- \$	- \$
CHESS	- \$	- \$	- \$	-2.9	-10.0, +4.2	-2.7	0.7	-1.6, +3.0	1.6	- \$	- \$	- \$
Deaconess	- \$	- \$	- \$	-0.3	-8.3, +7.7	-0.3	- \$	- \$	- \$	-34.6***	-50.3, -18.9	-3.7
Henry Ford	-1.2*	-2.6, +0.2	-3.1	-14.2***	-24.3, -4.2	-7.3	- \$	- \$	- \$	- \$	- \$	- \$
MemorialCare	0.7	-0.6, +1.9	2.2	-3.5	-13.3, +6.4	-2.1	- \$	- \$	- \$	- \$	- \$	- \$
Optum	-1.1***	-1.9, -0.3	-5.4	-3.9°	-9.1, +1.3	-4.0	- \$	- \$	- \$	-10.2	-26.4, +5.9	-0.8
OSF	0.4	-0.8, +1.6	1.6	1.5	-5.5, +8.5	1.4	1.8°	-.4, +4.0	3.3	-32.4***	-48.4, -16.4	-3.3
Park Nicollet	0.4	-1.1, +1.9	1.6	2.0	-8.0, +11.9	1.6	-2.3°	-5.6, +1.0	-3.9	- \$	- \$	- \$
Pioneer Valley	-0.3	-1.5, +0.8	-1.2	- \$	- \$	- \$	-1.9*	-3.9, +0.2	-3.6	- \$	- \$	- \$
Prospect	0.2	-1.1, +1.5	0.7	7.9°	-1.6, +17.5	5.3	-3.2***	-5.1, -1.3	-7.9	-9.0	-29.3, +11.3	-0.7
Steward	0.2	-0.7, +1.0	0.6	-1.1	-6.9, +4.8	-0.8	- \$	- \$	- \$	- \$	- \$	- \$
ThedaCare	-0.7	-2.4, +0.9	-2.8	-6.6°	-16.6, +3.4	-5.9	- \$	- \$	- \$	-22.1**	-41.7, -2.6	-2.6
Triad	-1.4°	-3.3, +0.4	-5.2	-3.9	-15.4, +7.6	-3.2	1.2	-2.4, +4.8	2.1	-42.7***	-66.3, -19.1	-4.2
Trinity	-0.5°	-1.2, +0.2	-1.7	-2.0	-7.0, +3.0	-1.4	0	-1.1, +1.2	0	- \$	- \$	- \$
UnityPoint	-0.4	-1.1, +0.3	-1.6	-2.7	-7.0, +1.7	-2.5	-0.4	-1.6, +0.9	-0.7	- \$	- \$	- \$

NOTES: p<0.2°, p<0.1* p<0.05**, p<0.01***. Impact estimate is the estimated relative change for the utilization measure in PY1 from difference-in-differences models. We report the estimated relative change per 1,000 beneficiaries per month in PY1 and percentage impact relative to expected utilization for NGACOs in 2016 absent the model. Decreases in utilization are considered favorable, while increases in utilization are considered unfavorable. CI = confidence interval; ED = emergency department; Nonhospital E&M = evaluation and management visits excluding those in acute care hospital and ED. \$Impact not reported because outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group.

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis) for a complete table of data sources.

Quality of Care (by NGACO)

We found marked variation in impacts on quality of care for beneficiaries aligned to NGACO providers in 2016 NGACOs for PY1; see Exhibit 5.9 below. Impacts are reported for four binary measures (per 1,000 beneficiaries) and are also expressed as a percentage of the expected outcome for 2016 NGACOs, absent the model. For each quality-of-care measure, we identified the NGACOs with significant ($p < 0.1$) relative increases or decreases in quality of care (highlighted in Exhibit 5.9) and those with results that were significant but could not be interpreted because changes in the measure in the baseline period were not parallel between NGACO-aligned beneficiaries and comparators (e.g., failure of the parallel trends test). We consider decreases in the number of beneficiaries who had ACSC hospitalizations, 30-day readmissions, or 30-day hospitalizations after SNF discharge to reflect better quality of care, as are increases in the number of beneficiaries who had an annual wellness visit (AWV).

ACSC Hospitalizations

- **Significant relative decrease** in PY1 for beneficiaries aligned to UnityPoint's providers (-0.9 beneficiaries per 1,000, 2.8 percent less than expected).
- **Significant relative increase** in PY1 for beneficiaries aligned to providers participating in Park Nicollet Health Services (Park Nicollet, 4.6 beneficiaries per 1,000, 17.3 percent more than expected), Accountable Care Coalition of Southeast Texas (ACCST, 3.9 beneficiaries per 1,000, 12.1 percent higher than expected), and Trinity Health ACO (Trinity, 1.6 beneficiaries per 1,000, 12.1 percent more than expected).
- A relative increase in ACSC hospitalizations for Baroma in PY1 cannot be interpreted because trends for this outcome in the baseline period were not parallel.

Unplanned 30-Day Readmission to Acute Care Hospitals

- **No significant relative decreases** in PY1 for any aligned beneficiaries.
- **Significant and interpretable relative increase** in beneficiaries who had an unplanned 30-day readmission in PY1 for ThedaCare (22.0 beneficiaries per 1,000, 17.8 percent higher than expected).

Unplanned Acute Care Hospitalizations within 30 Days of SNF Discharge

- **No significant relative decreases** in PY1 for any aligned beneficiaries.
- **Significant relative increase** in PY1 for beneficiaries aligned to Bellin's providers (81 beneficiaries per 1,000, 60.6 percent more than expected).

Annual Wellness Visits (AWV)

- **Significant relative increase** in PY1 for beneficiaries aligned to providers with Steward Integrated Care Network (Steward, 29.6 beneficiaries per 1,000, 13.9 percent more than expected) and Trinity (25.2 beneficiaries per 1,000, 19.9 percent more than expected).
- Relative changes in the number of beneficiaries who had an AWV in PY1 cannot be interpreted for 13 NGACOs (ACCST, Bellin, CHESS, Deaconess, Henry Ford, Park Nicollet, Pioneer Valley, UnityPoint, Beacon, Optum, OSF, Prospect, and ThedaCare) because trends for the outcome in the baseline period were not parallel.

Exhibit 5.9. Estimated Impact of 2016 NGACOs on Quality of Care in PY1

NGACO	ACSC Admissions (beneficiaries per 1,000)			30-Day Readmissions (beneficiaries per 1,000)			30-Day Admissions post-SNF (beneficiaries per 1,000)			AWV (%) (beneficiaries per 1,000)		
	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)	Impact Estimate	95% CI	Impact (%)
2016 Class	0.8°	-0.2, +1.8	2.5	1.4	-1.9, +4.8	1.1	1.3	-3.0, +5.6	0.9	20.4**	1.9, +39.0	11.9
ACCST	3.9**	0, 7.8	12.1	1.4	-15.6, 18.3	1.0	- \$	- \$	- \$	- \$	- \$	- \$
Baroma	- \$	- \$	- \$	1.8	-10.6, 14.1	1.3	2	-20.7, 24.7	1.4	- \$	- \$	- \$
Beacon	3.6°	-0.8, 8.1	11.2	- \$	- \$	- \$	0.3	-52.4, 53.1	0.3	- \$	- \$	- \$
Bellin	-5.9	-10.5, -1.2	-20.6	4.7	-26.0, 35.4	3.8	81*	-10.2, 172.2	60.6	- \$	- \$	- \$
CHESS	2.2	-1.8, 6.1	6.9	-9.5	-28.0, 9.1	-6.5	-5.1	-36.6, 26.4	-3.8	- \$	- \$	- \$
Deaconess	-2.5	-7.4, 2.5	-5.2	0.5	-21.0, 21.9	0.4	-7.6	-67.2, 51.9	-4.9	- \$	- \$	- \$
Henry Ford	0.3	-3.5, 4.1	0.7	5.2	-11.4, 21.7	4.4	9.8	-32.6, 52.3	7.5	- \$	- \$	- \$
MemorialCare	2.6	-0.6, 5.7	10.0	-1.5	-20.1, 17.0	-1.3	11.5	-44.3, 67.3	8.0	- \$	- \$	- \$
Optum	-0.8	-3.2, 1.6	-3.6	3.2	-12.5, 18.8	2.4	7.1	-33.6, 47.8	4.0	- \$	- \$	- \$
OSF	1.5	-2.2, 5.1	4.3	2.4	-14.8, 19.7	1.7	-10.1	-41.6, 21.5	-6.2	- \$	- \$	- \$
Park Nicollet	4.6**	0.5, 8.8	17.3	-8.4	-35.8, 19.1	-5.9	-32.7	-107.6, 42.2	-17.5	- \$	- \$	- \$
Pioneer Valley	- \$	- \$	- \$	11.2°	-3.7, 26.0	8.4	0.6	-27.6, 28.7	0.4	- \$	- \$	- \$
Prospect	0.9	-3.4, 5.2	2.1	-4.6	-23.1, 14.0	-3.5	30.9°	-14.3, 76.1	22.9	- \$	- \$	- \$
Steward	2.4°	-0.6, 5.4	5.7	-5.1	-17.3, 7.1	-3.4	-0.9	-22.1, 20.4	-0.6	29.6***	22.7, 36.5	13.9
ThedaCare	-1.8	-6.6, 3.0	-6.0	22**	0.9, 43.1	17.8	18.1	-24.0, 60.2	12.9	- \$	- \$	- \$
Triad	1.6	-3.6, 6.8	4.8	-10.9	-44.1, 22.2	-8.2	7.6	-78.5, 93.7	5.0	- \$	- \$	- \$
Trinity	1.6*	-0.3, 3.6	5.2	-1.7	-10.9, 7.5	-1.2	3.2	-14.9, 21.3	2.2	25.2***	20.9, 29.6	19.9
UnityPoint	-0.9**	-3.2, 1.3	-2.8	4.7	-7.7, 17.0	3.9	-9.2	-44.8, 26.5	-5.8	- \$	- \$	- \$

