



EVALUATION REPORT 3: APPENDIX

July 2026

Evaluation of the ACO REACH Model

Presented by:

Kristina Lowell (Project Director) and the
NORC Evaluation Team

NORC at the University of Chicago
1828 L Street NW, 9th Floor
Washington, DC 20814

Presented to:

Jennifer Lloyd
Contracting Officer Representative

Center for Medicare and Medicaid Innovation
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244



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Appendix A: Research Questions and Logic Model

Exhibit A.1 outlines the research questions examined in this report and the analytic methods used to address them. These research questions reflect the high-level priorities of the ACO REACH Model evaluation and provide an understanding of the model’s impact on utilization, cost, and quality measures, as well as ACOs’ organizational characteristics and implementation approaches.

Exhibit A.1. Research Questions and Analytic Methods in Evaluation Report 3

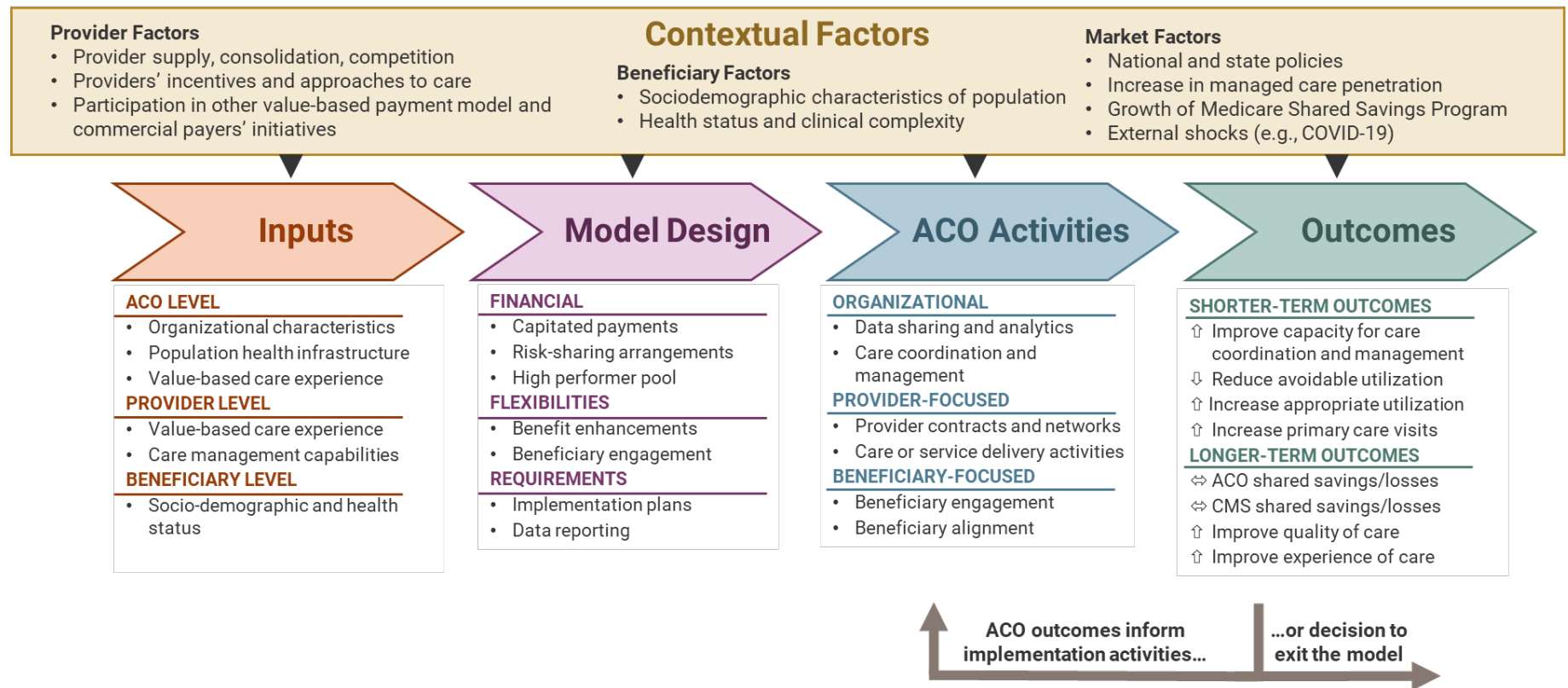
| Research Question | Analytic Methods | AR3 Chapter(s) |
|--|---|----------------|
| Utilization/Costs | | |
| Did utilization patterns (and corresponding spending) change under the model relative to a comparison group by ACO type ? Did this vary by ACO cohort, ACO characteristics, or beneficiary characteristics? | <ul style="list-style-type: none"> • Descriptive analyses of claims-based utilization and spending measures • DID analysis of claims-based utilization and spending measures for all ACO types • DID for subgroups of ACOs based on capitation and risk level (Standard ACOs only) • Net savings analysis including CMS incentive payments to ACOs in performance years | Chapters 6-8 |
| Did the model result in lower total Medicare spending (Parts A and B) relative to a comparison group by ACO type? Did this vary by ACO cohort, ACO characteristics, or beneficiary characteristics ? Did the model result in net savings to Medicare? | | Chapters 6-8 |
| Did utilization and spending patterns change under the model relative to a comparison group for beneficiary subgroups (dually eligible beneficiaries, chronic condition burden, disability/ESRD, area deprivation index)? | <ul style="list-style-type: none"> • DID analysis of claims-based utilization and spending measures for beneficiary subgroups (Standard ACOs only) | Chapters 6, 8 |
| Quality of Care | | |
| Did beneficiaries’ experience of care improve, decline, or remain unchanged? | <ul style="list-style-type: none"> • Thematic analysis of beneficiary interviews | Chapters 3, 5 |
| Did beneficiaries’ quality of care improve relative to a comparison group? Did this vary by ACO cohort, ACO characteristics, or beneficiary characteristics? | <ul style="list-style-type: none"> • Descriptive analyses of claims-based quality of care measures • DID of claims-based measures for all ACO types • Descriptive analysis of CAHPS measures | Chapters 6-8 |

| Research Question | Analytic Methods | AR3 Chapter(s) |
|---|--|-------------------------|
| Implementation | | |
| What are the characteristics of ACOs ? Do ACOs differ by organizational characteristics, capitation type, or risk level ? | <ul style="list-style-type: none"> • Descriptive analyses of data extracted from applications, programmatic data • Descriptive analysis of Pulse Check Survey data • Thematic analysis of interviews with ACO leaders | Chapter 3 |
| How did ACOs respond to financial and quality incentives and BEs ? | | Chapter 4 |
| How did Participant Providers and Preferred Providers change their care delivery approaches in response to financial and quality incentives and to BEs? | <ul style="list-style-type: none"> • Thematic analysis of interviews with ACO providers • Analysis of benefit enhancement data | Chapters 4-5 |
| How did ACOs implement the model ? What types of transformation activities did ACOs undertake? Did this vary by ACO type ? | <ul style="list-style-type: none"> • Descriptive analyses of data extracted from applications, programmatic data • Descriptive analysis of Pulse Check Survey data • Thematic analysis of interviews with ACO leaders | Chapter 5 |
| Did the ACOs that exited the model early have any shared characteristics ? | <ul style="list-style-type: none"> • Descriptive analysis of data extracted from applications, programmatic data • Thematic analysis of interviews with ACOs exiting the model | Chapter 3, Appendix B.3 |

NOTE: ACO=Accountable Care Organization; DID=difference-in-differences; BEs=benefit enhancements; ESRD=end-stage renal disease.

Our evaluation’s logic model (**Exhibit A.2**) draws from implementation science to consider how an implementation approach and measured impacts are shaped by the external environmental and organizational characteristics, as well as by innovation features.

Exhibit A.2. Logic Model



Appendix B: Qualitative Data Collection and Analysis

B.1 Document Review

The NORC team reviewed ACOs' model applications and other documentation that participant ACOs submitted. Based on the review, we conducted a thematic analysis to inform development of measures for the evaluation. Specifically, the measures aimed to document ACO characteristics and implementation approaches that systematically account for the complex nature and organization of ACOs. They were used in cross-ACO analyses to examine variation in model implementation as well as utilization and spending.

Data Sources: Applications and Additional Documentation

In calendar years (CY) 2020 and 2022, ACOs applied to the model for performance years (PYs) 2021, 2022, and 2023 in response to a request for applications.¹ The applications included both categorical and open-ended questions. ACOs that started in PY 2023 provided additional documentation on their ACOs' ownership, leadership, governance structure, partners and vendors, and outcomes-based contracts as part of their applications. ACOs continuing from prior years provided similar information on ownership, leadership, and governance structure in a "Request for Information." ACOs also had to submit other information related to implementation plans.

Approach: Data Extraction and Analysis

Using a directed content approach,² we applied two methods to the review and synthesis of document data. For applications and supporting documentation, we developed a review tool based on the evaluation's conceptual framework (**Exhibit B.1**), the Consolidated Framework for Implementation Research (CFIR), and the evaluation team's subject matter expertise. The document review tool captured data on the following:

- **Structure:** ACOs' structural characteristics provided insight into the different resources and capacities that ACOs brought into the model, including:
 - Types of organizations leading each ACO, the organizational structure of ACOs (for example, health systems, physician practices, or networks of providers), ACOs' relationship and affiliation with Participant Providers and Preferred Providers (for example, does the ACO directly employ providers), and other partnerships with vendors and community-based organizations

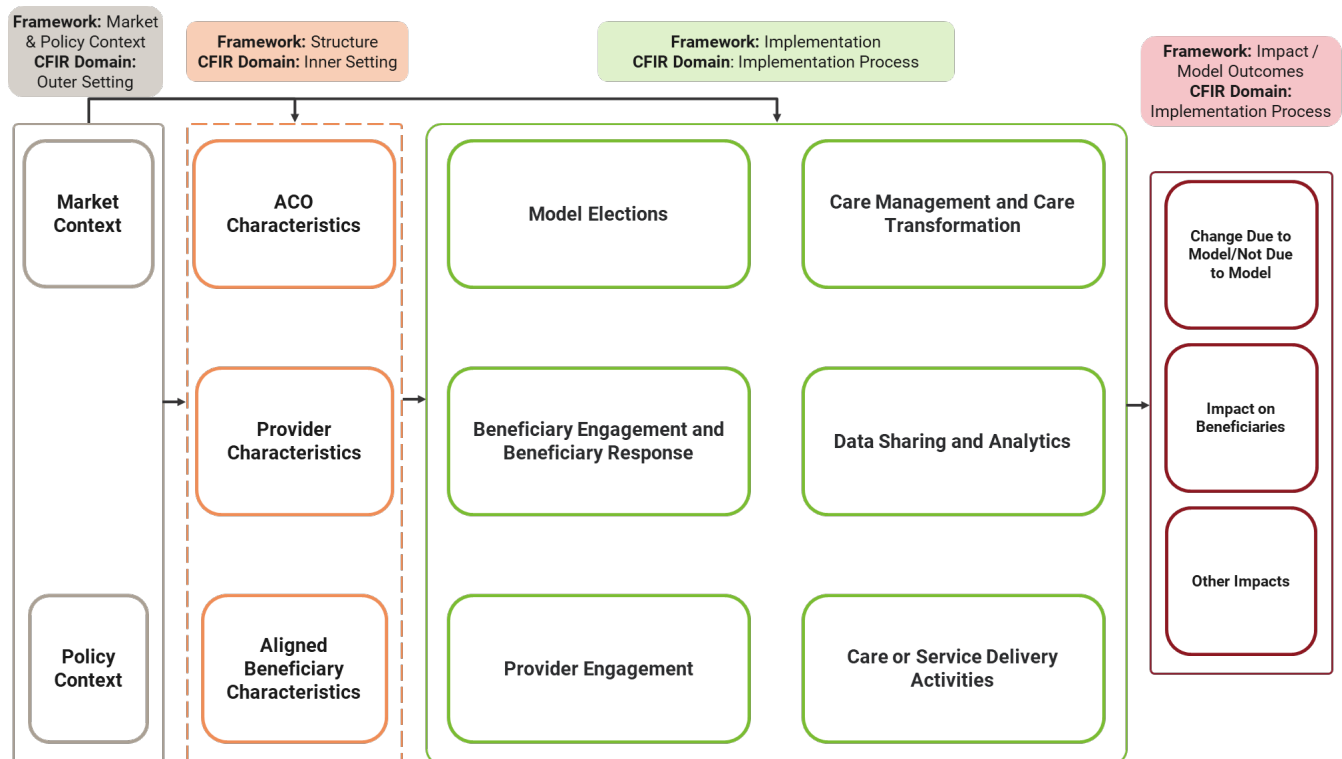
¹ The 2022 Starter ACOs include ACOs who applied in CY 2020 but chose to delay implementation of the model until PY 2022 and seven ACOs who submitted an abbreviated application in CY 2021 to transition directly from the NGACO Model (which ended in CY 2021) to the GPDC Model in PY 2022.

² The directed content approach is an approach that starts with an existing framework and uses data to support and/or build upon that framework. We leveraged the CFIR and our understanding of ACOs to develop our larger evaluation design. The evaluation design (informed by CFIR and our prior research on ACOs) was the framework that was the basis for our review.

- Prior experience in Innovation Center models and delegated risk contracts³
- Use of existing and/or new infrastructure to support population health and care management activities, including health IT systems, data analytic technologies, risk stratification, quality measures, and staff
- **Implementation:** ACOs’ planned implementation approaches included planned care management activities and strategies (such as population health management with proprietary software and evidence-based guidelines, financial incentives tied to performance, beneficiary engagement tools like patient portals and shared decision-making processes, and training resources available to aligned providers) to engage Participant Providers and beneficiaries

Exhibit B.1 provides a comprehensive overview of CFIR and conceptual framework domains and associated data elements derived from both primary and secondary qualitative and survey data sources, including the model applications.

Exhibit B.1. CFIR and Conceptual Framework Domains with Associated Data Elements and Sources



NOTE: ACO=accountable care organization; CFIR=Consolidated Framework for Implementation Research.

Open-ended data were coded into categories and synthesized to identify common themes and relationships by domain. We ran descriptive analyses using the closed-ended and categorical data. To analyze the implementation plans ACOs provided, we used natural language processing (NLP) to systematically review and classify key

³ In a delegated risk contract, the financial risk for a defined set of health care services is transferred from the payer (for example, CMS or health insurance plan) to the health care provider (for example, medical group practice, hospital, or group of physicians).

components of the plans and identify relationships between common topics and subtopics within responses to each question. We then used the topic models to develop a taxonomy of interventions and focus areas.

Information collected from ACOs' documentation provided an initial understanding of ACOs and their implementation plans and informed the development of our Pulse Check Surveys conducted in 2022 and PY 2023 (more information on the survey instrument and results is available in [Appendix F](#)).

Pulse Check Surveys and other data sources (like ACO websites and additional documentation) allowed us to verify and update this information and resolve any missing or conflicting data. With each round of data collection, we updated time-varying data elements to capture how model implementation changed. In cases where data appeared to conflict, we employed the following strategies to ensure that the data were accurate: deferring to information provided by ACO leaders in surveys and most recent documentation; triangulating data with additional sources; and adapting primary data collection efforts to verify or probe deeper when there were significant conflicts in the data.

Organizational Characteristics

In addition to the metrics included in the report, we used document review data in conjunction with survey and qualitative data to classify ACOs' structural characteristics and provide insight into the different resources and capacities that ACOs brought into the model.

These organizational characteristics describe each ACO's structure, capacity, and leadership at a specific point in time (in PY 2023) based on data available for that year. We began with descriptions from ACO applications and assessed them against our definitions for each characteristic. We then triangulated using publicly available information (for example, websites and news releases) and data collected through the annual Pulse Check Survey and qualitative interviews. Two researchers made independent assessments, and in cases where assessments differed, a third senior researcher determined the final categorization. Because organizational structure, ownership, and provider relationships can evolve due to external market factors, strategic choices, and model participation, we review these characteristics annually to reflect changes and provide an accurate depiction of the ACOs in the current performance year.

ACOs' **organizational structure** informs the extent to which providers were integrated with the ACO by means of shared 1) infrastructure; 2) systems; and 3) protocols for population health management, care coordination, and care delivery. Additional analyses incorporating organizational structure are available in [Appendix C](#) and [Appendix E](#).

- **Network of Individual Practices:** Partnership, association, or other network or group of physicians that distribute income from practices among members.⁴

⁴ Centers for Medicare & Medicaid Services. Medicare Managed Care Manual. Chapter 6 – Relationships with Providers. Rev 82, 04-27-07. <https://www.cms.gov/regulations-and-guidance/guidance/manuals/downloads/mc86c06.pdf>

- **IDS/Hospital System:** An integrated delivery system (IDS) is a vertically integrated health service network, including physicians, integrated practices, hospitals, and post-acute care.⁵ A hospital system is an organization with at least one hospital and group(s) of physicians.⁶
- **Medical Group Practices:** Single-specialty group practice with two or more physicians or multispecialty group practice with various specialty care (such as cardiology, neurology, psychiatry, endocrinology, etc.) in one organization.⁷

Lead organization type reflects the professional identity of those steering the ACO, as well as the areas of spending and utilization that the ACO had leverage or incentive to change. Additional analyses incorporating organizational structure are available in **Appendix C** and **Appendix E**.

- **Management Services Organization (MSO):** An organization that provides non-clinical administrative and operational services to health care providers or practices. Services can include operations management, quality management, network management, and risk management. There are two basic approaches to an MSO: The first takes full or partial ownership of the practice, and the second provides business services without taking ownership.
- **Physician Practice:** Includes both:
 - Medical practices composed of one or more physicians that are under the same management and provide patient care services. Practice does not include and/or is not part of a hospital, and physicians are not managed by a hospital.
 - Group, partnership, or association of physician practices (see definition earlier) that jointly participate in an ACO but are not necessarily under joint management.
- **Health System:** Organization that includes at least one hospital and at least one group of physicians that provide comprehensive care (including primary and specialty care) and are connected with each other and with the hospital through common ownership or joint management. Hospitals that employ community-based physicians are considered health systems under this definition. This does not include an independent practice, system of clinics or practices (without a central hospital), or an independent hospital (without a group of physicians).
- **Primary Care Company:** Company that operates a network or chain of primary care clinics. Company is often private equity-backed and for-profit and involves full risk contracting. Clinical model is often primary care-focused and supported by integrated care teams and sophisticated IT tools and platforms.
- **Insurer:** Entity that underwrites financial risk and pays the cost of health care services through traditional and consumer-directed insurance plans (can include commercial plans and Medicare Advantage plans).

⁵ AcademyHealth. The performance of integrated delivery systems. 2016. <https://academyhealth.org/node/2151>

⁶ Agency for Healthcare Research and Quality. Defining Health Systems. 2023. <https://www.ahrq.gov/chsp/defining-health-systems/index.html>

⁷ American College of Physicians. Medical Practice Types. <https://www.acponline.org/about-acp/about-internal-medicine/career-paths/residency-career-counseling/resident-career-counseling-guidance-and-tips/medical-practice-types>

ACO Functional Role. We used document review data in conjunction with survey and qualitative data to classify ACOs based on their relationships with aligned providers and their capacity to support, facilitate, and/or lead care delivery and population health management. Additional information on the survey data can be found in [Appendix E](#), and additional analyses incorporating functional roles are available in [Appendix C](#) and [Appendix E](#). These functional role types include:

- **Convener:** ACO primarily serves to bring together disparate providers (individuals or practices) to participate in value-based payment arrangements. The ACO may be a joint association or equal partnership of completely independent physician practices or associations, or it may be an organization that provides a conduit for providers to be part of an expanded network and receive administrative, non-clinical support for value-based arrangements (for example, an MSO). These ACOs help reduce overhead and increase economies of scale/network for aligned Participant Providers, but Participant Providers retain clinical autonomy.
- **Enabler:** In addition to convening providers, the ACO provides infrastructure, capacity, and/or staff to build providers' capacity for care management, population health management, and value-based care delivery. Examples of services include gaps-in-care reports, embedded care management staff, proprietary analytic software or platforms, and access to third-party vendors or partners that provide analytic or care management support. These services go beyond administrative support (for example, filing and reimbursing claims) and model-related activities such as feedback reports on utilization/spending metrics, shared savings/losses calculations, and waiver implementation.
- **Direct Care Provider:** The ACO owns the care delivery assets and therefore directly controls where and how care is delivered and managed (for example, the settings, technology, software, platforms, processes, and staff). Direct Care Provider ACOs can also directly influence the implementation and scale of care models. Typically, the ACO is led by a physician practice or health system. Participant Providers may not have been decision-makers regarding participation in the model, because Direct Care Provider ACOs are more likely to employ their Participant Providers.

B.2 ACO Leadership and Provider Interviews

Our approach to primary data collection and analysis for the ACO REACH evaluation aims to build on secondary data analyses, to explain findings on cost, utilization, and quality. In addition, primary data analyses offer context and detail to address research questions on implementation and responses to the model's incentives, particularly to understand implementation progress and the dynamic structural and contextual factors that may affect implementation over time.

We conducted semi-structured virtual interviews with ACO leadership (for example, Chief Executive Officers [CEOs], Chief Information Officers [CIOs], and providers [for example, clinical directors, physicians]) from two stratified samples of ACOs—one sample (generated in PY 2023) included ACOs that entered the model in 2021 or 2022, and another sample (generated in PY 2024) included ACOs that started in 2023. The interviews leveraged concurrently collected data from our Pulse Check Surveys and other sources (for example, applications) to capture the status of ACOs' planned and actual implementation activities.

Exhibit B.2. ACO Leadership and Provider Interviews

| Round | Timing | Cohort(s) | Participants | Participants | |
|-------|--------------------|------------|---|---------------------------|---------------------|
| | | | | ACO Leadership Interviews | Provider Interviews |
| 1 | June–November 2023 | 2021, 2022 | ACO leaders (including CEOs, Medical Directors, CFOs, Directors of Population Health) Providers (including employed and independent physicians) | 34 (from 34 ACOs) | 30 (from 17 ACOs) |
| 2 | June–October 2024 | 2023 | | 29 (from 32 ACOs) | 29 (from 12 ACOs) |

NOTE: In our sampling, the NORC team used PY 2022 ACO type for interviews conducted in 2023 and PY 2023 ACO type for interviews conducted in 2024. The number of participants in each interview varied based on topics to be covered during the interview, the individuals responsible for those functions, and scheduling accommodations.

ACO Leadership Interviews

Across all cohorts and years, we interviewed leaders from 66 ACOs. In 2023, we spoke with a subset of ACOs that joined the model in 2021 or 2022, and in 2024 we interviewed a subset of ACOs that joined the model in 2023. In 2023 and 2024, we spoke with ACOs in their second performance year (in the case of the 2022 and 2023 cohorts) or third performance year (in the case of the 2021 cohort) to provide ACOs enough time to orient themselves to the model’s design and to begin substantive implementation activities, so that they could reflect on model implementation features, early challenges, and lessons learned. **Exhibit B.3** provides an overview by ACO type of the ACOs interviewed in 2023 and 2024.

Sampling Approach. NORC drew a stratified random sample of Standard ACOs (representing about 25% of all currently participating Standard ACOs for each eligible starter cohort). To capture Standard ACOs with different structural characteristics, within the Standard cell strata, we purposively selected ACOs based on characteristics such as:

- ACO organizational type (integrated delivery system, medical group, network of individual practices/physicians)
- Lead/parent organization type (for example, insurer, MSO)
- ACO functional role (convener, enabler, or direct care provider)
- Prior Medicare ACO experience (Next Generation ACO [NGACO], Medicare Shared Savings Program [Shared Savings Program], or Pioneer ACO participation)
- Risk and capitation arrangements (Global vs. Professional risk and Total Care Capitation vs. Primary Care Capitation)
- Beneficiary populations (for example, those served by the health care safety net, those in rural areas)

Sampling characteristics were defined using information from ACO-level applications, quantitative data, and the ACO Alternative Payment Model (APM) Contacts Report.

For the first round of interviews, NORC interviewed a sample of 19 Standard ACOs that started in 2021 and 15 that started in 2022. For the second round of interviews, we selected a sample of: 22 Standard ACOs that started in 2023; six Standard ACOs with safety net providers; and four ACOs that entered the model in 2021 and switched from New Entrant ACOs (n=3) or High Needs ACOs (n=1) to Standard ACOs in PY 2022 and that were not included in our sample for the 2023 interviews. All ACOs that started in the model as New Entrant or High Needs ACOs and were active in PY 2023 or PY 2024 were interviewed, in recognition of: 1) their smaller numbers, diversity, and relative newness to the CMS Innovation Center’s Medicare payment models and 2) the CMS Innovation Center’s acknowledgement that these two subsets of ACOs reflect unique and critical perspectives.

Exhibit B.3. ACO Leadership Interviews Conducted in 2023 and 2024

| Starter Cohort(s) | Number of ACOs | | | |
|-------------------|----------------|-------------|------------|-------|
| | Standard | New Entrant | High Needs | Total |
| 2021 and 2022 | 17 | 10 | 7 | 34 |
| 2023 | 19 | 5 | 8 | 32 |

NOTE: In our sampling, the NORC team used PY 2022 ACO type for interviews conducted in 2023 and PY 2023 ACO type for interviews conducted in 2024. Numbers reflect numbers of ACOs interviewed. Interviews included multiple members of ACO leadership teams.

Interview Guide. We designed interviews with ACO leaders and managers to gather details about implementation progress and experience, including successes and challenges. For the in-depth interviews with ACO leadership, we aimed to understand the transition from the Global and Professional Direct Contracting (GPDC) Model to ACO REACH as well as the overall implementation experience of ACO REACH. **Exhibit B.4** provides an overview of topics included in the semi-structured interview guide.

Exhibit B.4. Topics Covered in ACO Leadership Interviews

| Synopsis |
|--|
| <p>Purpose: Provide ACO-level data to address research questions on implementation</p> <ul style="list-style-type: none"> • Explore experience with model incentives and benefit enhancements • Elaborate on implementation strategies and priorities, including successes and challenges |
| <p>Implementation Approaches:</p> <ul style="list-style-type: none"> • Financial management of risk and capitation • Population management with health IT and data analytics • Care delivery transformation with primary care focus • Provider engagement with financial incentives • Voluntary alignment (when relevant) • Beneficiary engagement with incentives and BEs • Provider and community partnerships |

Synopsis

Additional Topics:

- Intervention characteristics
- Setting characteristics (internal and external)
- Processes

Conducting Interviews. In our outreach, we asked our points of contact to share the names of two to three individuals in ACO leadership positions, such as CEOs, CIOs, Medical Directors, and Directors of Population Health and Care Management, who could participate in a 60-minute virtual group interview. These leadership roles were specified with the anticipation that these individuals could provide perspectives on a set of key discussion topics, including current and historic ACO structures and processes, new or updated provider engagement strategies, financial risk and capitation approaches, new or updated beneficiary engagement strategies, quality improvement efforts, and planned or in-progress ACO model implementation activities. Most ACO leadership interviews included two or more leadership members who collectively provided a comprehensive and in-depth perspective on past, current, and future model implementation efforts. Interviews were conducted by a senior team member and were recorded with permission.

Provider Interviews

An important consideration for the model evaluation is the arrangement between ACOs and their providers. ACOs negotiated payment arrangements with Participant Providers and Preferred Providers and provided the infrastructure and support for population health and care management. Individual practitioners may be one step removed from the model; they may experience the ACOs' incentives indirectly through their practices. We aimed to distinguish between the model's impact at the ACO level compared with the provider level to reveal new insights on how to advance value-based care in Medicare. We conducted semi-structured interviews with both Participant Providers and Preferred Providers to explore their responses to and experiences with model implementation, ACO REACH incentives, and benefit enhancements.

We conducted outreach to providers with the intention of interviewing two to three providers from each ACO interviewed. We interviewed 30 providers from 17 ACOs in 2023 and 29 providers from 18 ACOs in 2024.

Provider Recruitment. We aimed to obtain a cross-section of providers across the model and to be able to triangulate data from provider-ACO pairs. To achieve these goals, we worked with ACOs to identify Participant Providers that reflected the different arrangement types (for example, employed and independent). ACOs facilitated a connection between us and the practitioners using a template email we developed. We then followed up with the practitioners to schedule interviews. This process ensured that we were connected to the providers by their ACO and that we spoke with providers familiar with the model arrangement and able to provide different perspectives (successes and challenges) on their experiences in the model. In 2024, we offered providers compensation for their time.

Conducting Interviews. Exhibit B.5 summarizes the topics covered in interviews with ACO providers.

Exhibit B.5. Topics Covered in Provider Interviews

| Synopsis |
|---|
| <p>Implementation Approaches:</p> <ul style="list-style-type: none"> • Provider engagement with financial incentives, including risk-sharing • Population management with health IT and data analytics • Care delivery transformation with primary care focus • Perceptions of burden around participation in the model (for example, administrative requirements, reporting, and care delivery) |
| <p>Additional Topics:</p> <ul style="list-style-type: none"> • Nature of contractual arrangements with ACO, including risk-sharing • Experience with model features (for example, capitated payment, shared risk) • Resources and infrastructure from ACO to support care delivery • Features of communication and reporting to ACO • New/adapted approaches to care delivery |

We conducted 45- to 60-minute interviews to maximize busy providers’ participation while allowing sufficient time to probe on specific topics. Providers interviewed were ACO Participant Providers and included both frontline practitioners and physicians who held leadership roles at their practice, hospital, or Federally Qualified Health Center (FQHC). All interviews were recorded with participant permission.

Exhibit B.6. Providers Interviewed

| Cohort | Number of Provider Interviews | | | |
|---------------|-------------------------------|-----------------|-----------------|-------------------|
| | Standard | New Entrant | High Needs | TOTAL |
| 2021 and 2022 | 24 (from 13 ACOs) | 3 (from 2 ACOs) | 3 (from 2 ACOs) | 30 (from 17 ACOs) |
| 2023 | 24 (from 11 ACOs) | 2 (from 1 ACO) | 3 (from 1 ACO) | 29 (from 12 ACOs) |

NOTE: In our sampling, the NORC team used PY 2022 ACO type for interviews conducted in 2023 and PY 2023 ACO type for interviews conducted in 2024. Some provider interviews included more than one provider.

Analysis

All interviews were professionally transcribed. Transcripts were imported into Dedoose 9.0 for coding. We developed an initial qualitative codebook grounded in the key domains of our conceptual framework (**Exhibit B.1**), including market context, ACO structure and characteristics, implementation, and impact/outcomes. In addition to using CFIR constructs key in developing our initial conceptual framework design (for example, process and outer/inner setting), we also incorporated CFIR constructs related to implementation effectiveness,

to expand upon our existing implementation framework domain (for example, available resources, networks and partnerships, implementation climate, and beneficiaries' needs and preferences).⁸

The codebook was first piloted in 2023 using beneficiary interview data and refined using a dynamic, iterative process. This process engaged qualitative coders and interviewers to provide feedback and build consensus. All coders participated in several rounds of training on the codebook and coding procedures, followed by group reconciliation sessions to assess and enhance intercoder reliability before beginning formal coding.⁹

As new data were collected, we continued to refine the codebook and/or refined codes as new data were collected or to ensure consistency and reliability.¹⁰ When feasible, analysts who participated in interviews also coded the corresponding transcripts to leverage their contextual understanding. Senior evaluation team members reviewed a subset of coded data sources and provided oversight on coding conducted by junior staff members, to ensure analytic rigor and concordance. In 2024, we repeated trainings and reconciliation sessions to onboard new coders and incorporate additional data.

For analysis, team members were assigned specific topic areas and were responsible for reviewing coded data and drafting findings. Analysts exported relevant codes from Dedoose and used an analysis template to identify themes and illustrative examples. The team met regularly to discuss emerging findings, refine thematic categories, and consolidate insights. These discussions informed the drafting of report sections aligned with each analyst's topic area.

The report identifies themes by the number of ACOs with an interviewee who reported about the topic at hand: a few (2-3 ACOs, 5% of ACOs interviewed), some (4-7 ACOs, 6-10% of ACOs interviewed), many (8-32 ACOs, 12-48% of ACOs interviewed), or most (33 or more ACOs, 50% of ACOs interviewed).

B.3 Exit Interviews

Qualitative data collection included ongoing interviews with ACOs that exited the model. Before conducting our evaluation, we worked closely with Innovation Center staff to develop a semi-structured discussion guide for ACO interviews that would explore a consistent set of topics over the course of the evaluation. We modified the guide slightly to reflect the shift from GPDC to the ACO REACH Model. The topics covered in the guide included:

- Organization type/provider network composition
- Motivations for joining the ACO REACH Model
- Reasons for exiting the model
- Focus of ACO initiatives

⁸ Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, & Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*. 2009;4(1):50. doi:10.1186/1748-5908-4-50.

⁹ Mchugh ML. Interrater reliability: the kappa statistic. *Biochemia Medica*. 2012:276-282. doi:10.11613/bm.2012.031.

¹⁰ Pope C, Mays N, editors. *Qualitative research in health care*. Oxford, UK: Wiley-Blackwell; 2020 Feb 3.

- Expectations versus experience
- Challenges that ACOs have faced
- Plans after leaving ACO REACH

The team used the CMS-approved discussion guide to conduct eight one-hour interviews with 17 ACO leaders representing the eight ACOs that exited the model in 2023. Of these eight ACOs, seven were voluntarily terminated, and one was involuntarily terminated. Our team conducted one of the eight interviews as a regular New Entrant interview because it took place soon after that ACO announced their termination in July 2023. While three total ACOs were terminated involuntarily in 2023, the evaluation team was only able to interview one. The second ACO was unavailable for an interview, and we did not interview the third ACO per direction from CMS.

Two senior researchers led each interview, while another researcher took transcript-like notes. When possible, we conducted the interviews via Zoom and recorded them for notetaking purposes with consent from participants. The team debriefed after interviews and analyzed transcript-like interview notes, recording findings by key topic in a spreadsheet. Through this process and the ensuing team discussions, we identified key themes and findings. Interviewees were guaranteed that neither they nor their organizations would be named and that any information they provided would not be identifiably linked to them or their organization unless they consented beforehand.

Key Findings

Characteristics of Interviewed ACOs: ACOs that exited in 2023 were structured as networks of individual providers or medical group practices and led by primary care companies, insurers, or physician practices. Several of the ACOs included providers in multiple markets and experienced varied results by market. One ACO only worked with providers that belonged to federally qualified health centers (FQHCs), and another only included home-based medical practices serving beneficiaries in individual homes and congregate living arrangements. Several organizations appeared not to understand the infrastructure needs or associated time and resources required to operate an ACO that assumed both upside and downside risk.

Motivations for Joining the Model: Exiting ACOs explained that their optimism in joining the ACO REACH Model related to:

- **Previous success with value-based care:** All exiting ACOs reported that they had prior experience with value-based care and wanted to leverage this prior experience and existing infrastructure.
- **Congruence with organizational goals:** Half of the exiting ACOs noted that the model complemented their business-related goals, either a broader audience for their data analytics platform, implementing a “network enablement” business, or greater flexibility in provider contracts.
- **Prospect of offering enhanced services:** Several ACO leaders mentioned that the model would allow them to offer more benefits to beneficiaries (such as improved access to home-based care) and to enhance services to providers (including population health and care management services).
- **Experience with underserved populations:** Several ACO leaders mentioned having success in serving mixed-income populations or seniors in rural areas with higher needs.

Focus of ACO Initiatives and Investments: As they joined the ACO REACH Model, most interviewees had prior experience—in population health, and with monitoring and managing provider performance—that they believed they could leverage. They also indicated that, during their participation in the model, they invested significant capital in analytics and infrastructure support. They also invested in expanding their risk-based arrangements and provider contracts and in offering additional education and support services to providers.

Factors Influencing Decisions to Exit the Model: ACOs provided context for many interconnected variables that informed their decision to leave the model. Often, experience was inconsistent with expectations. Four themes emerged: 1) ACOs’ inability to meet minimum enrollment requirements; 2) financial losses greater than expected; 3) data issues that contributed to uncertainty and to the potential for additional financial losses; and 4) prior value-based care experience did not always yield success with the ACO REACH Model.

Other Feedback: Several ACOs mentioned trying to take advantage of the benefit enhancements, with mixed success. One leader noted that their ACO’s hesitancy around most benefit enhancements “is just the administrative burden.” One ACO that reported implementing the benefit enhancement for in-home primary care found that, when they described the incentive to beneficiaries, beneficiaries perceived it as part of a scam.

Plans After Leaving ACO REACH: All exiting ACOs indicated that they remained committed to value-based care; however, at the time of our interviews with them, many were not yet certain about how those plans would develop. Among their anticipated plans, they mentioned possibly shifting to the Shared Savings Program (MSSP), focusing on Medicare Advantage (MA), or merging with other ACOs.

Benefits of Participation: All ACO leaders interviewed said that their participation in the model yielded benefits for their organizations. They cited benefits including developing or adopting improved software and analytics, gaining experience in building community partnerships, improving risk coding, and understanding how to close gaps in care more effectively.