NOTES: p<0.2°, p<0.1* p<0.05**, p<0.01***. Impact estimate is the estimated relative change for the binary quality-of-care measure in PY1 from DID models. We report the estimated relative change as number of beneficiaries per 1,000 in PY1, and percentage impact relative to expected quality of care for NGACOs in 2016 absent the model. Decreases in beneficiaries with ACSC admissions, 30-day readmissions, and 30-day hospital admissions after SNF discharge are considered favorable. Increases in beneficiaries with annual wellness visits (AWVs) are considered favorable. ACSC = ambulatory care sensitive conditions, CI = confidence interval, SNF = skilled nursing facility. §Impact not reported because outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group.

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Technical Appendix D (Quantitative Methods and Analysis) for a complete table of data sources.

Medicare Spending by Care Settings and Category (by NGACO)

To understand the influence on Medicare savings for aligned beneficiaries, similar to our pooled analysis presented earlier in the chapter, we present impact estimates for Medicare savings by care setting and service category for the 18 2016 NGACOs in PY1. Spending in care settings includes both professional and facility services, with noted exceptions. Exhibit 5.10 below presents impacts and 95-percent CIs for spending (PBPM) in PY1; see Technical Appendix G (Comprehensive Quantitative Results) for estimate impacts expressed in terms of percentage. For each measure, we identified the NGACOs with significant ($p < 0.1$) relative increases or decreases in spending (highlighted in Exhibit 5.10) and those with results that could not be interpreted, because changes in measures in the baseline years were not parallel between NGACO-aligned beneficiaries and comparators (e.g., failure of the parallel trends test).

Outpatient/Office (includes facility and professional spending)

- **Significant relative decrease** in PY1 for beneficiaries aligned to providers with ThedaCare (-\$17.6 PBPM) and Deaconess (-\$16.2 PBPM).
- **Significant relative increase** in PY1 for beneficiaries aligned to UnityPoint providers (\$6.9 PBPM).

Acute Care Hospital Setting (includes facility and professional spending)

- **Significant relative decrease** in PY1 for beneficiaries aligned to providers with Henry Ford (-\$38.1 PBPM) and Optum (-\$16.2 PBPM).

SNF Setting (includes facility and professional spending)

- **Significant relative decrease** in PY1 for beneficiaries aligned to providers with Deaconess (-\$14.1 PBPM) and CHESS (-\$7.2 PBPM).
- **Significant relative increase** in PY1 for beneficiaries aligned to Bellin providers (\$15.9 PBPM).

Other Post-Acute Care Setting (includes IRF/LTCH/ Swing beds/CORF facility and professional spending)

- **Significant relative decrease** in PY1 for beneficiaries aligned to Beacon providers (-\$6.3 PBPM) and Prospect (-\$18.4 PBPM).

Home Health

- **Significant relative decrease** in PY1 for beneficiaries aligned to Triad providers (-\$5.3 PBPM).
- **Significant relative increase** in the PY1 for beneficiaries aligned to Beacon providers (\$5.4 PBPM).
- Relative decreases in home health spending in PY1 for Prospect and ThedaCare cannot be interpreted because baseline trends for this outcome are not parallel.

Hospice Setting (includes facility and professional spending)

- **Significant relative decrease** in PY1 for beneficiaries aligned to providers with ThedaCare

(-\$10.3 PBPM), OSF (-\$10.0 PBPM), Deaconess (-\$6.0 PBPM), Triad (-\$5.5 PBPM), and Optum (-\$3.3 PBPM).

Durable Medical Equipment

- No 2016 NGACOs had a significant relative decrease or increase.
- A relative increase in durable medical equipment spending in PY1 for Beacon cannot be interpreted because baseline trends for this outcome are not parallel.

Exhibit 5.10. Estimated Impact of 2016 NGACOs on Medicare Spending (PBPM) across Care Settings and Categories in PY1 (by NGACO)

NGACO	Total Spending		Outpatient/Office		Acute Care Hospital		SNF Setting		Other Post-Acute		Home Health		Hospice Setting		DME	
	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI	Estimate	95% CI
2016 Class	-\$18.2**	-\$33.2, - \$3.3	-1.7	-8.3, +2.8	-3.9°	-9.5, +1.7	-3.0**	-5.8, -0.2	-2.0	-5.4, +1.4	- \$	- \$	- \$	- \$	0.5°	-0.2, +1.2
ACCST	-3.00	-54.0, 48.1	0.6	-16.5, +17.7	12.0	-11.9, +36.0	6.9°	-1.7, +15.4	3.6	-12.6, +19.8	-0.2	-6.0, +5.7	-1.3	-7.3, +4.7	1.2	-6.5, +9.0
Baroma	- \$	- \$	0.9	-14.6, +16.3	- \$	- \$	0.3	-6.4, +7.0	0.2	-5.8, +6.3	1.3	-1.5, +4.1	-2.3	-7.4, +2.7	-1.9°	-4.7, +0.8
Beacon	38.8°	-7.8, 85.4	10.2	-8.5, +28.9	13.6	-8.4, +35.5	3.1	-4.4, +10.5	-6.3**	-12.4, -0.3	5.4***	2.1, 8.7	-2.1	-8.0, +3.9	- \$	- \$
Bellin	35.0	-15.8, 85.8	12.9	-8.7, +34.6	-16.8	-45.3, +11.8	15.9**	5.3, 26.4	-3.7°	-8.3, +0.8	-0.9	-4.3, +2.5	-0.6	-7.8, +6.5	0	-6.1, +6.2
CHESS	- \$	- \$	-8.9	-26.9, +9.0	-0.3	-17.1, +16.6	-7.2**	-13.3, -1.1	-4.8°	-11.6, +1.9	-1.4	-4.5, +1.7	-1.7	-6.4, +3.0	0.5	-3.3, +4.3
Deaconess	-42.4°	-93.5, 8.7	-16.2*	-34.5, +2.1	- \$	- \$	-14.1***	-24.5, -3.7	-1.3	-9.2, +6.6	- \$	- \$	-6.0*	-12.6, +0.6	-0.1	-3.1, +3.0
Henry Ford	-22.1	-69.9, 25.6	10.8°	-3.2, +24.8	-38.1***	-63.2, -13.1	- \$	- \$	-0.5	-8.2, +7.2	0.7	-2.9, +4.3	- \$	- \$	2.3	-1.9, +6.5
MemorialCare	-57.4**	-109.2, - 5.6	-3.3	-22.2, +15.6	-19.4	-51.1, +12.3	-7.5	-21.3, +6.3	-3.5	-19.2, +12.2	-2.7	-8.0, +2.5	-1.1	-6.8, +4.6	0.5	-4.2, +5.2
Optum	-34.7**	-65.9, -3.6	- \$	- \$	-16.2**	-31.4, -0.9	-1.2	-5.8, +3.4	- \$	- \$	-0.8	-2.9, +1.2	-3.3*	-7.2, +0.5	2.1°	-1.1, +5.2
OSF	2.3	-40.0, 44.6	4.6	-8.7, +17.9	-4.1	-27.5, +19.2	- \$	- \$	1.9	-1.6, +5.5	- \$	- \$	-10.0***	-15.7, -4.4	2.2	-2.0, +6.4
Park Nicollet	-30.3	-89.8, 29.3	-12.3	-31.9, +7.2	-1.9	-30.4, +26.6	2.5	-7.5, +12.5	-3.0	-8.3, +2.4	-0.4	-3.5, +2.6	3.5	-3.6, +10.5	-2.0	-6.9, +2.9
Pioneer Valley	-5.6	-46.5, 35.3	-8.7°	-21.4, +4.1	-2.9	-24.5, +18.7	- \$	- \$	-0.5	-5.9, +4.8	-1.9	-5.5, +1.7	1.7	-1.9, +5.3	0.1	-3.6, +3.8
Prospect	-55.1	-130.5, 20.3	8.3	-13.3, +30.0	28.1°	-3.8, +60.0	-10.2°	-24, +3.5	-18.4**	-33.2, -3.5	- \$	- \$	- \$	- \$	0.6	-3.2, +4.4
Steward	5.1	-31.1, 41.3	-0.1	-9.5, +9.3	6.0	-12.0, +23.9	-2.0	-8.7, +4.7	2.5	-2.5, +7.4	0.5	-2.3, +3.4	0.2	-3.3, +3.8	0.2	-1.7, +2.1
ThedaCare	-43.2*	-92.9, 6.4	-17.6*	-38.2, +2.9	-14.0	-41.0, +12.9	8.7°	-2.9, +20.3	-0.2	-9.3, +8.9	- \$	- \$	-10.3**	-19.9, -0.7	-0.7	-4.3, +2.9
Triad	-79.4**	-151.3, - 7.5	- \$	- \$	-15.3	-40.8, +10.2	-11.7	-22.6, -0.8	-6.6°	-16.0, +2.7	-5.3**	-9.6, -1.0	-5.5*	-12.9, +1.8	1.7	-3.5, +6.9
Trinity	-15.9	-39.2, 7.5	-1.6	-9.3, +6.2	-3.8	-16.9, +9.4	-3.2	-8.6, +2.3	- \$	- \$	- \$	- \$	-0.9	-3.4, +1.6	0.7	-1.5, +2.8
UnityPoint	-2.4	-24.1, 19.4	6.9*	-0.9, +14.8	-0.2	-11.4, +11.0	-4.0*	-8.6, +0.6	- \$	- \$	-1.0°	-2.4, +0.4	- \$	- \$	-0.4	-2.1, +1.2

NOTES: p<0.2°, p<0.1* p<0.05**, p<0.01***. Impact estimate is the estimated relative change from DID models, reported per beneficiary per month (PBPM), and as a percentage relative to expected spending for the NGACO group in 2016 absent the NGACO model. Impact estimates for Medicare spending across settings summed up to less than the impact estimate for total Medicare spending due to differences in how spending measures were modeled; see Technical Appendix D (Quantitative Methods and Analysis) for more details. CI = confidence interval; DME = durable medical equipment; SNF = skilled nursing facility. Other post-acute care settings includes inpatient rehabilitation facilities, long-term care hospitals, comprehensive outpatient rehabilitation facilities, and swing beds. §Impact not reported because outcome failed DID assumption of parallel trends across first and last baseline year between NGACO and comparison group.

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Appendix D (Quantitative Methods and Analysis), Exhibit D.8, for a complete table of data sources.

5.5. Net Impact of 2016 NGACOs on Medicare Spending

Our preceding estimates of *gross* impact on total Medicare Parts A and Part B spending was used to calculate the *net* impact of the NGACO model. The net impact is estimated by subtracting CMS's shared savings payments to NGACOs in 2016 from the gross impact estimated for these NGACOs.⁷⁷ Thus, this calculation is **gross impact (-\$100.01 million)** minus the total shared savings payment made by Medicare to the 2016 NGACOs (**\$37.97 million**) for a **net reduction in Medicare spending by the NGACO model in PY1 of \$62.12 million.**⁷⁸ **This is a net reduction in Medicare spending of -\$11.24 PBPM, or 1.06 percent lower.**

It is important to note that our evaluation's estimates of increases and decreases in spending are relative to a comparison group over time. Spending calculations are based on the *relative change* in Medicare spending for the beneficiaries of NGACO providers in 2016 compared to 2013-2015, relative to the change for a comparison group. This contrasts with the ACO shared savings benchmarks used in the model's financial results. The shared savings benchmarks are projections based on one year (calendar year 2014 for the 2016 class) for each ACO, and the savings indicate how NGACOs fared after reconciling the actual spending for NGACO-aligned beneficiaries in 2016 with the NGACO's benchmark.⁷⁹ Given differences in methodology and in the underlying priorities that lead to the use of different points of comparison, the results are not necessarily meant to agree. There is value in a general comparison as a means to better understand the model. Exhibit 5.11 illustrates the extent of agreement or overlap between the evaluation's estimated changes in Medicare spending and the model's shared savings benchmark for 2016 NGACOs in PY1, as follows:

- **Vertical axis:** displays the estimated relative reduction in Medicare spending PBPM by the NGACO. Positive values indicate relative reduced Medicare spending from the evaluation, and negative values represent relative increased Medicare spending from the evaluation.⁸⁰
- **Horizontal axis:** displays the NGACO's Medicare spending PBPM as determined by the financial benchmark target set by the model. Positive values indicate incurred savings, and negative values indicate losses incurred by the NGACO.

⁷⁷ NGACOs earned shared savings from, or paid shared losses to, Medicare based on the extent to which spending for their beneficiaries was below or above the benchmark level set by the model. We considered these shared savings and shared losses in estimating the net impact for each NGACO and for all NGACOs.

⁷⁸ See Appendix D (Quantitative Methods and Analysis) for more information about our approach to calculating the net impact of 2016 NGACOs on Medicare spending. Medicare paid shared savings to, or recuperated shared losses from, NGACOs based on the extent to which spending for their beneficiaries was below or above the benchmark target set by the model. We considered both the shared savings and shared losses amounts in estimating the net impact for the 2016 NGACOs. The benchmark expenditure data are available at <https://innovation.cms.gov/Files/x/nextgen-fncl-py1.xlsx>.

⁷⁹ The shared savings/losses incurred are based on the *difference* between the actual spending and benchmark spending target for beneficiaries of NGACO providers in the first performance year of the model. An NGACO's benchmark is determined using spending for the beneficiaries of NGACO providers in one baseline year (2014), accounting for regional trends in spending, differences in risk scores for the NGACO population from baseline to performance year, and a quality discount. The level of risk (100% or 80%) assumed by the NGACO in the performance year also determines the shared savings/losses amounts. For more details, please refer to the NGACO model benchmarking methods available at: <https://innovation.cms.gov/Files/x/nextgenaco-methodology.pdf>.

⁸⁰ The evaluation's gross savings are based on the *relative change* in Medicare spending for the beneficiaries of NGACO providers in the first year of the model, relative to a comparison group and change over three baseline years (2013–2015).

Our evaluation's estimate of gross savings and of individual NGACO spending relative to each's shared savings benchmark are calculated differently. The latter are determined after reconciling the actual spending for NGACO providers' aligned beneficiaries in 2016 with the NGACO's benchmark or the claims-based projected spending for these beneficiaries. In addition, the point estimates provided in Exhibit 5.11 do not indicate statistical significance nor the confidence intervals around these estimates. We present the data in Exhibit 5.12 to convey the two different assessments used to evaluate ACO performance.

We found the following for the 2016 NGACOs in PY1:

- **Agreement between evaluation and model benchmark savings for 2016 NGACOs as a group and for 11 of the 18 NGACOs individually**

Top right quadrant: The 2016 NGACOs as a group and nine NGACOs showed point estimates of reduced Medicare spending from the evaluation and also earned shared savings rewards for keeping their beneficiaries' spending below the model benchmark.⁸¹ In this quadrant, spending was estimated to be lower and significant ($p < 0.1$) for 2016 NGACOs overall and for two NGACOs (Triad, ThedaCare).