Comparison of Exiting ACOs, 2021–2023

The evaluation team analyzed the eight interviews with 2023 exiting ACOs, together with previous interviews with exiting ACOs from earlier performance years. Together, in 2022 and 2023, we conducted 20 interviews, representing 28 ACOs that exited the model between 2021 and 2023. We observed several notable differences between the interviews conducted in 2022 and those in 2023. For the interviewed ACOs that exited in 2023, there were:

- No integrated delivery systems as lead organizations
- Fewer ACOs had large, employed provider groups as a core part of their networks
- Several large medical groups running independent practice associations that did not understand the model or the need for significantly more infrastructure than required to participate in MA contracting
- Fewer ACOs taking on Global risk
- Fewer ACOs mentioning issues with CMS communications and a lack of responsiveness, and none mentioning claims processing issues
- No High Needs ACOs

There were several common themes across all 20 ACOs interviewed, including:

- A continued commitment to value-based care
- An expectation of positive performance in the model due to prior MA, Shared Savings Program, or NGACO success
- Challenges related to data delays and lack of patient-level data
- Uncertainty about the providers and beneficiaries aligned with their ACO and ultimately part of CMS’ financial calculations (often resulting in not meeting minimum enrollment requirements)
- Unexpected volatility, with retrospective trend adjustments (RTAs) and other model adjustments resulting in unsustainable financial losses and potential future losses

Exhibit B.7. Comparison of Exiting ACO Characteristics among Interviewed Exiting ACOs, 2021–2023

| Characteristics of Exiting ACOs Interviewed (at time of exiting performance year [PY]) | Number of Exiting ACOs Interviewed by Exiting Year | | | |
|---|--|----------------|-----------------|--------------|
| | PY 2021 (n=3) | PY 2022 (n=9)* | PY 2023 (n=8)** | Total (n=20) |
| ACO Type | | | | |
| Standard | 0 | 6 | 5 | 11 |
| New Entrant | 2 | 3 | 3 | 8 |
| High Needs | 1 | 0 | 0 | 1 |
| Risk Level | | | | |
| Global | 3 | 6 | 5 | 14 |
| Professional | 0 | 3 | 3 | 6 |

| Characteristics of Exiting ACOs Interviewed (at time of exiting performance year [PY]) | Number of Exiting ACOs Interviewed by Exiting Year | | | |
|---|--|----------------|-----------------|--------------|
| | PY 2021 (n=3) | PY 2022 (n=9)* | PY 2023 (n=8)** | Total (n=20) |
| Payment Mechanism | | | | |
| Primary Care Capitation (PCC) | 3 | 3 | 5 | 11 |
| PCC + Advanced Payment Option (APO) | 0 | 4 | 2 | 6 |
| Total Care Capitation (TCC) | 0 | 2 | 1 | 3 |
| Cohort Year | | | | |
| 2021 | 3 | 5 | 4 | 12 |
| 2022 | - | 4 | 3 | 8 |
| 2023 | - | - | 1 | 1 |
| Organizational Structure | | | | |
| Network of Individual Providers | 1 | 4 | 3 | 9 |
| Medical Group Practice | 2 | 1 | 4 | 6 |
| Integrated Delivery System (IDS)/Hospital System | 0 | 4 | 1 | 5 |
| Lead Organization Type | | | | |
| Health System | 1 | 5 | 0 | 6 |
| Primary Care Company | 0 | 1 | 4 | 5 |
| Insurer | 2 | 1 | 2 | 5 |
| Management Services Organization (MSO) | 0 | 2 | 1 | 3 |
| Physician Practice | 0 | 0 | 1 | 1 |
| Functional Role | | | | |
| Convener | 2 | 5 | 2 | 9 |
| Direct Care Provider | 1 | 4 | 4 | 9 |
| Enabler | 0 | 0 | 2 | 2 |

SOURCE: PY 2023 Financial Results, model applications, interviews with ACOs. Organizational characteristics reflect the team’s understanding of each ACO in 2023.

NOTE: CMS requested that the evaluation team not interview the six ACOs that were terminated involuntarily in PY 2022. For the ACOs terminated involuntarily in 2023, CMS requested that the evaluation team interview two of the three ACOs. The team interviewed one of the 2023 exiters; we were unable to reach the second ACO and were instructed by CMS not to interview the third involuntarily terminated ACO. The 2022 exiters interviewed included three ACOs that exited in 2021.

*Count excludes six ACOs (5 Standard ACOs, 1 High Needs ACO) that were terminated involuntarily by the end of PY 2022.

**Count excludes one Standard ACO that could not be reached for interviews and one New Entrant ACO that was involuntarily terminated and determined inappropriate for an exit interview.

B.4 Beneficiary Interviews

We conducted semi-structured interviews with 31 beneficiaries who were attributed to ACO REACH ACOs between September and November 2023.¹¹ The purpose of these interviews was to understand beneficiaries' health care experiences under the model, perceived impacts of the model, and potential unintended consequences.

Sampling

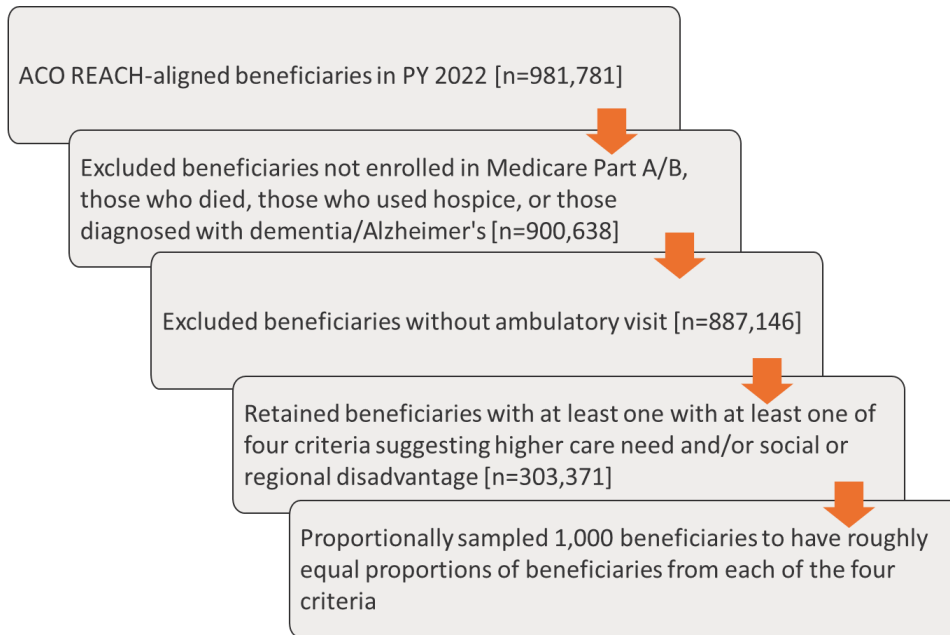
To identify candidates for interviews, we began with a list of 981,781 CMS Chronic Conditions Warehouse (CCW) beneficiary identifiers provided by CMS. This list comprised all aligned beneficiaries in PY 2022 and included flags for alignment type (claims, voluntary, or both) and ACO attribution. We cross-walked the identifiers against the Medicare enrollment database and hospice claims records and subset to include only those 1) with continuous Medicare Part A and B enrollment, 2) without a recorded death date or documented diagnosis of dementia or hospice enrollment, 3) with at least one documented ambulatory visit, and 4) meeting at least one of four criteria suggesting higher care need and/or social or regional disadvantage.¹² We then drew a random sample of 1,000 individuals, proportionately sampling for each of the four criteria within that sample. The selection of 1,000 beneficiaries was based on an assumed 3% interview recruitment rate, drawing from prior experience.¹³ **Exhibit B.8** provides a summary of the sampling approach.

¹¹ Of those interviewed, two beneficiaries preferred communicating in Spanish, and three beneficiaries resided in rural areas.

¹² From the remaining selection pool, we retained for sampling any beneficiaries with at least one of the four criteria, including dually eligible for Medicare and Medicaid; identified in claims files as high needs; or lives in a ZIP code in the top 20% ADI nationwide. The list of criteria is incomplete; a full list is available upon request.

¹³ The recruitment rate is calculated by dividing the number of successfully completed qualitative interviews by the number of beneficiaries invited to participate. In this case, beneficiaries were invited to participate by mailing them an advance letter.

Exhibit B.8. Summary of Sample Development



Recruitment

Recruitment efforts, conducted between August and November 2023, involved multiple steps to maximize participation. Beneficiary addresses were available through the Medicare enrollment database. We used LexisNexis to obtain telephone numbers. A bilingual outreach letter (English and Spanish) on CMS letterhead, signed by a CMS representative, was mailed to all 1,000 sampled beneficiaries, explaining the study purpose and inviting them to call a toll-free number to volunteer for interviews. The letter also informed beneficiaries that participants would receive a gift card for completing an interview.¹⁴ One week after mailing, trained call center representatives began proactive telephone outreach to explain the study and request participation. Targeted efforts focused on rural and Spanish-speaking beneficiaries identified through CMS claims and census data to ensure representation of these groups.¹⁵ The call center also received inbound calls from beneficiaries responding to the letter. Phone numbers were available for 921 of the 1,000 sampled beneficiaries, and recruitment calls were successfully placed to 914 individuals (91% of the sampling frame). Of those reached,

¹⁴ The original outreach letter indicated a gift card amount of \$25. Following the completion of seven pilot interviews and finalization of the interview questions, the outreach letter was updated, increasing the gift card amount to \$40 given that the pilot interviews averaged 42 minutes in length.

¹⁵ We used three methods to identify potential Spanish-speaking beneficiaries in our ACO REACH sample: the race/ethnicity code on the Master Beneficiary Summary File; whether they resided in a zip code from census tracts with 33% or greater Hispanic ethnicity; or if they had a last name ranked as one of the top 50 Hispanic surnames. The first method relied on the CMS claims database. The second and third methods used data from the 2020 U.S. Census and the Census Bureau's 2021 American Community Survey. Beneficiaries were coded as a potential Spanish speaker if they met one of three criteria. Applying these three criteria resulted in identifying 90 possible Spanish-speaking beneficiaries in the sample of 1,000. To reach rural Medicare beneficiaries, we used the USDA's rural-urban commuting area codes (<https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation/>) to identify Medicare beneficiaries residing in rural areas (with population less than 10,000). This resulted in flagging 62 rural beneficiaries in the 1,000-beneficiary sample.

most declined or were unable to participate.¹⁶ Ultimately, 31 beneficiaries agreed to and completed interviews, including eight who proactively volunteered by calling the toll-free line. This represents a recruitment rate of approximately 3%, consistent with expectations.

Interviews

Between September and November 2023, we conducted phone interviews with 31 beneficiaries.¹⁷ Interviews were conducted using a semi-structured format and lasted approximately 40 minutes on average. All interviews were recorded and professionally transcribed, except for one, which was documented through detailed notes by the interviewer.

The 31 interviewed beneficiaries were served by 24 different ACOs, including 22 Standard ACOs and two High Needs ACOs. Two interviews were conducted in Spanish. **Exhibit B.9** provides an overview of the characteristics of beneficiaries interviewed, based on both Medicare claims and self-reported demographic information.

Exhibit B.9. Characteristics of Beneficiaries Interviewed

| Based on Medicare Claims | Self-Reported Demographics |
|---|---|
| <ul style="list-style-type: none"> • 48% were dually eligible for Medicare and Medicaid • 74% were high needs* • 10% lived in a rural area** | <ul style="list-style-type: none"> • 42% were male • 29% were under age 65 • 29% had household income <\$15,000 |

* Categorized as “high needs” in claims data. Categorization of high needs is based upon high utilization of particular services, people with particular conditions, or those with frailty or high Hierarchical Condition Category (HCC) scores. High needs individuals do not necessarily receive care from High Needs ACOs.

**USDA’s rural-urban commuting area codes were used to identify Medicare beneficiaries residing in rural areas (with population less than 10,000).

¹⁶ While we did not collect reasons for non-participation, prior research suggests that common barriers to older adults’ participation in research include cognitive impairment, illness, fatigue, communication challenges, fear of scams, and institutional skepticism. These interviews also took place during Medicare open enrollment, which may have contributed to lower participation given competing demands and potential confusion about the purpose of the call. See, for example: Mackin ML, Herr K, Bergen-Jackson K, Fine P, Forcucci C, Sanders S. Research participation by older adults at end of life: barriers and solutions. *Res Gerontol Nurs.* 2009;2(3):162-171. doi:10.3928/19404921-20090421-05 and Boutilier B, Warner G, Wolfe B, et al. Engaging community-dwelling older adults in research: qualitative substudy of factors impacting participation. *JMIR Form Res.* 2025;9:e74191. Published 2025 Jun 3. doi:10.2196/74191.

¹⁷ The first seven interviews were used to pilot and refine the interview guide.

Interview Topics and Analysis

The semi-structured interview guide included questions on beneficiaries' experience related to:

- Primary care
- Health-related social needs
- Specialty care
- Care management and coordination
- Benefit enhancements experience
- Perceptions of the ACO model

Analysis

Interview transcripts were coded using Dedoose qualitative analysis software. Queries were run on subcodes and combinations of subcodes aligned with each research question. We conducted thematic analysis to identify common and divergent responses across interviews. For the one interview that was not recorded, the analyst's notes were analyzed manually and not imported into Dedoose.

Key Findings

Primary care: Overall, beneficiaries had consistent access to primary care and felt comfortable discussing their health concerns with their main provider. Most beneficiaries could schedule appointments with their main provider when they wanted them and had their questions answered between appointments either by the provider or staff. Beneficiaries were satisfied with the way their main provider communicated, felt comfortable discussing their health issues and concerns with the provider, and engaged with the provider in shared decision-making. One beneficiary shared *“He’s been my doctor a long time, and I feel like I know him well. He knows me.”* Another noted *“He’ll give me the options that I have, and then we’ll talk about those options, and he’ll explain them in the order in which he thinks would better suit me for my health, but he always leaves the decision to me.”*

Specialty care: About two-thirds of beneficiaries always or usually had access to specialty care. Long wait times were common but not associated with the model.

Care coordination: Beneficiaries reported robust information-sharing between specialists and their main providers. Beneficiaries reported that their main providers were aware of their visits to specialists, urgent care, and emergency rooms. Beneficiaries’ experience of care coordination ranged from very good to completely lacking. Beneficiaries reported that their main providers referred them to other services when needed, most often to physical therapy and dieticians. One beneficiary who reported having a care coordinator shared *“They call and see how I’m doing, check up on me, see if I need appointments, and if I need transportation, and if I need food or anything else.”*

Health-related social needs (HRSNs): Nearly a third of the beneficiaries interviewed were asked by their main provider whether they needed help with HRSNs such as housing, utilities, transportation, or food. Most beneficiaries that reported needing help received it.

Benefit Enhancements – Telehealth: An overwhelming majority of beneficiaries had experience with telehealth. Telehealth visits offered convenience and were quicker to schedule. The main disadvantages of telehealth visits were care limitations and technological challenges. About half of beneficiaries preferred in-person appointments to telehealth.

Home health: About half of beneficiaries had some experience with home-based health care. Taking vitals, medication management, and general health monitoring were the most common services of home-based care. Beneficiaries liked the convenience of receiving care at home from knowledgeable providers. Some beneficiaries experienced poor-quality services, while others lamented limited choice of care providers.

Perceptions of the ACO model of care: Beneficiaries do not seem to be aware of the ACO model of care. After interviewers explained the concept, beneficiaries reacted favorably to certain features, including the ability to see any provider they chose and for the model’s potential to lower costs or improve quality. One beneficiary responded *“I think rewarding [doctors] for doing good work is important. Also, I think it makes them want to give...better care.”* Beneficiaries expressed that they wanted to see doctors of their choosing, whether in or out of network. Beneficiaries’ concerns included the potential cost to the patient, the need for coordination and communication, and the need to align their health plan with other programs.

Appendix C: ACO Characteristics

This appendix presents detailed ACO characteristic descriptives with significance testing (chi-square and Fisher’s exact tests, where appropriate) by group. Statistically significant differences between one or more of the groups on a specific variable are denoted by an asterisk (*p<0.10, **p<0.05, ***p<0.01). The following exhibits link CMS data sources (including ACO REACH Model data and documents) with document review and interview data to characterize ACOs participating in ACO REACH across performance years and in PY 2023. For more information on our document review and interviews, please see [Appendix B](#).

For additional information and findings on the 2023 Pulse Check Survey in the report, please refer to [Appendix F](#).

Exhibit C.1 and **Exhibit C.2** present a summary of ACO type across PY 2021 through PY 2023 for all three starter cohorts. As shown in these exhibits, most ACOs participating in the model in PY 2023 were Standard ACOs, a group which grew over time both within cohorts and across performance years.

Exhibit C.1. ACO Type Across Performance Years and Cohorts, PY 2021–PY 2023

| Cohorts | Overall | ACO Types over PYs | | | | | |
|----------------------------|---------|--------------------|-----|-------------|-----|------------|-----|
| | | Standard | | New Entrant | | High Needs | |
| | | n | % | n | % | n | % |
| PY 2021 | | | | | | | |
| 2021 Starter Cohort | 53 | 29 | 55% | 18 | 34% | 6 | 11% |
| PY 2022 | | | | | | | |
| 2021 Starter Cohort | 50 | 37 | 74% | 9 | 18% | 4 | 8% |
| 2022 Starter Cohort | 49 | 41 | 84% | 4 | 8% | 4 | 8% |
| PY 2023 | | | | | | | |
| 2021 Starter Cohort | 44 | 35 | 80% | 5 | 11% | 4 | 9% |
| 2022 Starter Cohort | 40 | 36 | 90% | 2 | 5% | 2 | 5% |
| 2023 Starter Cohort | 48 | 34 | 71% | 6 | 13% | 8 | 17% |
| All ACOs in PY 2023 | 132 | 105 | 80% | 13 | 10% | 14 | 11% |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs).

NOTE: ACO=Accountable Care Organization. The PY 2021 counts include two New Entrant and one High Needs ACOs that exited at the end of PY 2021. The PY 2022 counts include 15 ACOs (11 Standard ACOs, three New Entrant ACOs, one High Needs ACO) that exited the model in PY 2022. The PY 2023 counts include 10 ACOs (six Standard ACOs and four New Entrant ACOs) that exited the model in PY 2023. The 2021 Starter Cohort counts also include nine New Entrant ACOs and one High Needs ACO that entered the model in PY 2021 and transitioned to Standard ACOs in PY 2022 or PY 2023. Finally, the 2022 Starter Cohort counts also include one New Entrant and one High Needs ACO that entered the model in PY 2022 and transitioned to Standard ACOs in PY 2023.

Exhibit C.2 presents a summary of organizational characteristics by ACO type in PY 2023, including p-values indicating whether the composition of organizational characteristics differed significantly across ACO types. The composition of organizational structures and lead organization types were significantly different across ACO

types. Most notably, there was a higher proportion of IDS/hospital system ACOs and health system-led ACOs amongst the Standard ACOs compared to other ACOs. New Entrant ACOs also had higher proportions of medical group practice ACOs and primary care company-led ACOs. Functional role was not significantly different, with most ACOs falling into either the Enabler or Direct Care Provider categories.

Exhibit C.2. Organizational Characteristics Across ACO Type in PY 2023

| Variables | Overall N=132 | ACO Type | | | p-value |
|---------------------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Organizational Structure | | | | | 0.04* |
| Network of Individual Practices | 79 (60%) | 61 (58%) | 7 (54%) | 11 (79%) | |
| Medical Group Practice | 27 (20%) | 19 (18%) | 6 (46%) | 2 (14%) | |
| IDS/Hospital System | 26 (20%) | 25 (24%) | 0 (0%) | 1 (7%) | |
| Lead Organization Type | | | | | 0.05** |
| Insurer | 18 (14%) | 16 (15%) | 1 (8%) | 1 (7%) | |
| MSO | 45 (34%) | 35 (33%) | 3 (23%) | 7 (50%) | |
| Primary Care Company | 19 (14%) | 12 (11%) | 6 (46%) | 1 (7%) | |
| Physician Practice | 26 (20%) | 19 (18%) | 3 (23%) | 4 (29%) | |
| Health System | 24 (18%) | 23 (22%) | 0 (0%) | 1 (7%) | |
| Functional Role | | | | | 0.62 |
| Convener | 10 (8%) | 8 (8%) | 1 (8%) | 1 (7%) | |
| Enabler | 72 (55%) | 56 (53%) | 6 (46%) | 10 (71%) | |
| Direct Care Provider | 50 (38%) | 41 (39%) | 6 (46%) | 3 (21%) | |

SOURCE: ACO REACH PY 2023 financial results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: ACO=Accountable Care Organization, MSO=management services organization, IDS=Integrated Delivery System. Results are presented as both an n and percentage. Asterisks indicate significance at *p<0.10; **p<0.05; ***p<0.01.

Exhibit C.3 and **Exhibit C.4** present a summary of value-based care experience by ACO type and model elections (including elections for risk and capitation payment), including p-values indicating whether prior value-based care experience differed significantly across ACO types and model elections. These value-based care experience variables are not mutually exclusive, and many ACOs entered the model with prior experience with APMs, the Shared Savings Program, and MA.

Overall, Standard ACOs were more likely to have prior experience with APMs and the Shared Savings Program, compared to New Entrant and High Needs ACOs. ACOs that elected for the full risk option (Global risk) were more likely to report prior experience with the Shared Savings Program. Nearly all ACOs reported having prior MA experience.

Exhibit C.3. Value-Based Care Experience Across ACO Type, PY 2023

| Variables | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|----------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Value-Based Care Experience and Resources at Baseline | | | | | |
| APM | 97 (73%) | 87 (83%) | 4 (31%) | 6 (43%) | <0.01*** |
| Shared Savings Program | 72 (55%) | 66 (63%) | 3 (23%) | 3 (21%) | <0.01*** |
| MA | 118 (94%) | 93 (94%) | 11 (85%) | 14 (100%) | 0.3 |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132).

NOTE: Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01. Totals and proportions for MA experience do not include 6 Standard ACOs for which application data on previous MA experience were not available. APM=Alternative Payment Model, MA=Medicare Advantage.

Exhibit C.4. Value-Based Care Experience Across Risk and Payment Elections, PY 2023

| Variables | Overall N=132 | Risk Election | | | Capitation | | |
|--|------------------|-----------------|----------------------|---------|-------------|--------------|---------|
| | | Global N=108 | Professional N=24 | p-value | TCC N=30 | PCC N=102 | p-value |
| Value-Based Care Experience and Resources at Baseline | | | | | | | |
| APM | 97 (73%) | 79 (73%) | 18 (75%) | 0.9 | 23 (77%) | 74 (73%) | 0.7 |
| Shared Savings Program | 72 (55%) | 63 (58%) | 9 (38%) | 0.06* | 18 (60%) | 54 (53%) | 0.5 |
| MA | 118 (94%) | 98 (93%) | 20 (95%) | >0.9 | 26 (93%) | 93 (94%) | >0.9 |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132).

NOTE: TCC=Total Care Capitation, PCC=Primary Care Capitation; APM=Alternative Payment Model, MA=Medicare Advantage. Results are presented as both an n and percentage. Asterisks indicate significance at *p<0.10; **p<0.05; ***p<0.01.

Exhibits C.5 through C.7 present a summary of how each organizational characteristic (organizational structure, lead organization type, and functional role) overlap and align with each other, including p-values indicating whether ACOs differed significantly across lead organization type, functional role, and organizational structure.

Organizational structure, lead organization type, and functional role are strongly associated with one another; therefore, there is strong correlation among them. For example, most IDS/hospital system-structured ACOs were led by health systems and functioned as direct care providers, and most ACOs structured as networks functioned as enablers for their providers. Additionally, most convening ACOs were structured as networks, and most MSO-led ACOs were structured as networks and functioned as enablers.

Exhibit C.5. Lead Organization Type and Functional Role Across Organizational Structure, PY 2023

| Variables | Overall N=132 | Organizational Structure | | | p-value |
|-------------------------------|------------------|---|-----------------------------------|--------------------------------|----------|
| | | Network of Individual Practices N=79 | Medical Group Practice N=27 | IDS/Hospital System N=26 | |
| Lead Organization Type | | | | | <0.01*** |
| Insurer | 19 (14%) | 14 (18%) | 3 (11%) | 1 (4%) | |
| MSO | 45 (34%) | 37 (47%) | 6 (22%) | 2 (8%) | |
| Primary Care Company | 19 (14%) | 8 (10%) | 11 (41%) | 0 (0%) | |
| Physician Practice | 26 (20%) | 18 (23%) | 7 (26%) | 1 (4%) | |
| Health System | 24 (18%) | 2 (3%) | 0 (0%) | 22 (85%) | |
| Functional Role | | | | | <0.01*** |
| Convener | 10 (8%) | 9 (11%) | 1 (4%) | 0 (0%) | |
| Enabler | 72 (55%) | 63 (80%) | 8 (30%) | 1 (4%) | |
| Direct Care Provider | 50 (38%) | 7 (9%) | 18 (67%) | 25 (96%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: MSO=management services organization, IDS=integrated delivery system. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

Exhibit C.6. Organizational Structure and Functional Role Across Lead Organization Type, PY 2023

| Variables | Overall N=132 | Lead Organization | | | | | p-value |
|---------------------------------|------------------|-------------------|-------------|------------------------------------|-------------------------------|--------------------------|----------|
| | | Insurer N=18 | MSO N=45 | Primary Care Company N=19 | Physician Practice N=26 | Health System N=24 | |
| Organizational Structure | | | | | | | <0.01*** |
| IDS/Hospital System | 26 (20%) | 1 (6%) | 2 (4%) | 0 (0%) | 1 (4%) | 22 (92%) | |
| Medical Group Practice | 27 (21%) | 3 (17%) | 6 (13%) | 11 (58%) | 7 (27%) | 0 (0%) | |
| Network of Individual Practices | 79 (60%) | 14 (78%) | 37 (82%) | 8 (42%) | 18 (69%) | 2 (8%) | |
| Functional Role | | | | | | | <0.01*** |
| Convener | 10 (8%) | 4 (22%) | 2 (4%) | 1 (5%) | 3 (12%) | 0 (0%) | |
| Enabler | 72 (55%) | 12 (67%) | 41 (91%) | 3 (16%) | 14 (54%) | 2 (8%) | |
| Direct Care Provider | 50 (38%) | 2 (11%) | 2 (4%) | 15 (79%) | 9 (35%) | 22 (92%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: MSO=management services organization, IDS=integrated delivery system. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

Exhibit C.7. Organizational Structure and Lead Organization Type Across Functional Role, PY 2023

| Variables | Overall N=132 | Functional Role | | | p-value |
|---------------------------------|------------------|------------------|-----------------|------------------------------|----------|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| Organizational Structure | | | | | <0.01*** |
| IDS/Hospital System | 26 (20%) | 0 (0%) | 1 (1%) | 25 (50%) | |
| Medical Group Practice | 27 (20%) | 1 (10%) | 8 (11%) | 18 (36%) | |
| Network of Individual Practices | 79 (60%) | 9 (90%) | 63 (88%) | 7 (14%) | |
| Lead Organization Type | | | | | <0.01*** |
| Insurer | 18 (14%) | 4 (40%) | 12 (17%) | 2 (4%) | |
| MSO | 45 (34%) | 2 (20%) | 41 (57%) | 2 (4%) | |
| Primary Care Company | 19 (14%) | 1 (10%) | 3 (4%) | 15 (30%) | |
| Physician Practice | 26 (20%) | 3 (30%) | 14 (19%) | 9 (18%) | |
| Health System | 24 (18%) | 0 (0%) | 2 (3%) | 22 (44%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

Appendix D: Provider Characteristics

D.1 Provider Affiliation Types

The ACO REACH Model allowed for two possible types of affiliations for providers with ACOs: Participant or Preferred Providers. ACOs entered into participation agreements with both types of affiliated providers and varied in how they paid their providers based on their participation agreements. One evaluation goal is to provide more context around these flexibilities within the model, including how ACOs paid both types of providers.

Participant Providers were individual practitioners and facilities to which ACO beneficiaries were directly aligned, either because the beneficiary had historically received the plurality of their primary care services from the ACO Participant Providers or had designated an ACO Participant Provider as their primary care provider. These providers were alignment-eligible individual practitioners or facilities or suppliers. Providers were only permitted to act as Participant Providers for one participating ACO. Beneficiaries were aligned to the ACO through the ACO Participant Providers, and these providers and suppliers were responsible for reporting quality through the ACO and committing to beneficiary care improvement. During each performance year, ACOs and their ACO Participant Providers are prohibited from simultaneously participating in GPDC and the Shared Savings Program, Next Generation ACO (NGACO) Model, Comprehensive ESRD Care (CEC) Model, Maryland Total Cost of Care (MD TCOC) Model, Vermont All-Payer ACO Model (VTAPM), Kidney Care Choices (KCC) Model, Primary Care First (PCF) Model, Comprehensive Primary Care Plus (CPC+) Model, Independence at Home (IAH) Demonstration, or any other Medicare initiative that involves shared savings. Participant Providers could include but were not limited to:

- Physicians or other practitioners in group practice arrangements
- Networks of individual practices of physicians or other practitioners
- Hospitals employing physicians or other practitioners
- FQHCs
- Rural Health Clinics (RHCs)
- Critical Access Hospitals (CAHs)

Preferred Providers, on the other hand, could operate both within the ACO REACH Model across one or more ACOs, as well as with Medicare ACOs participating in the previously mentioned risk-based initiatives (including the Shared Savings Program) with the exception of the MD TCOC Model. Unlike Participant Providers, Preferred Providers are not used in beneficiary alignment or quality scoring and do not have to opt into claims reductions unless they elect to participate in capitation payment in their contractual participation agreements with the ACO. While ACOs were not required to have Preferred Providers, Preferred Providers enabled an ACO to extend its network by supplementing and complementing the types of care that Participant Providers delivered to their aligned beneficiaries. Preferred Providers could be individual practitioners or facilities affiliated with provider

organizations. In addition to the types of providers that can be Participant Providers, Preferred Providers could include the following:

- Physicians or other practitioners in group practice arrangements
- Networks of individual practices of physicians or other practitioners
- Ambulatory surgery centers
- Acute and long-term care hospitals (LTCHs)
- Skilled nursing facilities (SNFs)
- Home health agencies (HHAs)
- Hospices

D.2 Participant Provider and Preferred Provider Network Analyses

This appendix presents methodology and results supporting findings related to Participant Provider and Preferred Provider networks. We summarized the number of practitioners and facilities overall and by ACO type among Participant Providers and Preferred Providers in the model in PY 2023 (**Exhibit D.1**). To assess differences by ACO type, we used analysis of variance (ANOVA) with post-hoc testing.

Practitioner and facility network analysis

For the analysis of composition of Participant and Preferred practitioner networks, providers were first categorized into primary care, non-physician, specialty care, and unknown/other based on Health Care Provider Taxonomy (HPTC) codes. Next, we applied another round of categorization with a focus on primary care physicians and advanced practice providers (APPs) based on Medicare provider/supplier taxonomy codes. Providers were categorized into:

- **Primary care physicians:** included all providers with the title of physician categorized under primary care
- **Primary care APPs:** included nurse practitioners, physician assistants, certified clinical nurse specialists, certified nurse midwives, and certified registered nurse anesthetists
- **Specialty care providers:** included all providers categorized as specialty in the first categorization
- **Other:** included providers that did not fit into the other three categories, such as mental and behavioral health providers, physical and occupational therapists, and dentists

Provider composition was summarized with proportions overall and by ACO type. Differences in proportions were determined using chi-square tests and in the overall counts using ANOVA.

Exhibit D.1. ACO Participant Provider and Preferred Provider Network Sizes in PY 2023

| Participant Providers, <i>total</i> | Standard | | New Entrant | | High Needs | | All ACOs | |
|--|----------|--|-------------|--|------------|--|----------|--|
| | 58,126 | | 1,248 | | 2,218 | | 61,592 | |
| Practitioners | | | | | | | | |
| Median | 235 | | 53 | | 114.5 | | 213 | |
| Minimum | 23 | | 11 | | 43 | | 11 | |
| Maximum | 4,408 | | 253 | | 409 | | 4,408 | |
| Facilities | | | | | | | | |
| Median | 0 | | 0 | | 0 | | 0 | |
| Minimum | 0 | | 0 | | 0 | | 0 | |
| Maximum | 185 | | 5 | | 3 | | 185 | |
| Preferred Providers, <i>total</i> | | | | | | | | |
| Practitioners | | | | | | | | |
| Median | 10 | | 0 | | 2 | | 3 | |
| Minimum | 0 | | 0 | | 0 | | 0 | |
| Maximum | 19,712 | | 56 | | 206 | | 19,712 | |
| Facilities | | | | | | | | |
| Median | 19 | | 0 | | 92 | | 0 | |
| Minimum | 0 | | 0 | | 0 | | 0 | |
| Maximum | 1,726 | | 31 | | 1,320 | | 1,726 | |

SOURCE: NORC analysis of PY 2023 ACO REACH provider data (received from model’s Implementation & Monitoring Contractor; n=132 ACOs).

NOTE: Practitioners include individual practitioners who may be employed directly by a health system or practice participating in the model; physician groups/practices; networks of individual physician practices or other practitioners; and independent or solo practitioners. Facilities include acute care hospitals, skilled nursing facilities (SNFs), home health agencies (HHAs), long-term care hospitals (LTCHs), or inpatient rehabilitation facilities (IRFs).

Exhibit D.2. Average ACO Participant Provider and Preferred Provider Network Sizes in PY 2022 and PY 2023

| | Standard | | New Entrant | | High Needs | | All ACOs | |
|--|-------------|-------------|-------------|---------|------------|-----------|-----------|-------------|
| | PY 2022 | PY 2023 | PY 2022 | PY 2023 | PY 2022 | PY 2023 | PY 2022 | PY 2023 |
| Participant Providers, <i>mean (SD)</i> | | | | | | | | |
| Practitioners | 629 (1,002) | 546 (756) | 91 (89) | 95 (86) | 115 (85) | 158 (116) | 517 (915) | 460 (696) |
| Facilities | 7 (25) | 8 (26) | 10 (36) | 0.6 (1) | 0.1 (0.4) | 0.4 (0.9) | 7 (26) | 6 (24) |
| Preferred Providers, <i>mean (SD)</i> | | | | | | | | |
| Practitioners | 224 (417) | 518 (2,144) | 50 (143) | 16 (22) | 25 (61) | 29 (55) | 185 (381) | 416 (1,921) |
| Facilities | 52 (137) | 103 (277) | 55 (184) | 3 (9) | 37 (44) | 423 (581) | 51 (138) | 127 (325) |

SOURCE: NORC analysis of PY 2022 and PY 2023 ACO REACH provider data (received from model’s Implementation & Monitoring Contractor; 2023: n=132 ACOs, 2022: n=99 ACOs).

NOTE: Practitioners include individual practitioners who may be employed directly by a health system or practice participating in the model; physician groups/practices; networks of individual physician practices or other practitioners; and independent or solo practitioners. Facilities include acute care hospitals, SNFs, HHAs, LTCHs, or IRFs.

Safety net facility analysis

For this analysis, safety net facilities included FQHCs, RHCs, and CAHs designated by CMS Certification Number (CCN). Descriptive statistics were generated for Participant and Preferred safety net facilities to determine the number of ACOs with any safety net facilities in their network over the three performance years by ACO type and cohort.

Exhibit D.3. ACOs with Any Safety Net Facilities (Participant Provider and Preferred Provider) by ACO Type and Cohort, PY 2021–PY 2023

| | PY 2021 N=53 | PY 2022 N=99 | PY 2023 N=132 |
|-----------------|-----------------|-----------------|------------------|
| All ACOs | 6 (11%) | 22 (22%) | 42 (32%) |
| ACO Type | | | |
| Standard | 5 (17%) | 21 (27%) | 38 (36%) |
| New Entrant | 0 (0%) | 1 (8%) | 4 (31%) |
| High Needs | 1 (17%) | 0 (0%) | 0 (0%) |
| Cohort | | | |
| 2021 | 6 (11%) | 8 (16%) | 10 (23%) |
| 2022 | - | 14 (29%) | 17 (43%) |
| 2023 | - | - | 15 (31%) |

SOURCE: NORC analysis of PY 2021, PY 2022, and PY 2023 ACO REACH provider data (received from the model’s Implementation & Monitoring Contractor).

NOTE: N and % reflect the number and proportion of ACOs with any safety net facilities. ACO=Accountable Care Organization; Safety net facilities include Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), and Critical Access Hospitals (CAHs).

Exhibit D.4. Number of Safety Net Facilities (Participant and Preferred) by ACO Type and Cohort, PY 2021–PY 2023

| | PY 2021 | | | | PY 2022 | | | | PY 2023 | | | |
|-----------------|-----------|------|-----|-----|------------|------|-----|-----|------------|------|-----|-----|
| | Total | FQHC | RHC | CAH | Total | FQHC | RHC | CAH | Total | FQHC | RHC | CAH |
| All ACOs | 30 | 21 | 7 | 2 | 420 | 255 | 139 | 26 | 871 | 743 | 83 | 45 |
| ACO Type | | | | | | | | | | | | |
| Standard | 21 | 12 | 7 | 2 | 418 | 254 | 138 | 26 | 862 | 736 | 81 | 45 |
| New Entrant | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 9 | 7 | 2 | 0 |
| High Needs | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cohort | | | | | | | | | | | | |
| 2021 | 30 | 21 | 7 | 2 | 113 | 52 | 58 | 3 | 79 | 41 | 31 | 7 |
| 2022 | - | - | - | - | 307 | 203 | 81 | 23 | 300 | 224 | 39 | 37 |
| 2023 | - | - | - | - | - | - | - | - | 492 | 478 | 13 | 1 |

SOURCE: NORC analysis of PY 2021, PY 2022, and PY 2023 ACO REACH provider data (received from the model’s Implementation & Monitoring Contractor).