Bottom left quadrant: Two NGACOs showed point estimates for increased Medicare spending from the evaluation and also incurred shared loss penalties for spending more than their benchmark expenditure.⁸²

- **Lack of agreement between evaluation findings and model benchmark savings for seven of the 18 NGACOs**

Top left quadrant: Five NGACOs reduced Medicare spending relative to the comparison group in the evaluation, yielding savings to CMS. These estimated savings to Medicare were significant ($p < 0.1$) for two NGACOs in this quadrant (Memorial Care, Optum). However, providers in these NGACOs did not improve relative to their own past performance and were subject to a downside risk repayment requirement, for exceeding the benchmark spending for their beneficiaries.⁸³

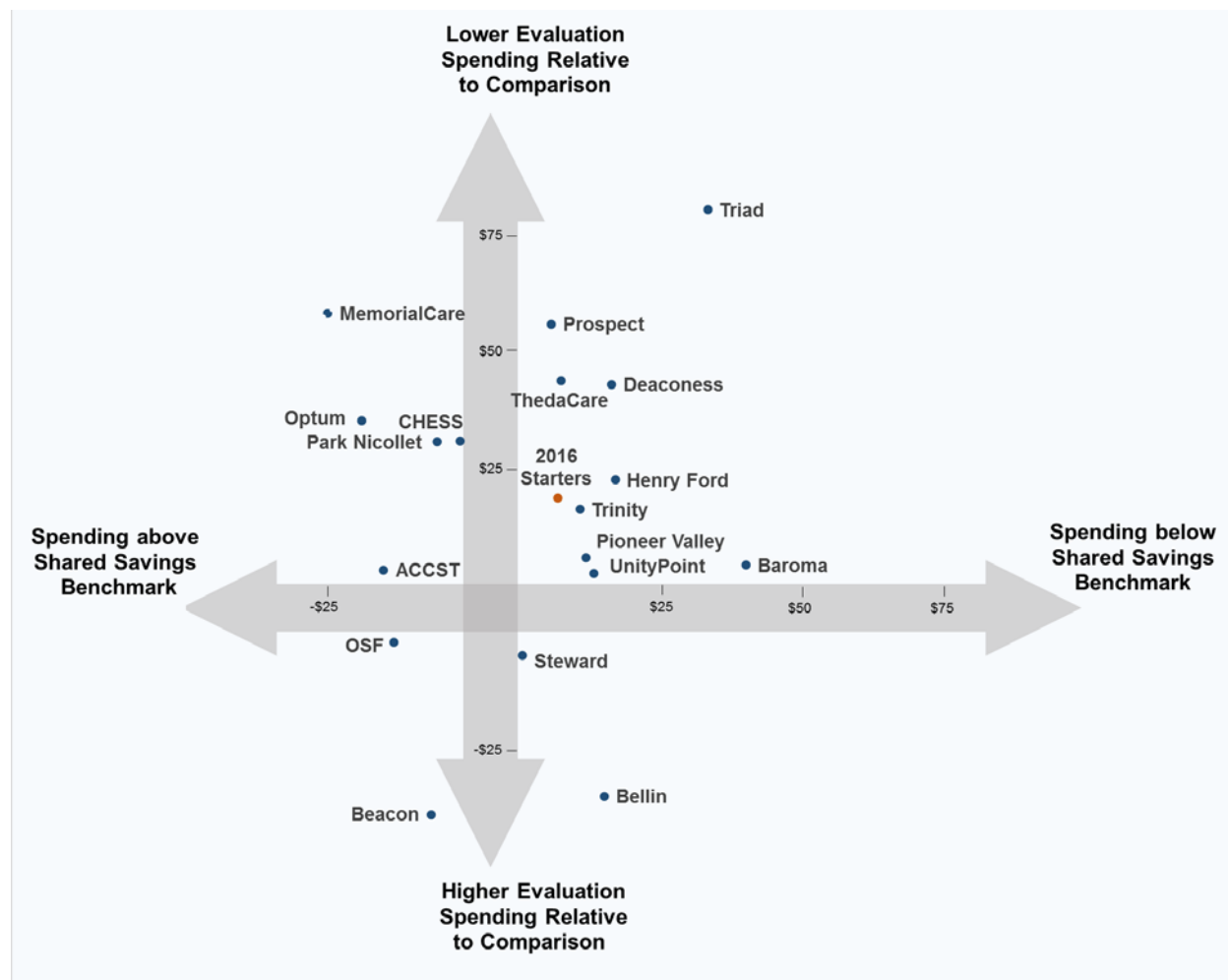
Bottom right quadrant: Two NGACOs earned financial rewards for spending less than their beneficiaries' target benchmark but failed to reduce Medicare spending according to the evaluation. Providers in these NGACOs were not able to reduce spending for their beneficiaries' relative to beneficiaries of non-ACO providers in their markets. Nevertheless, they earned financial rewards under the model.

⁸¹ One ACO in this quadrant (Prospect) withdrew from the NGACO model in PY 2017.

⁸² One ACO in this quadrant (OSF) withdrew from the NGACO model in PY 2017.

⁸³ It is possible that the providers who joined these NGACOs were already efficient in the baseline year used for determining the model's benchmark. Two ACOs in this quadrant (Optum and Memorial Care) withdrew from the NGACO model in PY 2018.

Exhibit 5.11. Shared Savings Benchmark vs. Estimated Savings from Evaluation, 2016 NGACOs



NOTES: X-axis = the PBPM dollar amount of NGACO spending below (positive, or right side of spectrum) or above (negative, left side of spectrum) the target benchmark set by CMS. Y-axis = the PBPM dollar amount of reduced (positive values above the X-axis) or increased (negative values below the X-axis) Medicare spending from the evaluation, estimated relative to a comparison group. SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Appendix D (Quantitative Methods and Analysis), Exhibit D.8, for a complete table of data sources.

5.6. Discussion

Our claims-based evaluation findings for the NGACO model in its first year show no consistent pattern in features or outcomes among NGACOs that lowered total Medicare spending. We discuss in this section emerging themes that merit further investigation in future reports. Exhibit 5.12 presents a summary of spending and utilization impacts for the 2016 NGACOs, alongside selected characteristics that we hypothesize to influence outcomes. These characteristics include prior experience as Medicare ACOs, ACO organizational type, level of risk sharing for PY 2016, and whether the ACO elected to use the SNF waiver. We currently do not draw on findings from the ACO leadership survey because the survey, collected in mid-2017, captures implementation experience over a longer time frame than what the claims-based evaluation findings in this report represent.

Outcomes among NGACOs that lowered Medicare spending. All four NGACOs that significantly lowered Medicare spending had favorable reductions in length of stay and spending in acute care hospital setting, along with favorable reductions in spending in at least one dimension of post-acute care (SNF or other post-acute care setting), as well as the hospice setting. All four NGACOs favorably reduced either outpatient/office spending or nonhospital E&M visits, and three NGACOs favorably reduced home health spending. These favorable reductions did not necessarily have to reach statistical significance for there to be a significant reduction in total Medicare spending, as noted for Memorial Care. Our findings suggest that there are multiple pathways across various care settings for ACOs to total lower Medicare spending.

Outcomes among other NGACOs. Other NGACOs, like Deaconess and Henry Ford, showed similar favorable decreases for spending and utilization outcomes, but their reduction in total Medicare spending while favorable did not reach statistical significance.

Features of NGACOs that lowered Medicare spending. Two new ACOs, a former Pioneer, and a former SSP lowered Medicare spending in the first performance year, suggesting that prior Medicare ACO experience was not a prerequisite for lowering spending in the NGACO model. All three new NGACOs lowered spending, though the reduction noted for one did not reach statistical significance. Three of the four ACOs that lowered Medicare spending were integrated delivery systems (IDSs), suggesting that this organization structure could offer advantages in the NGACO model. However, several ACOs that did not significantly reduce spending were also IDSs. Two of three ACOs that assumed 100% risk significantly lowered Medicare spending. However, because few ACOs assumed 100% risk in the first year we cannot decisively conclude that greater assumption of risk by NGACOs was associated with greater Medicare spending reduction. Three of four ACOs that lowered Medicare spending elected to implement the SNF waiver. Other ACOs implementing the SNF waiver did not significantly reduce Medicare spending, although three had a significant reduction and one had a significant increase in Medicare spending in the SNF setting.

As we reconcile the variation in findings, we acknowledge that alongside the features that NGACOs select, such as risk sharing and payment types, approaches employed by NGACOs (such as care coordination and use of health IT) as well as features of their markets (such as Medicare Advantage penetration and competition), likely have a role in influencing relative impacts. We will study the influences of such factors in future reports.

As we move forward in this evaluation, we will continue to analyze these claims-based measures, as well as additional claims-based measures of care in the SNF and hospice setting, and home health care, as well as survey and qualitative data. We also plan to use Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys and Group Practice Reporting Option (GPRO) data to assess the impact of NGACOs on beneficiary experience and clinical outcomes, respectively. We will also have a larger set of NGACOs to draw inferences from, as more organizations join the model. For example, only three 2016 NGACOs elected 100% risk-sharing and two elected PBP, limiting our ability to draw conclusions about how these selections may mediate impacts. Furthermore, we will use multiple techniques to understand the heterogeneity in outcomes and potential explanatory mechanisms for the early and varied findings observed.

Exhibit 5.12. Summary Table, Impacts of 2016 NGACOs on Spending, Utilization, and Quality, With Selected Organizational Characteristics (Pooled and by NGACO), PY1

	NGACO	Medicare Spending								Utilization				Structure and Process				Aligned Beneficiaries
		Total Spending	Outpatient / Office	Acute Care Hospital	SNF setting	Other Post-Acute Setting	Home Health	Hospice Setting	DME	Acute Care Adm.	Acute Care Days	ED Visits (incl. obs)	Non hosp. E&M Visits	Prior Medicare ACO	ACO Type	Risk Sharing	SNF Waiver	
	2016 CLASS	●	○	○	●	○				○	●		●					477,197
Significant Decrease in Spending	Optum	●		●	○		○	●		●	○		○	New	non-IDS	100	yes	29,671
	Triad	●		○	○	○	●	●		○	○		●	SSP	IDS	100	yes	29,035
	ThedaCare	●	●	○		○		●	○	○	○		●	Pioneer	IDS	80	no	15,857
	MemorialCare	●	○	○	○	○	○	○			○			New	IDS	80	yes	19,453
Non-significant Decrease in Spending	Deaconess	○	●		●	○		●	○		○		●	MSSP	non-IDS	80	yes	31,442
	Unity Point	○	⚙	○	●		○		○	○	○			Pioneer/SSP	IDS	80	yes	65,487
	Henry Ford	○		●		○				●	●			New	IDS	80	yes	20,988
	Trinity	○	○	○	○			○		○	○			SSP	IDS	80	yes	52,882
	Prospect	○			○	●						●	○	SSP	IDS	80	no	13,799
	Park Nicollet	○	○	○		○	○		○			○		Pioneer	IDS	80	no	14,428
	CHESS		○	○	●	○	○	○			○			SSP	non-IDS	100	yes	13,281
	Pioneer Valley	○	○	○		○	○			○		●		SSP	non-IDS	80	yes	33,903
	ACCST	○					○	○			○			SSP	non-IDS	80	yes	13,391
	Baroma	○						○	○				○	SSP	non-IDS	80	yes	27,449
Non-significant Increase in Spending	Beacon					●	⚙	○				⚙		Pioneer	non-IDS	80	yes	14,714
	Bellin			○	⚙	○	○	○		○	○	○		Pioneer	IDS	80	yes	8,286
	OSF			○				●					●	Pioneer	IDS	80	yes	36,668
	Steward		○		○						○			Pioneer	IDS	80	yes	36,463

Notes: ●: Statistically significant (at p<.1) and favorable outcome; ○: Not statistically significant (at p<.1) but favorable outcome; ⚙: Statistically significant but unfavorable outcome; blank: Not statistically significant and not favorable outcome, or not interpretable outcome

5.7. Limitations

There are several important limitations to this analysis. First, beneficiaries and providers in NGACOs may be systematically different from those in the comparison group. Though we used propensity score weighting to ensure that beneficiaries in the two groups were similar with respect to observed demographic, disease burden, community-level, and market-level characteristics, our analysis does not account for unmeasured, time-varying differences between the two groups, which could bias our impact estimates. However, we would anticipate more of a bias only if those time-varying effects coincided with the onset of the NGACO incentives in 2016 and if effects differed for NGACO and comparison groups.

Second, our estimated impacts are conservative, as the savings accrued to Medicare from NGACO providers in 2016 may be greater than those reported. Specifically, we take into account the anticipated greater spillover of care from ACO providers to the comparison group beneficiaries in the performance period—which we investigated and discuss in greater detail below—which contributes to more conservative impact estimates.

Finally, our estimates may reflect biases related to the wide variation in Medicare spending for beneficiaries in our study population, as well as to the impact of other CMS value-based programs and in particular, initiatives that bundle payments or furnish episodic payments to providers.

Spillover

Our comparison group comprises Medicare FFS beneficiaries residing in NGACO market areas. These comparators are identified as receiving usual care, as they are attributed to providers unaffiliated with any Medicare ACO. However, they may have obtained care from ACO-affiliated providers, making their care similar to that of the NGACO beneficiaries' care. Spillover occurs via provider behavior, where motivated ACO-affiliated providers deliver high-quality care to all patients, irrespective of the patient's ACO membership or payer. Such spillover of care from ACO providers, if more likely for the comparison group in the performance period relative to baseline, would dampen our estimates of reduced Medicare spending under the model.⁸⁴ In addition, a small percentage (2.5 percent) of PY1 comparison beneficiaries were in an SSP ACO; this is a source of spillover of ACO effects into the comparison pool which could also make impact estimates more conservative.⁸⁵ This is due to the timing of the NGACO annual report since finalization of the SSP beneficiaries for PY 2016 occurred after completion of data analyses for this report.

⁸⁴ McWilliams JM. Savings from ACOs—building on early success" *Ann Intern Med* 2016;165(12):873–875; Phipps-Taylor M, Shortell S. ACO spillover effects: An opportunity not to be missed. *NEJM Catalyst*, September 21, 2016. Available at <https://catalyst.nejm.org/aco-spillover-effects-opportunity-not-missed/>. Accessed March 31, 2018.

⁸⁵ Alignment to SSP ACOs in a calendar year (CY) is retrospective - based on QEM visits incurred during the CY, while alignment to NGACOs and the comparison group is prospective- based on QEM visits incurred during a two-year alignment period preceding the CY. While these comparison beneficiaries were prospectively aligned to non-ACO providers for the evaluation, they were retrospectively aligned by CMS to SSP ACOs after finalization of the SSP alignment.

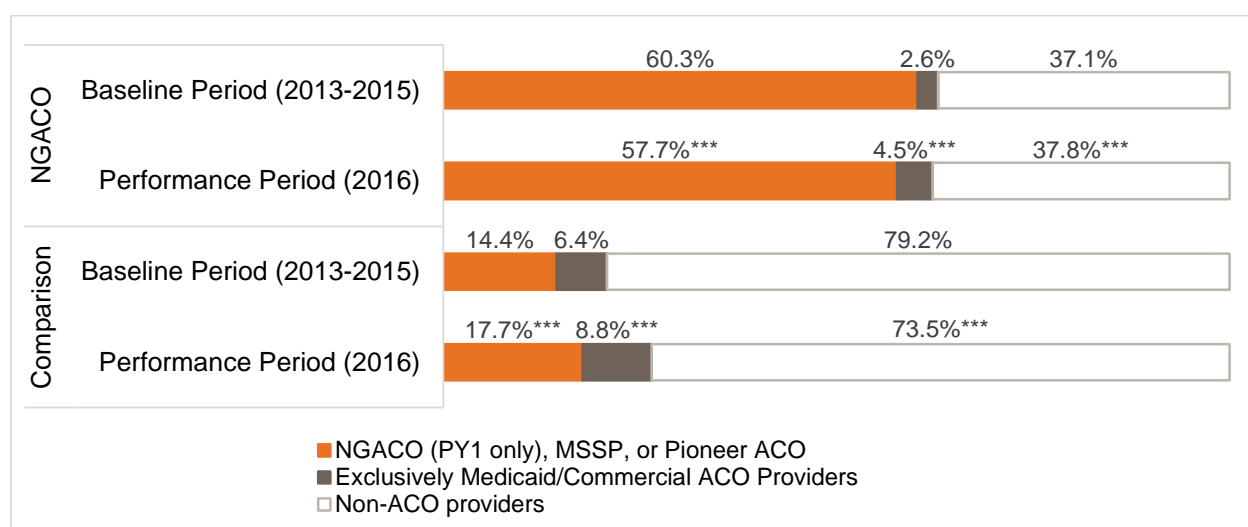
We explored the prospect for spillover, using the measure of nonhospital E&M visits. Specifically, for each beneficiary, we constructed three measures for the proportion of E&M visits, one for each of three provider groups, as follows:

- providers affiliated with Medicare ACOs (NGACOs, Pioneer, and SSP)
- providers affiliated exclusively with Medicaid and commercial ACOs
- providers unaffiliated with any ACOs.⁸⁶

Exhibit 5.13 shows the average of these outcomes in the baseline period and PY1.

In both the baseline period and PY1, NGACO beneficiaries obtained the majority of their E&M visits from Medicare ACO-affiliated providers (58–60 percent), while those in the comparison group had most of these types of visits from non-ACO providers (74–79 percent). Going from baseline to PY1, the proportion of visits that the comparison group obtained from Medicare ACO-affiliated providers increased significantly (from 14 percent to 18 percent, $p < 0.001$). Both groups saw similar significant increases in care from providers affiliated exclusively with Medicaid and commercial ACOs. The increased spillover of care from ACO-affiliated providers to comparison group beneficiaries, from the baseline to PY1, is likely to make our impact estimates more conservative. In future reports, we plan to control for spillover in our analyses.

Exhibit 5.13. Percentage of E&M Visits to Medicare ACO, Other ACO, and Non-ACO Providers in Baseline Period and PY1, for 2016 NGACOs and Comparison Group



NOTE: Differences between the baseline and performance period are significant at $p < 0.2+$, $p < 0.1^*$, $p < 0.05^{**}$, $p < 0.01^{***}$. E&M visits in all settings except hospital inpatient and ED setting. Providers were assigned to participation in an ACO in a hierarchical manner on the basis of (1) participation in Pioneer, SSP, or NGACO; (2) not in any Medicare ACO, but participation in a Medicaid or commercial ACO (or both); and (3) no participation in any ACO. Information on provider participation in Medicare ACO is from CMS data, and participation in Medicaid and commercial ACOs is from SK&A/Quintiles data.