NOTE: Cell values reflect the total number of safety net facilities in that group. ACO=Accountable Care Organization; FQHC=Federally Qualified Health Center; RHC=Rural Health Clinic; CAH=Critical Access Hospital.

Exhibit D.5. Participant Provider Years of Medicare ACO Experience in PY 2023 by Organizational Structure and Lead Organization

| | Organizational Structure | | |
|-------------------------------------|-------------------------------------|------------------------|---------------------------------|
| | Integrated Delivery System/Hospital | Medical Group Practice | Network of Individual Practices |
| Lead Organization, mean (SD) | | | |
| Health System | 4.84 (3.04) | - | 3.79 (2.33) |
| Insurer | 3.74 (2.89) | 4.72 (2.67) | 3.51 (2.91) |
| MSO | 4.55 (2.72) | 3.76 (2.88) | 3.60 (3.00) |
| Physician Practice | 0.46 (1.33) | 4.87 (3.17) | 3.45 (2.86) |
| Primary Care Company | - | 3.17 (2.73) | 3.66 (2.77) |

SOURCE: NORC analysis of Shared Savings Program, Pioneer, and NGACO provider files on the Virtual Research Data Center (VRDC) and NORC analysis of PY 2023 ACO REACH Participant Provider data (received from the model’s Implementation & Monitoring Contractor).

NOTE: MSO=management services organization.

Appendix E: Model Features

This appendix presents detailed model election descriptives with significance testing (chi-square and Fisher's exact tests, where appropriate) by group. Statistically significant differences between one or more of the groups on a specific variable and are denoted by an asterisk (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$). The following exhibits link CMS data sources (including ACO REACH Model data and documents) with document review and interview data to characterize ACOs participating in ACO REACH across PYs and in PY 2023. For more information on our qualitative data collection and analysis methods, please see [Appendix B](#).

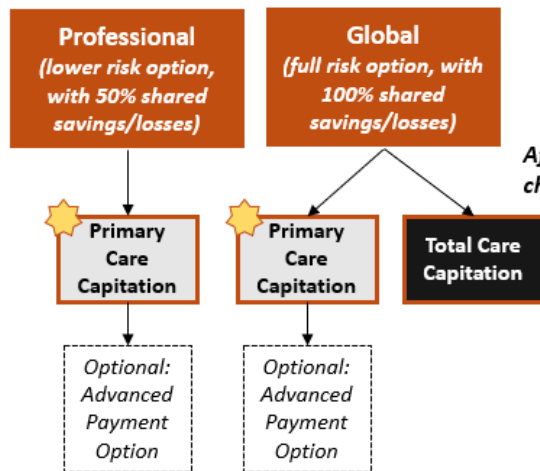
E.1 Risk-Sharing and Payment Elections

Exhibit E.1 provides an overview of the risk-sharing and payment options and how funds flow from CMS to ACOs to Participant Providers and participating Preferred Providers.

Exhibit E.1. Overview of ACO Risk-Sharing, Payment Options, and Flow of Funds

Risk Sharing and Payment Options

Each ACO chooses one of two risk-sharing options:



After selecting risk, ACOs then choose payment mechanisms:

Primary Care Capitation (PCC): monthly capitation payments for primary care services, with an add-on **Advanced Payment Option (APO)** to cover eligible non-primary care services.

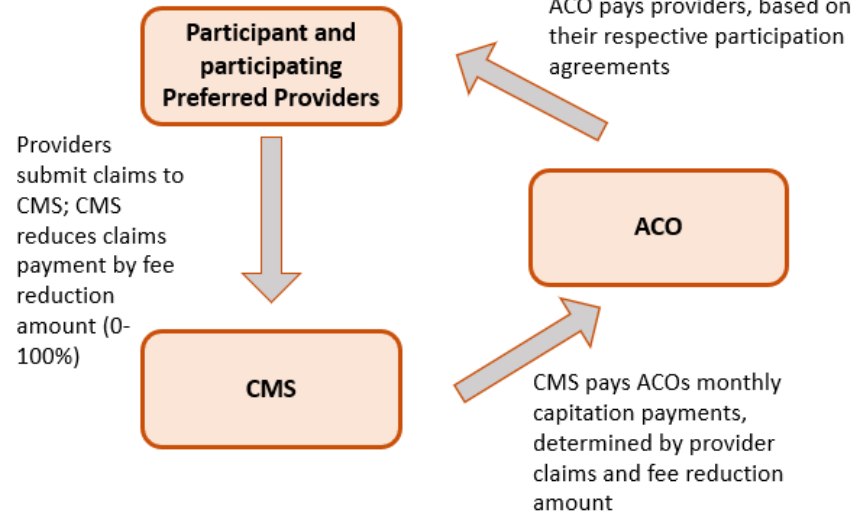
OR

Total Care Capitation (TCC): monthly capitation payments for all services delivered to aligned beneficiaries (**only available under Global risk**)

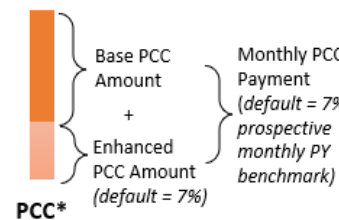
For primary care capitation payments, an ACO receives both:

- A **base amount** to cover primary care services
- An **enhanced amount** recouped by CMS during financial settlement.

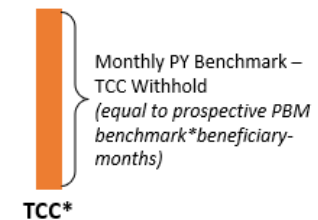
Flow of Funds and Payments



How CMS pays ACOs:



How ACOs pay providers:



ACOs vary in how they pay their providers, based on their participation agreements. One evaluation goal is a more nuanced understanding about how ACOs pay providers.

Exhibits E.2 through E.4 present a summary of payment and risk elections across PY 2021 through PY 2023 for all three starter cohorts. Most ACOs across performance years and cohorts elected Primary Care Capitation (PCC) and the full risk option (Global risk).

Exhibit E.2. Payment Elections by Performance Year and Cohort, PY 2021–PY 2023

| Cohorts | Overall | Payment Elections over PYs | | | | | |
|---------------------|------------|----------------------------|------------|---------------|------------|-----------|------------|
| | | TCC | | PCC (overall) | | PCC + APO | |
| | | n | % | n | % | n | % |
| PY 2021 | | | | | | | |
| 2021 Starter Cohort | 53 | 11 | 21% | 42 | 80% | 21 | 40% |
| PY 2022 | | | | | | | |
| 2021 Starter Cohort | 50 | 13 | 26% | 37 | 74% | 24 | 48% |
| 2022 Starter Cohort | 49 | 14 | 29% | 35 | 71% | 18 | 37% |
| PY 2023 | | | | | | | |
| 2021 Starter Cohort | 44 | 8 | 18% | 36 | 82% | 23 | 52% |
| 2022 Starter Cohort | 40 | 9 | 23% | 31 | 78% | 18 | 45% |
| 2023 Starter Cohort | 48 | 13 | 27% | 35 | 73% | 23 | 48% |
| All ACOs | 132 | 30 | 23% | 102 | 77% | 64 | 48% |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs).

NOTE: ACO=Accountable Care Organization, TCC=Total Care Capitation, PCC=Primary Care Capitation, APO=advanced payment option. These counts also include 15 ACOs (three ACOs that elected PCC, five ACOs that elected PCC+APO, and seven ACOs that elected TCC) that exited the model in PY 2022 and 10 ACOs (six ACOs that elected PCC, three ACOs that elected PCC+APO, and one ACO that elected TCC) that exited the model in PY 2023. The 2021 Starters counts also include the following ACOs that entered into the model in PY 2021 and then changed their payment election in PY 2022 or PY 2023: five ACOs that transitioned from PCC to PCC with APO; three ACOs that transitioned from PCC with APO to TCC; two ACOs that transitioned from PCC with APO to PCC; and four ACOs that transitioned from TCC to PCC with APO. The 2022 Starter Cohort counts included the following ACOs that entered the model in PY 2022 and then changed their payment election in PY 2023: two ACOs that transitioned from PCC to PCC with APO; two ACOs that transitioned from PCC to TCC; one ACO that transitioned from PCC with APO to PCC; and three ACOs that transitioned from TCC to PCC with APO.

Exhibit E.3. Risk-Sharing Elections by Performance Year and Cohort, PY 2021–PY 2023

| Cohorts | Overall | Risk-Sharing Elections over PYs | | | |
|---------------------|---------|---------------------------------|-----|--------------|-----|
| | | Global | | Professional | |
| | | n | % | n | % |
| PY 2021 | | | | | |
| 2021 Starter Cohort | 53 | 39 | 74% | 14 | 26% |
| PY 2022 | | | | | |
| 2021 Starter Cohort | 50 | 40 | 80% | 10 | 20% |
| 2022 Starter Cohort | 49 | 32 | 65% | 17 | 35% |
| PY 2023 | | | | | |
| 2021 Starter Cohort | 44 | 39 | 89% | 5 | 11% |
| 2022 Starter Cohort | 40 | 29 | 73% | 11 | 28% |
| 2023 Starter Cohort | 48 | 40 | 83% | 8 | 17% |
| All ACOs | 132 | 108 | 82% | 24 | 18% |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs).

NOTE: ACO=Accountable Care Organization. These counts also include three ACOs (three Global risk ACOs) that exited the model in PY 2022, 15 ACOs (four Professional risk ACOs and 11 Global risk ACOs) that exited the model in PY 2022, and 10 ACOs (four Professional risk ACOs and six Global risk ACOs) that exited the model in PY 2023. The 2021 Starter Cohort counts also include four ACOs that entered into the model in PY 2021 and transitioned from Professional risk to Global risk in PY 2022 and four more ACOs that transitioned from Professional risk to Global risk in PY 2023. The 2022 Starter Cohort counts include three ACOs that entered the model in PY 2022 and transitioned from Professional risk to Global risk in PY 2023.

Exhibit E.4. Risk-Sharing and Payment Elections by Performance Year and Cohort, PY 2021–PY 2023

| Cohorts | Overall | Payment Elections over PYs | | | | | |
|---------------------|---------|----------------------------|-----|--------------|-----|--------------------|-----|
| | | Global + TCC | | Global + PCC | | Professional + PCC | |
| | | n | % | n | % | n | % |
| PY 2021 | | | | | | | |
| 2021 Starter Cohort | 53 | 11 | 21% | 28 | 53% | 14 | 26% |
| PY 2022 | | | | | | | |
| 2021 Starter Cohort | 50 | 13 | 26% | 27 | 54% | 10 | 20% |
| 2022 Starter Cohort | 49 | 14 | 29% | 18 | 37% | 17 | 35% |
| PY 2023 | | | | | | | |
| 2021 Starter Cohort | 44 | 8 | 18% | 31 | 70% | 5 | 11% |
| 2022 Starter Cohort | 40 | 9 | 23% | 20 | 50% | 11 | 28% |
| 2023 Starter Cohort | 48 | 13 | 27% | 27 | 56% | 8 | 17% |
| All ACOs | 132 | 30 | 23% | 78 | 59% | 24 | 18% |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs).

NOTE: ACO=Accountable Care Organization, TCC=Total Care Capitation, PCC=Primary Care Capitation. These counts also include 15 ACOs (four Professional ACOs and 11 Global ACOs) that exited the model in PY 2022. The 2021 Starter Cohort counts also include four ACOs that entered into the model in PY 2021 and transitioned from Professional risk to Global risk in PY 2022.

Exhibits E.5 through E.8 present a summary of model elections by organizational characteristics in PY 2023, including p-values indicating whether model elections differed significantly across organizational characteristics. While there were no significant differences across ACO types, ACOs structured as IDS/hospital systems or led by health systems were more likely to elect Professional risk, and ACOs led by primary care companies and provider organizations (physician practices and health systems) were more likely to elect TCC than PCC. Because most provider-led organizations and IDS/hospital system-structured ACOs functioned as direct care providers, they were similarly more likely to elect TCC than ACOs that primarily enabled providers.

Exhibit E.5. Risk-Sharing and Payment Elections by ACO Type in PY 2023

| Variables | Overall N=132 | ACO Type | | | p-value |
|------------------------|------------------|-------------------|---------------------|--------------------|---|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Risk | | | | | 0.5 |
| Professional | 24 (18%) | 20 (19%) | 3 (23%) | 1 (7%) | |
| Global | 108 (82%) | 85 (81%) | 10 (77%) | 13 (93%) | |
| Capitation Type | | | | | 0.3 (PCC only vs. PCC+APO vs. TCC); 0.2 (TCC vs. PCC overall) ¹ |
| PCC (overall) | 102 (77%) | 78 (74%) | 12 (92%) | 12 (86%) | |
| PCC+APO | 38 (29%) | 30 (29%) | 6 (46%) | 2 (14%) | |
| PCC (only) | 64 (48%) | 48 (46%) | 6 (46%) | 10 (71%) | |
| TCC | 30 (23%) | 27 (26%) | 1 (8%) | 2 (14%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs).

NOTE: ACO=Accountable Care Organization, TCC=Total Care Capitation, PCC=Primary Care Capitation, APO=advanced payment option. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

¹Two separate p-values were generated for capitation type. The first was generated by a Fisher’s exact test of independence that treated each payment option (PCC, PCC with APO, and TCC) separately, while the second was generated by a test that combined both PCC options and compared them with TCC.

Exhibit E.6. Risk-Sharing and Payment Elections by ACO Organizational Structure in PY 2023

| Variables | Overall N=132 | ACO Organizational Structure | | | p-value |
|------------------------|------------------|--|-----------------------------------|--------------------------------|--|
| | | Network of Individual Practices N=79 | Medical Group Practice N=27 | IDS/Hospital System N=26 | |
| Risk | | | | | <0.01*** |
| Professional | 24 (18%) | 9 (11%) | 3 (11%) | 12 (46%) | |
| Global | 108 (82%) | 70 (89%) | 24 (89%) | 14 (54%) | |
| Capitation Type | | | | | 0.5 (PCC only vs. PCC+APO vs. TCC); 0.03(TCC vs. PCC overall) ¹ |
| PCC (overall) | 102 (77%) | 62 (78%) | 22 (81%) | 18 (69%) | |
| PCC+APO | 38 (29%) | 46 (58%) | 9 (33%) | 9 (35%) | |
| PCC (only) | 64 (48%) | 16 (20%) | 13 (48%) | 9 (35%) | |
| TCC | 30 (23%) | 17 (22%) | 5 (19%) | 8 (31%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: TCC=Total Care Capitation, PCC=Primary Care Capitation, APO=advanced payment option, IDS=Integrated Delivery System. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

¹Two separate p-values were generated for capitation type. The first was generated by a Fisher’s exact test of independence that treated each payment option (PCC, PCC with APO, and TCC) separately, while the second was generated by a test that combined both PCC options and compared them with TCC.

Exhibit E.7. Risk-Sharing and Payment Elections by Lead Organization Type in PY 2023

| Variables | Overall N=132 | Lead Organization Type | | | | | p-value |
|------------------------|------------------|------------------------|-------------|---------------------------------|-------------------------------|--------------------------|--|
| | | Insurer N=18 | MSO N=45 | Primary Care Company N=19 | Physician Practice N=26 | Health System N=24 | |
| Risk | | | | | | | <0.01*** |
| Professional | 24 (18%) | 2 (11%) | 3 (7%) | 3 (16%) | 4 (15%) | 12 (50%) | |
| Global | 108 (82%) | 16 (89%) | 42 (93%) | 16 (84%) | 22 (85%) | 12 (50%) | |
| Capitation Type | | | | | | | 0.4 (PCC only vs. PCC+APO vs. TCC); 0.02**(TCC vs. PCC overall) ¹ |
| PCC (overall) | 102 (77%) | 15 (83%) | 38 (84%) | 13 (68%) | 20 (77%) | 16 (67%) | |
| PCC+APO | 64 (48%) | 9 (50%) | 32 (71%) | 6 (32%) | 11 (42%) | 6 (25%) | |
| PCC (only) | 39 (29%) | 6 (33%) | 6 (13%) | 7 (37%) | 9 (35%) | 10 (42%) | |
| TCC | 30 (23%) | 3 (17%) | 7 (16%) | 6 (32%) | 6 (23%) | 8 (33%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: TCC=Total Care Capitation, PCC=Primary Care Capitation, APO=advanced payment option, MSO=management services organization. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

¹Two separate p-values were generated for capitation type. The first was generated by a Fisher’s exact test of independence that treated each payment option (PCC, PCC with APO, and TCC) separately, while the second was generated by a test that combined both PCC options and compared them with TCC.

Exhibit E.8. Risk-Sharing and Payment Elections by Functional Role in PY 2023

| Variables | Overall N=132 | Functional Role | | | p-value |
|------------------------|------------------|------------------|-----------------|---------------------------------|---|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| Risk | | | | | 0.05* |
| Professional | 24 (18%) | 2 (20%) | 8 (11%) | 14 (28%) | |
| Global | 108 (82%) | 8 (80%) | 64 (89%) | 36 (72%) | |
| Capitation Type | | | | | <0.01*** (PCC only vs. PCC+APO vs. TCC); 0.03**(TCC vs. PCC overall) ¹ |
| PCC (overall) | 102 (77%) | 7 (70%) | 62 (86%) | 33 (66%) | |
| PCC+APO | 64 (48%) | 5 (50%) | 48 (67%) | 11 (22%) | |
| PCC (only) | 38 (29%) | 2 (20%) | 14 (19%) | 22 (44%) | |
| TCC | 30 (23%) | 3 (30%) | 10 (14%) | 17 (34%) | |

SOURCE: ACO REACH PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: TCC=Total Care Capitation, PCC=Primary Care Capitation, APO=advanced payment option. Results are presented as both an n and percentage. Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

¹Two separate p-values were generated for capitation type. The first was generated by a Fisher’s exact test of independence that treated each payment option (PCC, PCC with APO, and TCC) separately, while the second was generated by a test that combined both PCC options and compared them with TCC.

E.2 Benefit Enhancements

Exhibit E.9 and **Exhibit E.10** include an overview of total submitted claims, average submitted claims, and number of submitted claims per 1,000 total aligned beneficiaries by ACO type and organizational structure for every benefit enhancement available to ACOs in PY 2023.

They also include p-values indicating whether the average number of claims or number of claims submitted per 1,000 beneficiaries was significantly different across ACO type or organizational structure. After adjusting for the total number of aligned beneficiaries, High Needs ACOs were more likely to submit more claims for the telehealth, SNF 3-day, concurrent care for beneficiaries that elect Medicare hospice, home health homebound, and nurse practitioner services waivers than were Standard or New Entrant ACOs. Even without adjustment for the total aligned beneficiary population, the High Needs ACOs submitted a significantly higher average number of claims for the concurrent care for beneficiaries that elect Medicare hospice waiver. Of note, the IDS/hospital system-structured ACOs submitted a significantly higher average number of claims for the home health homebound and nurse practitioner services waivers, and network ACOs submitted more telehealth waiver claims per 1,000 beneficiaries.

Exhibit E.9. Total, Average, and Population-Adjusted Claims Submitted for Benefit Enhancements, by ACO type, PY 2023

| Benefit Enhancements | ACO Type | | | p-value |
|--|-------------------|---------------------|--------------------|----------|
| | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Telehealth† | | | | |
| Total Claims Submitted | 451,736 | 23,688 | 14,476 | |
| Average Claims Submitted | 4,302.25 | 1,822.15 | 1,034.00 | <0.01*** |
| Submitted Claims Per 1,000 Beneficiaries | 258.34 | 306.32 | 842.60 | <0.01*** |
| Skilled Nursing Facility (SNF) 3-Day Rule Waiver† | | | | |
| Total Claims Submitted | 105,030 | 5,180 | 8,217 | |
| Average Claims Submitted | 1,000.29 | 398.46 | 586.93 | 0.06* |
| Submitted Claims Per 1,000 Beneficiaries | 54.22 | 68.71 | 399.05 | <0.01*** |
| Concurrent Care for Beneficiaries that Elect Medicare Hospice | | | | |
| Total Claims Submitted | 19,423 | 122 | 7,371 | |
| Average Claims Submitted | 184.98 | 9.38 | 526.5 | 0.03** |
| Submitted Claims Per 1,000 Beneficiaries | 8.62 | 1.79 | 319.63 | <0.01*** |
| Home Health Homebound Waiver | | | | |
| Total Claims Submitted | 51,044 | 142 | 2,427 | |
| Average Claims Submitted | 486.13 | 10.92 | 173.36 | 0.12 |
| Submitted Claims Per 1,000 Beneficiaries | 24.24 | 1.46 | 113.23 | <0.01*** |
| Nurse Practitioner Services | | | | |
| Total Claims Submitted | 197 | 4 | 10 | |
| Average Claims Submitted | 1.88 | 0.31 | 0.71 | 0.53 |
| Submitted Claims Per 1,000 Beneficiaries | 0.08 | 0.15 | 0.58 | <0.01*** |
| Care Management Home Visits | | | | |
| Total Claims Submitted | 144 | 0 | 7 | |
| Average Claims Submitted | 1.37 | 0.00 | 0.50 | 0.87 |
| Submitted Claims Per 1,000 Beneficiaries | 0.30 | 0.00 | 0.40 | 0.91 |
| Post-Discharge Home Visits | | | | |
| Total Claims Submitted | 54 | 0 | 3 | |
| Average Claims Submitted | 0.51 | 0.00 | 0.21 | 0.82 |
| Submitted Claims Per 1,000 Beneficiaries | 0.06 | 0.00 | 0.26 | 0.32 |

SOURCE: ACO REACH PY 2023 Benefit Enhancement Data; PY 2023 Financial Results (n=132 ACOs).

NOTE: Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

† Counts in this report reflect all PY 2023 claims for telehealth and SNF 3-day rule waiver services from participating ACOs, regardless of benefit enhancement (BE) indicator code (for telehealth or SNF 3-day rule waivers) or demographic-specific G-codes (just for the telehealth waiver). A BE indicator code is used on claims to identify services that qualify for a Medicare payment waiver or enhancement

to reimburse providers for services that are not covered under Original Medicare. For the telehealth benefit enhancement, demographic-specific G-codes are used to bill for distant site practitioners or home health providers billing for eligible services under the waiver. Claims from entities not listed in CMS’ official ACO REACH participant file were excluded.

Out of the 489,900 telehealth claims, only 3,848 claims were submitted with a demographic-specific G-code (by 116 participating ACOs) and only 1,772 claims were submitted with both a BE indicator code and a demographic-specific G-code (by just 43 ACOs). Out of the 118,427 SNF episode claims submitted for the SNF 3-day rule waiver, just 14,784 claims were submitted with a BE indicator code, by 75 ACOs.

Exhibit E.10. Total, Average, and Population-Adjusted Claims Submitted for Benefit Enhancements, by Organizational Structure, PY 2023

| Benefit Enhancements | Organizational Structure | | | p-value |
|--|---|--------------------------------|-----------------------------|----------|
| | Network of Individual Practices N=79 | Medical Group Practice N=27 | IDS/Hospital System N=26 | |
| Telehealth† | | | | |
| Total Claims Submitted | 290,357 | 78,190 | 121,353 | |
| Average Claims Submitted | 3,675.41 | 2,895.93 | 4,667.42 | 0.35 |
| Submitted Claims Per 1,000 Beneficiaries | 383.55 | 240.24 | 235.25 | 0.07* |
| Skilled Nursing Facility (SNF) 3-Day Rule Waiver† | | | | |
| Total Claims Submitted | 67,058 | 20,795 | 30,574 | |
| Average Claims Submitted | 848.84 | 770.19 | 1,175.92 | 0.26 |
| Submitted Claims Per 1,000 Beneficiaries | 107.62 | 68.03 | 70.55 | 0.21 |
| Concurrent Care for Beneficiaries that Elect Medicare Hospice | | | | |
| Total Claims Submitted | 6,956 | 2,928 | 17,032 | |
| Average Claims Submitted | 215.59 | 108.44 | 267.54 | 0.53 |
| Submitted Claims Per 1,000 Beneficiaries | 50.10 | 43.56 | 10.34 | 0.51 |
| Home Health Homebound Waiver | | | | |
| Total Claims Submitted | 26,093 | 2,818 | 24,702 | |
| Average Claims Submitted | 330.29 | 104.37 | 950.08 | <0.01*** |
| Submitted Claims Per 1,000 Beneficiaries | 36.99 | 8.29 | 38.59 | 0.13 |
| Nurse Practitioner Services | | | | |
| Total Claims Submitted | 74 | 32 | 105 | |
| Average Claims Submitted | 0.94 | 1.19 | 4.04 | 0.05* |
| Submitted Claims Per 1,000 Beneficiaries | 0.14 | 0.19 | 0.12 | 0.88 |
| Care Management Home Visits | | | | |
| Total Claims Submitted | 118 | 0 | 33 | |
| Average Claims Submitted | 1.49 | 0.00 | 1.27 | 0.80 |
| Submitted Claims Per 1,000 Beneficiaries | 0.46 | 0.00 | 0.04 | 0.65 |

| Benefit Enhancements | Organizational Structure | | | p-value |
|--|---|--------------------------------|-----------------------------|---------|
| | Network of Individual Practices N=79 | Medical Group Practice N=27 | IDS/Hospital System N=26 | |
| Post-Discharge Home Visits | | | | |
| Total Claims Submitted | 26 | 1 | 30 | |
| Average Claims Submitted | 0.33 | 0.04 | 1.15 | 0.37 |
| Submitted Claims Per 1,000 Beneficiaries | 0.11 | 0.00 | 0.03 | 0.60 |

SOURCE: ACO REACH PY 2023 Benefit Enhancement Data; PY 2023 Financial Results (n=132 ACOs); model applications and additional documentation (n=132); ACO leadership interviews (n=66).

NOTE: Asterisks indicate statistical significance at *p<0.10; **p<0.05; ***p<0.01.

† Counts in this report reflect all PY 2023 claims for telehealth and SNF 3-day rule waiver services from participating ACOs, regardless of benefit enhancement (BE) indicator code (for telehealth or SNF 3-day rule waivers) or demographic-specific G-codes (just for the telehealth waiver). A BE indicator code is used on claims to identify services that qualify for a Medicare payment waiver or enhancement to reimburse providers for services that are not covered under Original Medicare. For the telehealth benefit enhancement, demographic-specific G-codes are used to bill for distant site practitioners or home health providers billing for eligible services under the waiver. Claims from entities not listed in CMS’ official ACO REACH participant file were excluded.

Out of the 489,900 telehealth claims, only 3,848 claims were submitted with a demographic-specific G-code (by 116 participating ACOs) and only 1,772 claims were submitted with both a BE indicator code and a demographic-specific G-code (by just 43 ACOs). Out of the 118,427 SNF episode claims submitted for the SNF 3-day rule waiver, just 14,784 claims were submitted with a BE indicator code, by 75 ACOs.

E.3 Beneficiary Alignment

Exhibit E.11 includes an overview of total beneficiaries aligned and the number and percent of aligned beneficiaries that were voluntarily aligned, by ACO type. Standard ACOs comprised 96% of total aligned beneficiaries in PY 2023, and 60.9% of all New Entrant ACO-aligned beneficiaries were voluntarily aligned.

Exhibit E.11. Beneficiary Voluntary Alignment in PY 2023 by ACO Type

| Alignment | ACO Type | | | Total ACOs |
|---|-------------------|---------------------|--------------------|------------|
| | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Total Aligned Beneficiaries in PY 2023 | 1,956,513 | 67,941 | 21,606 | 2,046,060 |
| Voluntary Aligned Beneficiaries in PY 2023 | 85,007 | 41,382 | 4,317 | 130,706 |
| Voluntary Aligned Percent (%) | 4.3% | 60.9% | 20.0% | 6.4% |

SOURCE: NORC analysis of Medicare FFS claims and enrollment data and ACO REACH programmatic data; PY 2023 Financial Results (n=132 ACOs).

NOTE: This table includes all beneficiaries aligned under the model, including Prospective Plus-aligned beneficiaries, and uses the model’s beneficiary alignment procedures (outlined in the [PY 2023 Financial Operating Guide, Appendix B](#)).

Appendix F: Pulse Check Survey

This appendix presents background information and methodology for the 2023 Pulse Check Survey. The survey instrument used in 2023 is in **Appendix F.1**, **Appendix F.2** and **Appendix F.3** include selected tables displaying 2023 Pulse Check Survey results, with results presented by ACO type and functional role, respectively. Tables include results of significance testing using chi-square and Fisher’s exact tests of independence, where appropriate. Significance at certain threshold levels is indicated by asterisks.

The primary goal of the first Pulse Check Survey, fielded as an online questionnaire in 2021, was to gather data on the status and evolution of the model-related activities that ACOs identified in their applications. The 2022 survey focused on motivations for participating in the model and implementation efforts to date, specifically around beneficiary engagement and provider engagement activities. The 2023 survey focused on gathering some of the same information from the 2022 survey for the ACOs entering the model in 2023, as well as some additional information from all ACOs on care management strategies.

The 2023 Pulse Check Survey was administered through two separate surveys: one for the 2021/2022 ACO starter cohort and another for the 2023 ACO starter cohort. To minimize the burden on the 2021/2022 cohort—who had already responded to the survey in 2022—this group was not asked certain questions they had previously answered. The 2023 ACO starter cohort survey included all questions asked of the 2021/2022 starter cohort while incorporating questions asked in 2022 to capture the full picture of ACO activities. Participation in the survey was a requirement for currently active ACOs; the survey was optional for ACOs involuntarily terminated prior to survey implementation.

- **Timing.** The survey launched on October 23, 2023, and the final response was received on December 13, 2023.
- **Population.** The survey was fielded to all ACOs participating in the ACO REACH Model during PY 2023.
- **Mode.** The survey was fielded via web. Each ACO received a unique link to the online survey to enable tracking of ACO responses and follow-up with non-respondents. Respondents were able to exit the survey and restart where they left off.
- **Completion rates.** We received a completion rate of 100% from the 132 ACOs participating in the model in 2023.

Instrument Development. The survey was developed deductively by focusing on topics and research questions connected to the evaluation’s logic model (**Exhibit A.2**). The survey questions addressed topics listed in **Exhibit F.1**.

Exhibit F.1. Pulse Check Survey Topics, 2023

| Survey Section | Domain of Inquiry |
|------------------------|---|
| Background Information | Motivation to join the ACO REACH Model |
| | Activities related to model participation |
| Beneficiary Engagement | Beneficiary satisfaction |
| | Beneficiary engagement |
| | Access to care |
| | Collection of beneficiary social determinants of health (SDOH) data |
| | Voluntary alignment |
| | Benefit enhancements/Beneficiary engagement incentives |
| Provider Engagement | Participant Provider engagement activities |
| | Participant Provider payment |
| | Preferred Provider payment |
| | Financial risk-sharing |
| Care Management | Extent of care management implementation |
| | Care management program offerings |
| Data Sharing | Number of electronic health records (EHRs) |
| | Data sharing with providers |

Building from the research questions, we refined the instrument to align with the changes to the model in the transition from GPDC to ACO REACH. We then used qualitative data from multiple sources, including content analysis of ACO REACH applications and preliminary qualitative interview insights, to further refine the instrument. The instrument went through multiple rounds of internal revision and CMS review. This iterative process also included discussion around questions for which it was important to have comparable data points on all ACOs at the start of the evaluation (that is, questions asked in the 2022 Pulse Check Survey that should also be asked of the 2023 cohort ACOs), as well as whether certain questions needed to be asked again of the 2022 cohort in 2023. **Appendix F.1** presents the complete set of 2023 survey questions, indicating the specific cohorts to whom each question was administered and detailing the associated skip logic.

To test whether question wording and content accurately measured the intended evaluation constructs, we pilot tested the draft survey instrument with four members of the target population. We incorporated the feedback gathered during pilot testing into the final survey instruments. We also conducted usability testing to ensure correct functionality with respect to survey flow, question display logic, and other programmed features intended to enhance user experience.

Survey Outreach. Because each ACO had multiple points of contact listed, we asked Innovation Center regional coordinators to identify the primary contact at each of their assigned ACOs. Some individuals were listed as the primary contact for multiple ACOs. To reduce burden on participants and ensure that the survey was reaching the correct person, we sent out initial emails to individuals listed as the primary contact for multiple ACOs to: 1) let them know that they were listed as the primary contact for multiple ACOs and would be receiving links to

complete surveys for each ACO and 2) ask if there was an alternative point of contact who should receive and complete the survey for any of their ACOs. In 2022, respondents with multiple ACOs were offered the opportunity to apply responses across all ACOs for which they were responsible. In 2023, respondents were not provided with that option unless they explicitly requested it and attested that their answers to the questions (that is, ACO implementation) would be the same across the ACOs for which they were responsible.

Each primary contact received an initial survey invitation; respondents listed as the primary contact for multiple REACH ACOs received one email with individual links for all ACOs for which they were responsible. In the initial survey invitation to the ACOs, we included an overview of the evaluation and the survey's purpose. The initial invitation also noted the estimated time to complete the survey and whom to contact for assistance. NORC encouraged ACOs to share the survey link with others in the ACO to assist with completing it.

We used several methods to encourage participation in and raise awareness of the survey. First, the Innovation Center included language about the survey in its weekly newsletter to all ACOs participating in the model. Second, we posted a PDF version of the survey on the Innovation Center internal website, 4i, for the ACOs' initial review and reference. ACOs that had not started or completed the survey received follow-up reminder emails on November 3 and November 10, 2023. We also asked CMS regional coordinators to follow up with their ACOs that had not yet completed the survey. Lastly, we regularly monitored a help-desk email account to address questions from the ACOs.

Recoding, Cleaning, and Analytic File Preparation. We recoded the data collected during fielding to produce a final analytic file. We reviewed the recoded data to evaluate the appropriateness and completeness of responses. Using the recoded data, we created summary tables for each survey question. The summary tables included counts for each response option, as well as the percentage of respondents selecting a given response option. Counts and percentages were calculated overall and by ACO type.

Data Dictionary. We developed a data dictionary to serve as a roadmap for those analyzing the survey data. The data dictionary included variable names for each question, variable type (for example, numeric or character), and the question wording. The data dictionary also provided a list of all response option labels and values associated with a given question.

Descriptive Statistical Analysis. Given that the Pulse Check Survey followed a census design with a 100% response rate for the required ACOs, survey weighting and imputation were not necessary. For the purposes of this report, only responses from ACOs participating in the model in PY 2023 were analyzed. Descriptive percentages were calculated for ordinal and nominal responses along with their respective standard deviations and confidence intervals. Additional cross-tabulations were generated to evaluate relationships between certain ACO characteristics (for example, ACO organizational structure and functional role) and survey responses.

F.1 2023 Instrument



Welcome!

We sincerely appreciate your participation in the annual ACO REACH Pulse Check. Pulse Checks are annual surveys conducted as part of the independent evaluation of ACO REACH. The Centers for Medicare & Medicaid Services' (CMS') Center for Medicare and Medicaid Innovation (Innovation Center) has contracted NORC at the University of Chicago to lead the evaluation of the ACO REACH model. NORC is conducting this Pulse Check with partners at L&M Policy Research.

Thank you very much for your assistance and cooperation on this important effort!

What is the purpose of this survey?

The purpose of the survey is to help CMS and other audiences understand the different strategies ACO REACH participants have implemented regarding social determinants of health, voluntary alignment, provider and beneficiary engagement, and care management, as well as their experiences in the model to date.

How will survey results be used?

Survey data will be used to evaluate the ACO REACH model and will complement results from the recent ACO REACH Learning System's Learning Needs Assessment (LNA). Data from this survey will not be used to audit individual ACOs. Responses will be analyzed in aggregate and at the ACO-level and presented in public reports and publications about ACO REACH. At the end of the survey, you have the option of downloading a copy of your responses.

Who is responsible for responding to this survey?

Participation in evaluation activities, including this survey, is required of all ACOs participating in ACO REACH at any time in the 2023 performance year. The survey link has been shared with the person the CMS regional coordinator identified as the primary contact regarding the survey. However, we anticipate that others in the ACO may have information needed to answer the questions. To facilitate consulting with others, you may stop and save your responses to the survey and resume later. You may also share the link to the survey with others in the ACO to assist with completing it.

How long will the survey take to complete? When is it due?

The survey is expected to take approximately 30 minutes to complete. We ask that you submit your responses no later than **November 17, 2023**.

Whom do I contact for assistance?

[Contact information was provided for NORC’s Institutional Review Board, the NORC evaluation team, and the ACO REACH evaluation Contracting Officer Representative.]

INSTRUCTIONS

Please use the “Continue” and “Previous” survey buttons **on the bottom of the screen** to navigate through the questions in the survey. You must use the "Continue" button on the screen after you have responded to a question for your answer to be saved. **Please do not use your browser buttons to navigate through the questions in the survey.** However, you can simply close your internet browser window to exit the survey and any responses completed before closing will be saved.