SOURCE: NORC analysis of Medicare enrollment and claims data, 2013-2016 and ancillary data. See Appendix D (Quantitative Methods and Analysis), Exhibit D.8, for a complete table of data sources.

⁸⁶ Because our main interest was measuring the direct spillover of care from providers under the influence of *any* Medicare ACO incentive, we grouped care (non-inpatient E&M visits) from NGACO, SSP, and Pioneer ACO providers into a single category. Because we were also interested in measuring indirect spillover from providers exclusively in commercial/Medicaid ACOs on Medicare beneficiaries in both the NGACO and comparison group, we grouped care from providers who were exclusively in such ACOs into a single category. We detail our approach to measuring spillover in Appendix D: Quantitative Methods and Analysis and present spillover for each NGACO and comparison group in Appendix G: Comprehensive Quantitative Results.

Additional Potential Sources of Bias for Impact Estimates

In addition to spillover, we identify three potential sources of bias that could influence our impact estimates in either direction:

- Difficulty in predicting the wide variation in spending for Medicare beneficiaries in the NGACO and comparison group
- Impact of penalties and incentives from CMS's other value-based programs on NGACO and/or comparison groups
- Differential impact on NGACO and comparison groups of CMS initiatives that bundle payments or furnish episodic payments to providers

Wide Variation in Spending

Medicare spending varies markedly for beneficiaries in our study population (Appendix G: Comprehensive Quantitative Results), with more than half comprising low spenders (70 percent of the sample spent less than the mean) and a small proportion of very high spenders (the top 20 percent of spenders accounted for 77 percent of total Medicare spending in the study population). We used models that best predicted average spending for the study population. However, these models under-predict spending for the top 20 percent of spenders (e.g., those who accounted for the most spending). In a sensitivity analysis using models that better predicted spending for the top 20 percent of spenders, we found greater impacts of the NGACO model in reducing Medicare spending for the study population (-\$25.2 PBPM). With many NGACOs focusing their care coordination approaches on these high-spending Medicare beneficiaries, greater impacts for this group can be expected. In future reports, we plan to explore methods to more accurately predict Medicare expenditures for both low- and high-spenders in our study population.

Other CMS Value-Based Programs

Medicare providers incur incentives and penalties based on the quality of care given to Medicare beneficiaries under CMS value-based programs that tie a small proportion of the providers' payment to value rather than volume alone.⁸⁷ Participation in these value-based programs is mandatory for Medicare providers, including hospitals, physician practices, and facilities such as ambulatory surgical centers, with certain exceptions. While the influence of these incentives and penalties is unclear, it is possible that they could have different impacts on the NGACO and comparison groups, making the latter less expensive to Medicare than the former group by virtue of the quality-adjusted payment amounts.

We hypothesize that the NGACO model may attract higher-quality practices. NGACOs also may include better performing hospitals and SNFs in their network of preferred providers. Then, because incentive payments to NGACOs may be larger than the comparison group from value-based programs, beneficiaries of NGACO providers may have higher total Medicare spending (including the bonus

⁸⁷ CMS' value-based programs' incentives and penalties apply to Medicare Part A (Hospital Readmission Reduction Program, Hospital Value-Based Purchasing Program, Electronic Health Record [EHR] Meaningful Use Program), and Part B (Physician Quality Reporting System, Value-Modifier Program, EHR Meaningful Use Program, Ambulatory Surgical Center Quality Reporting Program, Electronic Prescribing Incentive Program.)

payments) relative to their spending absent incentives. At the same time, comparison practices may incur greater penalties through value-based programs such as the Physician Quality Reporting System and Value-Based Modifier (from which NGACO providers are exempt) and making beneficiaries of these providers have lower Medicare spending (including the penalties) relative to their spending absent such penalties.

We investigated the magnitude of incentives and penalties from other CMS value-based purchasing programs on the NGACO and comparison groups' total Medicare Part A and B spending in 2016. See Technical Appendix D (Quantitative Methods and Analysis) for a description of the approach; results are presented in Appendix G (Comprehensive Quantitative Results). We found that incentives and penalties from CMS value-based programs accounted for less than one percent of the actual Medicare spending for NGACO and comparison beneficiaries in 2016. Because the magnitude of incentives and penalties were similar for NGACO and comparison group beneficiaries, we assume that they are not biasing our impact estimates and are therefore not including an adjustment for them in the model at this time.

CMS's Bundled and Episodic Payment Initiatives

CMS initiatives that bundle payments to hospitals and post-acute providers for selected episodes of care, such as the Bundled Payments for Care Improvement or Comprehensive Care for Joint Replacement initiatives, may affect NGACO and comparison groups in different ways. Bundled Payments for Care Improvement in particular has demonstrated impacts in decreasing institutional post-acute care spending.⁸⁸ Similarly, CMS's Oncology Care Model offers payments to oncology practices to improve quality and reduce spending for episodes of cancer needing chemotherapy. The disproportionate participation of NGACO or comparison group providers and beneficiaries in these bundled and episodic payment initiatives could bias estimates in either direction. In future reports, we plan to identify and account for the participation of NGACO and comparison beneficiaries in such overlapping CMS initiatives.

5.8. Summary

The 2016 NGACOs as a group showed a promising reduction in Medicare Parts A and B spending:

Gross reductions in Medicare spending. In the first performance year, 2016 NGACO providers reduced spending for their beneficiaries by \$100.08 million (1.71 percent). The estimated decrease in Medicare spending of -\$18.23 per beneficiary per month (PBPM) in PY1 is similar to the decrease noted in the first two years of the Pioneer ACO model. It is larger than the decrease noted for SSP ACOs in the early years.⁸⁹

⁸⁸ Dummit LA, Kahvecioglu D, Marrufo G, et al. Association between hospital participation in a Medicare bundled payment initiative and payments and quality outcomes for lower extremity joint replacement episodes. *JAMA* 2016; 316(12):1267–1278.

⁸⁹ Nyweide DJ, Lee W, Cuerdon TT, Pham HH, Cox M, Rajkumar R, Conway PH. Association of Pioneer Accountable Care Organizations vs. traditional Medicare fee-for-service with spending, utilization, and patient experience. *JAMA* 2015; 313(21): 2152–2161; McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early performance of Accountable Care Organizations in Medicare. *N Engl J Med* 2016; 374(24):2357–2366.

Net reductions in spending. After accounting for the shared savings payments CMS made to 2016 NGACOs in PY1, the net decrease in Medicare spending was \$62.12 million (1.06 percent). Eleven of the 18 NGACOs in the 2016 class incurred financial rewards or penalties from the model that agreed with the savings or losses their providers offered Medicare in PY1.

Four 2016 NGACOs achieved statistically significant reductions in Medicare spending. We noted wide variation in impacts across individual ACOs. Seven ACOs showed Medicare spending point estimates exceeding -\$30 PBPM, while two showed point estimates exceeding +\$30 PBPM. Most of the 18 NGACOs achieved some reduction in spending, but only four achieved significant reductions (Optum, MemorialCare, ThedaCare, and Triad), accounting for about 57 percent of the overall reduction. Two new ACOs (Optum and MemorialCare), one former Pioneer ACO (ThedaCare), and one former SSP ACO (Triad) showed savings estimates that reached statistical significance, suggesting that both former and new ACOs had opportunities for reducing Medicare spending under the NGACO model. Three of these ACOs were IDS (MemorialCare, ThedaCare, and Triad) and one was non-IDS (Optum), suggesting that opportunity for success was not limited to one organizational type. Finally, two of three NGACOs that assumed 100 percent risk (Optum, and Triad) were successful in reducing Medicare spending.

Reduced Medicare spending on post-acute and palliative care. Contributing to the decrease in Medicare spending for 2016 NGACOs were significant decreases in the SNF setting. There was an overall reduction in SNF spending of -\$16.61 million (-\$3.00 PBPM or -3.1 percent). Three ACOs had significant reductions and one had a significant increase in SNF setting spending. Two NGACOs significantly reduced spending in other post-acute care settings. We also noted a decreasing trend in Medicare spending in the hospice setting in PY1 for the 2016 NGACOs, while spending on palliative care for the comparison group increased. Five ACOs had significant reductions in Medicare spending for palliative care. The approaches of NGACOs that may be associated with dampening palliative care spending for their beneficiary populations, relative to other Medicare beneficiaries in their markets, merit further investigation.