Lastly, we have provided definitions on certain terms throughout the survey. When available, you can click the lightbulb icon next to the term for more information.

Again, we greatly appreciate your time and participation. Let’s get started!

This survey will be asking about the functions and services performed by the **ACO itself as an entity or its parent company.**

When responding, please do not include functions that may be performed by some practices or providers participating in the ACO but were not initiated at the ACO level.

As a reminder, you are submitting this survey for [INSERT ACO NAME].

The first question explores your ACO’s motivations for participating in ACO REACH.

1. **[ASK ALL]** Which of the following best describes your ACO’s main motivations for participating in ACO REACH? Please use 1, 2, and 3 to rank your ACO’s top 3 motivations in the boxes below.
 - 1 To gain experience with capitated risk
 - 2 To benefit from high shared savings potential
 - 3 To expand our value-based payment portfolio
 - 4 To increase primary care provider alignment
 - 5 To increase specialist provider alignment
 - 6 To deliver value-based care to underserved Medicare beneficiaries
 - 7 None of the above. Please specify other reason:

Now, we would like to ask you about a few specific features of the ACO REACH model.

2. **[ASK OF 2023 COHORT ONLY]** To what extent did each of the following features of ACO REACH influence your ACO’s (or its parent company’s) decision to participate in the model? Select one response per row.
 - a. Lower alignment threshold for certain types of ACOs
 - b. Beneficiary incentives and benefit enhancements
 - c. Capitation
 - d. Qualifies as Advanced Alternative Payment Model; exempt from Merit-Based Incentive Payment
[Note: A type of APM that includes specific features and allows participants to seek Qualifying APM]

Participant status by achieving threshold levels of payments or patients through the Advanced APM. You are excluded from Merit-Based Incentive Payment System (MIPS) reporting requirements and payment adjustments]

- e. **Advanced Payment Option** *[Note: A supplemental payment mechanism available for selection by the ACO for a Performance Year if the ACO also has selected PCC Payment for that Performance Year. If the ACO selects the APO, CMS will make a prospective monthly APO payment to the ACO for APO Eligible Services furnished to aligned beneficiaries by those Participant Providers and Preferred Providers to opt into the APO arrangement.]*
- f. Voluntary alignment
- g. Builds on existing activities or strategies to promote value-based care
- h. Emphasis on provider-led governance
- i. Health equity benchmark adjustment
- j. Other, please specify:
 - 1 To a great extent
 - 2 Somewhat
 - 3 Very little
 - 4 Not at all

3A. **[ASK ALL]** Now we would like to know about different strategies that your ACO may or may not be currently focused on in this performance year. For each of the items listed below, please select the response option that most accurately reflects the perspective of your ACO.

- a. Investments in primary care capacity (staffing, expanded hours)
- b. Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments
- c. Initiatives to encourage referrals to high-quality or Preferred Providers
- d. Complex care management or population-specific care management programs
- e. Initiatives to reduce low value care *[Note: Services that provide little or no benefit to patients, have potential to cause harm, incur unnecessary cost to patients, or waste limited health care resources]*
- f. Initiatives to reduce avoidable inpatient or emergency department utilization
- g. Initiatives to reduce post-acute care utilization
- h. Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation
- i. Emphasis on primary care touchpoints (e.g., annual wellness visits)
- j. Other, please specify:
 - 1 High priority
 - 2 Medium priority
 - 3 Low priority
 - 4 Not a priority

3B. **[ASK ALL: ASK WHERE 3A = HIGH OR MEDIUM PRIORITY]** For which populations is your organization implementing this strategy? Select all that apply.

- a. Investments in primary care capacity (staffing, expanded hours)
- b. Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments
- c. Initiatives to encourage referrals to high-quality or Preferred Providers
- d. Complex care management or population-specific care management programs
- e. Initiatives to reduce low value care
- f. Initiatives to reduce avoidable inpatient or emergency department utilization
- g. Initiatives to reduce post-acute care utilization
- h. Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation
- i. Emphasis on primary care touchpoints (e.g., annual wellness visits)
- j. Other, please specify:
 - 1 ACO REACH-aligned beneficiaries
 - 2 Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible)
 - 3 Other FFS Medicare beneficiaries not in a value-based care contract
 - 4 Medicare Advantage beneficiaries
 - 5 Medicaid/CHIP-only beneficiaries
 - 6 Commercially insured patients
 - 7 Uninsured patients

3C. **[ASK ALL: ASK WHERE 3A = HIGH OR MEDIUM PRIORITY]** For each strategy, please select the response that best reflects your ACO's approach.

- a. Investments in primary care capacity (staffing, expanded hours)
- b. Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments
- c. Initiatives to encourage referrals to high-quality or Preferred Providers
- d. Complex care management or population-specific care management programs
- e. Initiatives to reduce low value care
- f. Initiatives to reduce avoidable inpatient or emergency department utilization
- g. Initiatives to reduce post-acute care utilization
- h. Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation
- i. Emphasis on primary care touchpoints (e.g., annual wellness visits)
- j. Other, please specify:
 - 1 Adopted this strategy primarily due to our participation in ACO REACH
 - 2 Expanded work on this strategy primarily due to our participation in ACO REACH
 - 3 Implemented this strategy independent of our participation in ACO REACH

The next questions explore your ACO's collection and use of Social Determinants of Health (SDOH) data.

4A. **[ASK ALL]** Which of the following best describes your ACO's collection of SDOH data?

- 1 The ACO collected SDOH data before entering the model.
- 2 The ACO recently introduced SDOH data collection to respond to current or future model-related needs.
- 3 The ACO recently introduced SDOH data collection unrelated to the model.
- 4 The ACO does not currently collect SDOH data.

4B. **[ASK ALL]** To what extent is each of the following a challenge that your ACO faces in collecting SDOH data? Select one response per row.

- a. The instruments used to collect these data are not standardized across providers.
- b. These data are collected and stored in different ways across the ACO.
- c. Data collection systems for these data across the ACO are not fully set up.
- d. Providers are reluctant to administer these instruments to their beneficiaries.
- e. Patients are reluctant to provide this information to their providers.
- f. We do not have sufficient financial resources to collect these data.
- g. We do not have sufficient time to collect these data.
- h. The data is not always reliable.
- i. Other, please specify:
 - 1 To a great extent
 - 2 Somewhat
 - 3 Very little
 - 4 Not at all

4C. **[ASK ALL: ASK IF 4A = 1-3]** Is your ACO using any of the following strategies to address the challenges of collecting SDOH data? Please select "Yes" or "No" for each item listed below.

- a. Developing and disseminating standardized instruments across the ACO
- b. Setting up new data pipelines to integrate data across the ACO
- c. Requiring the data be collected in a structured format
- d. Relying on social workers or community health workers to facilitate data collection
- e. Posting questionnaires within patient portals
- f. Developing provider training related to the collection and documentation of these data
- g. Providing practices with resources, such as tablets, for in-office questionnaire completion
- h. Other, please specify:
 - 1 Yes
 - 2 No

4D. **[ASK ALL: ASK IF 4A = 1-3]** Please indicate whether your ACO uses beneficiary SDOH data for each of the following. Please select “Yes” or “No” for each item listed below.

- a. To identify beneficiaries who may benefit from care management
- b. To stratify beneficiaries by characteristics to identify disparities in outcomes
- c. To connect beneficiaries to non-medical community resources, such as food and housing programs
- d. To help allocate resources to different practices across the ACO
- e. Other, please specify:
 - 1 Yes
 - 2 No

Now we have a few questions about how your ACO stores data and shares information across providers.

5. **[ASK ALL]** Please provide the number of electronic health records (EHRs) currently being used by providers within your ACO. Your best estimate is fine.

[NUMERIC OPEN END]

6. **[ASK ALL]** Does your ACO push notifications or flag beneficiary records (such as on a shared data platform or EHR) to alert providers for beneficiaries that meet any of the following criteria? Please select “Yes” or “No” for each item listed below.

- a. With a recent hospitalization or ED visit
- b. Above a certain risk score
- c. With specific clinical conditions or combinations of specific chronic conditions
- d. Due for an annual wellness visit
- e. Due for preventive care screenings
- f. Due for an SDOH/social needs screening
- g. Screened positive for SDOH/social needs
- h. Other, please specify:
 - 1 Yes
 - 2 No

Now we would like to ask you a few questions about strategies your ACO has used to increase voluntary alignment.

7A. **[ASK OF 2023 COHORT ONLY]** Does your ACO currently conduct activities to increase voluntary alignment?

- 1 Yes
- 2 No

7B. **[ASK OF 2023 COHORT ONLY: ASK IF 7A = “Yes”]** Below is a list of different approaches that your ACO may use to increase voluntary alignment. For each one, please indicate whether your ACO uses this approach.

- a. Communicates to beneficiaries through the ACO’s patient portal or via email
- b. Communicates to beneficiaries via mail
- c. Other direct communication to beneficiaries
- d. Training for care managers, other care team members (e.g., social workers), or providers to conduct outreach or educate beneficiaries about voluntary alignment
- e. Training for office or front desk staff to respond to beneficiary questions about voluntary alignment
- f. Presentations for beneficiaries (e.g., via webinar, town hall, information session)
- g. Partner/collaborate with potential referral sources (e.g., community-based organizations such as Area Agencies on Aging)
- h. Outsource outreach to an external vendor
- i. Other strategy (please specify):
 - 1 Yes
 - 2 No

The next questions explore activities your ACO may or may not be using to engage Participant Providers in working toward the goals of ACO REACH or accountable care more broadly.

When answering, please consider the provider engagement activities initiated by the **ACO itself as an entity**. Please do not include activities that may be initiated by practices and providers participating in the ACO. We understand there are a variety of different provider arrangements so some of these questions may be challenging to answer precisely. Please answer to the best of your ability.

Your responses should reflect only the functions or services that your ACO **currently** performs, not those the ACO plans to implement.

8. **[ASK OF 2023 COHORT ONLY]** Does your ACO provide staff or financial support to Participant Providers to provide any of the following services? Please select “Yes” or “No” for each item listed below.

- a. Telehealth
- b. Expanded evening or weekend hours for practices
- c. Urgent care
- d. Extended care *[Note: Extended care refers to services offered by the ACO (not just select practices in the ACO) beyond those offered in a typical primary care practice. Examples include IV fluids, ultrasound, and x-rays.]*
- e. Other support for expanded access to care, please specify:
 - 1 Yes
 - 2 No

9. **[ASK ALL]** Approximately what portion of your ACO's Participant Providers are employed directly by a health system or practice participating in the model?

- 1 All, or 100%
- 2 Less than 100% but more than 50%
- 3 Less than 50% but more than 10%
- 4 Less than 10% but not 0%
- 5 None, or 0%

10. **[ASK OF 2023 COHORT ONLY]** How important are each of the following practice support and improvement activities to your ACO's efforts to engage Participant Providers? Select one response per row.

- a. ACO provides or arranges for centralized population health support staff (e.g., care managers, pharmacist, schedulers/administrative support)
- b. ACO provides or arranges for staff embedded in practices (e.g., administrative, care manager, health educator/coach, social worker)
- c. ACO provides or arranges for investments in infrastructure at the practice level *[Note: Infrastructure refers to Electronic Health Record software, hardware, data analytic support, care delivery tools (e.g., shared decision-making aids, beneficiary survey instruments), and licenses to access tools]*
- d. Data analysis support other than feedback reports on quality, utilization, or cost
- e. Regular meetings between ACO and individual practice leaders
- f. Action-oriented initiatives focusing on small-scale, discrete areas for improvement (e.g., improve completion rates for flu vaccine, increasing number of annual wellness visits)
- g. Training and education sessions
- h. Workflow redesign or optimization support
- i. Other practice support and improvement activities (please specify):
 - 1 Extremely important
 - 2 Very important
 - 3 Moderately important
 - 4 Slightly important
 - 5 Not at all important

11. **[ASK OF 2023 COHORT ONLY]** How important are each of the following information-sharing activities to your ACO's efforts to engage Participant Providers? Select one response per row.
- Feedback reports on quality or utilization with comparisons at the practice level
 - Feedback reports on cost with comparisons at the practice level
 - Feedback reports on quality or utilization with comparisons at the individual clinician level
 - Feedback reports on cost with comparisons at the individual clinician level
 - Coaching or one-on-one review of performance, quality and/or cost data
 - Other information to help providers manage care (e.g., specialty and other service use)
 - Real time data on emergency department (ED) and inpatient admissions, discharges, and transfers (ADTs)
 - Other information sharing activities, please specify:
 - Extremely important
 - Very important
 - Moderately important
 - Slightly important
 - Not at all important
12. **[ASK OF 2023 COHORT ONLY]** How important are each of the following incentives to your ACO's efforts to engage Participant Providers? Select one response per row.
- Financial bonuses tied to performance
 - Financial penalties tied to performance
 - Non-financial awards or recognition tied to performance
 - Upfront payments
 - Other incentives, please specify:
 - Extremely important
 - Very important
 - Moderately important
 - Slightly important
 - Not at all important
13. **[ASK ALL]** Thinking about all the practice supports, information-sharing activities, and financial and non-financial incentives your ACO has been using for provider engagement, how effective would you say these activities have been for your ACO in engaging Participant Providers? Select one response per row.
- Practice support and improvement activities
 - Information sharing activities
 - Financial incentives
 - Non-financial incentives
 - Very effective
 - Somewhat effective
 - Not too effective
 - Not at all effective
 - Not applicable

We are interested in understanding your ACO's payment arrangements with Participant Providers.

14. **[ASK OF 2023 COHORT ONLY]** Does your ACO use any of the following methods to pay Participant Providers? Select one response per row.

- a. Partial fee-for-service
- b. Fee-for-service
- c. Partial capitation
- d. Total capitation
- e. Payments tied to quality thresholds
- f. Other (please specify):
 - 1 ACO uses this method
 - 2 ACO does not use this method

15A. **[ASK OF 2023 COHORT ONLY]** Does your ACO share upside financial risk (savings) directly with the Participant Provider types listed below? Select all that apply.

- a. Individual practitioners who may be employed directly by a health system or practice participating in the model
- b. Physician groups / practices
- c. Networks of individual physician practices or other practitioners
- d. Independent or solo practitioners
- e. Acute care hospitals
- f. Skilled nursing facilities (SNFs)
- g. Home health agencies (HHAs)
- h. Long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs)
- i. Other provider type, please specify:
 - 1 Total ACO savings
 - 2 Service-specific savings
 - 3 Provider type does not participate in ACO
 - 4 Does not share savings with this type of provider

15B. [ASK OF 2023 COHORT ONLY: ASK IF 15A = YES for “Total ACO Savings” and “Service-Specific Savings”]

For upside risk (savings), what portion is shared with each provider type? Select one response per row.

- a. Individual practitioners who may be employed directly by a health system or practice participating in the model
- b. Physician groups / practices
- c. Networks of individual physician practices or other practitioners
- d. Independent or solo practitioners
- e. Acute care hospitals
- f. Skilled nursing facilities (SNFs)
- g. Home health agencies (HHAs)
- h. Long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs)
- i. Other provider type (please specify):
 - 1 More than 50%
 - 2 31-50%
 - 3 11-30%
 - 4 1-10%

15C. [ASK OF 2023 COHORT ONLY] Does your ACO share downside financial risk (losses) directly with the Participant Provider types listed below? Select all that apply.

- a. Individual practitioners who may be employed directly by a health system or practice participating in the model
- b. Physician groups / practices
- c. Networks of individual physician practices or other practitioners
- d. Independent or solo practitioners
- e. Acute care hospitals
- f. Skilled nursing facilities (SNFs)
- g. Home health agencies (HHAs)
- h. Long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs)
- i. Other provider type, please specify:
 - 1 Total ACO losses
 - 2 Service-specific losses
 - 3 Does not share losses with this type of provider

15D. [ASK OF 2023 COHORT ONLY: ASK IF 15C = YES for “Total ACO Losses” and “Service-Specific Losses”]

For downside risk (losses), what portion is shared with each provider type? Select one response per row.

- a. Individual practitioners who may be employed directly by a health system or practice participating in the model
- b. Physician groups / practices
- c. Networks of individual physician practices or other practitioners
- d. Independent or solo practitioners
- e. Acute care hospitals
- f. Skilled nursing facilities (SNFs)
- g. Home health agencies (HHAs)
- h. Long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs)
- i. Other provider type (please specify):
 - 1 More than 50%
 - 2 31-50%
 - 3 11-30%
 - 4 1-10%

16. [ASK OF 2023 COHORT ONLY] Does your ACO use financial rewards and/or penalties with its Preferred Providers? Please select “Yes” or “No” for each item listed below.

- a. ACO uses financial rewards
 - 1 Yes
 - 2 No
- b. ACO uses financial penalties
 - 1 Yes
 - 2 No

These next few questions explore how your ACO uses care management processes and strategies to provide high-value care to your beneficiaries.

17. [ASK ALL] To what extent does your ACO have processes in place for clinicians to engage beneficiaries in decisions involving their care and the self-management of their conditions? Please select the number that applies.

| Few or no processes in place | | | Some processes in place | | | Comprehensive program in place | | |
|------------------------------|---|---|-------------------------|---|---|--------------------------------|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

18. [ASK ALL] To what extent are chronic care management processes and programs in place to manage beneficiaries with high-need, high-cost chronic illnesses? Please select the number that applies.

| Few or no chronic care management processes or programs in place | | | Some chronic care management processes or programs in place | | | Comprehensive chronic care management processes and programs in place | | |
|--|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

19. **[ASK ALL]** To what extent are systems in place to ensure smooth transitions of care across all practice settings, including hospitals, long-term care, home care, adult day care, and community-based health and social services as needed? Please select the number that applies.

| Few or no systems in place | | | Some systems in place | | | Nearly all/all necessary systems in place | | |
|----------------------------|---|---|-----------------------|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

20. **[ASK ALL]** What share of your ACO-attributed hospitalized beneficiaries undergoing a care transition to home or post-acute care facility receive the following services to reduce the risk of readmission? Select one response per row.

- a. Medication reconciliation
- b. Telephone follow-up (within 72 hours of discharge)
- c. In-home follow-up (within 72 hours of discharge)
- d. Standardized processes in place to ensure timely follow-up with primary/specialty care
- e. Discharge summaries are transmitted to clinicians accepting care of the beneficiary
- f. Use of a beneficiary navigator or care manager while beneficiary is in the hospital
- g. Use of a care management or health coach post-discharge

- 1 All
- 2 Most
- 3 Some
- 4 None
- 5 Don't know

21. **[ASK ALL]** For beneficiaries attributed to the ACO, to what extent is a system in place for predictive risk stratification? Please select the number that applies.

| Little or no ability to identify and target beneficiaries using predictive risk stratification | | | Some ability to identify and target beneficiaries using predictive risk stratification | | | Comprehensive ability to identify and target beneficiaries using predictive risk stratification | | |
|--|---|---|--|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

22. **[ASK ALL]** Do you segment high-risk beneficiaries into subgroups based on common needs (e.g., frailty, mental illness, similar combinations of chronic conditions)? Select “Yes” or “No.”

- 1 Yes
- 2 No

23. **[ASK ALL]** Does the ACO offer care management programs to patients that meet any of the following conditions? Select “Yes” or “No” for each response option.

- a. Specific chronic conditions or diseases (e.g., end-stage renal disease, diabetes, COPD, etc.)
- b. Frailty and/or difficulty with activities of daily living
- c. Advanced illness (that requires palliative, hospice, or end-of-life care)
- d. Comorbid conditions
- e. Mental or behavioral health conditions
- f. Health-related social needs
- g. Rising risk for chronic conditions *[Note: Rising risk: Patients with moderate utilization and spending, forecast to become more costly in the future.]*
- h. Recent hospitalization or ED visit

- 1 Yes
- 2 No

24. **[ASK ALL]** Overall, how much of an impact would you say that your ACO’s participation in ACO REACH has had on influencing provider behavior to perform new activities to improve care?

- 1 A major impact
- 2 A minor impact
- 3 No impact

25. **[ASK ALL]** To what extent do you feel that the model, beyond Participating Providers’ prior care delivery processes, is achieving meaningful improvements in patient care?

- 1 To a great extent
- 2 Somewhat
- 3 Very little
- 4 Not at all

26. **[ASK ALL]** Is there anything else you’d like us to know that we did not ask about or any earlier responses you would like to further explain?

[OPEN END]

27. **[ASK ALL]** You have reached the end of the survey. Please list the names and titles of those who helped complete the survey.

[OPEN END]

We thank you for your time spent taking this survey. Your response has been recorded. (Your respondent’s response summary will appear here)

F.2 Selected 2023 Pulse Check Survey Results by ACO Type

These tables present the cross-tabulations of Pulse Check Survey responses by ACO type, with statistical significance testing (chi-square and Fisher’s exact tests, where appropriate) by group. Unless otherwise noted, the sample size (n) for each table is 132. When the n for individual items within a question series vary, the corresponding n for each item, overall and by group, has been noted within that item’s specific table row. In these cases, the overall and by group n will have been removed from the header row. Statistically significant differences between one or more of the groups on a specific question or item and are denoted by an asterisk (*p<0.10, **p<0.05, ***p<0.01); “-” denotes a p-value could not be generated for that question/item.

Question 1. Which of the following best describes your ACO's main motivations for participating in ACO REACH?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Motivation ranked first | | | | | 0.5 |
| To deliver value-based care to underserved Medicare beneficiaries | 54 (41%) | 37 (35%) | 7 (54%) | 10 (71%) | |
| To expand our value-based payment portfolio | 31 (23%) | 27 (26%) | 2 (15%) | 2 (14%) | |
| To benefit from high shared savings potential | 15 (11%) | 12 (11%) | 2 (15%) | 1 (7%) | |
| To increase primary care provider alignment | 14 (11%) | 14 (13%) | 0 (0%) | 0 (0%) | |
| To gain experience with capitated risk | 14 (11%) | 11 (10%) | 2 (15%) | 1 (7%) | |
| To increase specialist provider alignment | 4 (3%) | 4 (4%) | 0 (0%) | 0 (0%) | |
| Other motivation | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Motivation ranked second | | | | | - |
| To deliver value-based care to underserved Medicare beneficiaries | 26 (20%) | 23 (22%) | 2 (15%) | 1 (7%) | |
| To expand our value-based payment portfolio | 28 (21%) | 22 (21%) | 3 (23%) | 3 (21%) | |
| To benefit from high shared savings potential | 31 (23%) | 22 (21%) | 4 (31%) | 5 (36%) | |
| To increase primary care provider alignment | 23 (17%) | 22 (21%) | 1 (8%) | 0 (0%) | |
| To gain experience with capitated risk | 19 (14%) | 13 (12%) | 2 (15%) | 4 (29%) | |
| To increase specialist provider alignment | 2 (2%) | 1 (1%) | 1 (8%) | 0 (0%) | |
| Other motivation | 3 (2%) | 2 (2%) | 0 (0%) | 1 (7%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Motivation ranked third | | | | | - |
| To deliver value-based care to underserved Medicare beneficiaries | 19 (14%) | 15 (14%) | 2 (15%) | 2 (14%) | |
| To expand our value-based payment portfolio | 27 (20%) | 24 (23%) | 3 (23%) | 0 (0%) | |
| To benefit from high shared savings potential | 30 (23%) | 26 (25%) | 3 (23%) | 1 (7%) | |
| To increase primary care provider alignment | 31 (23%) | 21 (20%) | 2 (15%) | 8 (57%) | |
| To gain experience with capitated risk | 11 (8%) | 7 (7%) | 3 (23%) | 1 (7%) | |
| To increase specialist provider alignment | 9 (7%) | 9 (9%) | 0 (0%) | 0 (0%) | |
| Other motivation | 5 (4%) | 3 (3%) | 0 (0%) | 2 (14%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Now, we would like to ask you about a few specific features of the ACO REACH model.

Question 2. To what extent did each of the following features of ACO REACH influence your ACO's (or its parent company's) decision to participate in the model?

Asked of 2023 cohort ACOs

| Item | Overall N=48 | ACO Type | | | p-value |
|---|-----------------|------------------|--------------------|-------------------|-----------|
| | | Standard N=34 | New Entrant N=6 | High Needs N=8 | |
| Lower alignment threshold for certain types of ACOs | | | | | <0.001*** |
| To a great extent | 8 (17%) | 4 (12%) | 4 (67%) | 0 (0%) | |
| Somewhat | 12 (25%) | 3 (9%) | 1 (17%) | 8 (100%) | |
| Very little | 14 (29%) | 13 (38%) | 1 (17%) | 0 (0%) | |
| Not at all | 14 (29%) | 14 (41%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Beneficiary incentives and benefit enhancements | | | | | 0.6 |
| To a great extent | 12 (25%) | 10 (29%) | 1 (17%) | 1 (13%) | |
| Somewhat | 22 (46%) | 15 (44%) | 2 (33%) | 5 (63%) | |
| Very little | 12 (25%) | 8 (24%) | 2 (33%) | 2 (25%) | |
| Not at all | 2 (4%) | 1 (3%) | 1 (17%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Capitation | | | | | >0.9 |
| To a great extent | 35 (73%) | 25 (74%) | 4 (67%) | 6 (75%) | |
| Somewhat | 11 (23%) | 7 (21%) | 2 (33%) | 2 (25%) | |
| Very little | 2 (4%) | 2 (6%) | 0 (0%) | 0 (0%) | |
| Not at all | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Qualifies as Advanced Alternative Payment Model; exempt from Merit-Based Incentive Payment | | | | | 0.4 |
| To a great extent | 15 (31%) | 13 (38%) | 1 (17%) | 1 (13%) | |
| Somewhat | 16 (33%) | 11 (32%) | 2 (33%) | 3 (38%) | |
| Very little | 4 (8%) | 4 (12%) | 0 (0%) | 0 (0%) | |
| Not at all | 13 (27%) | 6 (18%) | 3 (50%) | 4 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Advanced Payment Option | | | | | 0.4 |
| To a great extent | 19 (40%) | 12 (35%) | 2 (33%) | 5 (63%) | |
| Somewhat | 15 (31%) | 11 (32%) | 1 (17%) | 3 (38%) | |

| Item | Overall N=48 | ACO Type | | | p-value |
|--|-----------------|------------------|--------------------|-------------------|----------|
| | | Standard N=34 | New Entrant N=6 | High Needs N=8 | |
| Very little | 10 (21%) | 7 (21%) | 3 (50%) | 0 (0%) | |
| Not at all | 4 (8%) | 4 (12%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Voluntary alignment | | | | | 0.002*** |
| To a great extent | 18 (38%) | 7 (21%) | 4 (67%) | 7 (88%) | |
| Somewhat | 21 (44%) | 20 (59%) | 1 (17%) | 0 (0%) | |
| Very little | 8 (17%) | 6 (18%) | 1 (17%) | 1 (13%) | |
| Not at all | 1 (2%) | 1 (3%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Builds on existing activities or strategies to promote value-based care | | | | | 0.3 |
| To a great extent | 40 (83%) | 28 (82%) | 4 (67%) | 8 (100%) | |
| Somewhat | 8 (17%) | 6 (18%) | 2 (33%) | 0 (0%) | |
| Very little | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Not at all | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Emphasis on provider-led governance | | | | | 0.11 |
| To a great extent | 13 (27%) | 9 (26%) | 4 (67%) | 0 (0%) | |
| Somewhat | 29 (60%) | 19 (56%) | 2 (33%) | 8 (100%) | |
| Very little | 2 (4%) | 2 (6%) | 0 (0%) | 0 (0%) | |
| Not at all | 4 (8%) | 4 (12%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Benchmark adjustment | | | | | 0.7 |
| To a great extent | 13 (27%) | 11 (32%) | 1 (17%) | 1 (13%) | |
| Somewhat | 25 (52%) | 16 (47%) | 3 (50%) | 6 (75%) | |
| Very little | 6 (13%) | 4 (12%) | 1 (17%) | 1 (13%) | |
| Not at all | 4 (8%) | 3 (9%) | 1 (17%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other, please specify: (if not applicable, select "Not at all") | | | | | >0.9 |
| To a great extent | 2 (4%) | 2 (6%) | 0 (0%) | 0 (0%) | |
| Somewhat | 2 (4%) | 2 (6%) | 0 (0%) | 0 (0%) | |
| Very little | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=48 | ACO Type | | | p-value |
|-----------------|-----------------|------------------|--------------------|-------------------|---------|
| | | Standard N=34 | New Entrant N=6 | High Needs N=8 | |
| Not at all | 39 (81%) | 26 (76%) | 5 (83%) | 8 (100%) | |
| Respondent skip | 5 (10%) | 4 (12%) | 1 (17%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 3A. Now we would like to know about different strategies that your ACO may or may not be currently focused on in this performance year. For each of the items listed below, please select the response option that most accurately reflects the perspective of your ACO.

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|-----------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Investments in primary care capacity (staffing, expanded hours) | | | | | 0.12 |
| High priority | 65 (49%) | 53 (50%) | 7 (54%) | 5 (36%) | |
| Medium priority | 35 (27%) | 26 (25%) | 5 (38%) | 4 (29%) | |
| Low priority | 22 (17%) | 20 (19%) | 1 (8%) | 1 (7%) | |
| Not a priority | 10 (8%) | 6 (6%) | 0 (0%) | 4 (29%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments | | | | | 0.5 |
| High priority | 25 (19%) | 19 (18%) | 4 (31%) | 2 (14%) | |
| Medium priority | 55 (42%) | 45 (43%) | 3 (23%) | 7 (50%) | |
| Low priority | 42 (32%) | 31 (30%) | 6 (46%) | 5 (36%) | |
| Not a priority | 10 (8%) | 10 (10%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Initiatives to encourage referrals to high-quality or Preferred Providers | | | | | 0.2 |
| High priority | 52 (39%) | 45 (43%) | 4 (31%) | 3 (21%) | |
| Medium priority | 39 (30%) | 31 (30%) | 5 (38%) | 3 (21%) | |
| Low priority | 35 (27%) | 23 (22%) | 4 (31%) | 8 (57%) | |
| Not a priority | 6 (5%) | 6 (6%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Complex care management or population-specific care management programs | | | | | <0.001*** |
| High priority | 94 (71%) | 83 (79%) | 5 (38%) | 6 (43%) | |
| Medium priority | 24 (18%) | 15 (14%) | 6 (46%) | 3 (21%) | |
| Low priority | 13 (10%) | 6 (6%) | 2 (15%) | 5 (36%) | |
| Not a priority | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|-----------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Initiatives to reduce low value care | | | | | 0.09* |
| High priority | 52 (39%) | 40 (38%) | 2 (15%) | 10 (71%) | |
| Medium priority | 47 (36%) | 37 (35%) | 8 (62%) | 2 (14%) | |
| Low priority | 26 (20%) | 21 (20%) | 3 (23%) | 2 (14%) | |
| Not a priority | 7 (5%) | 7 (7%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Initiatives to reduce avoidable inpatient or emergency department utilization | | | | | 0.5 |
| High priority | 116 (88%) | 91 (87%) | 11 (85%) | 14 (100%) | |
| Medium priority | 15 (11%) | 13 (12%) | 2 (15%) | 0 (0%) | |
| Low priority | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Not a priority | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Initiatives to reduce post-acute care utilization | | | | | 0.7 |
| High priority | 81 (61%) | 63 (60%) | 8 (62%) | 10 (71%) | |
| Medium priority | 37 (28%) | 30 (29%) | 5 (38%) | 2 (14%) | |
| Low priority | 12 (9%) | 10 (10%) | 0 (0%) | 2 (14%) | |
| Not a priority | 2 (2%) | 2 (2%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation | | | | | 0.6 |
| High priority | 58 (44%) | 47 (45%) | 6 (46%) | 5 (36%) | |
| Medium priority | 56 (42%) | 43 (41%) | 7 (54%) | 6 (43%) | |
| Low priority | 17 (13%) | 14 (13%) | 0 (0%) | 3 (21%) | |
| Not a priority | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Emphasis on primary care touchpoints (e.g., annual wellness visits) | | | | | <0.001*** |
| High priority | 99 (75%) | 84 (80%) | 7 (54%) | 8 (57%) | |
| Medium priority | 28 (21%) | 20 (19%) | 6 (46%) | 2 (14%) | |
| Low priority | 5 (4%) | 1 (1%) | 0 (0%) | 4 (29%) | |
| Not a priority | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other, please specify: (if not applicable, select "Not a priority") | | | | | 0.5 |
| High priority | 5 (4%) | 5 (5%) | 0 (0%) | 0 (0%) | |
| Medium priority | 3 (2%) | 2 (2%) | 0 (0%) | 1 (7%) | |
| Low priority | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Not a priority | 108 (82%) | 84 (80%) | 11 (85%) | 13 (93%) | |
| Respondent skip | 16 (12%) | 14 (13%) | 2 (15%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 3B. For which patient populations is your organization implementing this strategy? Select all that apply.

Asked of ACOs that said each was at least a medium priority; Q3A = "high" or "medium" priority

| Item | Overall | ACO Type | | | p-value |
|---|----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Investments in primary care capacity such as non-physician providers, after-hours care (n¹) | 100 | 79 | 12 | 9 | |
| ACO REACH-aligned beneficiaries | 99 (99%) | 78 (99%) | 12 (100%) | 9 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 50 (50%) | 39 (49%) | 6 (50%) | 5 (56%) | >0.9 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 39 (39%) | 29 (37%) | 6 (50%) | 4 (44%) | 0.7 |
| Medicare Advantage beneficiaries | 74 (74%) | 61 (77%) | 9 (75%) | 4 (44%) | 0.13 |
| Medicaid/CHIP-only beneficiaries | 39 (39%) | 32 (41%) | 2 (17%) | 5 (56%) | 0.2 |
| Commercially insured patients | 45 (45%) | 37 (47%) | 4 (33%) | 4 (44%) | 0.7 |
| Uninsured patients | 22 (22%) | 17 (22%) | 1 (8%) | 4 (44%) | 0.15 |
| Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments (n¹) | 80 | 64 | 7 | 9 | |
| ACO REACH-aligned beneficiaries | 72 (90%) | 57 (89%) | 6 (86%) | 9 (100%) | 0.5 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 38 (48%) | 31 (48%) | 4 (57%) | 3 (33%) | 0.7 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 23 (29%) | 18 (28%) | 2 (29%) | 3 (33%) | >0.9 |
| Medicare Advantage beneficiaries | 50 (63%) | 41 (64%) | 6 (86%) | 3 (33%) | 0.10 |
| Medicaid/CHIP-only beneficiaries | 29 (36%) | 26 (41%) | 0 (0%) | 3 (33%) | 0.091* |
| Commercially insured patients | 29 (36%) | 25 (39%) | 2 (29%) | 2 (22%) | 0.6 |
| Uninsured patients | 9 (11%) | 7 (11%) | 0 (0%) | 2 (22%) | 0.4 |
| Initiatives to encourage referrals to high-quality or Preferred Providers (n¹) | 91 | 76 | 9 | 6 | |
| ACO REACH-aligned beneficiaries | 86 (95%) | 72 (95%) | 8 (89%) | 6 (100%) | 0.6 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 43 (47%) | 36 (47%) | 3 (33%) | 4 (67%) | 0.5 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 29 (32%) | 22 (29%) | 5 (56%) | 2 (33%) | 0.3 |
| Medicare Advantage beneficiaries | 58 (64%) | 49 (64%) | 6 (67%) | 3 (50%) | 0.8 |
| Medicaid/CHIP-only beneficiaries | 24 (26%) | 20 (26%) | 2 (22%) | 2 (33%) | 0.9 |

| Item | Overall | ACO Type | | | p-value |
|--|-----------|-----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Commercially insured patients | 34 (37%) | 27 (36%) | 5 (56%) | 2 (33%) | 0.5 |
| Uninsured patients | 10 (11%) | 8 (11%) | 0 (0%) | 2 (33%) | 0.14 |
| Complex care management or population-specific care management programs (n¹) | 118 | 98 | 11 | 9 | |
| ACO REACH-aligned beneficiaries | 116 (98%) | 96 (98%) | 11 (100%) | 9 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 53 (45%) | 43 (44%) | 5 (45%) | 5 (56%) | 0.9 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 32 (27%) | 22 (22%) | 6 (55%) | 4 (44%) | 0.034** |
| Medicare Advantage beneficiaries | 85 (72%) | 71 (72%) | 9 (82%) | 5 (56%) | 0.4 |
| Medicaid/CHIP-only beneficiaries | 30 (25%) | 25 (26%) | 2 (18%) | 3 (33%) | 0.8 |
| Commercially insured patients | 39 (33%) | 33 (34%) | 4 (36%) | 2 (22%) | 0.9 |
| Uninsured patients | 12 (10%) | 9 (9%) | 0 (0%) | 3 (33%) | 0.055* |
| Initiatives to reduce low value care (n¹) | 99 | 77 | 10 | 12 | |
| ACO REACH-aligned beneficiaries | 95 (96%) | 73 (95%) | 10 (100%) | 12 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 45 (45%) | 35 (45%) | 5 (50%) | 5 (42%) | >0.9 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 33 (33%) | 23 (30%) | 6 (60%) | 4 (33%) | 0.2 |
| Medicare Advantage beneficiaries | 62 (63%) | 49 (64%) | 8 (80%) | 5 (42%) | 0.2 |
| Medicaid/CHIP-only beneficiaries | 32 (32%) | 25 (32%) | 3 (30%) | 4 (33%) | >0.9 |
| Commercially insured patients | 42 (42%) | 35 (45%) | 4 (40%) | 3 (25%) | 0.5 |
| Uninsured patients | 14 (14%) | 11 (14%) | 0 (0%) | 3 (25%) | 0.2 |
| Initiatives to reduce avoidable inpatient or emergency department utilization (n¹) | 131 | 104 | 13 | 14 | |
| ACO REACH-aligned beneficiaries | 130 (99%) | 103 (99%) | 13 (100%) | 14 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 61 (47%) | 50 (48%) | 6 (46%) | 5 (36%) | 0.7 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 38 (29%) | 29 (28%) | 5 (38%) | 4 (29%) | 0.7 |
| Medicare Advantage beneficiaries | 91 (69%) | 77 (74%) | 9 (69%) | 5 (36%) | 0.019** |
| Medicaid/CHIP-only beneficiaries | 43 (33%) | 36 (35%) | 2 (15%) | 5 (36%) | 0.4 |
| Commercially insured patients | 48 (37%) | 41 (39%) | 3 (23%) | 4 (29%) | 0.5 |
| Uninsured patients | 17 (13%) | 13 (13%) | 0 (0%) | 4 (29%) | 0.073* |
| Initiatives to reduce post-acute care utilization (n¹) | 118 | 93 | 13 | 12 | |

| Item | Overall | ACO Type | | | p-value |
|---|-----------|-----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| ACO REACH-aligned beneficiaries | 114 (97%) | 89 (96%) | 13 (100%) | 12 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 51 (43%) | 42 (45%) | 6 (46%) | 3 (25%) | 0.4 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 28 (24%) | 21 (23%) | 5 (38%) | 2 (17%) | 0.4 |
| Medicare Advantage beneficiaries | 72 (61%) | 60 (65%) | 9 (69%) | 3 (25%) | 0.027** |
| Medicaid/CHIP-only beneficiaries | 29 (25%) | 24 (26%) | 2 (15%) | 3 (25%) | 0.8 |
| Commercially insured patients | 34 (29%) | 29 (31%) | 3 (23%) | 2 (17%) | 0.7 |
| Uninsured patients | 8 (7%) | 6 (6%) | 0 (0%) | 2 (17%) | 0.3 |
| Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation (n¹) | 114 | 90 | 13 | 11 | |
| ACO REACH-aligned beneficiaries | 111 (97%) | 87 (97%) | 13 (100%) | 11 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 43 (38%) | 35 (39%) | 3 (23%) | 5 (45%) | 0.5 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 27 (24%) | 18 (20%) | 5 (38%) | 4 (36%) | 0.2 |
| Medicare Advantage beneficiaries | 66 (58%) | 52 (58%) | 9 (69%) | 5 (45%) | 0.5 |
| Medicaid/CHIP-only beneficiaries | 33 (29%) | 28 (31%) | 1 (8%) | 4 (36%) | 0.2 |
| Commercially insured patients | 27 (24%) | 21 (23%) | 3 (23%) | 3 (27%) | >0.9 |
| Uninsured patients | 13 (11%) | 10 (11%) | 0 (0%) | 3 (27%) | 0.093* |
| Emphasis on primary care touchpoints (e.g., annual wellness visits; n¹) | 127 | 104 | 13 | 10 | |
| ACO REACH-aligned beneficiaries | 126 (99%) | 103 (99%) | 13 (100%) | 10 (100%) | >0.9 |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 58 (46%) | 47 (45%) | 5 (38%) | 6 (60%) | 0.6 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 37 (29%) | 25 (24%) | 7 (54%) | 5 (50%) | 0.028** |
| Medicare Advantage beneficiaries | 89 (70%) | 74 (71%) | 10 (77%) | 5 (50%) | 0.3 |
| Medicaid/CHIP-only beneficiaries | 39 (31%) | 31 (30%) | 3 (23%) | 5 (50%) | 0.3 |
| Commercially insured patients | 45 (35%) | 37 (36%) | 4 (31%) | 4 (40%) | 0.9 |
| Uninsured patients | 15 (12%) | 10 (10%) | 1 (8%) | 4 (40%) | 0.028** |
| Other priority specified in 3A (n¹) | 8 | 7 | 0 | 1 | |
| ACO REACH-aligned beneficiaries | 7 (88%) | 6 (86%) | 0 (NA%) | 1 (100%) | >0.9 |

| Item | Overall | ACO Type | | | p-value |
|--|---------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Other FFS Medicare beneficiaries in a value-based care contract (e.g., MSSP or managed care contracts for dually eligible) | 4 (50%) | 3 (43%) | 0 (NA%) | 1 (100%) | >0.9 |
| Other FFS Medicare beneficiaries not in a value-based care contract | 4 (50%) | 3 (43%) | 0 (NA%) | 1 (100%) | >0.9 |
| Medicare Advantage beneficiaries | 5 (63%) | 4 (57%) | 0 (NA%) | 1 (100%) | >0.9 |
| Medicaid/CHIP-only beneficiaries | 4 (50%) | 3 (43%) | 0 (NA%) | 1 (100%) | >0.9 |
| Commercially insured patients | 2 (25%) | 1 (14%) | 0 (NA%) | 1 (100%) | 0.3 |
| Uninsured patients | 2 (25%) | 1 (14%) | 0 (NA%) | 1 (100%) | 0.3 |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test and Pearson’s Chi-squared test.
 *p<0.10; **p<0.05; ***p<0.01.

3C. For each strategy, please select the response that best reflects your ACO's approach.

Asked of ACOs that said each was at least a medium priority; Q3A = "high" or "medium" priority

| Item | Overall | ACO Type | | | p-value |
|---|----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Investments in primary care capacity such as non-physician providers, after-hours care | 100 | 79 | 12 | 9 | 0.10* |
| Adopted this strategy primarily due to our participation in ACO REACH | 10 (10%) | 6 (8%) | 3 (25%) | 1 (11%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 51 (51%) | 40 (51%) | 4 (33%) | 7 (78%) | |
| Implemented this strategy independent of our participation in ACO REACH | 39 (39%) | 33 (42%) | 5 (42%) | 1 (11%) | |
| Investments in behavioral health capacity such as behavioral health professionals, telehealth appointments | 80 | 64 | 7 | 9 | 0.3 |
| Adopted this strategy primarily due to our participation in ACO REACH | 19 (24%) | 13 (20%) | 1 (14%) | 5 (56%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 28 (35%) | 24 (38%) | 2 (29%) | 2 (22%) | |
| Implemented this strategy independent of our participation in ACO REACH | 29 (36%) | 24 (38%) | 3 (43%) | 2 (22%) | |
| Respondent skip | 4 (5%) | 3 (5%) | 1 (14%) | 0 (0%) | |
| Initiatives to encourage referrals to high-quality or Preferred Providers | 91 | 76 | 9 | 6 | 0.8 |
| Adopted this strategy primarily due to our participation in ACO REACH | 19 (21%) | 17 (22%) | 1 (11%) | 1 (17%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 45 (49%) | 38 (50%) | 5 (56%) | 2 (33%) | |
| Implemented this strategy independent of our participation in ACO REACH | 26 (29%) | 20 (26%) | 3 (33%) | 3 (50%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Complex care management or population-specific care management programs | 118 | 98 | 11 | 9 | 0.7 |
| Adopted this strategy primarily due to our participation in ACO REACH | 22 (19%) | 18 (18%) | 2 (18%) | 2 (22%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 56 (47%) | 45 (46%) | 5 (45%) | 6 (67%) | |
| Implemented this strategy independent of our participation in ACO REACH | 39 (33%) | 34 (35%) | 4 (36%) | 1 (11%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Initiatives to reduce low value care | 99 | 77 | 10 | 12 | 0.14 |
| Adopted this strategy primarily due to our participation in ACO REACH | 23 (23%) | 14 (18%) | 2 (20%) | 7 (58%) | |

| Item | Overall | ACO Type | | | p-value |
|---|------------|------------|-------------|------------|----------------|
| | | Standard | New Entrant | High Needs | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 37 (37%) | 32 (42%) | 3 (30%) | 2 (17%) | |
| Implemented this strategy independent of our participation in ACO REACH | 36 (36%) | 28 (36%) | 5 (50%) | 3 (25%) | |
| Respondent skip | 3 (3%) | 3 (4%) | 0 (0%) | 0 (0%) | |
| Initiatives to reduce avoidable inpatient or emergency department utilization | 131 | 104 | 13 | 14 | 0.6 |
| Adopted this strategy primarily due to our participation in ACO REACH | 23 (18%) | 16 (15%) | 2 (15%) | 5 (36%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 57 (44%) | 47 (45%) | 5 (38%) | 5 (36%) | |
| Implemented this strategy independent of our participation in ACO REACH | 50 (38%) | 40 (38%) | 6 (46%) | 4 (29%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Initiatives to reduce post-acute care utilization | 118 | 93 | 13 | 12 | 0.5 |
| Adopted this strategy primarily due to our participation in ACO REACH | 28 (24%) | 20 (22%) | 2 (15%) | 6 (50%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 44 (37%) | 35 (38%) | 6 (46%) | 3 (25%) | |
| Implemented this strategy independent of our participation in ACO REACH | 43 (36%) | 35 (38%) | 5 (38%) | 3 (25%) | |
| Respondent skip | 3 (3%) | 3 (3%) | 0 (0%) | 0 (0%) | |
| Initiatives to address beneficiaries' social needs, such as food insecurity, housing, and transportation | 114 | 90 | 13 | 11 | 0.8 |
| Adopted this strategy primarily due to our participation in ACO REACH | 34 (30%) | 25 (28%) | 4 (31%) | 5 (45%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 55 (48%) | 43 (48%) | 7 (54%) | 5 (45%) | |
| Implemented this strategy independent of our participation in ACO REACH | 24 (21%) | 21 (23%) | 2 (15%) | 1 (9%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Emphasis on primary care touchpoints (e.g., annual wellness visits) | 127 | 104 | 13 | 10 | 0.6 |
| Adopted this strategy primarily due to our participation in ACO REACH | 18 (14%) | 15 (14%) | 3 (23%) | 0 (0%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 61 (48%) | 48 (46%) | 6 (46%) | 7 (70%) | |
| Implemented this strategy independent of our participation in ACO REACH | 47 (37%) | 40 (38%) | 4 (31%) | 3 (30%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Other priority specified in 3A | 8 | 7 | 0 | 1 | >0.9 |

| Item | Overall | ACO Type | | | p-value |
|--|---------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Adopted this strategy primarily due to our participation in ACO REACH | 3 (38%) | 3 (43%) | 0 (NA%) | 0 (0%) | |
| Expanded work on this strategy primarily due to our participation in ACO REACH | 3 (38%) | 2 (29%) | 0 (NA%) | 1 (100%) | |
| Implemented this strategy independent of our participation in ACO REACH | 1 (13%) | 1 (14%) | 0 (NA%) | 0 (0%) | |
| Respondent skip | 1 (13%) | 1 (14%) | 0 (NA%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 4A. Which of the following best describes your ACO's collection of SDOH data?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.018** |
| The ACO collected SDOH data before entering the model. | 37 (28%) | 32 (30%) | 5 (38%) | 0 (0%) | |
| The ACO recently introduced SDOH data collection to respond to current or future model-related needs. | 77 (58%) | 58 (55%) | 5 (38%) | 14 (100%) | |
| The ACO recently introduced SDOH data collection unrelated to the model. | 10 (8%) | 9 (9%) | 1 (8%) | 0 (0%) | |
| The ACO does not currently collect SDOH data. | 8 (6%) | 6 (6%) | 2 (15%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 4B. To what extent is each of the following a challenge that your ACO faces in collecting SDOH data? Select one response per row.

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| The instruments used to collect these data are not standardized across providers. | | | | | 0.079* |
| To a great extent | 59 (45%) | 48 (46%) | 3 (23%) | 8 (57%) | |
| Somewhat | 41 (31%) | 34 (32%) | 5 (38%) | 2 (14%) | |
| Very little | 15 (11%) | 8 (8%) | 4 (31%) | 3 (21%) | |
| Not at all | 17 (13%) | 15 (14%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| These data are collected and stored in different ways across the ACO. | | | | | 0.3 |
| To a great extent | 67 (51%) | 54 (51%) | 5 (38%) | 8 (57%) | |
| Somewhat | 31 (23%) | 23 (22%) | 5 (38%) | 3 (21%) | |
| Very little | 15 (11%) | 10 (10%) | 2 (15%) | 3 (21%) | |
| Not at all | 19 (14%) | 18 (17%) | 1 (8%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Data collection systems for these data across the ACO are not fully set up. | | | | | 0.6 |
| To a great extent | 58 (44%) | 48 (46%) | 3 (23%) | 7 (50%) | |
| Somewhat | 47 (36%) | 36 (34%) | 6 (46%) | 5 (36%) | |
| Very little | 13 (10%) | 9 (9%) | 3 (23%) | 1 (7%) | |
| Not at all | 14 (11%) | 12 (11%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Providers are reluctant to administer these instruments to their beneficiaries. | | | | | 0.029** |
| To a great extent | 34 (26%) | 30 (29%) | 1 (8%) | 3 (21%) | |
| Somewhat | 45 (34%) | 36 (34%) | 7 (54%) | 2 (14%) | |
| Very little | 40 (30%) | 26 (25%) | 5 (38%) | 9 (64%) | |
| Not at all | 13 (10%) | 13 (12%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Patients are reluctant to provide this information to their providers. | | | | | 0.045** |
| To a great extent | 35 (27%) | 29 (28%) | 4 (31%) | 2 (14%) | |
| Somewhat | 65 (49%) | 53 (50%) | 7 (54%) | 5 (36%) | |
| Very little | 21 (16%) | 12 (11%) | 2 (15%) | 7 (50%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Not at all | 11 (8%) | 11 (10%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| We do not have sufficient financial resources to collect these data. | | | | | 0.13 |
| To a great extent | 21 (16%) | 18 (17%) | 3 (23%) | 0 (0%) | |
| Somewhat | 34 (26%) | 27 (26%) | 4 (31%) | 3 (21%) | |
| Very little | 48 (36%) | 34 (32%) | 4 (31%) | 10 (71%) | |
| Not at all | 29 (22%) | 26 (25%) | 2 (15%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| We do not have sufficient time to collect these data. | | | | | 0.2 |
| To a great extent | 28 (21%) | 25 (24%) | 3 (23%) | 0 (0%) | |
| Somewhat | 60 (45%) | 43 (41%) | 6 (46%) | 11 (79%) | |
| Very little | 25 (19%) | 20 (19%) | 3 (23%) | 2 (14%) | |
| Not at all | 19 (14%) | 17 (16%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| The data is not always reliable. | | | | | 0.5 |
| To a great extent | 10 (8%) | 9 (9%) | 1 (8%) | 0 (0%) | |
| Somewhat | 61 (46%) | 45 (43%) | 8 (62%) | 8 (57%) | |
| Very little | 46 (35%) | 36 (34%) | 4 (31%) | 6 (43%) | |
| Not at all | 15 (11%) | 15 (14%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other, please specify: (if not applicable, select "Not at all") | | | | | 0.7 |
| To a great extent | 10 (8%) | 9 (9%) | 1 (8%) | 0 (0%) | |
| Somewhat | 4 (3%) | 4 (4%) | 0 (0%) | 0 (0%) | |
| Very little | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Not at all | 104 (79%) | 80 (76%) | 10 (77%) | 14 (100%) | |
| Respondent skip | 14 (11%) | 12 (11%) | 2 (15%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 4C. Is your ACO using any of the following strategies to address the challenges of collecting SDOH data?

Asked of ACOs that collect SDOH data; Q4A="The ACO collected SDOH data before entering the model," "The ACO recently introduced SDOH data collection to respond to current or future model-related needs," or "The ACO recently introduced SDOH data collection unrelated to the model."

| Item | Overall N=124 | ACO Type | | | p-value |
|--|------------------|------------------|---------------------|--------------------|---------|
| | | Standard N=99 | New Entrant N=11 | High Needs N=14 | |
| Developing and disseminating standardized instruments across the ACO. | | | | | 0.8 |
| Yes | 100 (81%) | 78 (79%) | 10 (91%) | 12 (86%) | |
| No | 24 (19%) | 21 (21%) | 1 (9%) | 2 (14%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Setting up new data pipelines to integrate data across the ACO. | | | | | 0.6 |
| Yes | 99 (80%) | 77 (78%) | 10 (91%) | 12 (86%) | |
| No | 25 (20%) | 22 (22%) | 1 (9%) | 2 (14%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Requiring the data be collected in a structured format. | | | | | 0.2 |
| Yes | 105 (85%) | 81 (82%) | 10 (91%) | 14 (100%) | |
| No | 19 (15%) | 18 (18%) | 1 (9%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Relying on social workers or community health workers to facilitate data collection. | | | | | 0.6 |
| Yes | 61 (49%) | 48 (48%) | 7 (64%) | 6 (43%) | |
| No | 63 (51%) | 51 (52%) | 4 (36%) | 8 (57%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Posting questionnaires within patient portals. | | | | | 0.041** |
| Yes | 54 (44%) | 48 (48%) | 4 (36%) | 2 (14%) | |
| No | 70 (56%) | 51 (52%) | 7 (64%) | 12 (86%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Developing provider training related to the collection and documentation of these data. | | | | | 0.7 |
| Yes | 103 (83%) | 81 (82%) | 9 (82%) | 13 (93%) | |
| No | 21 (17%) | 18 (18%) | 2 (18%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=124 | ACO Type | | | p-value |
|--|------------------|------------------|---------------------|--------------------|---------|
| | | Standard N=99 | New Entrant N=11 | High Needs N=14 | |
| Providing practices with resources, such as tablets, for in-office questionnaire completion | | | | | 0.8 |
| Yes | 46 (37%) | 38 (38%) | 4 (36%) | 4 (29%) | |
| No | 78 (63%) | 61 (62%) | 7 (64%) | 10 (71%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other, please specify: (if not applicable, select "No") | | | | | 0.6 |
| Yes | 8 (6%) | 7 (7%) | 1 (9%) | 0 (0%) | |
| No | 104 (84%) | 81 (82%) | 9 (82%) | 14 (100%) | |
| Respondent skip | 12 (10%) | 11 (11%) | 1 (9%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 4D. Please indicate whether your ACO uses beneficiary SDOH data for each of the following.

Asked of ACOs that collect SDOH data; Q4A="The ACO collected SDOH data before entering the model", "The ACO recently introduced SDOH data collection to respond to current or future model-related needs", or "The ACO recently introduced SDOH data collection unrelated to the model."

| Item | Overall N=124 | ACO Type | | | p-value |
|---|------------------|------------------|---------------------|--------------------|---------|
| | | Standard N=99 | New Entrant N=11 | High Needs N=14 | |
| To identify beneficiaries who may benefit from care management | | | | | 0.5 |
| Yes | 96 (77%) | 78 (79%) | 9 (82%) | 9 (64%) | |
| No | 28 (23%) | 21 (21%) | 2 (18%) | 5 (36%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| To stratify beneficiaries by characteristics to identify disparities in outcomes | | | | | >0.9 |
| Yes | 82 (66%) | 65 (66%) | 7 (64%) | 10 (71%) | |
| No | 42 (34%) | 34 (34%) | 4 (36%) | 4 (29%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| To connect beneficiaries to non-medical community resources, such as food and housing programs | | | | | 0.6 |
| Yes | 98 (79%) | 76 (77%) | 10 (91%) | 12 (86%) | |
| No | 26 (21%) | 23 (23%) | 1 (9%) | 2 (14%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| To help allocate resources to different practices across the ACO | | | | | 0.5 |
| Yes | 53 (43%) | 43 (43%) | 3 (27%) | 7 (50%) | |
| No | 71 (57%) | 56 (57%) | 8 (73%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other, please specify: (if not applicable, select "No") | | | | | 0.6 |
| Yes | 8 (6%) | 8 (8%) | 0 (0%) | 0 (0%) | |
| No | 104 (84%) | 80 (81%) | 10 (91%) | 14 (100%) | |
| Respondent skip | 12 (10%) | 11 (11%) | 1 (9%) | 0 (0%) | |

¹Results are presented as both an n and percentage.

²Fisher's exact test

³*p<0.10; **p<0.05; ***p<0.01

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher's exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 5. Please provide the number of electronic health records (EHRs) currently being used by providers within your ACO. Your best estimate is fine.

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|-------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Median (Min, Max) | 6 (1, 75) | 6 (1, 75) | 4 (1, 25) | 6 (1, 24) | 0.3 |

NOTE: P-value calculated using Kruskal-Wallis rank sum test. *p<0.10; **p<0.05; ***p<0.01.

Question 6. Does your ACO push notifications or flag beneficiary records (such as on a shared data platform or EHR) to alert providers for beneficiaries that meet any of the following criteria?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|-----------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| With a recent hospitalization or ED visit | | | | | 0.3 |
| Yes | 108 (82%) | 88 (84%) | 11 (85%) | 9 (64%) | |
| No | 24 (18%) | 17 (16%) | 2 (15%) | 5 (36%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Above a certain risk score | | | | | 0.13 |
| Yes | 86 (65%) | 64 (61%) | 10 (77%) | 12 (86%) | |
| No | 46 (35%) | 41 (39%) | 3 (23%) | 2 (14%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| With specific clinical conditions or combinations of specific chronic conditions | | | | | 0.11 |
| Yes | 101 (77%) | 81 (77%) | 12 (92%) | 8 (57%) | |
| No | 31 (23%) | 24 (23%) | 1 (8%) | 6 (43%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Due for an annual wellness visit | | | | | 0.005*** |
| Yes | 105 (80%) | 89 (85%) | 9 (69%) | 7 (50%) | |
| No | 27 (20%) | 16 (15%) | 4 (31%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Due for preventive care screenings | | | | | <0.001*** |
| Yes | 98 (74%) | 85 (81%) | 8 (62%) | 5 (36%) | |
| No | 34 (26%) | 20 (19%) | 5 (38%) | 9 (64%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Due for an SDOH/social needs screening | | | | | >0.9 |
| Yes | 43 (33%) | 35 (33%) | 4 (31%) | 4 (29%) | |
| No | 89 (67%) | 70 (67%) | 9 (69%) | 10 (71%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Screened positive for SDOH/social needs | | | | | 0.5 |
| Yes | 49 (37%) | 41 (39%) | 5 (38%) | 3 (21%) | |
| No | 83 (63%) | 64 (61%) | 8 (62%) | 11 (79%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Other, please specify: (if not applicable, select "No") | | | | | 0.5 |
| Yes | 7 (5%) | 7 (7%) | 0 (0%) | 0 (0%) | |
| No | 110 (83%) | 85 (81%) | 11 (85%) | 14 (100%) | |
| Respondent skip | 15 (11%) | 13 (12%) | 2 (15%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Now we would like to ask you a few questions about strategies your ACO has used to increase voluntary alignment.

Question 7A. Does your ACO currently conduct activities to increase voluntary alignment?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| 7A. Does your ACO currently conduct activities to increase voluntary alignment?⁴ | | | | | 0.3 |
| Yes | 107 (81%) | 82 (78%) | 12 (92%) | 13 (93%) | |
| No | 25 (19%) | 23 (22%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

Question 7B. Below is a list of different approaches that your ACO may use to increase voluntary alignment. For each one, please indicate whether your ACO uses this approach.

Asked of ACOs that currently conduct activities to increase voluntary alignment; Q7A="Yes"

| Item | Overall | ACO Type | | | p-value |
|--|----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Communicates to beneficiaries through the ACO's patient portal or via email¹ | 107 | 82 | 12 | 13 | 0.4 |
| Yes | 63 (59%) | 51 (62%) | 6 (50%) | 6 (46%) | |
| No | 44 (41%) | 31 (38%) | 6 (50%) | 7 (54%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Communicates to beneficiaries via mail¹ | 107 | 82 | 12 | 13 | 0.060* |
| Yes | 87 (81%) | 66 (80%) | 8 (67%) | 13 (100%) | |
| No | 20 (19%) | 16 (20%) | 4 (33%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other direct communication to beneficiaries¹ | 41 | 28 | 6 | 7 | 0.4 |
| Yes | 25 (61%) | 15 (54%) | 5 (83%) | 5 (71%) | |
| No | 16 (39%) | 13 (46%) | 1 (17%) | 2 (29%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Training for care managers, other care team members (e.g., social workers), or providers to conduct outreach or educate beneficiaries about voluntary alignment¹ | 107 | 82 | 12 | 13 | 0.8 |
| Yes | 85 (79%) | 66 (80%) | 9 (75%) | 10 (77%) | |
| No | 22 (21%) | 16 (20%) | 3 (25%) | 3 (23%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Training for office or front desk staff to respond to beneficiary questions about voluntary alignment¹ | 107 | 82 | 12 | 13 | 0.034** |
| Yes | 94 (88%) | 74 (90%) | 11 (92%) | 9 (69%) | |
| No | 8 (7%) | 3 (4%) | 1 (8%) | 4 (31%) | |
| Respondent skip | 5 (5%) | 5 (6%) | 0 (0%) | 0 (0%) | |
| Presentations for beneficiaries (e.g., via webinar, town hall, information session)¹ | 107 | 82 | 12 | 13 | 0.5 |
| Yes | 26 (24%) | 22 (27%) | 1 (8%) | 3 (23%) | |
| No | 81 (76%) | 60 (73%) | 11 (92%) | 10 (77%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall | ACO Type | | | p-value |
|---|----------|----------|-------------|------------|----------|
| | | Standard | New Entrant | High Needs | |
| Partner/collaborate with potential referral sources (e.g., community-based organizations such as Area Agencies on Aging)¹ | 107 | 82 | 12 | 13 | 0.4 |
| Yes | 21 (20%) | 16 (20%) | 1 (8%) | 4 (31%) | |
| No | 86 (80%) | 66 (80%) | 11 (92%) | 9 (69%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Outsource outreach to an external vendor² | 41 | 28 | 6 | 7 | 0.002*** |
| Yes | 18 (44%) | 9 (32%) | 2 (33%) | 7 (100%) | |
| No | 23 (56%) | 19 (68%) | 4 (67%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other strategy, please specify: (if not applicable, select "No")¹ | 107 | 82 | 12 | 13 | 0.8 |
| Yes | 14 (13%) | 12 (15%) | 1 (8%) | 1 (8%) | |
| No | 51 (48%) | 36 (44%) | 7 (58%) | 8 (62%) | |
| Respondent skip | 42 (39%) | 34 (41%) | 4 (33%) | 4 (31%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

¹This item combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

²This item was only asked of 2023 cohort ACOs.

Question 8. Does your ACO provide staff or financial support to Participant Providers to provide any of the following services?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|----------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N= 13 | High Needs N=14 | |
| ACO provides any staff or financial support to Participant Providers to expand access to care for any of expanded hours, urgent care, extended care, etc. | | | | | 0.027** |
| Any expanded access activity | 69 (52%) | 50 (48%) | 7 (54%) | 12 (86%) | |
| None | 63 (48%) | 55 (52%) | 6 (46%) | 2 (14%) | |
| ACO provides staff or financial support to Participant Providers to expand access to care for all of expanded hours, urgent care, extended care, etc. | | | | | 0.013** |
| All expanded access activities | 56 (42%) | 39 (37%) | 6 (46%) | 11 (79%) | |
| Not all activities | 76 (58%) | 66 (63%) | 7 (54%) | 3 (21%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Pearson’s Chi-squared test. *p<0.10; **p<0.05; ***p<0.01. This table presents composite variables combining responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

Question 9. Approximately what portion of your ACO's Participant Providers are employed directly by a health system or practice participating in the model?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|----------------------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.4 |
| All, or 100% | 61 (46%) | 45 (43%) | 5 (38%) | 11 (79%) | |
| Less than 100% but more than 50% | 34 (26%) | 27 (26%) | 5 (38%) | 2 (14%) | |
| Less than 50% but more than 10% | 9 (7%) | 9 (9%) | 0 (0%) | 0 (0%) | |
| Less than 10% but not 0% | 12 (9%) | 10 (10%) | 2 (15%) | 0 (0%) | |
| None, or 0% | 16 (12%) | 14 (13%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher's exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 10. How important are each of the following practice support and improvement activities to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| ACO provides or arranges for centralized population health support staff (e.g., care managers, pharmacist, schedulers/administrative support) | | | | | 0.3 |
| Very important | 108 (82%) | 89 (85%) | 9 (69%) | 10 (71%) | |
| Not very important | 23 (17%) | 15 (14%) | 4 (31%) | 4 (29%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| ACO provides or arranges for staff embedded in practices (e.g., administrative, care manager, health educator/coach, social worker) | | | | | 0.4 |
| Very important | 73 (55%) | 61 (58%) | 7 (54%) | 5 (36%) | |
| Not very important | 58 (44%) | 43 (41%) | 6 (46%) | 9 (64%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| ACO provides or arranges for investments in infrastructure at the practice level | | | | | 0.7 |
| Very important | 87 (66%) | 68 (65%) | 8 (62%) | 11 (79%) | |
| Not very important | 44 (33%) | 36 (34%) | 5 (38%) | 3 (21%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Data analysis support other than feedback reports on quality, utilization, or cost | | | | | 0.8 |
| Very important | 115 (87%) | 92 (88%) | 11 (85%) | 12 (86%) | |
| Not very important | 15 (11%) | 11 (10%) | 2 (15%) | 2 (14%) | |
| Respondent skip | 2 (2%) | 2 (2%) | 0 (0%) | 0 (0%) | |
| Regular meetings between ACO and individual practice leaders | | | | | 0.5 |
| Very important | 113 (86%) | 88 (84%) | 11 (85%) | 14 (100%) | |
| Not very important | 18 (14%) | 16 (15%) | 2 (15%) | 0 (0%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|------------------------|-----------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Action-oriented initiatives focusing on small-scale, discrete areas for improvement (e.g., improve completion rates for flu vaccine, increasing number of annual wellness visits) | | | | | 0.2 |
| Very important | 101 (77%) | 84 (80%) | 7 (54%) | 10 (71%) | |
| Not very important | 30 (23%) | 20 (19%) | 6 (46%) | 4 (29%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Training and education sessions | | | | | >0.9 |
| Very important | 106 (80%) | 83 (79%) | 11 (85%) | 12 (86%) | |
| Not very important | 25 (19%) | 21 (20%) | 2 (15%) | 2 (14%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Workflow redesign or optimization support | | | | | >0.9 |
| Very important | 70 (53%) | 56 (53%) | 7 (54%) | 7 (50%) | |
| Not very important | 61 (46%) | 48 (46%) | 6 (46%) | 7 (50%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Other practice support and improvement activities, please specify: (if not applicable, select "Not at all important") | | | | | 0.3 |
| Very important | 16 (12%) | 15 (14%) | 0 (0%) | 1 (7%) | |
| Not very important | 64 (48%) | 47 (45%) | 7 (54%) | 10 (71%) | |
| Respondent skip | 52 (39%) | 43 (41%) | 6 (46%) | 3 (21%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

Question 11. How important are each of the following information-sharing activities to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall | ACO Type | | | p-value |
|--|-----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Feedback reports on quality or utilization with comparisons at the practice level¹ | 48 | 34 | 6 | 8 | 0.8 |
| Very important | 44 (92%) | 30 (88%) | 6 (100%) | 8 (100%) | |
| Not very important | 4 (8%) | 4 (12%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on cost with comparisons at the practice level¹ | 48 | 34 | 6 | 8 | 0.8 |
| Very important | 41 (85%) | 28 (82%) | 6 (100%) | 7 (88%) | |
| Not very important | 7 (15%) | 6 (18%) | 0 (0%) | 1 (13%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on quality or utilization with comparisons at the individual clinician level¹ | 48 | 34 | 6 | 8 | >0.9 |
| Very important | 39 (81%) | 27 (79%) | 5 (83%) | 7 (88%) | |
| Not very important | 9 (19%) | 7 (21%) | 1 (17%) | 1 (13%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on cost with comparisons at the individual clinician level¹ | 48 | 34 | 6 | 8 | 0.5 |
| Very important | 34 (71%) | 22 (65%) | 5 (83%) | 7 (88%) | |
| Not very important | 14 (29%) | 12 (35%) | 1 (17%) | 1 (13%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Coaching or one-on-one review of performance, quality and/or cost data | 132 | 105 | 13 | 14 | >0.9 |
| Very important | 106 (80%) | 84 (80%) | 11 (85%) | 11 (79%) | |
| Not very important | 25 (19%) | 20 (19%) | 2 (15%) | 3 (21%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Other information to help providers manage care (e.g., specialty and other service use) | 132 | 105 | 13 | 14 | >0.9 |
| Very important | 95 (72%) | 74 (70%) | 10 (77%) | 11 (79%) | |
| Not very important | 36 (27%) | 30 (29%) | 3 (23%) | 3 (21%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |

| Item | Overall | ACO Type | | | p-value |
|---|-----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Real time data on emergency department (ED) and inpatient admissions, discharges, and transfers (ADTs)¹ | 132 | 105 | 13 | 14 | >0.9 |
| Very important | 118 (89%) | 93 (89%) | 12 (92%) | 13 (93%) | |
| Not very important | 13 (10%) | 11 (10%) | 1 (8%) | 1 (7%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Other information sharing activities, please specify: (if not applicable, select "Not at all important") | 132 | 105 | 13 | 14 | 0.6 |
| Very important | 17 (13%) | 14 (13%) | 2 (15%) | 1 (7%) | |
| Not very important | 58 (44%) | 44 (42%) | 5 (38%) | 9 (64%) | |
| Respondent skip | 57 (43%) | 47 (45%) | 6 (46%) | 4 (29%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

¹This item was only asked of 2023 cohort ACOs.

Question 12. How important are each of the following incentives to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Financial bonuses tied to performance | | | | | 0.013** |
| Very important | 109 (83%) | 91 (87%) | 7 (54%) | 11 (79%) | |
| Not very important | 23 (17%) | 14 (13%) | 6 (46%) | 3 (21%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Financial penalties tied to performance | | | | | 0.8 |
| Very important | 39 (30%) | 31 (30%) | 3 (23%) | 5 (36%) | |
| Not very important | 93 (70%) | 74 (70%) | 10 (77%) | 9 (64%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Non-financial awards or recognition tied to performance | | | | | 0.13 |
| Very important | 45 (34%) | 32 (30%) | 5 (38%) | 8 (57%) | |
| Not very important | 87 (66%) | 73 (70%) | 8 (62%) | 6 (43%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Upfront payments | | | | | >0.9 |
| Very important | 65 (49%) | 52 (50%) | 7 (54%) | 6 (43%) | |
| Not very important | 67 (51%) | 53 (50%) | 6 (46%) | 8 (57%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other incentives, please specify: (if not applicable, select "Not at all important") | | | | | 0.5 |
| Very important | 15 (11%) | 13 (12%) | 2 (15%) | 0 (0%) | |
| Not very important | 60 (45%) | 46 (44%) | 5 (38%) | 9 (64%) | |
| Respondent skip | 57 (43%) | 46 (44%) | 6 (46%) | 5 (36%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

Question 13. Thinking about all the practice supports, information-sharing activities, and financial and non-financial incentives your ACO has been using for provider engagement, how effective would you say these activities have been for your ACO in engaging Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Practice support and improvement activities | | | | | 0.10* |
| Very effective | 52 (39%) | 47 (45%) | 3 (23%) | 2 (14%) | |
| Somewhat effective | 70 (53%) | 50 (48%) | 9 (69%) | 11 (79%) | |
| Not too effective | 7 (5%) | 6 (6%) | 1 (8%) | 0 (0%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 3 (2%) | 2 (2%) | 0 (0%) | 1 (7%) | |
| Information sharing activities | | | | | 0.074* |
| Very effective | 46 (35%) | 41 (39%) | 2 (15%) | 3 (21%) | |
| Somewhat effective | 64 (48%) | 44 (42%) | 10 (77%) | 10 (71%) | |
| Not too effective | 18 (14%) | 17 (16%) | 1 (8%) | 0 (0%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 4 (3%) | 3 (3%) | 0 (0%) | 1 (7%) | |
| Financial incentives | | | | | 0.024** |
| Very effective | 63 (48%) | 55 (52%) | 3 (23%) | 5 (36%) | |
| Somewhat effective | 53 (40%) | 42 (40%) | 5 (38%) | 6 (43%) | |
| Not too effective | 7 (5%) | 4 (4%) | 2 (15%) | 1 (7%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 9 (7%) | 4 (4%) | 3 (23%) | 2 (14%) | |
| Non-financial incentives | | | | | 0.3 |
| Very effective | 16 (12%) | 14 (13%) | 0 (0%) | 2 (14%) | |
| Somewhat effective | 33 (25%) | 28 (27%) | 3 (23%) | 2 (14%) | |
| Not too effective | 33 (25%) | 27 (26%) | 3 (23%) | 3 (21%) | |
| Not at all effective | 18 (14%) | 12 (11%) | 1 (8%) | 5 (36%) | |
| Respondent skip | 32 (24%) | 24 (23%) | 6 (46%) | 2 (14%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 14. Does your ACO use any of the following methods to pay Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Partial fee-for-service | | | | | 0.2 |
| ACO uses this method | 45 (34%) | 32 (30%) | 5 (38%) | 8 (57%) | |
| ACO does not use this method | 74 (56%) | 60 (57%) | 8 (62%) | 6 (43%) | |
| Respondent skip | 13 (10%) | 13 (12%) | 0 (0%) | 0 (0%) | |
| Fee-for-service | | | | | 0.2 |
| ACO uses this method | 59 (45%) | 46 (44%) | 4 (31%) | 9 (64%) | |
| ACO does not use this method | 59 (45%) | 45 (43%) | 9 (69%) | 5 (36%) | |
| Respondent skip | 14 (11%) | 14 (13%) | 0 (0%) | 0 (0%) | |
| Partial capitation | | | | | 0.3 |
| ACO uses this method | 63 (48%) | 46 (44%) | 9 (69%) | 8 (57%) | |
| ACO does not use this method | 56 (42%) | 46 (44%) | 4 (31%) | 6 (43%) | |
| Respondent skip | 13 (10%) | 13 (12%) | 0 (0%) | 0 (0%) | |
| Total capitation | | | | | 0.7 |
| ACO uses this method | 44 (33%) | 32 (30%) | 5 (38%) | 7 (50%) | |
| ACO does not use this method | 72 (55%) | 59 (56%) | 7 (54%) | 6 (43%) | |
| Respondent skip | 16 (12%) | 14 (13%) | 1 (8%) | 1 (7%) | |
| Payments tied to quality thresholds | | | | | 0.2 |
| ACO uses this method | 75 (57%) | 61 (58%) | 5 (38%) | 9 (64%) | |
| ACO does not use this method | 43 (33%) | 31 (30%) | 8 (62%) | 4 (29%) | |
| Respondent skip | 14 (11%) | 13 (12%) | 0 (0%) | 1 (7%) | |
| Other, please specify: (if not applicable, select "ACO does not use this method") | | | | | 0.3 |
| ACO uses this method | 26 (20%) | 21 (20%) | 4 (31%) | 1 (7%) | |
| ACO does not use this method | 50 (38%) | 37 (35%) | 4 (31%) | 9 (64%) | |
| Respondent skip | 56 (42%) | 47 (45%) | 5 (38%) | 4 (29%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

Question 15A. Does your ACO share upside financial risk (savings) directly with the Participant Provider types listed below? Select all that apply.