Improved inpatient and outpatient utilization. 2016 NGACOs had a significant decrease in the number of inpatient hospital days per month (20 fewer, per 1,000 aligned beneficiaries) but no reductions in the number of hospital stays, which might explain why Medicare spending in the inpatient hospital setting decreased (-\$21.67 million overall or -\$3.9 PBPM) but did not reach statistical significance. Fewer inpatient hospital days may translate to fewer inpatient professional services, contributing to lower spending in the inpatient hospital setting. 2016 NGACOs also had a significant reduction in the number of E&M visits per month (hospital outpatient or office-based, 179 fewer, per 1,000 aligned beneficiaries), and spending in the outpatient/office setting reduced but not significantly (-\$15.22 million overall or -\$2.8 PBPM). Evidence from other CMS models suggests that NGACOs' care coordination activities

could have offset some E&M use, but further investigation on whether these decreases stem from reductions in primary or specialist E&M use is warranted.^{90,91}

Home Health and Durable Medical Equipment. For the 2016 NGACOs as a whole, we noted a decreasing trend in Medicare spending for home health in PY1.⁹² One ACO (Triad) reduced home health spending. However, we found no significant reduction in DME spending for the Class or any individual NGACO.

Improved quality of care. 2016 NGACOs saw a nearly 12 percent increase in aligned beneficiaries with an AWV. NGACOs report attempting to use AWVs to engage and anchor their beneficiaries to their providers, while simultaneously engaging their providers to comprehensively document their beneficiaries care needs.⁹³ Though conceivable, it's unlikely that the increase in beneficiaries with an AWV (one per beneficiary per year) alone could have substituted and contributed to the observed decreases in the number of E&M visits. With CMS offering a \$25 coordinated care reward to NGACO beneficiaries, from 2017 onwards, for receiving their annual wellness visit from a doctor who participates in an NGACO, we expect the rate of AWV to further increase for the NGACO group.

Improvements by NGACO providers in baseline period for selected outcomes. For selected outcomes NGACO providers were already changing outcomes for their beneficiaries across the baseline years, compared to beneficiaries of non-ACO providers in their markets. These outcomes failed the assumption of parallel trends required by the DID design. We assessed the impact of NGACO incentives on only those outcomes for which the NGACO and comparison providers had similar performance trends in the baseline period.

Limitations constrain the interpretation of our preliminary, first year findings. Chief among them are the potential impact on modeling of the wide variation in Medicare spending among our study sample and the influence of spillover (ACO-affiliated providers deliver care to both aligned beneficiaries and comparators) and other value-based purchasing models, including other CMS initiatives.

- **Wide variation in spending:** About 70 percent of our study sample (NGACO-aligned beneficiaries) had Medicare spending less than the mean for the full sample, while the top 20 percent of spenders accounted for 77 percent of total Medicare spending. We used models that best predict average spending for the entire population, which underpredict spending for aligned beneficiaries that account for the most spending. With many NGACOs focusing on these high-spending beneficiaries, greater impacts would be expected, and our current findings may be seen as conservative. This may also explain the discrepancy between the effect size observed for reduced Medicare spending across all

⁹⁰ Dale, Stacy B., Arkadipta Ghosh, Deborah N. Peikes, Timothy J. Day, Frank B. Yoon, Erin Fries Taylor, Kaylyn Swankoski et al. "Two-year costs and quality in the comprehensive primary care initiative." *New England Journal of Medicine* 374, no. 24 (2016): 2345-2356.

⁹¹ Nyweide, David J., Woolton Lee, Timothy T. Cuerdon, Hoangmai H. Pham, Megan Cox, Rahul Rajkumar, and Patrick H. Conway. "Association of Pioneer Accountable Care Organizations vs traditional Medicare fee for service with spending, utilization, and patient experience." *Jama* 313, no. 21 (2015): 2152-2161.

care settings and categories (summed), which is larger than the impact seen for reduction in total Medicare spending.

- **Spillover:** Between the baseline period and PY1, comparators received a greater proportion of care from NGACO-affiliated providers (from 14 percent to 18 percent, $p < 0.001$). This increased care spillover means that our impact estimates are likely to be conservative.
- **Other value-based payment models:** Medicare providers are required to participate in a range of value-based programs and, as a result, incur incentive and penalties based on the quality of care given to beneficiaries. The CMS value-based payment incentives and penalties account for less than one percent of actual Medicare spending for both 2016 NGACO-aligned beneficiaries and comparators, meaning that these are unlikely to bias our findings. However, episode-based CMS initiatives (e.g., bundled payment models like BPCI & CJR, and the Oncology Care Model) that share a focus on post-acute care and specialty care spending may bias estimates in either direction.

Our understanding of the factors that influence performance, especially in PY1 for the 2016 NGACOs, is informed by the context in which the NGACO model is being fielded, with consideration of markets, organizational characteristics, and model features (Chapter 3) and provider networks and patterns of care (Chapter 4).

Chapter 6: Summary and Future Reports

This first annual report has examined the perspectives and experience of NGACO leadership from survey and semi-structured interview data and NGACO performance from claims-based outcome measures for the first performance year (PY1). As this evaluation is in its first year, we have been in the early stages of data collection and analysis. As a result, this report generates emerging hypotheses, to be fully tested as additional data are collected, integrated, and analyzed. With these caveats, we synthesize our qualitative and quantitative findings in the context of the conceptual framework presented earlier in the report (Exhibit 1.2). The framework depicts domains that guide our development of hypotheses about pathways and configurations that may support successful performance of NGACOs. These hypotheses will guide future analyses on external (e.g., market) and internal (e.g., organizational, provider, and beneficiary) factors that contribute to such success.

Goals of the evaluation include determination of whether the NGACO model accomplishes its aims and if so, to understand the factors that either singly or in combination are associated with sustained success. In this chapter, we summarize factors and notable variations in organizational and market characteristics and implementation experience that align with our conceptual framework and discuss how these characteristics, structures, and processes lay the groundwork for analyses in future reports.

We recognize there are limitations to the interpretation of our first year findings, for example, in the limits to initial claims-based impacts and the related difficulties in modelling the wide variation in Medicare spending. The influence of spillover from ACO-affiliated providers to both aligned beneficiaries and comparators, as well as unmeasured effects from other value-based purchasing models and CMS initiatives, is also a concern. In subsequent performance years, NGACO performance may reflect organizational decisions in response to performance (relative to benchmarks) and to CMS policy directives, in addition to the factors highlighted here. While it will be challenging to describe configurations and relationships that are important contributors to NGACO success, we are cautiously optimistic that our evaluation will advance understanding of value-based care delivery reform.

6.1. ACO Structure, Model Features, and Provider Networks

Most 2016 NGACOs identify as an integrated delivery system [IDS] and reported prior value-based contracting experience. An IDS may have organizational advantages over a non-IDS as its infrastructure to support the deliverable of accountable care (e.g., governance structure, health IT and analytics systems) may be less fragmented than non-IDS ACOs. ACOs with value-based contracting experience, including managed care experience (e.g., Medicare Advantage or commercial ACO) would be expected to achieve savings. In interviews, many NGACO leadership teams mentioned that participating in the model enabled them to build on prior experience with alternative payment models, making the NGACO model a logical next step in the organization's ongoing movement toward risk-sharing and value-based purchasing aligned to populations. Prior experience with risk-based contracting appears to have informed the choice of NGACO model options.

Provider networks vary considerably across NGACOs in composition, size, and breadth of affiliated practitioner specialties and facility types. NGACOs have developed their provider networks with

consideration of provider electronic health record [EHR] capability, clinical performance, and experience with care management. Primary care clinicians were the most common type of individual provider, and SNFs were the most common type of institutional provider. ACO leaders noted that primary care providers are critical to value-based care models because of their focus on preventive care and comprehensive care management, and encourage such providers to better manage their referrals to specialists who are willing to coordinate care with them. Alongside strong relationships with providers and strategic provider composition, partnerships with SNFs and other post-acute care facilities in their provider networks may be an important component to success. In telephone interviews, NGACO leaders identified post-acute care settings, particularly SNFs, as one of the biggest opportunities to reduce total Medicare spending for their beneficiaries. Referrals to preferred SNF partners may help explain some of the decline in spending in the SNF setting.

In future reports, we plan to explore how organizational and model features impact implementation, describe how NGACO networks vary in terms of network characteristics, as well as describe differences in composition of primary and specialty care providers, and by differences in composition and relationships across facility types. Lastly, we plan to examine how provider turn-over correlates with ACO performance. We will refine organizational types used in the current report to describe variation across NGACOs and explain the different capacities NGACOs can leverage to implement the model. We will also draw on survey and qualitative data to understand the strategies that ACOs use to reduce spending across care settings and how relationships and partnerships across the care continuum can improve performance.