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Practitioners¹ | | | | | |
| Share total ACO savings with Participant practitioners | 107 (81%) | 88 (84%) | 7 (54%) | 12 (86%) | 0.035** |
| Share service-specific savings with Participant practitioners | 24 (18%) | 17 (16%) | 4 (31%) | 3 (21%) | 0.3 |
| No practitioners in ACO | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | - |
| Share no savings with Participant practitioners | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | - |
| Facilities² | | | | | |
| Share total ACO savings with Participant facilities | 12 (9%) | 11 (10%) | 0 (0%) | 1 (7%) | 0.7 |
| Share service-specific savings with Participant facilities | 24 (18%) | 22 (21%) | 1 (8%) | 1 (7%) | 0.3 |
| No Participant facilities in ACO | 30 (23%) | 23 (22%) | 3 (23%) | 4 (29%) | 0.8 |
| Share no savings with Participant facilities | 48 (36%) | 33 (31%) | 7 (54%) | 8 (57%) | 0.071* |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

¹Practitioners include: Individual practitioners who may be employed directly by a health system or practice participating in the model, physician groups/practices, networks of individual physician practices or other practitioners, and independent or solo practitioners.

²Facilities include: acute care hospitals, skilled nursing facilities (SNFs), home health agencies (HHAs), long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs).

Question 15C. Does your ACO share downside financial risk (losses) directly with the Participant Provider types listed below? Select all that apply.

Asked of ACOs who did not report each provider or facility type does not participate in the ACO; 15A not="Provider type does not participate in ACO"

| Item | Overall | ACO Type | | | p-value |
|--|----------|----------|-------------|------------|---------|
| | | Standard | New Entrant | High Needs | |
| Practitioners¹ | 132 | 105 | 13 | 14 | |
| Share total ACO losses with Participant practitioners | 27 (20%) | 21 (20%) | 0 (0%) | 6 (43%) | 0.019** |
| Share service-specific losses with Participant practitioners | 7 (5%) | 5 (5%) | 2 (15%) | 0 (0%) | 0.2 |
| Facilities² | 102 | 82 | 10 | 10 | |
| Share total ACO losses with Participant facilities | 7 (7%) | 7 (9%) | 0 (0%) | 0 (0%) | >0.9 |
| Share service-specific losses with Participant facilities | 2 (2%) | 2 (2%) | 0 (0%) | 0 (0%) | >0.9 |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

¹ Practitioners include: Individual practitioners who may be employed directly by a health system or practice participating in the model, physician groups/practices, networks of individual physician practices or other practitioners, and independent or solo practitioners.

² Facilities include: acute care hospitals, skilled nursing facilities (SNFs), home health agencies (HHAs), long-term care hospitals (LTCHs) or inpatient rehabilitation facilities (IRFs).

Question 16. Does your ACO use financial rewards and/or penalties with its Preferred Providers?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|-------------------------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| ACO uses financial rewards | | | | | 0.2 |
| Yes | 53 (40%) | 46 (44%) | 5 (38%) | 2 (14%) | |
| No | 78 (59%) | 58 (55%) | 8 (62%) | 12 (86%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| ACO uses financial penalties | | | | | 0.067* |
| Yes | 29 (22%) | 28 (27%) | 1 (8%) | 0 (0%) | |
| No | 102 (77%) | 76 (72%) | 12 (92%) | 14 (100%) | |
| Respondent skip | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses).

Question 17. To what extent does your ACO have processes in place for clinicians to engage beneficiaries in decisions involving their care and the self-management of their conditions?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--------------------------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.3 |
| Comprehensive program in place (7-9) | 60 (45%) | 51 (49%) | 5 (38%) | 4 (29%) | |
| Some processes in place (4-6) | 59 (45%) | 45 (43%) | 5 (38%) | 9 (64%) | |
| Few or no processes in place (1-3) | 13 (10%) | 9 (9%) | 3 (23%) | 1 (7%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. Respondents placed their responses on a scale from 1-9. Responses were aggregated for summary purposes.

Question 18. To what extent are chronic care management processes and programs in place to manage beneficiaries with high-need, high-cost chronic illnesses?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.069* |
| Comprehensive chronic care management processes and programs in place (7-9) | 79 (60%) | 68 (65%) | 6 (46%) | 5 (36%) | |
| Some chronic care management processes and programs in place (4-6) | 45 (34%) | 30 (29%) | 6 (46%) | 9 (64%) | |
| Few or no chronic care management processes or programs in place (1-3) | 8 (6%) | 7 (7%) | 1 (8%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. Respondents placed their responses on a scale from 1-9. Responses were aggregated for summary purposes.

Question 19. To what extent are systems in place to ensure smooth transitions of care across all practice settings, including hospitals, long-term care, home care, adult day care, and community-based health and social services as needed?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.7 |
| Nearly all/all necessary systems in place (7-9) | 53 (40%) | 44 (42%) | 5 (38%) | 4 (29%) | |
| Some systems in place (4-6) | 72 (55%) | 56 (53%) | 7 (54%) | 9 (64%) | |
| Few or no systems in place (1-3) | 7 (5%) | 5 (5%) | 1 (8%) | 1 (7%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. Respondents placed their responses on a scale from 1-9. Responses were aggregated for summary purposes.

Question 20. What share of your ACO-attributed hospitalized beneficiaries undergoing a care transition to home or post-acute care facility receive the following services to reduce the risk of readmission?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Medication reconciliation | | | | | 0.090* |
| All/Most | 82 (62%) | 67 (64%) | 7 (54%) | 8 (57%) | |
| Some/None | 48 (36%) | 38 (36%) | 5 (38%) | 5 (36%) | |
| Respondent skip | 2 (2%) | 0 (0%) | 1 (8%) | 1 (7%) | |
| Telephone follow-up (within 72 hours of discharge) | | | | | 0.050* |
| All/Most | 91 (69%) | 76 (72%) | 9 (69%) | 6 (43%) | |
| Some/None | 38 (29%) | 28 (27%) | 3 (23%) | 7 (50%) | |
| Respondent skip | 3 (2%) | 1 (1%) | 1 (8%) | 1 (7%) | |
| In-home follow-up (within 72 hours of discharge) | | | | | 0.3 |
| All/Most | 31 (23%) | 21 (20%) | 5 (38%) | 5 (36%) | |
| Some/None | 93 (70%) | 78 (74%) | 7 (54%) | 8 (57%) | |
| Respondent skip | 8 (6%) | 6 (6%) | 1 (8%) | 1 (7%) | |
| Standardized processes in place to ensure timely follow-up with primary/specialty care | | | | | 0.021** |
| All/Most | 83 (63%) | 71 (68%) | 6 (46%) | 6 (43%) | |
| Some/None | 47 (36%) | 34 (32%) | 6 (46%) | 7 (50%) | |
| Respondent skip | 2 (2%) | 0 (0%) | 1 (8%) | 1 (7%) | |
| Discharge summaries are transmitted to clinicians accepting care of the beneficiary | | | | | 0.4 |
| All/Most | 69 (52%) | 57 (54%) | 6 (46%) | 6 (43%) | |
| Some/None | 59 (45%) | 46 (44%) | 6 (46%) | 7 (50%) | |
| Respondent skip | 4 (3%) | 2 (2%) | 1 (8%) | 1 (7%) | |
| Use of a beneficiary navigator or care management while beneficiary is in the hospital | | | | | 0.5 |
| All/Most | 49 (37%) | 39 (37%) | 6 (46%) | 4 (29%) | |
| Some/None | 71 (54%) | 58 (55%) | 5 (38%) | 8 (57%) | |
| Respondent skip | 12 (9%) | 8 (8%) | 2 (15%) | 2 (14%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Use of a care management or health coach post-discharge | | | | | 0.045** |
| All/Most | 61 (46%) | 50 (48%) | 7 (54%) | 4 (29%) | |
| Some/None | 67 (51%) | 54 (51%) | 5 (38%) | 8 (57%) | |
| Respondent skip | 4 (3%) | 1 (1%) | 1 (8%) | 2 (14%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 21. For beneficiaries attributed to the ACO, to what extent is a system in place for predictive risk stratification?⁴

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.2 |
| Comprehensive ability to identify and target beneficiaries using predictive risk stratification (7-9) | 89 (67%) | 74 (70%) | 7 (54%) | 8 (57%) | |
| Some ability to identify and target beneficiaries using predictive risk stratification (4-6) | 34 (26%) | 24 (23%) | 4 (31%) | 6 (43%) | |
| Little or no ability to identify and target beneficiaries using predictive risk stratification (1-3) | 9 (7%) | 7 (7%) | 2 (15%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. Respondents placed their responses on a scale from 1-9. Responses were aggregated for summary purposes.

Question 22. Do you segment high-risk beneficiaries into subgroups based on common needs (e.g., frailty, mental illness, similar combinations of chronic conditions)?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|-----------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.3 |
| Yes | 97 (73%) | 80 (76%) | 8 (62%) | 9 (64%) | |
| No | 35 (27%) | 25 (24%) | 5 (38%) | 5 (36%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Care Management Index Score

The care management index was developed for the National Survey of ACOs (NSACO) to measure care management and coordination activities and implementation. This index aggregates responses from Q17-Q22. For more information on the calculation of the care management index, see [Association Between Care Management and Outcomes Among Patients with Complex Needs in Medicare Accountable Care Organizations \(2019\)](#).

| Item | Overall N=132 | ACO Type | | | p-value |
|-------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Median (Min, Max) | 10.0 (1.0, 16.0) | 10.0 (1.0, 16.0) | 10.0 (1.0, 15.0) | 8.5 (4.0, 14.0) | 0.3 |

NOTE: P-value calculated using Kruskal-Wallis rank sum test. *p<0.10; **p<0.05; ***p<0.01.

Question 23. Does the ACO offer care management programs to patients with any of the following conditions?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|--|------------------|-------------------|---------------------|--------------------|-----------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Specific chronic conditions or diseases (e.g., end-stage renal disease, diabetes, COPD, etc.) | | | | | <0.001*** |
| Yes | 111 (84%) | 96 (91%) | 8 (62%) | 7 (50%) | |
| No | 21 (16%) | 9 (9%) | 5 (38%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Frailty and/or difficulty with activities of daily living | | | | | 0.8 |
| Yes | 78 (59%) | 63 (60%) | 8 (62%) | 7 (50%) | |
| No | 54 (41%) | 42 (40%) | 5 (38%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Advanced illness (that requires palliative, hospice, or end-of-life care) | | | | | 0.2 |
| Yes | 100 (76%) | 79 (75%) | 8 (62%) | 13 (93%) | |
| No | 32 (24%) | 26 (25%) | 5 (38%) | 1 (7%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Comorbid conditions | | | | | 0.001*** |
| Yes | 106 (80%) | 91 (87%) | 8 (62%) | 7 (50%) | |
| No | 26 (20%) | 14 (13%) | 5 (38%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Mental or behavioral health conditions | | | | | 0.2 |
| Yes | 67 (51%) | 57 (54%) | 6 (46%) | 4 (29%) | |
| No | 65 (49%) | 48 (46%) | 7 (54%) | 10 (71%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Health-related social needs | | | | | 0.042** |
| Yes | 75 (57%) | 65 (62%) | 6 (46%) | 4 (29%) | |
| No | 57 (43%) | 40 (38%) | 7 (54%) | 10 (71%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

| Item | Overall N=132 | ACO Type | | | p-value |
|---|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| Rising risk for chronic conditions | | | | | 0.10* |
| Yes | 91 (69%) | 77 (73%) | 7 (54%) | 7 (50%) | |
| NORC at the University of Chicago | 41 (31%) | 28 (27%) | 6 (46%) | 7 (50%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Recent hospitalization or ED visit | | | | | 0.012** |
| Yes | 112 (85%) | 94 (90%) | 9 (69%) | 9 (64%) | |
| No | 20 (15%) | 11 (10%) | 4 (31%) | 5 (36%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 24. Overall, how much of an impact would you say that your ACO's participation in ACO REACH has had on influencing provider behavior to perform new activities to improve care?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|-----------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | 0.025** |
| A major impact | 72 (55%) | 63 (60%) | 3 (23%) | 6 (43%) | |
| A minor impact | 60 (45%) | 42 (40%) | 10 (77%) | 8 (57%) | |
| No impact | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Question 25. To what extent do you feel that the model, beyond Participating Providers' prior care delivery processes, is achieving meaningful improvements in patient care?

Asked of all ACOs

| Item | Overall N=132 | ACO Type | | | p-value |
|-------------------|------------------|-------------------|---------------------|--------------------|---------|
| | | Standard N=105 | New Entrant N=13 | High Needs N=14 | |
| | | | | | >0.9 |
| To a great extent | 48 (36%) | 40 (38%) | 4 (31%) | 4 (29%) | |
| Somewhat | 78 (59%) | 59 (56%) | 9 (69%) | 10 (71%) | |
| Very little | 5 (4%) | 5 (5%) | 0 (0%) | 0 (0%) | |
| Not at all | 1 (1%) | 1 (1%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

F.3 Selected 2023 Pulse Check Survey Results by Functional Role

These tables present the cross-tabulations of Pulse Check Survey responses by functional role, with significance testing (chi-square and Fisher’s exact tests, where appropriate) by group. Unless otherwise noted, the sample size (n) for each table is 132. When the n for individual items within a question series vary, the corresponding n for each item, overall and by group, has been noted within that item’s specific table row. In these cases, the overall and by group n will have been removed from the header row. Significant p-values indicate a statistically significant difference between one or more of the groups on a specific question or item and are denoted by an asterisk (*p<0.10, **p<0.05, ***p<0.01); “-” denotes a p-value could not be generated for that question/item.

Question 10. How important are each of the following practice support and improvement activities to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | Functional Role | | | p-value |
|--|------------------|------------------|-----------------|---------------------------------|----------|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| ACO provides or arranges for centralized population health support staff (e.g., care managers, pharmacist, schedulers/administrative support) | | | | | 0.010** |
| Very important | 108 (82%) | 5 (50%) | 57 (79%) | 46 (92%) | |
| Not very important | 23 (17%) | 5 (50%) | 14 (19%) | 4 (8%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| ACO provides or arranges for staff embedded in practices (e.g., administrative, care manager, health educator/coach, social worker) | | | | | 0.002*** |
| Very important | 73 (55%) | 1 (10%) | 37 (51%) | 35 (70%) | |
| Not very important | 58 (44%) | 9 (90%) | 34 (47%) | 15 (30%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| ACO provides or arranges for investments in infrastructure at the practice level | | | | | 0.3 |
| Very important | 87 (66%) | 4 (40%) | 47 (65%) | 36 (72%) | |
| Not very important | 44 (33%) | 6 (60%) | 24 (33%) | 14 (28%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Data analysis support other than feedback reports on quality, utilization, or cost | | | | | 0.7 |
| Very important | 115 (87%) | 9 (90%) | 63 (88%) | 43 (86%) | |
| Not very important | 15 (11%) | 1 (10%) | 7 (10%) | 7 (14%) | |
| Respondent skip | 2 (2%) | 0 (0%) | 2 (3%) | 0 (0%) | |

| Item | Overall N=132 | Functional Role | | | p-value |
|--|------------------|------------------|-----------------|---------------------------------|----------|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| Regular meetings between ACO and individual practice leaders | | | | | >0.9 |
| Very important | 113 (86%) | 9 (90%) | 61 (85%) | 43 (86%) | |
| Not very important | 18 (14%) | 1 (10%) | 10 (14%) | 7 (14%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Action-oriented initiatives focusing on small-scale, discrete areas for improvement (e.g., improve completion rates for flu vaccine, increasing number of annual wellness visits) | | | | | 0.2 |
| Very important | 101 (77%) | 6 (60%) | 52 (72%) | 43 (86%) | |
| Not very important | 30 (23%) | 4 (40%) | 19 (26%) | 7 (14%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Training and education sessions | | | | | 0.3 |
| Very important | 106 (80%) | 6 (60%) | 60 (83%) | 40 (80%) | |
| Not very important | 25 (19%) | 4 (40%) | 11 (15%) | 10 (20%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Workflow redesign or optimization support | | | | | 0.002*** |
| Very important | 70 (53%) | 2 (20%) | 32 (44%) | 36 (72%) | |
| Not very important | 61 (46%) | 8 (80%) | 39 (54%) | 14 (28%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Other practice support and improvement activities, please specify: (if not applicable, select "Not at all important") | | | | | 0.5 |
| Very important | 16 (12%) | 2 (20%) | 6 (8%) | 8 (16%) | |
| Not very important | 64 (48%) | 4 (40%) | 39 (54%) | 21 (42%) | |
| Respondent skip | 52 (39%) | 4 (40%) | 27 (38%) | 21 (42%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

Question 11. How important are each of the following information-sharing activities to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall | Functional Role | | | p-value |
|--|-----------|-----------------|----------|----------------------|---------|
| | | Convener | Enabler | Direct Care Provider | |
| Feedback reports on quality or utilization with comparisons at the practice level¹ | 48 | 2 | 29 | 17 | >0.9 |
| Very important | 44 (92%) | 2 (100%) | 26 (90%) | 16 (94%) | |
| Not very important | 4 (8%) | 0 (0%) | 3 (10%) | 1 (6%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on cost with comparisons at the practice level¹ | 48 | 2 | 29 | 17 | >0.9 |
| Very important | 41 (85%) | 2 (100%) | 24 (83%) | 15 (88%) | |
| Not very important | 7 (15%) | 0 (0%) | 5 (17%) | 2 (12%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on quality or utilization with comparisons at the individual clinician level¹ | 48 | 2 | 29 | 17 | 0.3 |
| Very important | 39 (81%) | 1 (50%) | 25 (86%) | 13 (76%) | |
| Not very important | 9 (19%) | 1 (50%) | 4 (14%) | 4 (24%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Feedback reports on cost with comparisons at the individual clinician level¹ | 48 | 2 | 29 | 17 | 0.5 |
| Very important | 34 (71%) | 1 (50%) | 22 (76%) | 11 (65%) | |
| Not very important | 14 (29%) | 1 (50%) | 7 (24%) | 6 (35%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Coaching or one-on-one review of performance, quality and/or cost data | 132 | 10 | 72 | 50 | 0.12 |
| Very important | 106 (80%) | 10 (100%) | 60 (83%) | 36 (72%) | |
| Not very important | 25 (19%) | 0 (0%) | 11 (15%) | 14 (28%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Other information to help providers manage care (e.g., specialty and other service use) | 132 | 10 | 72 | 50 | 0.3 |
| Very important | 95 (72%) | 6 (60%) | 56 (78%) | 33 (66%) | |
| Not very important | 36 (27%) | 4 (40%) | 15 (21%) | 17 (34%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |

| Item | Overall | Functional Role | | | p-value |
|---|-----------|-----------------|----------|----------------------|---------|
| | | Convener | Enabler | Direct Care Provider | |
| Real time data on emergency department (ED) and inpatient admissions, discharges, and transfers (ADTs) | 132 | 10 | 72 | 50 | 0.026** |
| Very important | 118 (89%) | 6 (60%) | 66 (92%) | 46 (92%) | |
| Not very important | 13 (10%) | 4 (40%) | 5 (7%) | 4 (8%) | |
| Respondent skip | 1 (1%) | 0 (0%) | 1 (1%) | 0 (0%) | |
| Other information sharing activities, please specify: (if not applicable, select "Not at all important") | 132 | 10 | 72 | 50 | 0.5 |
| Very important | 17 (13%) | 1 (10%) | 12 (17%) | 4 (8%) | |
| Not very important | 58 (44%) | 3 (30%) | 32 (44%) | 23 (46%) | |
| Respondent skip | 57 (43%) | 6 (60%) | 28 (39%) | 23 (46%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

¹This item was only asked of 2023 cohort ACOs.

Question 12. How important are each of the following incentives to your ACO's efforts to engage Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | Functional Role | | | p-value |
|---|------------------|------------------|-----------------|---------------------------------|---------|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| Financial bonuses tied to performance | | | | | 0.085* |
| Very important | 109 (83%) | 8 (80%) | 64 (89%) | 37 (74%) | |
| Not very important | 23 (17%) | 2 (20%) | 8 (11%) | 13 (26%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Financial penalties tied to performance | | | | | 0.4 |
| Very important | 39 (30%) | 2 (20%) | 25 (35%) | 12 (24%) | |
| Not very important | 93 (70%) | 8 (80%) | 47 (65%) | 38 (76%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Non-financial awards or recognition tied to performance | | | | | 0.13 |
| Very important | 45 (34%) | 1 (10%) | 23 (32%) | 21 (42%) | |
| Not very important | 87 (66%) | 9 (90%) | 49 (68%) | 29 (58%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Upfront payments | | | | | 0.033** |
| Very important | 65 (49%) | 4 (40%) | 43 (60%) | 18 (36%) | |
| Not very important | 67 (51%) | 6 (60%) | 29 (40%) | 32 (64%) | |
| Respondent skip | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Other incentives, please specify: (if not applicable, select "Not at all important") | | | | | 0.4 |
| Very important | 15 (11%) | 3 (30%) | 8 (11%) | 4 (8%) | |
| Not very important | 60 (45%) | 3 (30%) | 34 (47%) | 23 (46%) | |
| Respondent skip | 57 (43%) | 4 (40%) | 30 (42%) | 23 (46%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01. This table combines responses from the 2022 Pulse Check Survey (2021 and 2022 cohort ACO responses) and 2023 Pulse Check Survey (2023 cohort ACO responses). Response options varied somewhat across years, so response options have been collapsed into “very important” and “not very important” to facilitate aggregation.

Question 13. Thinking about all the practice supports, information-sharing activities, and financial and non-financial incentives your ACO has been using for provider engagement, how effective would you say these activities have been for your ACO in engaging Participant Providers?

Asked of all ACOs

| Item | Overall N=132 | Functional Role | | | p-value |
|--|------------------|------------------|-----------------|------------------------------|---------|
| | | Convener N=10 | Enabler N=72 | Direct Care Provider N=50 | |
| Practice support and improvement activities | | | | | 0.2 |
| Very effective | 52 (39%) | 3 (30%) | 33 (46%) | 16 (32%) | |
| Somewhat effective | 70 (53%) | 6 (60%) | 36 (50%) | 28 (56%) | |
| Not too effective | 7 (5%) | 0 (0%) | 3 (4%) | 4 (8%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 3 (2%) | 1 (10%) | 0 (0%) | 2 (4%) | |
| Information sharing activities | | | | | 0.029** |
| Very effective | 46 (35%) | 1 (10%) | 29 (40%) | 16 (32%) | |
| Somewhat effective | 64 (48%) | 6 (60%) | 37 (51%) | 21 (42%) | |
| Not too effective | 18 (14%) | 2 (20%) | 6 (8%) | 10 (20%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 4 (3%) | 1 (10%) | 0 (0%) | 3 (6%) | |
| Financial incentives | | | | | 0.020** |
| Very effective | 63 (48%) | 5 (50%) | 43 (60%) | 15 (30%) | |
| Somewhat effective | 53 (40%) | 5 (50%) | 23 (32%) | 25 (50%) | |
| Not too effective | 7 (5%) | 0 (0%) | 4 (6%) | 3 (6%) | |
| Not at all effective | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | |
| Respondent skip | 9 (7%) | 0 (0%) | 2 (3%) | 7 (14%) | |
| Non-financial incentives | | | | | |
| Very effective | 16 (12%) | 1 (10%) | 13 (18%) | 2 (4%) | |
| Somewhat effective | 33 (25%) | 2 (20%) | 14 (19%) | 17 (34%) | |
| Not too effective | 33 (25%) | 3 (30%) | 20 (28%) | 10 (20%) | |
| Not at all effective | 18 (14%) | 3 (30%) | 10 (14%) | 5 (10%) | |
| Respondent skip | 32 (24%) | 1 (10%) | 15 (21%) | 16 (32%) | |

NOTE: Results are presented as both an n and percentage. P-value calculated using Fisher’s exact test. *p<0.10; **p<0.05; ***p<0.01.

Appendix G: Data Sources for Quantitative Analyses

Exhibit G.1 describes the data files used for the construction of the ACO REACH treatment and comparison groups and for the evaluation’s quantitative analyses.

Exhibit G.1. Data Sources for Claims-Based Analyses

| Data File | File Description, Source, and Evaluation Uses |
|--|---|
| Central Repository Alignment Files | <ul style="list-style-type: none"> ▪ These files include the CYs 2021–2023 ACO Participant Provider list, ACO Preferred Provider list, ACO file of Participant Providers used for attribution, list of ACO-aligned beneficiaries including those voluntarily aligned, payment reductions on the claims (capitation or the advanced payment option [APO] percentage reduction), and benefit enhancements elected by ACO Participant and Preferred Providers. ▪ They were created by the Innovation Center’s GPDC/ACO REACH program analysis and operational support contractor. ▪ These lists were used to align beneficiaries prospectively to ACO Participant Providers in each performance year (PY) and select comparison groups (that is, beneficiaries prospectively aligned to eligible non-ACO/non-ACO Participant/Preferred Providers). Some of the data also were used to create measures included in the descriptive analyses. |
| Central Repository Payment Files | <ul style="list-style-type: none"> ▪ These files include capitated payment amounts for beneficiaries in each ACO in CYs 2021–2023. ▪ They were created by the GPDC/ACO REACH program analysis and operational support contractor. ▪ They were used to apportion capitated payments for care furnished to GPDC/ACO REACH beneficiaries in CYs 2021–2023 to calculate total gross Medicare Parts A & B spending, which included capitation. |
| Medicare Fee-for-Services (FFS) Claims | <ul style="list-style-type: none"> ▪ These files contain carrier claims, durable medical equipment claims, home health agency claims, hospice claims, inpatient claims, outpatient claims, skilled nursing facility (SNF) claims for CYs 2017–2023. ▪ They were obtained from the Chronic Conditions Data Warehouse (CCW). ▪ These files were used to create claims-based outcomes for GPDC/ACO REACH and comparison group beneficiaries. |
| Master Beneficiary Summary Files | <ul style="list-style-type: none"> ▪ These files contain coverage, demographic, and chronic/potentially disabling condition flags for Medicare beneficiaries for CYs 2017–2023. ▪ They were obtained from the CCW. ▪ These files were used to identify beneficiaries enrolled in Original Medicare each year to perform claim-based alignment and to create measures included in the descriptive and impacts analyses. |
| Master Data Management Files | <ul style="list-style-type: none"> ▪ These files contain beneficiary- and provider-level information for CYs 2018–2023 pertaining to alignment to GPDC/ACO REACH and other advanced payment models (APMs). ▪ They were obtained from the CCW. ▪ These files were used to identify voluntarily aligned GPDC/ACO REACH beneficiaries and flag beneficiary enrollment to other APMs. |

| Data File | File Description, Source, and Evaluation Uses |
|---|---|
| Medicare Data on Physician Practice and Specialty (MD-PPAS) | <ul style="list-style-type: none"> ▪ These files contain data on provider-level information such as specialty, TIN practice assignment, etc., for CYs 2018–2022. ▪ They were obtained from the CCW. ▪ These files were used to create market-level physician practice characteristics. |
| National Plan and Provider Enumeration System (NPPES) | <ul style="list-style-type: none"> ▪ These files contain provider specialties for CYs 2018–2023. ▪ They were obtained from the CCW. ▪ These files were used to determine the subset of providers who were eligible for alignment. |
| Medicare FFS Public Provider Enrollment File | <ul style="list-style-type: none"> ▪ These files were populated from Medicare Provider Enrollment, Chain, and Ownership System (PECOS) and contain provider specialties. ▪ They were obtained from the CMS website as of Q1 CY 2024.¹⁸ ▪ These files were used to determine the subset of providers who were eligible for alignment. |
| Provider of Services (POS) File | <ul style="list-style-type: none"> ▪ These files contain bed counts and number of Medicare discharges from acute care hospitals, SNFs, and other long-term care (LTC) facilities for CYs 2017–2023. ▪ They were obtained from the CCW.¹⁹ ▪ These files were used to create market-level hospital and SNF characteristics, and to describe GPDC/ACO REACH provider characteristics. |
| American Hospital Association (AHA) Annual Surveys | <ul style="list-style-type: none"> ▪ These files contain health system information for acute care hospitals for CYs 2017–2022. ▪ They were obtained from the AHA. ▪ These files were used in creating market-level hospital characteristics. |
| Area Health Resources File (AHRF) | <ul style="list-style-type: none"> ▪ These files contain the Health Professional Shortage Area (HPSA) variables for the lagged year (CYs 2017–2022). ▪ They were obtained from the Health Resources and Services Administration (HRSA).²⁰ ▪ These variables were used in risk adjustment. |
| Rural-Urban Commuting Area (RUCA) Code | <ul style="list-style-type: none"> ▪ This file contains the 2010 ZIP-based rural-urban commuting area codes. ▪ They were obtained from the United States Department of Agriculture, Economic Research Service (USDA ERS).²¹ ▪ This file was used to create the geographic location variable used in comparison group construction (make the comparison group similar to the treatment group regarding rurality of beneficiary residence) and regression models. |
| Population Estimates Program (PEP) | <ul style="list-style-type: none"> ▪ These files contain estimates of U.S. population. ▪ They were obtained from the Census Bureau.²² ▪ The 2019 data were used to calculate COVID-19 county-level infection rate and mortality rate for CYs 2020–2022. |

¹⁸ Medicare Fee-For-Service Public Provider Enrollment File (PPEF). Available at: <https://data.cms.gov/provider-characteristics/medicare-provider-supplier-enrollment/medicare-fee-for-service-public-provider-enrollment>

¹⁹ Provider of Services File (POS) – Hospital & Non-Hospital Facilities. Available at: <https://data.cms.gov/provider-characteristics/hospitals-and-other-facilities/provider-of-services-file-hospital-non-hospital-facilities>

²⁰ Area Health Resources Files (AHRF). Available at: <https://data.hrsa.gov/data/download>

²¹ Rural-Urban Commuting Area Codes (RUCA). Available at: <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/>

²² Census Bureau Population Estimates Program. Available at: <https://www.census.gov/programs-surveys/popest.html>

| Data File | File Description, Source, and Evaluation Uses |
|--|--|
| New York Times COVID-19 Data | <ul style="list-style-type: none"> ▪ These files contain daily CYs 2020–2022 COVID-19 cases and deaths number reported by each U.S. county. ▪ They were obtained from <i>The New York Times</i> coronavirus data repository.²³ ▪ They were used to derive county-level COVID-19 measures including 7-day moving average infection rate, 7-day moving average mortality rate, and case fatality rate. |
| COVID-19 Pandemic Vulnerability Index | <ul style="list-style-type: none"> ▪ These files contain county-level CYs 2021–2022 COVID-19 measures. ▪ They were obtained from the National Institute of Environmental Health Sciences.²⁴ ▪ They were used to derive county-level COVID-19 vaccination rate collected by the U.S. Department of Health and Human Services (HHS) COVID-19 Community Profile Report. |
| COVID-19 Community Vulnerability Index | <ul style="list-style-type: none"> ▪ These files contain county-level community vulnerability index data. ▪ They were obtained from Surgo Ventures.²⁵ ▪ They were used for the descriptive analyses. |
| Area Deprivation Index (ADI) | <ul style="list-style-type: none"> ▪ These files contain 2019–2021 rankings of neighborhood socioeconomic disadvantage. ▪ They were obtained from the geographic-based indices of health in the CCW. ▪ They were used for the descriptive and subgroup analyses. |
| HRR-ZIP Code Crosswalk | <ul style="list-style-type: none"> ▪ These files contain a crosswalk for ZIP codes to Hospital Referral Regions (HRRs). ▪ They were obtained from the Dartmouth Atlas of Health Care Data website.²⁶ ▪ They were used for determining markets for GPDC/ACO REACH and comparison groups. |
| Direct Contracting (DC) / ACO REACH / Kidney Care Choices (KCC) Rate Book | <ul style="list-style-type: none"> ▪ These files contain PY 2021–2023 county-level payment rates. ▪ They were obtained from the Innovation Center website.²⁷ ▪ They were used to balance county-level differences in the entropy balancing (EB). |
| 5-year American Community Survey (ACS) Estimates | <ul style="list-style-type: none"> ▪ These files contain the five-year ZIP code tabulation area (ZCTA) level estimates from the ACS for the lagged year (CYs 2017–2022). ▪ They were obtained from the U.S. Census Bureau website.²⁸ ▪ They were used to create ZCTA-level variables used in descriptive analyses and balancing GPDC/ACO REACH and comparison groups, as well as risk adjustment. |
| Participation in the Comprehensive Care for Joint Replacement (CJR) Model | <ul style="list-style-type: none"> ▪ These files contain beneficiary enrolled in the CJR Model for CYs 2018–2023. ▪ They were obtained from the CMS CJR contractor. ▪ They were used to describe beneficiary participation in CJR. |
| Participation in the Bundled Payments for Care Improvement Advanced (BPCI-A) Model | <ul style="list-style-type: none"> ▪ These files contain beneficiary enrolled in the BPCI-A Model for CYs 2018–2023. ▪ They were obtained from the CMS BPCI-A Contractor. ▪ They were used to describe beneficiary participation in BPCI-A. |

²³ Coronavirus (COVID-19) data in the United States. Available at: <https://github.com/nytimes/covid-19-data>

²⁴ COVID-19 Pandemic Vulnerability Index (PVI). Available at: <https://www.niehs.nih.gov/research/resources/databases/covid19pvi/index.cfm> and data available at: <https://github.com/COVID19PVI/data>

²⁵ COVID-19 Community Vulnerability Index (CCVI). Available at: <https://precisionforcovid.org/ccvi> and data available at: https://covid-static-assets.s3.amazonaws.com/US-CCVI/surgo_ccvi.zip

²⁶ HRR-ZIP Code Crosswalk. Available at: <https://data.dartmouthatlas.org/supplemental/>

²⁷ PY 2021 Direct Contracting/Kidney Care Choices (DC/KCC) Rate Book. Available at: <https://www.cms.gov/priorities/innovation/media/document/dckcc-rate-book-dec2020>

PY 2022 DC/KCC Rate Book. Available at: <https://www.cms.gov/priorities/innovation/media/document/dc-kcc-py2022-ratebook>

PY 2023 DC/KCC Rate Book. Available at: <https://www.cms.gov/priorities/innovation/media/document/gpdc-py2023-ratebook>

²⁸ 5-year American Community Survey (ACS) Estimates. Available at: <https://data.census.gov/>

| Data File | File Description, Source, and Evaluation Uses |
|--|--|
| Participation in the Oncology Care Model (OCM) | <ul style="list-style-type: none"> ▪ These files contain beneficiary enrolled in the OCM Model for CYs 2018–2022. ▪ They were obtained from the CMS OCM Contractor. ▪ They were used to describe beneficiary participation in OCM. |
| ACO Model beneficiary and provider files | <ul style="list-style-type: none"> ▪ These files contain a list of beneficiaries and providers participating in Next Generation ACO (NGACO) and Shared Savings Program during CYs 2018–2022. ▪ They were obtained from the CCW. ▪ They were used to describe beneficiary and provider experience in Medicare ACO programs. |
| Central Repository of High Needs Files | <ul style="list-style-type: none"> ▪ These files contain high needs data, including concurrent and prospective Hierarchical Condition Category (HCC) scores among all Original Medicare beneficiaries for CYs 2018–2023. ▪ They were obtained from GPDC/ACO REACH program analysis and the operational support contractor. ▪ They were used to identify High Needs ACOs and the comparison group’s eligible beneficiaries and describe the prospective HCC score for beneficiary characteristics. |
| GPDC/ACO REACH Financial Results | <ul style="list-style-type: none"> ▪ This file contains financial results for PYs 2021–2023 DCEs/ACOs. ▪ They were obtained from the Innovation Center website.²⁹ ▪ These files were used to calculate the net impact of Medicare spending. |
| GPDC/ACO REACH Consumer Assessment of Healthcare Providers and Systems (CAHPS) | <ul style="list-style-type: none"> ▪ These files include ACO-administered CAHPS survey in PY 2022 and PY 2023. ▪ They were obtained from GPDC/ACO REACH program analysis and operational support contractor. ▪ They were used to examine ACO-aligned beneficiaries’ experience of care. |
| Medicare FFS CAHPS | <ul style="list-style-type: none"> ▪ This file contains CAHPS survey administered to Original Medicare beneficiaries who were not in any type of APM in PY 2022 and PY 2023. ▪ They were obtained from the CCW. ▪ They were used to serve as a benchmark in examining REACH ACO’s beneficiary experience of care relative to Original Medicare beneficiaries who were not in any type of APM. |
| Merit-Based Incentive Payment System (MIPS) CAHPS | <ul style="list-style-type: none"> ▪ These files contain CAHPS survey administered to Original Medicare beneficiaries in Shared Savings Program ACOs and seen by other group providers participating in MIPS in PY 2022 and PY 2023. ▪ They were obtained from the MIPS program contractor. ▪ They were used to serve as a benchmark in examining REACH ACOs’ beneficiary experience of care relative to Original Medicare beneficiaries in Shared Savings Program ACOs. ▪ The evaluation team used the MIPS CAHPS because Shared Savings Program CAHPS files were not available at the time of conducting the analysis for the third evaluation report. |
| ACO REACH PY 2023 Benefit Enhancement Data | <ul style="list-style-type: none"> ▪ These files include data on claims submitted for benefit enhancements available to REACH ACOs in 2023. ▪ They were obtained from the CMS Learning System Contractor. ▪ They were used to analyze uptake of benefit enhancements in ACO REACH. |

²⁹ PY 2021 GPDC Financial Results. Available at: <https://www.cms.gov/priorities/innovation/media/document/gpdc-py2021-financial-results>. PY 2022 GPDC Financial Results. Available at: <https://www.cms.gov/files/document/gpdc-py2022-financial-results.xlsx>. PY 2023 ACO REACH Financial Results. Available at: <https://www.cms.gov/priorities/innovation/files/aco-reach-py2022-fin-qual-results.xlsx>.

Appendix H: Measure Specifications

This appendix specifies the variables used in the descriptive tables, entropy balancing (EB), and regression adjustment for impact analyses ([Appendix H.1](#)) and describes the claims-based outcome measures used to evaluate the model’s impact ([Appendix H.2](#)).

H.1 Variables for Descriptive Analysis, Entropy Balancing, and Regression Adjustment

Exhibit H.1 lists variables used in descriptive analysis, EB, and regression adjustment, as well as the data source, level of measurement, and a brief description for each of them.³⁰

Exhibit H.1. Variables for Descriptives, Weighting, and Risk Adjustment

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|-----------------------------|--------|-------------|---|--------------------|-------------------|-----------------------|
| Domain: Demographics | | | | | | |
| Age | MBSF | Beneficiary | Beneficiary age at end of the calendar year. Continuous age is used for regression adjustment and reported in the descriptive tables, while age categories (under 65, 65–69, 70–74, 75–79, 80–84, 85 and over) were used for EB | X | X | X |
| Sex | MBSF | Beneficiary | Indicator for male | X | X | X |
| Dual eligibility | MBSF | Beneficiary | Indicator for dual eligibility in any month during the calendar year (that is, calendar year for the performance or baseline years) | X | X | X |
| Months of alignment | MBSF | Beneficiary | Number of beneficiary months of alignment during the calendar year | X | X ³¹ | X |
| Year | MBSF | Beneficiary | Calendar year <ul style="list-style-type: none"> ▪ 2021 cohort: 2018–2020 for the baseline years, 2021 for PY 1, 2022 for PY 2, and 2023 for PY 3 ▪ 2022 cohort: 2019–2021 for the baseline years, 2022 for PY 2, and 2023 for PY 3 ▪ 2023 cohort: 2020–2022 for the baseline years, and 2023 for PY 3 | X | X | X |

³⁰ Not all variables were included in this exhibit. Please refer to the appendices of the Second Evaluation Report for the full list of variables: <https://www.cms.gov/priorities/innovation/data-and-reports/2024/gpdc-2nd-ann-report-app>

³¹ Months of alignment was not included in the EB model for mortality because mortality status directly affects months of alignment.

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|--------------------------------------|----------------|-------------|---|--------------------|-------------------|-----------------------|
| ACO REACH status | Alignment file | Beneficiary | Indicator for whether a beneficiary was aligned to ACO REACH or comparison group in the performance or baseline year | X | X | X |
| State | MBSF | Beneficiary | State of residence; state was used to create Census Region (Northeast, Midwest, South, West) for descriptive tables | X | | |
| Domain: Clinical³² | | | | | | |
| End-stage renal disease (ESRD) | MBSF | Beneficiary | Indicator for Medicare coverage based on ESRD diagnosis during the year | | X | X |
| Disability | MBSF | Beneficiary | Indicator for Medicare coverage based on disability status during the year | X | X | X |
| Cancer | MBSF | Beneficiary | Indicator for cancer, including colorectal cancer, endometrial cancer, breast cancer, lung cancer, prostate cancer, urologic cancers (kidney, renal pelvis, and ureter), and leukemias and lymphomas, based on meeting CCW criteria ³³ in the prior year | | X | X |
| Cardiac conditions | MBSF | Beneficiary | Indicator for cardiac conditions, including acute myocardial infarction, heart failure, atrial fibrillation, and ischemic heart disease, based on meeting CCW criteria in the prior year | X | X | X |
| Vascular conditions | MBSF | Beneficiary | Indicator for vascular disease, including hypertension and peripheral vascular disease, based on meeting CCW criteria in the prior year | X | X | X |
| Cognitive disorders | MBSF | Beneficiary | Indicator for cognitive disorders, including Alzheimer’s disease and non-Alzheimer’s dementia, based on meeting CCW criteria in the prior year | | X | X |
| Stroke | MBSF | Beneficiary | Indicator for stroke, including stroke/transient ischemic attack, based on meeting CCW criteria in the prior year | | X | X |
| Endocrine | MBSF | Beneficiary | Indicator for endocrine conditions, including diabetes, hyperlipidemia, anemia, hypothyroidism, and benign prostatic hyperplasia, based on meeting CCW criteria in the prior year | X | X | X |

³² Clinical indicators are coded as “1” if beneficiary has one or more of the conditions in the indicator and “0” if otherwise/unknown. CCW indicators are based on the end-of-year flags in the prior year.

³³ To be specific, we used Medicare Beneficiary Summary File (MBSF) 30 Chronic Conditions Data Warehouse (CCW) Chronic Condition Segment and MBSF Other Chronic or Potentially Disabling Conditions Segment end-of-year indicator variables, and flagged the beneficiary with the specific condition if the CCW chronic condition variables indicated as “beneficiary met claims criteria” (i.e., a minimum number/type of Medicare claims that have the proper diagnosis codes and occurred within a specified time period).

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|-----------------------------------|--------|-------------|---|--------------------|-------------------|-----------------------|
| Eye | MBSF | Beneficiary | Indicator for eye disorders, including glaucoma and cataract, based on meeting CCW criteria in the prior year | X | X | X |
| Rheumatoid conditions | MBSF | Beneficiary | Indicator for rheumatoid conditions, including osteoporosis with or without pathological fracture and rheumatoid arthritis/osteoarthritis, based on meeting CCW criteria in the prior year | X | X | X |
| Respiratory conditions | MBSF | Beneficiary | Indicator for respiratory conditions, including asthma, chronic obstructive pulmonary disease, and all-cause pneumonia, based on meeting CCW criteria in the prior year | X | X | X |
| Chronic kidney disease | MBSF | Beneficiary | Indicator for chronic kidney disease, based on meeting CCW criteria in the prior year | X | X | X |
| Hip fracture | MBSF | Beneficiary | Indicator for hip fracture, including hip and pelvic fracture, based on meeting CCW criteria in the prior year | | X | X |
| Infections | MBSF | Beneficiary | Indicator for infections, including human immunodeficiency virus and/or acquired immunodeficiency syndrome and viral hepatitis (general), based on meeting CCW criteria in the prior year | | X | X |
| Metabolic developmental disorders | MBSF | Beneficiary | Indicator for metabolic developmental disorders, including cystic fibrosis and other metabolic developmental disorders, based on meeting CCW criteria in the prior year | | X | X |
| Mental health conditions | MBSF | Beneficiary | Indicator for behavioral health conditions, including schizophrenia; schizophrenia and other psychotic disorders; personality disorders; anxiety disorders; post-traumatic stress disorder; bipolar disorder; depression, bipolar, or other depressive mood disorders; or depressive disorders, based on meeting CCW criteria in the prior year | X | X | X |
| Developmental disorders | MBSF | Beneficiary | Indicator for developmental disorders, including attention deficit hyperactivity disorder (ADHD), conduct disorders, and hyperkinetic syndrome, autism spectrum disorders, intellectual disabilities and related conditions, other developmental delays, and learning disabilities, based on meeting CCW criteria in the prior year | | X | X |
| Skin conditions | MBSF | Beneficiary | Indicator for skin conditions, including pressure and chronic ulcers, based on meeting CCW criteria in the prior year | | X | X |

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|--|-----------------|-------------|--|--------------------|-------------------|-----------------------|
| Substance use disorders | MBSF | Beneficiary | Indicator for substance use disorders, including alcohol use disorders, drug use disorders, opioid use disorder, and tobacco use, based on meeting CCW criteria in the prior year | | X | X |
| Chronic pain disorders | MBSF | Beneficiary | Indicator for chronic pain disorders, including fibromyalgia, chronic pain, and fatigue, based on meeting CCW criteria in the prior year | X | X | X |
| Spinal cord disorders/injuries | MBSF | Beneficiary | Indicator for spinal cord disorders/injuries, including spinal cord injury and spina bifida and other congenital anomalies of the nervous system, based on meeting CCW criteria in the prior year | | X | X |
| Obesity | MBSF | Beneficiary | Indicator for obesity, based on meeting CCW criteria in the prior year | X | X | X |
| Traumatic brain injury | MBSF | Beneficiary | Indicator for traumatic brain injury, including traumatic brain injury and nonpsychotic mental disorders due to brain damage, based on meeting CCW criteria in the prior year | | X | X |
| Sensory impairments | MBSF | Beneficiary | Indicator for sensory impairments, including blindness and visual impairment and sensory deafness and hearing impairment, based on meeting CCW criteria in the prior year | | X | X |
| Mobility impairments | MBSF | Beneficiary | Indicator for mobility impairments, based on meeting CCW criteria in the prior year | | X | X |
| Liver conditions | MBSF | Beneficiary | Indicator for liver conditions, including liver disease, cirrhosis, and other liver conditions, based on meeting CCW criteria in the prior year | | X | X |
| Neurological disorders and conditions | MBSF | Beneficiary | Indicator for neurological disorders and conditions, including Parkinson’s Disease and Secondary parkinsonism, cerebral palsy, epilepsy, muscular dystrophy, migraine and chronic headache, multiple sclerosis, and transverse myelitis, based on meeting CCW criteria in the prior year | | X | X |
| Total number of chronic conditions | MBSF | Beneficiary | Count of major chronic conditions in the prior year; capped at 10 when used in EB | X | X | |
| Long-term care flag | Medicare claims | Beneficiary | Indicator for long-term care nursing home stay in the prior year | X | X | X |
| Prior Medicare Advantage (MA) enrollment | MBSF | Beneficiary | Indicator for whether a beneficiary was enrolled in a MA plan in the prior year | X | X | X |

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|---|--|-------------|---|--------------------|-------------------|-----------------------|
| High Needs flag | Central Repository of High Needs Files | Beneficiary | Indicator for beneficiaries considered High Needs using the model’s High Needs eligibility criteria. For more details on the High Needs eligibility criteria, see the Global and Professional Direct Contracting Model Financial Operating Guide: Overview . | X | | |
| High Needs Mobility Flag | Central Repository of High Needs Files | Beneficiary | Indicator for beneficiaries considered to have one or more conditions that impair the beneficiary’s mobility using the model’s High Needs eligibility criteria. For more details on the High Needs eligibility criteria, see the Global and Professional Direct Contracting Model Financial Operating Guide: Overview . | X | | |
| High Needs Frailty Flag | Central Repository of High Needs Files | Beneficiary | Indicator for beneficiaries exhibiting signs of frailty using the model’s High Needs eligibility criteria. For more details on the High Needs eligibility criteria, see the Global and Professional Direct Contracting Model Financial Operating Guide: Overview . | X | | |
| High Needs Chronic or Serious Illness Flag | Central Repository of High Needs Files | Beneficiary | Indicator for beneficiaries having at least one significant chronic or other serious illness using the model’s High Needs eligibility criteria. For more details on the High Needs eligibility criteria, see the Global and Professional Direct Contracting Model Financial Operating Guide: Overview . | X | | |
| High Needs CMS-HCC Risk Score and Readmissions Flag | Central Repository of High Needs Files | Beneficiary | Indicator for beneficiaries having an elevated CMS-HCC risk score and two or more unplanned admissions in the previous 12 months using the model’s High Needs eligibility criteria. For more details on the High Needs eligibility criteria, see the Global and Professional Direct Contracting Model Financial Operating Guide: Overview . | X | | |
| Claims-Based Frailty Index ³⁴ | Medicare claims | Beneficiary | Frailty Index categories (0–≤0.15, >0.15–≤0.25, >0.25–≤0.35, >0.35–≤0.45, >0.45) | X | | |
| Part D coverage | MBSF | Beneficiary | Indicator for Part D coverage in any month during the year | X | | X |
| Part D low-income drug subsidy | MBSF | Beneficiary | Indicator for received Part D Low-Income Drug Subsidy during the year | X | | |
| Prospective CMS-HCC Risk Score | RTI High Needs File | Beneficiary | HCC score in the prior year | X | | |

³⁴ We used the claims-based frailty index to describe the level of frailty of beneficiaries aligned to High Needs ACOs or their comparison groups. The measure was created based on the Kim *et al.* 2018 study. Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. *Measuring frailty in Medicare data: development and validation of a claims-based frailty index*. The Journals of Gerontology: Series A. 2018 Jun 14;73(7):980-7.

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|--|---------------------------|--------------------|--|--------------------|-------------------|-----------------------|
| Domain: Market or Neighborhood | | | | | | |
| Rural-Urban Commuting Area (RUCA) Code | USDA ERS | ZIP | RUCA codes based on a beneficiary’s ZIP code. For descriptive tables, we defined rural area as having RUCA code 7–10. | X | X | X |
| Health professional shortage area (HPSA) primary care | AHRF | County | HPSA category for primary care based on a beneficiary’s county | X | | |
| HPSA mental health | AHRF | County | HPSA category for mental health care based on a beneficiary’s county | X | | |
| ACO REACH benchmark rate | ACO REACH / KCC Rate Book | County | County-level benchmark rate for ACO REACH aged/disabled beneficiaries in PY 2023, based on beneficiary’s county ³⁵ | | X | |
| Providers per 1,000 Original Medicare population within 10 miles | Medicare claims; MBSF | ZIP | ZIP code-level number of Original Medicare alignment-eligible providers within 10 miles per 1,000 Original Medicare population, based on provider location in outpatient/carrier claims and beneficiary residence in the MBSF. The continuous version was used for descriptive tables; the percentile version was used for EB and regression adjustment. | X | X | X |
| Percent below poverty line | 5-year ACS Estimates | ZCTA | Percent population below federal poverty line in a beneficiary’s ZCTA. The continuous version was used for descriptive tables; the percentile version was used for regression adjustment. | X | | X |
| Bachelor’s degree or higher | 5-year ACS Estimates | ZCTA | Percent population aged 25 and older holding a bachelor’s degree in a beneficiary’s ZCTA. The continuous version was used for descriptive tables; the percentile version was used for EB and regression adjustment. | X | X | X |
| Median income | 5-year ACS Estimates | ZCTA | Median household income in a beneficiary’s ZCTA. The percentile version was used for EB and regression adjustment. | | X | X |
| Area Deprivation Index | CMS and GBIH | Census Block Group | National percentile rank for Area Deprivation Index (ADI) based on beneficiary’s census block group; ADI categories (1–25, 26–50, 51–75, 76–100) | X | | |

³⁵ We used this variable to balance on county-level variations on Medicare spending, so in each performance year of the evaluation we used the respective PY’s rate book for that PY and its base years.

| Variable | Source | Level | Variable Description | Descriptive Tables | Entropy Balancing | Regression Adjustment |
|---|---|-------------|---|--------------------|-------------------|-----------------------|
| Hospital referral region (HRR) | Dartmouth Atlas ZIP code to HRR crosswalk | HRR | Indicator for HRR based on beneficiary's ZIP code | | | X |
| Domain: Other Alternative Payment Models | | | | | | |
| CPC+ or PCF Model | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to CPC+ or PCF any time in the year | X | | |
| FAI | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to FAI anytime in the year | X | | |
| IAH Demonstration | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the IAH Demonstration any time in the year | X | | |
| NGACO Model | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the NGACO Model any time in the year | X | | |
| CEC Model | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the CEC Model any time in the year | X | | |
| Shared Savings Program | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the Medicare Shared Savings Program any time in the year | X | | |
| ETC Model | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the ETC Model any time in the year | X | | |
| KCC Model | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the KCC Model any time in the year | X | | |
| VIT Demonstration | MDM | Beneficiary | Indicator for whether a beneficiary was aligned to the VIT Demonstration any time in the year | X | | |
| CJR Model | CMS CJR Contractor | Beneficiary | Indicator for whether a beneficiary was in the CJR Model any time in the year | X | | |
| BPCI Advanced Initiatives | CMS BPCI-A Contractor | Beneficiary | Indicator for whether a beneficiary was in the BPCI or BPCI Advanced Models any time in the year | X | | |
| OCM | CMS OCM Contractor | Beneficiary | Indicator for whether a beneficiary was in OCM any time in the year | X | | |

NOTE: MBSF=Medicare Beneficiary Summary File; HCC=Hierarchical Condition Categories; RTI=Research Triangle Institute; USDA ERS=US Department of Agriculture Economic Research Service; AHRF=Area Health Resource File; GPDC=Global and Professional Direct Contracting; ZCTA=ZIP Code Tabulation Areas; GBIH=Geographic-Based Indices of Health; ACS=American Community Survey; MDM=Master Data Management Files; FFS=Fee-for-services; CPC+=Comprehensive Primary Care Plus; PCF=Primary Care First; FAI=Financial Alignment Initiative; IAH=Independence at Home; CEC=Comprehensive end-stage renal disease (ESRD) Care; Shared Savings Program=Medicare Shared Savings Program; ETC=ESRD Treatment Choices; KCC=Kidney Care Choices; VIT=Value in Opioid Use Disorder Treatment; CJR=Comprehensive Care for Joint Replacement; BPCI=Bundled Payments for Care Improvement; OCM=Oncology Care Model; NGACO=Next Generation ACO.

H.2 Measures of Spending, Utilization, and Quality

The following sections describe the claims-based spending, utilization, and quality measures used to evaluate the model's impact, using difference-in-differences (DID) methods. The measures that were assessed by DID methods include:

- Gross and net total Medicare spending
- Eight categories of Medicare spending by care setting and service type
- Eight utilization measures³⁶
- Seven quality of care measures³⁷

Measures were created for the treatment group and comparison group in performance and baseline years. Spending measure specifications (for both total gross spending and setting-specific spending) in the performance and baseline years for the treatment and comparison groups account for model-specific payments made to ACO REACH, NGACO, Comprehensive Primary Care Plus (CPC+), and Primary Care First (PCF) model participants that are captured in the Medicare claims.³⁸ The utilization and quality measure specifications were consistent for the treatment and comparison groups in the performance and baseline years.

Additionally, for eight claims-based outcome measures, we descriptively assessed trends over time for the treatment group but did not include these measures in the impact analyses owing to their expected violations of the parallel trends test. These measures include: 1) primary care visits spending, 2) primary care practitioner services, 3) urgent care visits, 4) urgent care visits excluding COVID-related visits,³⁹ 5) annual wellness visits, 6) chronic disease management for patients with multiple chronic conditions, 7) advance care plan, and 8) mortality. Because we balanced the ACO and comparison groups on beneficiary characteristics but not provider characteristics, we expected the two groups—for many ACOs and comparators—to differ in their baseline trends for the first seven outcomes related to care processes. Regarding mortality, owing to the primary care focus of the ACO REACH Model, this outcome may be less under the control of ACOs and their providers. These trend graphs are presented, for each ACO type, in [Appendix J](#), [Appendix K](#), and [Appendix L](#).

ACO REACH Model Payment Adjustments

Total Care Capitation (TCC). Capitated payment that applies to all services covered by Medicare Parts A and B that are provided to aligned beneficiaries by Participant and Preferred Providers participating in this option.

Primary Care Capitation (PCC). Capitated payment that applies to certain primary care services provided to aligned beneficiaries by Participant and Preferred Providers who are primary care practitioners participating in this option.

Advance Payment Option (APO). Reduced FFS payments for services not covered under PCC. Only ACOs that elect PCC can also choose this option.

³⁶ Total hospice days is a new measure added in PY 2023.

³⁷ Low-value care is a new measure added in PY 2023.

³⁸ Model-specific payment adjustments on claims included capitation for ACO REACH, population-based payments for NGACO, and flat fees or reduced visit fees for PCF/CPC+.

³⁹ Two measures of urgent care visits, one including and the other excluding COVID-related visits, are new measures added in PY 2023.

H.2.1 Medicare Spending Outcomes

We created three kinds of outcome measures to capture ACO-level Medicare spending in the baseline years and performance years: 1) total Medicare gross spending, 2) total Medicare net spending, and 3) Medicare spending in care settings. It is important to note that there are substantive differences in how the total spending and spending category measures were calculated. The total Medicare gross spending measure represents what Medicare actually paid by including beneficiary-level capitated payments under the ACO REACH Model, whereas the spending category measures represent what Medicare would have paid ACOs absent capitation across a variety of care settings. Direct comparisons between total spending and spending categories are not feasible, given differences in how these measures were constructed and analyzed. The net spending measure is gross spending plus CMS' ACO incentive payments in the form of shared savings and the high-performers pool (HPP) bonus to highest performing ACOs. The HPP was introduced in PY 2023, to support exceptional performance and continuous quality improvement. Under the HPP, ACOs qualify for a shared savings bonus if they meet or exceed the Continuous Improvement/Sustained Exceptional Improvement criteria⁴⁰ and their average measure performance is greater than or equal to the 70th percentile.

Total Medicare Gross Spending

Total Medicare gross spending included Medicare Parts A and B spending, capturing ACO REACH's TCC/PCC, and APO payments.⁴¹ This measure distinguished between amounts paid on population-based payment (PBP) claims,⁴² non-PBP claims,⁴³ and other model-specific payments reconciled through the claims system for APMs.

Exhibits H.2 and H.3 detail the process for determining treatment and comparison group beneficiary gross Medicare spending during two types of calendar years: years prior to model onset and model years, respectively. The processes to calculate gross Medicare spending are described separately for these two types of years because the model years included reductions toward capitations and APO on ACO REACH provider claims for model aligned beneficiaries.

Years prior to Model Onset. We identified claims with claim admission date (for facility claims) or claim from date (for physician/supplier claims) during years prior to the model's onset for each cohort (**Exhibit H.2**). The baseline years for the 2021 cohort (2018–2020) were all before model onset; in the 2022 cohort's baseline (2019–2022), two years were before onset of the model (2019–2021); and in the 2023 cohort's baseline (2020–

⁴⁰ <https://www.cms.gov/files/document/py25-reach-qual-meas-meth-report.pdf>.

⁴¹ For more information on how TCC, PCC, and APO payments are defined by the model, refer to the PY 2023 Financial Operating Policies: Capitation and Advanced Payment Mechanisms document, available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financialop-cap-pymnt-mech>.

⁴² PBP claims are reduced based on the respective model's financial strategy that typically pays model participants outside of the claims system. To capture spending accurately, we removed those adjustments, available through the CCW, to allow for the claims to represent what Medicare would have paid absent the ACO REACH Model.

⁴³ Although PBPs are a feature of several models, for PY 2021 and baseline years, we only adjust for PBP claims that are a feature of the NGACO Model. Although PBP claims are not a feature of the ACO REACH Model, beneficiaries aligned to the NGACO Model may be included in the treatment group in baseline years and for the comparison group in baseline and performance years. Thus, we account for PBP costs on claims for NGACO beneficiaries to accurately capture gross Medicare spending for this evaluation.

2022), one year (2020) before the model's onset.⁴⁴ We processed claims differently depending on whether they were facility claims⁴⁵ or physician/supplier claims.⁴⁶

We then used the program identifier on the claim to distinguish between NGACO claims (to account for PBPs in this overlapping model) and non-NGACO claims, as well as between claims for treatment group and comparison group beneficiaries.

For facility claims:

- NGACO instances: gross Medicare spending was calculated as the claim value amount from claims with PBP adjustments for NGACO minus the uncompensated care payment amount.
- Non-NGACO instances: gross Medicare spending was calculated as the claim payment amount minus the uncompensated care payment amount.

For physician/supplier claims:

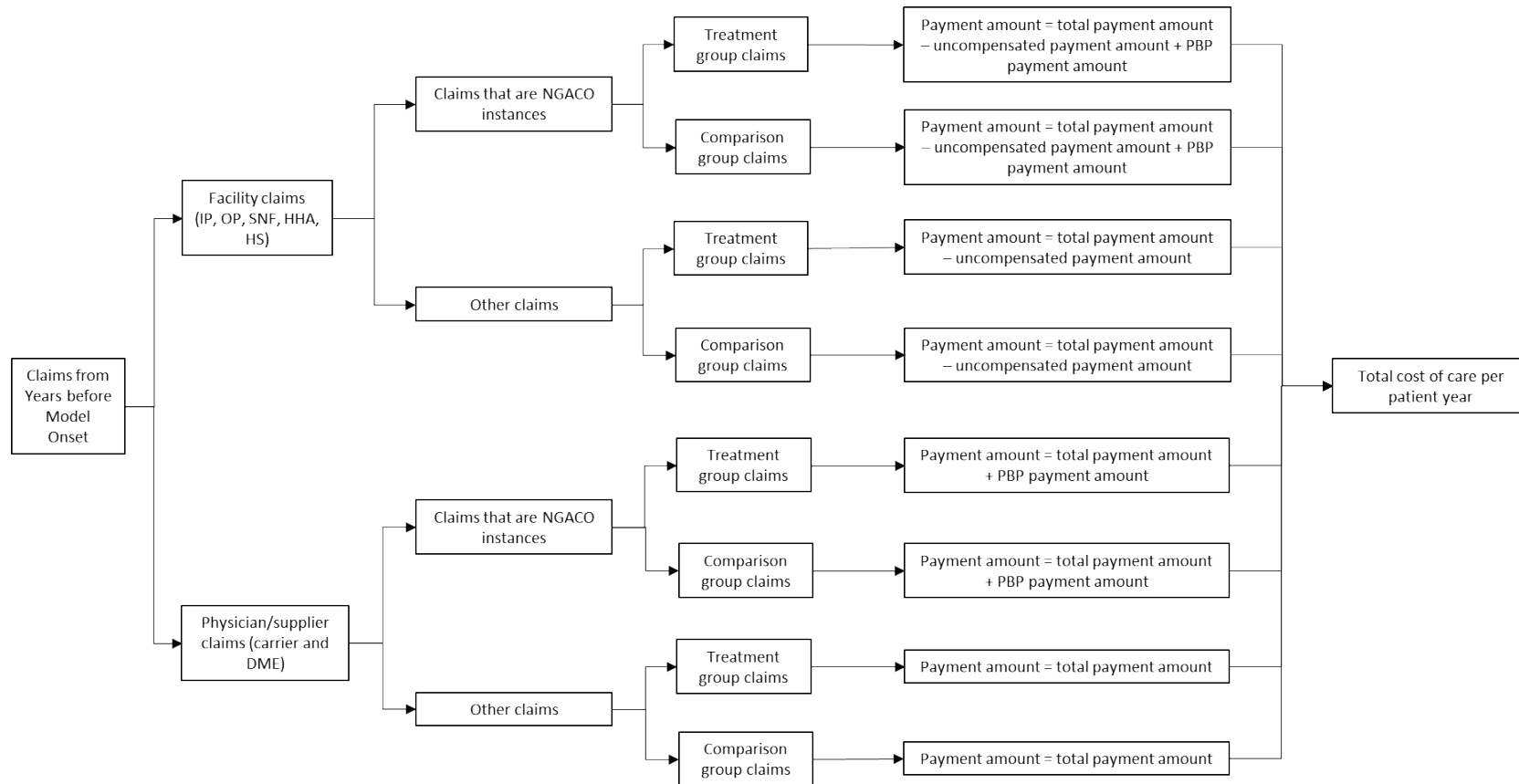
- NGACO instances: gross Medicare spending was calculated as the claim payment amount plus the claim PBP reduction amount.
- Non-NGACO instances: we further distinguished between CPC+ and PCF claims and claims that were not associated with either of these primary care models. We used the program identifier on the claim to distinguish between CPC+/PCF claims and non-CPC+/PCF claims. For physician/supplier claims that were CPC+/PCF instances for beneficiaries in the treatment group or comparison group, gross Medicare spending was calculated as the claim payment amount adjusted for the corresponding line "other applied amount," representing CPC+ Payment Adjustment Amounts, PCF Flat Visit Reduction Amounts, or PCF Flat Visit Fee Increased Amounts. For physician/supplier claims that were not CPC+/PCF instances for beneficiaries in the treatment group or comparison group, gross Medicare spending was calculated as the claim payment amount.

⁴⁴ Claims in BY 2021 for the 2022 cohort and claims in BY 2021 and BY 2022 for the 2023 cohort were processed using the approach described for GPDC/ACO REACH model years (2021–2023) in **Exhibit H.3**.

⁴⁵ Facility claims include claim types 10 (Home Health Agency), 20 (non-swing bed skilled nursing facility), 30 (swing bed skilled nursing facility), 40 (hospital outpatient), 50 (hospice), and 60 (inpatient).

⁴⁶ Physician/supplier claims include claim types 71 (local carrier non-durable medical equipment, prosthetics, orthotics, and supplies), 72 (local carrier durable medical equipment, prosthetics, orthotics, and supplies), 81 (durable medical equipment regional carrier; non-durable medical equipment, prosthetics, orthotics, and supplies), and 82 (durable medical equipment regional carrier; durable medical equipment, prosthetics, orthotics, and supplies).

Exhibit H.2. Total Gross Medicare Spending in Years prior to the Model Onset (2018–2020⁴⁷)



NOTE: IP=Inpatient; OP=Outpatient; SNF=Skilled Nursing Facility; HHA=Home Health Agency; HS=Hospice; DME=Durable Medical Equipment; NGACO=Next Generation Accountable Care Organization; PBP=Population-Based Payment. The total payment amount for facility claims that are NGACO instances is the claim value amount from claims with value code Q0; the total payment amount for facility claims that are not NGACO instances (that is, “Other” claims) is the claim payment amount. The uncompensated care payment amount is subtracted from all payment amounts for facility claims. The total payment amount for physician/supplier claims that are NGACO instances is the claim payment amount plus the PBP reduction amount; the total payment amount for physician/supplier claims that are not NGACO instances and are either treatment group or comparison group claims could be from Comprehensive Primary Care Plus (CPC+), Primary Care First (PCF) instances, or non-CPC+/PCF instances. The total payment amount for CPC+/PCF instances is the claim payment amount adjusted for the line “other applied amount” for claims with the line other applied indicator code T, A2, or A3. The total payment amount for non-CPC+/PCF instances is the claim payment amount.

⁴⁷ In our evaluation, 2018–2020 serve as BY3–BY1 for 2021 Cohort, 2019–2020 serve as BY3–BY2 for 2022 Cohort, and 2020 serves as BY3 for the 2023 Cohort.

Model Years (2021–2023). We identified model years' claims in the same manner as we did for the years preceding the model's onset (**Exhibit H.3**). In addition, we distinguished GPDC/ACO REACH claims (to account for capitation and APO payments; treatment group only) from non-NGACO/GPDC/ACO REACH claims (treatment group and comparison group).

For facility claims:

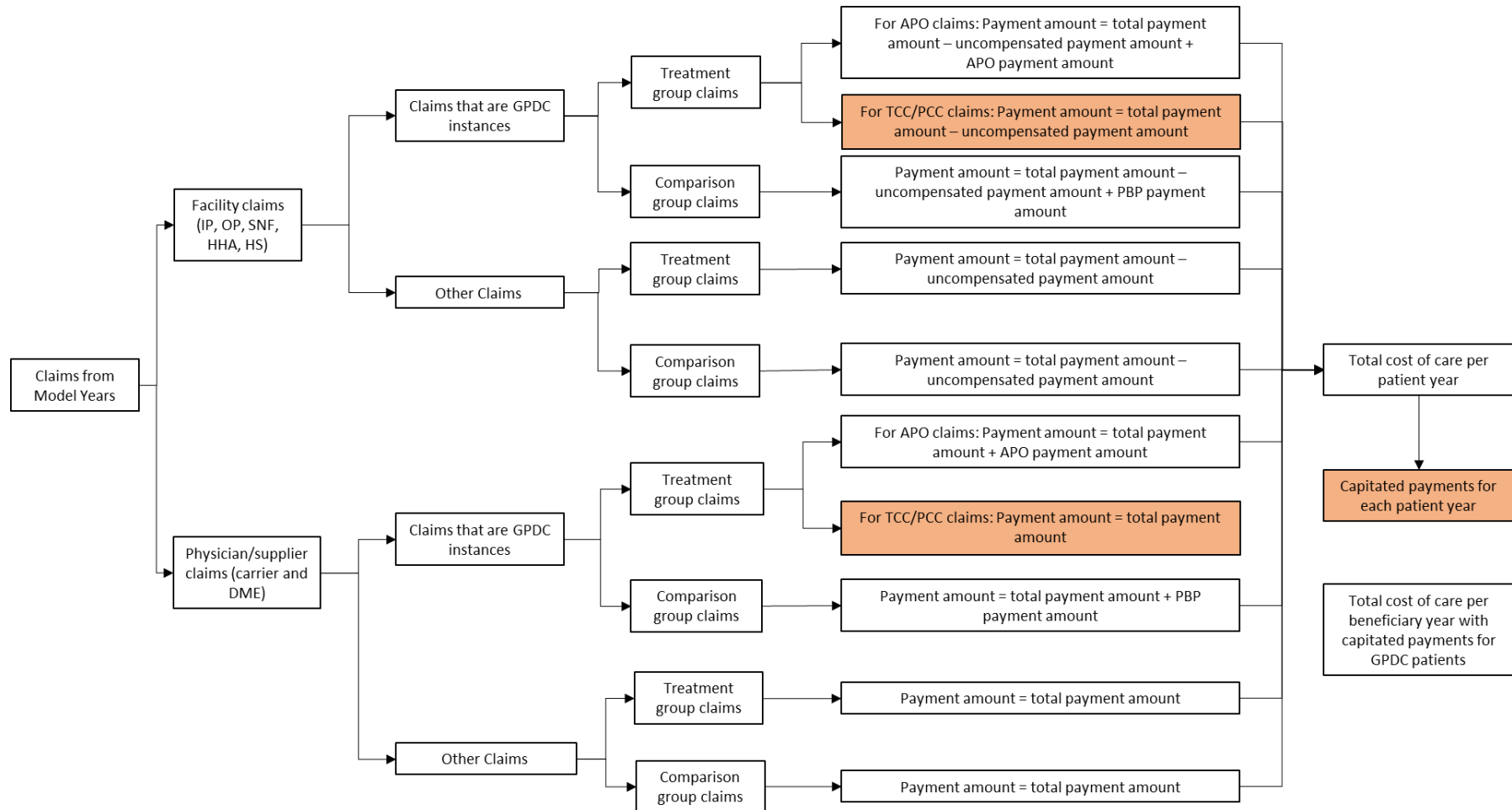
- GPDC/ACO REACH instances: gross Medicare spending for PCC+APO claims was calculated as the claim payment amount minus the uncompensated care amount plus the claim APO reduction amount; gross Medicare spending for TCC/PCC-only claims was calculated as the claim payment amount minus the uncompensated care payment amount. We linked Medicare claims to the model's provider election files, provided by the Innovation Center's GPDC/ACO REACH payment analysis and operational support contractor,⁴⁸ to distinguish between APO and TCC/PCC claims. We obtained PBP/APO reduction amounts from the CCW and aggregated monthly beneficiary-level TCC/PCC amounts, provided by the Innovation Center's GPDC/ACO REACH Model payment analysis and operational support contractor, to the year level for the purpose of calculating the gross Medicare spending measure. When spending was aggregated to the beneficiary-year level, capitated payments for each beneficiary year were added to the gross Medicare spending amount.
- Non-GPDC/ACO REACH instances: claims were processed the same way as claims that were either NGACO or other instances in the baseline years. There were no NGACO or CPC+ claims in CY 2022 or CY 2023.