6.2. ACO Context: Markets

Markets likely play a key role in influencing NGACO organizational characteristics, choice of model features, and NGACO implementation experience. Understanding these characteristics and features enables us to analyze how they relate to model outcomes. Many 2016 NGACO markets include other Medicare and commercial ACOs and have high penetration rates of Medicare Advantage (MA) plans. All four NGACOs with statistically significant reductions in total Medicare spending are located in markets with higher MA concentration, and two of the four had prior risk-sharing experience in MA plans. While such market concentration may motivate organizations to join the NGACO model, unmeasured overlap between the NGACO and other Medicare models, such as the Comprehensive Care for Joint Replacement (CJR) and Bundled Payments for Care Improvement initiatives (BPCI), may explain some of the reduced Medicare spending related to post-acute care presented in the current report.

Markets also influence the availability of providers and partner institutions, including SNF and home health care agencies, as well as workforce available to implement home visit or telehealth waivers. There is substantial variation across 2016 NGACOs in these health care provider market measures, including the number of primary care physicians per 1,000 residents; the concentration of hospital markets; and standardized, risk-adjusted per capita Medicare spending. Markets influence health information technology (HIT) interoperability, and such data sharing capabilities may be related to outcomes.

In future analyses, we plan to examine how the market concentration of ACOs and MA plans may impact performance. We will identify and account for the participation of NGACO and comparison beneficiaries in BPCI, CJR, and other relevant CMS initiatives that are identifiable and may overlap with the NGACO

model. In addition, we will continue to examine the effects of spillover and whether provider affiliation with ACOs across payer types can impact performance. We will also build on findings from our planned qualitative and survey data on the role of market characteristics (e.g., provider concentration, health IT interoperability), to understand how these are related to outcomes at the ACO level.

6.3. ACO Implementation Experience

Nearly half of the 2016 NGACO leaders identified prospective alignment and the three benefit enhancements as model features that influenced their ACO's motivation to participate and represented competitive advantages. However, both features require supportive data analytics and data exchange, and processes utilized by NGACOs to achieve these are likely to affect performance. Managing financial risk by tracking utilization and quality measures is a new, additional focus for most NGACOs. In interviews, leadership teams noted that lags in access to claims and not knowing populations' risk score and financial spending in advance inhibit their ability to forecast spending. Leaders also indicated that the choice of 80 percent risk and the FFS payment mechanism in lieu of population-based payment (PBP) stemmed from a lack of data infrastructure to handle PBP payments. Almost all ACOs raised concerns about risk-adjustment and their benchmarks and the difficulty that more efficient organizations may face in achieving improvement over the benchmark over time.

Our evaluation identified shared experiences among the 2016 NGACOs in how data were used to monitor performance, primarily in four areas: financial, claims-based utilization, patient satisfaction or experience, and practice-based quality. While all NGACOs share financial or claims-based utilization performance indicators with some providers, data sharing among all providers was limited but was an area on which NGACOs were focused. In addition, NGACO leaders reported working on implementation activities around the benefit enhancements, included building systems to flag aligned beneficiaries and establishing data analytic capacity to monitor performance.

We also found consistency in the approaches to care management, including a focus on beneficiaries' self-management of conditions, care transitions, and end-of-life care. We observed widespread use of centralized staff for care management, the implementation of standardized processes and protocols, and care team expansion or integration. In addition, most NGACOs conducted activities to engage patients in self-management, most notably using the annual wellness visit (AWV). The AWV may be a promising strategy to encourage sustained beneficiary engagement with an NGACO. While social issues outside the realm of medical care are important factors in wellbeing and recovery from illness, most NGACOs noted that a lack of funding to address social determinants of health posed the biggest challenge to addressing social needs (ACO Leadership survey findings).

Prospective alignment helps NGACOs identify beneficiaries for whom they are financially liable, yet the Medicare beneficiaries' unrestricted choice of providers presents a challenge to NGACOs. This unrestricted choice may result in fragmented care, as beneficiaries go outside NGACO provider networks for care. This in turn may weaken the model's expected impact on cost and quality.⁹⁴ In interviews,

⁹⁴ McWilliams et al., 2014; Pham HH, Schrag D, O'Malley AS, Wu B, Bach PB. Care patterns in Medicare and their implications for pay for performance. *New Engl J Med.* 2007; 356(11): 1130–1139; van Walraven C, Oake N, Jennings A, Forster AJ. The association between continuity of care and outcomes: A systematic and critical review. *J Eval Clin Pract.* 2010;16(5):947–956.

NGACO leaders described negative consequences for care coordination and continuity when beneficiaries seek services outside of NGACO networks but felt limited in their ability to motivate beneficiaries to seek care in-network. Maintaining continuity of care and improving the likelihood of beneficiaries seeking care within their provider network will be important contributions to success.⁹⁵ These aspects of care-seeking varied markedly among NGACO-aligned beneficiaries.

Of the three optional NGACO model benefit enhancements, the SNF waiver was the most commonly implemented, reflecting a focus on post-acute care that may be associated with reduced spending while in a SNF setting. As noted earlier, an overall reduction in SNF spending across the 2016 NGACOs reaches statistical significance, and SNFs are the most common institutional providers in NGACO networks. Ten of the 2016 NGACOs reported implementing the SNF waiver and another three NGACOs described being in the process of implementing the waiver. The three NGACOs with a significant reduction in Medicare spending in the SNF setting had each reported electing the SNF waiver.

In future reports, we plan to consider the ability of NGACOs to expand and enhance data analytic capacity and the influence that this capacity may have on performance outcomes. The various applications of health IT through financial monitoring, supporting care transitions, or engaging beneficiaries, may provide different pathways to success. New data from future provider and beneficiary surveys may provide further insight on specific engagement strategies and their relative importance. We also plan to assess how beneficiary engagement strategies relate to patterns of care, and how configurations of engagement and care-seeking can impact NGACO performance. In addition, we will also examine how variation in beneficiary characteristics, primarily health status and chronic conditions, between ACOs, may be related to performance.

6.4. NGACO Performance: Impact on Spending, Utilization, and Quality of Care in 2016

In PY1, 2016 NGACO providers *reduced spending* for their beneficiaries by \$100.08 million (1.7 percent). The estimated decrease in Medicare spending of -\$18.23 per beneficiary per month (PBPM) in PY1 is similar to the decrease noted in the first two years of the Pioneer ACO model and larger than the decrease noted for SSP ACOs in the early years.⁹⁶ However, there was *wide variation in spending* across ACOs. Seven NGACOs showed Medicare spending point estimates exceeding -\$30 PBPM, while two showed point estimates exceeding +\$30 PBPM. Former Pioneer and SSP ACOs, as well as new ACOs with prior Medicare Advantage risk-sharing experience, showed savings. Most of the decline in spending could be attributed to *reduced Medicare spending on post-acute care*, most notably on spending in skilled nursing facilities (SNFs) that reached statistical significance for three ACOs (-\$16.61 million, \$3.00 PBPM, or -3.1 percent). We also found reductions in *the number of inpatient hospital days and nonhospital evaluation and management (E&M) visits per month* (1.7 and 15.6 fewer per 1,000 aligned

⁹⁵ McWilliams JM, Chernew M, Dalton JB, Landon BE. Outpatient care patterns and organizational accountability in Medicare. *JAMA Intern Med.* 2014;174(6):938–945. McWilliams et al., 2014.

⁹⁶ Nyweide DJ, Lee W, Cuerdon TT, Pham HH, Cox M, Rajkumar R, Conway PH. Association of Pioneer Accountable Care Organizations vs. traditional Medicare fee-for-service with spending, utilization, and patient experience. *JAMA* 2015;313(21):2152–2161; McWilliams JM, Hatfield LA, Chernew ME, Landon BE, Schwartz AL. Early performance of accountable care organizations in Medicare. *New Engl J Med.* 2016;374(24):2357–2366.

beneficiaries, respectively) and *increases in the number of annual wellness visits* (by almost 12 percent) among NGACO providers.

In future reports, we intend to integrate qualitative and survey findings to understand how the implementation experience for NGACOs relates to variation in impacts. Our plans include a more fine-grained analysis of spending measures by category and supplementation of our claims-based quality metrics with measures based on beneficiary experience (Consumer Assessment of Healthcare Providers and Systems [CAHPS] surveys) and on clinical process and outcome measures (Group Practice Reporting Option [GPRO] registry). In addition, as more NGACOs join the model in 2017 and 2018, we anticipate greater numbers of observations, allowing us to analyze impacts for subgroups of beneficiary populations and NGACOs. In assessing the model over multiple performance years, we plan to explore the impacts of NGACO financial incentives (greater upside and downside risk) relative to a secondary comparison group of beneficiaries in SSP ACOs that assume only upside risk, as well as the potential mediating effect on providers and beneficiaries of joining and then disaffiliating from an NGACO. Finally, we will use Bayesian approaches to express estimated decreases in Medicare spending under NGACO incentives as probabilities of savings, for easier inference of impacts under the NGACO model.