For physician/supplier claims:

- GPDC/ACO REACH instances: gross Medicare spending for PCC+APO claims was calculated as the claim payment amount plus the claim APO reduction amount; gross Medicare spending for TCC/PCC only claims was calculated as the claim payment amount. As earlier, we aggregated spending to the beneficiary-year level and added the appropriate capitated payment for each beneficiary year to the gross Medicare spending amount.
- Non-GPDC/ACO REACH instances for beneficiaries in the treatment group: gross Medicare spending was calculated as the claim payment amount.
- Non-GPDC/ACO REACH instances for beneficiaries in the comparison group: claims were processed the same way as claims that were either NGACO instances or other instances in the baseline years. There were no NGACO or CPC+ claims in CY 2022 or CY 2023.

⁴⁸ These data are available in the Central Repository Payment File, provided by the Innovation Center's GPDC/ACO REACH payment analysis and operational support contractor in "Constructing MER (Monthly Expenditure Report)/QBR (Quarterly Benchmark Report) Data from the Claim & Claim Line Feed Data Files" (April 2022).

Exhibit H.3. Total Gross Medicare Spending in Model Years (2021–2023)



NOTE: IP=Inpatient; OP=Outpatient; SNF=Skilled Nursing Facility; HHA=Home Health Agency; HS=Hospice; DME=Durable Medical Equipment; GPDC=Global and Professional Direct Contracting; APO=Advance Payment Option; PCC=Primary Care Capitation; TCC=Total Care Capitation; PBP=Population-Based Payment. The total payment amount for facility claims that are APO GPDC/ACO REACH instances is the claim payment amount plus the APO PBP reduction amount. The total payment amount for facility claims that are TCC/PCC GPDC/ACO REACH instances is the claim payment amount plus the beneficiary-year capitation amounts for TCC/PCC claims. The total payment amount for facility claims that are Next Generation Accountable Care Organization (NGACO) instances is the claim amount plus the NGACO PBP reduction amount. The total payment amount for facility claims that are non-GPDC/ACO REACH/NGACO instances (that is, “Other” claims) is the claim payment amount. The uncompensated care payment amount is subtracted from all payment amounts for facility claims. The total payment amount for physician/supplier claims that are GPDC/ACO REACH instances is the claim payment amount plus the PBP reduction amount. The total payment amount for

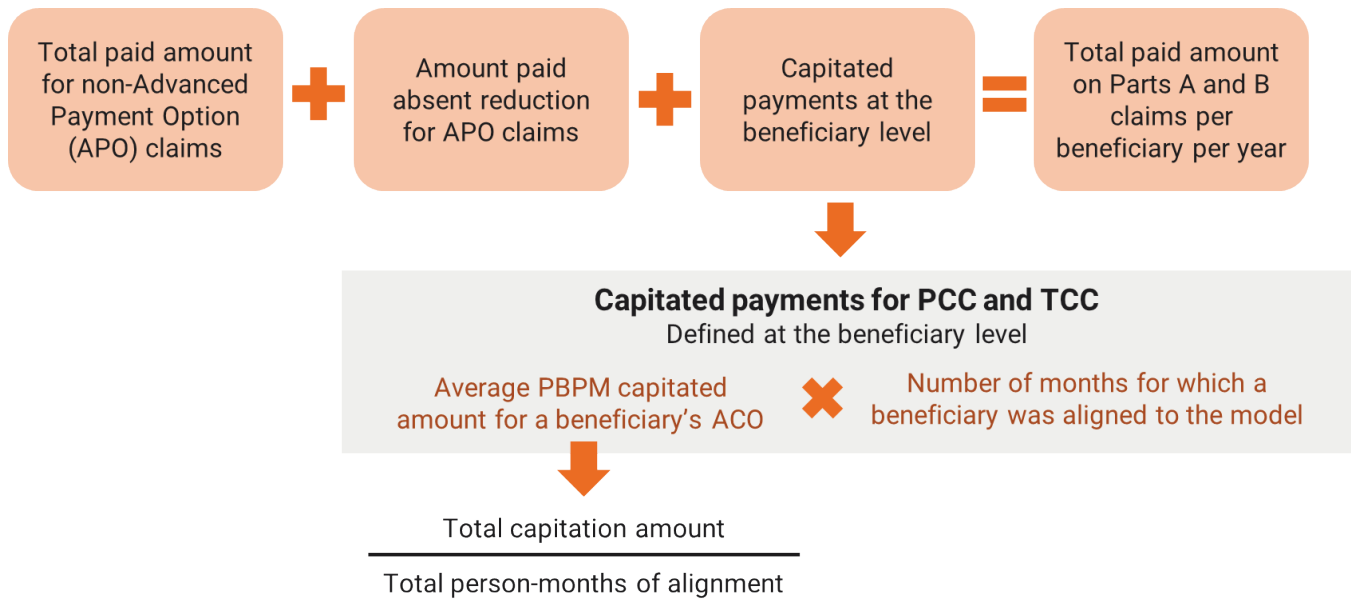
physician/supplier claims that are APO GPDC/ACO REACH instances is the claim payment amount plus the PBP reduction amount. The total payment amount for physician/supplier claims that are TCC/PCC GPDC/ACO REACH instances is the claim payment amount plus the beneficiary-year capitation amount for TCC/PCC claims. The total payment amount for physician/supplier claims that are non-GPDC/ACO REACH instances and are treatment group claims is the claim payment amount. The total payment amount for physician/supplier claims that are non-GPDC/ACO REACH instances and are comparison group claims could be NGACO, Comprehensive Primary Care Plus (CPC+)/Primary Care First (PCF) instances, or non-NGACO/CPC+/PCF instances. The total payment amount for NGACO instances is the claim payment amount plus the NGACO PBP reduction amount. The total payment amount for CPC+/PCF instances is the claim payment amount adjusted for the line “other applied amount” for claims with the line other applied indicator code T, A2, or A3. The total payment amount for non-NGACO/CPC+/PCF instances is the claim payment amount.

In computing total Medicare gross spending, we include the APO claims reduction amounts that are advanced to ACOs electing PCC plus APO (PCC+APO) option. Under the APO, ACOs receive advance monthly payments that are reduced on FFS claims for their providers participating in the APO. APO payments are reconciled against the amount of reduction made in FFS payments using the following formula:

$$\sum \text{APO Claims Reduction Amount} = \text{APO} (\sum \text{Monthly Advance Payment Amount} - \text{Reconciliation Amount})$$

The formula for calculating gross Medicare spending is shown in **Exhibit H.4**. In CY 2023, we excluded payment amounts on 2023 claims submitted with two Healthcare Common Procedure Coding System (HCPCS) codes related to fraudulent urinary catheter durable medical equipment claims (A4352 and A4353), in alignment with model calculations.

Exhibit H.4. Calculating Gross Medicare Spending for the Evaluation



Total Medicare Net Spending

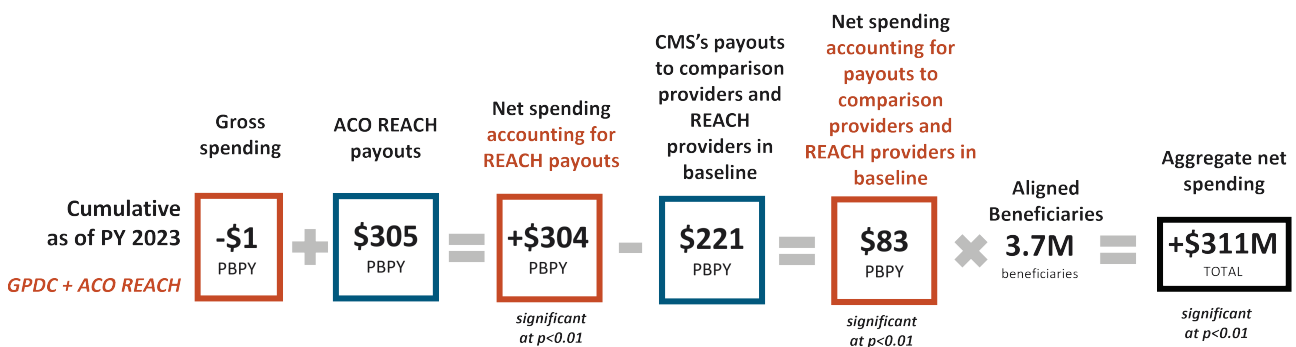
Total Medicare net spending is defined as total Medicare gross spending plus the shared savings payments CMS made to ACOs (and minus the shared losses ACOs made to CMS) in the respective performance year under the Professional or Global option, representing the cost to CMS of incentive payments to ACOs to participate in the model. The formula for calculating the net spending impact estimate, from the corresponding estimate for gross Medicare spending, is shown for Standard ACOs as an illustration in **Exhibit H.5**. We obtained the PY 2023 shared savings amount from the public financial results in November 2024.⁴⁹ We adjusted the shared savings/losses amount based on the difference in total aligned beneficiary months between the model’s

⁴⁹ PY 2023 ACO REACH Financial Results. Available at: <https://www.cms.gov/priorities/innovation/files/aco-reach-py2022-fin-qual-results.xlsx>

population and the evaluation’s population.⁵⁰ Starting in PY 2023, high-performing REACH ACOs could receive a separate high-performer bonus payout.⁵¹ In PY 2023, shared savings applied to calculate the net spending totaled \$738,507,160 for Standard ACOs (including \$44,778,573 for high-performer payout), \$41,729,521 for New Entrant ACOs⁵² (no New Entrant ACO earned a high-performer payout in PY 2023), and \$91,969,146 for High Needs ACOs (including \$539,826 for high-performer payout).

For a comprehensive accounting of net spending, in addition to including ACO shared savings payouts to REACH ACOs in the performance year (PY), we also included ACO shared savings payouts in the Shared Savings Program and NGACO model. These additional payouts applied to the ACO REACH group in the baseline years and to the comparison group in both time periods (shaded box in **Exhibit H.5**). In the main report, we present impact estimates for both these variants of the net spending measure.

Exhibit H.5. Calculating the Net Medicare Spending Impact Estimate (Standard ACOs)



Medicare Spending in Care Settings

We constructed nine setting-specific outcomes for Medicare spending, including eight measures for impact analyses and one measure for treatment group trend tracked to reflect intensity of resource use (**Exhibit H.6**). These measures capture what Medicare would have paid absent ACO REACH’s TCC/PCC payments and include amounts on non-APO claims plus the amount that Medicare would have paid absent APO reduction for APO claims for treatment group beneficiaries. They are adjusted for PBPs and other model-specific payments reconciled through the claims system for other APMs (NGACO, CPC+, and PCF) that overlapped with ACO REACH baseline years or performance years (comparison group only).⁵³ Each measure reflects the paid amount on specific claims per beneficiary per year (PBPY), calculated as the paid amount in a year (through alignment end date) for beneficiaries aligned to either the ACO REACH or comparison group.⁵⁴ Spending can accrue from

⁵⁰ The difference is about 6% in PY 2023 (that is, evaluation’s beneficiary-month was 94% of model’s beneficiary-month on average and overall, varied by ACO). Most of the difference in total aligned beneficiary-month between the model’s population and the evaluation’s population is due to exclusion of prospectively plus aligned beneficiaries in the evaluation’s sample.

⁵¹ In PY 2023, high performers payout was distributed to 20 Standard ACOs and 4 High Needs ACOs.

⁵² This amount did not include the shared savings amounts from the one New Entrant ACO excluded from our analysis due to inadequate sample for the ACO group during base years.

⁵³ The payments of NGACO, CPC+, and PCF models were applied to beneficiaries who were aligned to those models, which can be in the acute hospital setting, post-acute facility setting, or outpatient setting. The adjustment was made at the claim level by setting and linked to each setting’s spending measures.

⁵⁴ Direct comparisons between total spending and spending categories are not feasible given differences in how these measures were constructed and analyzed.

beneficiaries with an admission date or visit encounter start date from the beginning of the CY (January 1) through the end of the CY (December 31) or until the last day the beneficiary remained aligned with the treatment or comparison group.

Exhibit H.6. Nine Claims-Based, Setting-Specific Medicare Spending Measures

| Setting | Specification |
|--|--|
| Acute care | Paid amounts on FFS IP claims for short-term (general and specialty) hospitals or CAHs, excluding federal and non-federal emergency hospitals |
| Outpatient facility | Paid amounts on FFS OP claims for hospital outpatient care |
| SNF | Paid amounts on FFS non-swing bed SNF and swing bed SNF claims |
| IRF and LTCH | Paid amount on FFS inpatient claims for IRF and LTCH providers |
| Professional services | Paid amounts on FFS non-DME carrier claims, excluding claim lines with one of the 102 E&M HCPCS codes used to determine ACO REACH Model alignment ⁵⁵ |
| Specialty care visits | Paid amounts on FFS outpatient and non-DME Carrier claims for specialty care practitioners, using the same HCPCS code list described for the primary care visits measure |
| Home health | Paid amounts on FFS home health claims |
| Hospice | Paid amounts on FFS hospice claims |
| <i>Primary care visits[^]</i> | <i>Paid amounts on FFS outpatient and non-DME carrier claims for primary care practitioners using the union of the E&M HCPCS codes used for ACO REACH Model alignment and the RBCS E&M services HCPCS codes⁵⁶</i> |

NOTE: FFS=Fee-for-services; IP=inpatient; CAH=critical access hospital; OP=outpatient; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital; DME=Durable Medical Equipment; HCPCS=Healthcare Common Procedure Coding System; RBCS=Restructured BETOS (Berenson-Eggers Type of Service) Classification System; E&M=evaluation and management. [^]Not included in the impact estimation; trend tracked for treatment group. Measures in *italics* are secondary measures excluded from impact analyses.

We constructed three measures used to capture spending in professional settings.

- The **professional services spending** measure captures the paid amounts on FFS non-durable medical equipment (DME) carrier claims and excludes HCPCS codes for evaluation and management (E&M) services used for ACO REACH Model alignment that are captured in the primary care visit and specialty care visit spending measures.
- The **primary care visit spending** measure includes paid amounts on FFS outpatient and non-DME carrier claims with the union of HCPCS codes (total: 522 codes) for E&M services from the Restructured BETOS Classification System (RBCS; 514 codes) and E&M services used to determine ACO REACH Model alignment (76 codes) for outpatient services provided by primary care providers (that is, providers with a specialty code that indicates general practice, family medicine, internal medicine, pediatric medicine, geriatric medicine,

⁵⁵ HCPCS codes used to determine ACO REACH alignment can be found in Tables B.6.3 from the PY 2023 ACO REACH financial operating guide: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>.

⁵⁶ CMS Restructured BETOS Classification System (RBCS). <https://data.cms.gov/resources/restructured-betos-classification-system-data-dictionary>

nurse practitioner, clinical nurse specialist, or physician assistant). The primary care visit spending measure is not included in the impact estimation; we descriptively track trends in this measure for the treatment group.

- The **specialty care visit spending measure** includes paid amounts on the same claim types with the same HCPCS code list as used in the primary care visit spending measure, but limits claims to specialty care providers (that is, providers with a specialty code that indicates cardiology, gastroenterology, osteopathic manipulative medicine, neurology, obstetrics/gynecology, hospice and palliative care, sports medicine, physical medicine and rehabilitation, psychiatry, geriatric psychiatry, pulmonology, nephrology, infectious disease, endocrinology, rheumatology, multispecialty clinic or group practice, addiction medicine, hematology, hematology/oncology, preventive medicine, medical oncology, gynecological/oncology, or neuropsychiatry).

Exhibit H.7 provides a high-level summary of the differences among the three spending measures in the professional settings.

Exhibit H.7. Summary of Setting-Specific Measures for Professional Services

| | Claim Type(s) Include... | | HCPCS/CPT Include... | | Provider Type(s) Include... | |
|--------------------------------|--------------------------|------------------------|----------------------|----------|-----------------------------|--------------------------|
| | Outpatient Claims | Non-DME Carrier Claims | Model Alignment E&M | RBCS E&M | Primary Care Providers | Specialty Care Providers |
| Professional services spending | | ✓ | | ✓ | ✓ | ✓ |
| Primary care visits spending | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Specialty care visits spending | ✓ | ✓ | ✓ | ✓ | | ✓ |

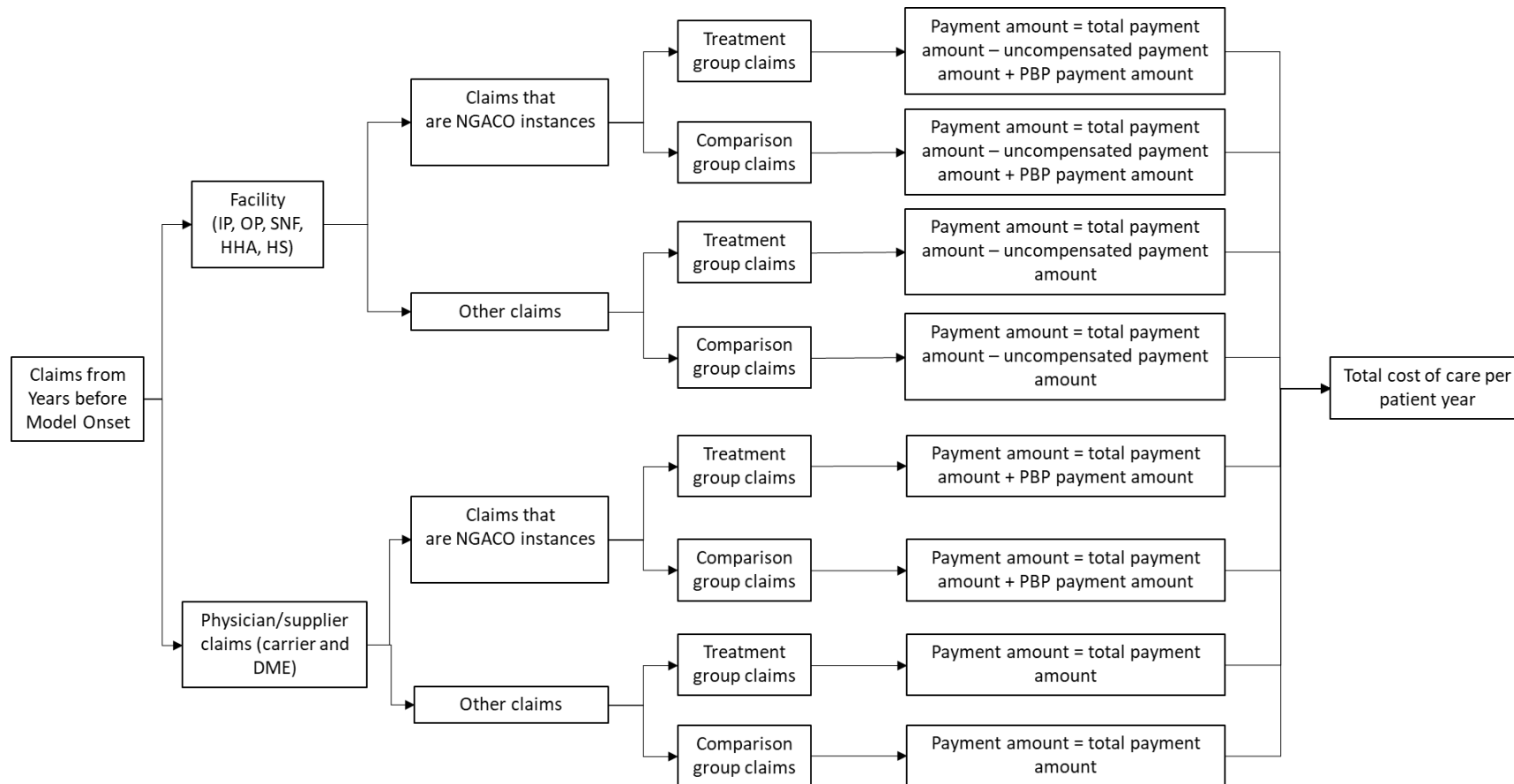
NOTE: DME=durable medical equipment; HCPCS=Healthcare Common Procedure Coding System; RBCS=Restructured BETOS Classification System; E&M=evaluation and management.

Creating Setting-Specific Medicare Spending Measures. We adopted a different approach than is described earlier for gross Medicare spending to create measures in the calendar years (CYs) (baseline years [BYs] and performance years [PYs]) that captured Medicare spending for different settings and service types. Instead of calculating what Medicare actually paid (as was done for gross Medicare spending), we calculated what Medicare would have paid because we were unable to cleanly parse out capitated payments across different care settings because capitated amounts are calculated at the beneficiary-year level. However, this approach enables understanding of how ACOs influenced intensity of resource use in care settings. Therefore, the gross Medicare spending measure and the measures of Medicare spending in separate care settings cannot be directly compared.

Exhibits H.8 and H.9 detail the process for determining treatment and comparison group beneficiary gross Medicare spending in care setting and service type categories during the years prior to the model’s onset and model years, respectively.

Years prior to Model Onset. Claims identification and processing for these years’ spending category measures is the same as the process for their total Medicare spending measure (**Exhibit H.8**).

Exhibit H.8. Medicare Spending in Care Setting and Service Type Categories in Years Prior to Model Onset (2018–2020)



NOTE: IP=Inpatient; OP=Outpatient; SNF=Skilled Nursing Facility; HHA=Home Health Agency; HS=Hospice; DME=Durable Medical Equipment; NGACO=Next Generation Accountable Care Organization; PBP=Population-Based Payment. The total payment amount for facility claims that are NGACO instances is the claim value amount from claims with value code Q0; the total payment amount for facility claims that are not NGACO instances (that is, “Other” claims) is the claim payment amount. The uncompensated care payment amount is subtracted from all payment amounts for facility claims. The total payment amount for physician/supplier claims that are NGACO instances is the claim payment amount plus the PBP reduction amount; the total payment amount for physician/supplier claims that are not NGACO instances and are either treatment group or comparison group claims could be from Comprehensive Primary Care Plus (CPC+)/Primary Care First (PCF) instances or non-CPC+/PCF instances. The total payment amount for CPC+/PCF instances is the claim payment amount adjusted for the line “other applied amount” for claims with the line other applied indicator code T, A2, or A3. The total payment amount for non-CPC+/PCF instances is the claim payment amount.

Model Years (2021–2023). We identified claims for Medicare spending in care setting and service type categories in the same manner for model years (**Exhibit H.9**) as we did for the years prior to model onset. Similar to the total Medicare spending measure, we then used the program identifier on the claim to distinguish between model and non-model claims. However, unlike the total spending measure, we only distinguish ACO REACH to account for APO payments (treatment group only).

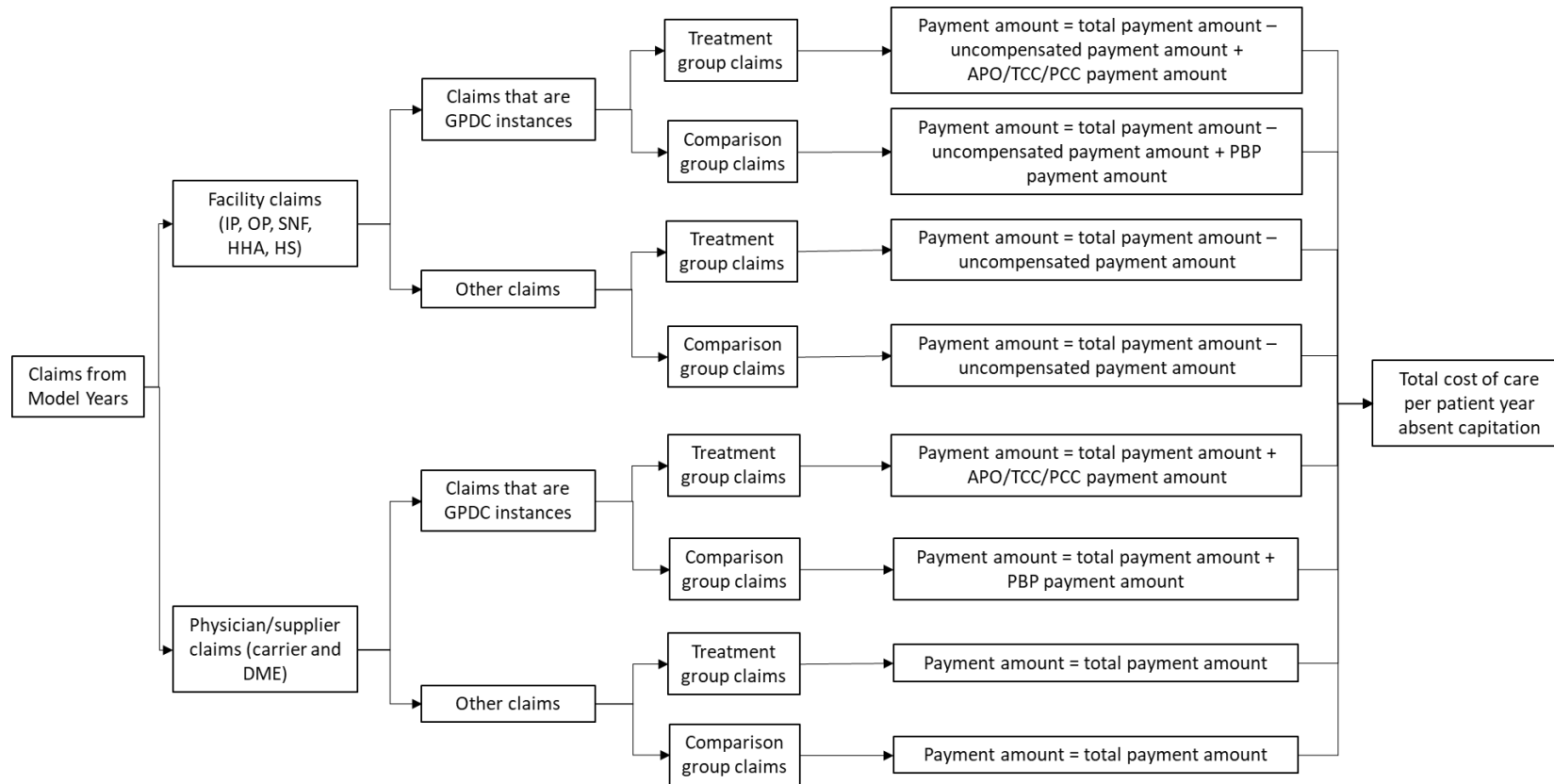
For facility claims:

- GPDC/ACO REACH instances: claims were processed the same way as in the performance years' total Medicare spending measure, except that beneficiary-year level capitated payments were not added to the spending amounts.
- Non-GPDC/Non-ACO REACH instances: claims were processed the same way as in the performance years' total Medicare spending measure. In PY 2021, these included NGACO and CPC+ claims.

For physician/supplier claims:

- GPDC/ACO REACH instances: claims were processed the same way as in the performance years' total Medicare spending measure, except that beneficiary-year level capitated payments were not added to the spending amounts.
- Non-GPDC/Non-ACO REACH instances: claims were processed the same way as in the performance years' total Medicare spending measure. In PY 2021, these included NGACO and CPC+ claims.

Exhibit H.9. Medicare Spending in Care Setting and Service Type Categories in Model Year (2021–2023)



NOTE: IP=Inpatient; OP=Outpatient; SNF=Skilled Nursing Facility; HHA=Home Health Agency; HS=Hospice; DME=Durable Medical Equipment; GPDC=Global and Professional Direct Contracting; APO=Advance Payment Option; PCC=Primary Care Capitation; TCC=Total Care Capitation; PBP=Population-Based Payment. The total payment amount for facility claims that are GPDC/ACO REACH instances is the claim payment amount plus the APO/TCC/PCC PBP reduction amount; the total payment amount for facility claims that are NGACO instances is the claim payment amount plus the NGACO PBP reduction amount; the total payment amount for facility claims that are non-GPDC/NGACO instances (that is, “Other” claims) is the claim payment amount. The uncompensated care payment amount is subtracted from all payment amounts for facility claims. The total payment amount for physician/supplier claims that are GPDC/ACO REACH instances is the claim payment amount plus the PBP reduction amount; the total payment amount for physician/supplier claims that are non-GPDC/ACO REACH instances and are treatment group claims is the claim payment amount. The total payment amount for physician/supplier claims that are non-GPDC instances and are comparison group claims could be from NGACO, Comprehensive Primary Care Plus (CPC+)/Primary Care First (PCF) instances or non-CPC+/PCF instances. The total payment amount for NGACO instances is the claim payment amount plus NGACO PBP reduction amount. The total payment amount for CPC+/PCF instances is the claim payment amount adjusted for the line “other applied amount” for claims with the line other applied indicator code T, A2, or A3. The total payment amount for non-CPC+/PCF instances is the claim payment amount.

Accounting for APO Claims in Gross Total and Setting-Specific Medicare Spending

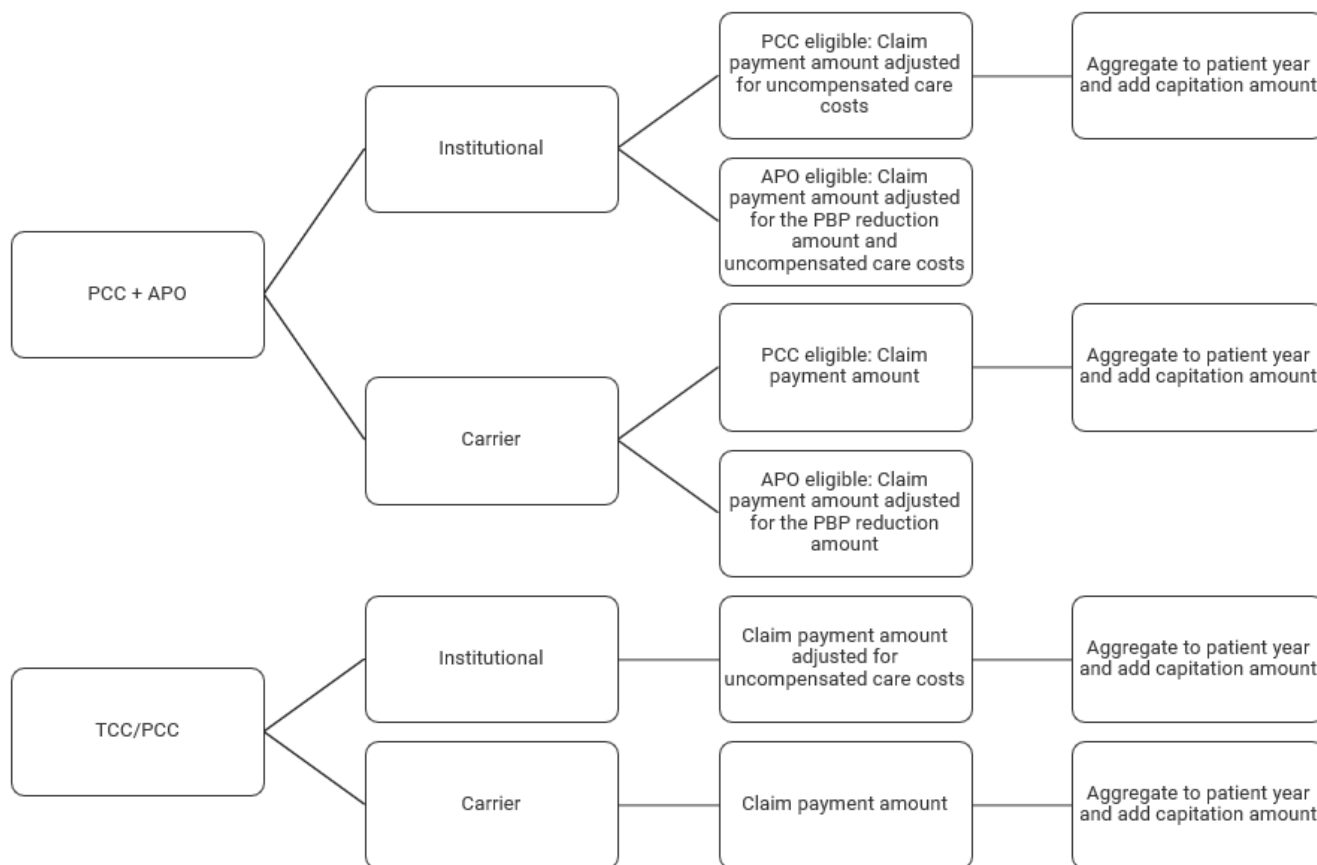
Exhibit H.10 shows the high-level process for accounting for APO claims in gross total Medicare spending and setting-specific Medicare spending measures in performance years. We determined whether claims were TCC, PCC only, or PCC+APO using guidance provided by the Innovation Center’s GPDC/ACO REACH payment analysis and operational support contractor. Irrespective of claim type, PCC+APO claims may have a component that is PCC-eligible and a component that is APO-eligible.

- **PCC+APO.** For facility claims, the payment amount from the PCC-eligible component is the claim payment amount minus the uncompensated care payment amount. When we aggregate Medicare spending to the beneficiary year, for gross Medicare spending, we add in the appropriate beneficiary-year capitation amount. For facility claims, the payment amount from the APO-eligible component is the claim payment amount plus the APO reduction amount minus the uncompensated care payment amount.

For physician/supplier claims, the payment amount from the PCC-eligible component is the claim payment amount. As earlier, when we aggregate gross Medicare spending to the beneficiary year, we add in the appropriate beneficiary-year capitation amount. For physician/supplier claims, the payment amount from the APO-eligible component is the claim payment amount plus the APO reduction amount.

- **TCC/PCC only.** For facility claims, the payment amount is the claim payment amount minus the uncompensated care payment amount. For physician/supplier claims, the payment amount is the claim payment amount. As described earlier, when we aggregate Medicare spending to the beneficiary year, for gross Medicare spending, we add in the appropriate beneficiary-year capitation amount.

Exhibit H.10. Process to Account for APO Claims in Medicare Spending Measures for the Treatment Group in PYs (2021–2023)



NOTE: PCC=Primary Care Capitation; APO=Advance Payment Option; TCC=Total Care Capitation; PBP=Population-Based Payment.

H.2.2 Medicare Utilization Outcomes

Eleven utilization measures—including eight measures which were used for impact analyses and three measures for which trends were tracked descriptively for the treatment group only (**Exhibit H.11**)—were created for the treatment group and, as relevant, the comparison group, in performance and baseline years. These measures were selected to assess the ACO REACH Model’s impact on utilization across different types of health care providers and settings. Unlike the total Medicare gross spending and spending category measures, the utilization measures were calculated the same way for the treatment and comparison group and in all baseline and performance years. As previously noted, PCP services and urgent care visits (both including and excluding COVID-related visits) are not included in impact estimation; we descriptively track trends in these measures for the treatment group.

Exhibit H.11. Eleven Claims-Based Utilization Measures

| Main Outcome | Specification |
|--|--|
| Acute care hospitalizations | <p>Number of all-cause acute care inpatient hospital stays per 1,000 beneficiaries per year (BPY) during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>Stays that included transfers between facilities were counted as one stay. All stays with an admission date occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, were included in the measure.</p> |
| Acute care length of stay (days) | <p>Number of days between acute care inpatient hospital admission and discharge per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>Stays that included transfers between facilities were counted as one stay. Acute care inpatient hospital days occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, were included in the measure.</p> |
| ED visits and observation stays | <p>Number of ED visits, including observation stays, per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>Visits that included transfers between facilities were counted as one visit. ED visits resulting in inpatient hospital stays were excluded. All ED visits, including observation stays, occurring between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the reference year, were included in the measure.</p> |
| IRF and LTCH days | <p>Number of institutional PAC (IRF and LTCH) days per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>All institutional PAC days occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, were counted toward the measure.</p> |
| SNF days | <p>Number of SNF days (in either a swing bed or non-swing bed SNF) per 1,000 BPY⁵⁷ during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>All SNF days occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, were counted toward the measure.</p> |
| Home health episodes | <p>Number of 30-day home health episodes per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>Prior to 1/1/2020, episodes include sum of 60-day home health episodes, as well as home health episodes with low-utilization payment adjustments and partial episode payment adjustments. After 1/1/2020, episodes include the sum of 30-day home health episodes, as well as home health episodes with low-utilization payment adjustments and partial episode payment adjustments. Episodes were standardized to 30 days to allow for comparison over time. All episodes that began between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the reference year, were included in the measure. Home health episodes are capped at 14 to reflect the number of mathematically possible 30-day episodes within a calendar year.</p> |
| Continuous hospice days prior to death | <p>Number of continuous hospice service days between hospice election and death per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO</p> |

⁵⁷ Although SNF days can only accumulate among SNF users, the measure rate per 1,000 BPY includes both SNF users and non-users.

| Main Outcome | Specification |
|--|---|
| | <p>or comparison group who died while electing the Medicare hospice benefit, calculated using the claim from and claim through dates on hospice claims.</p> <p>Beneficiaries who disenrolled from hospice alive and returned would have their (measure) day count “restarted” at live discharge. Hospice stay days occurring between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the year, were included in the measure.</p> |
| Total hospice days | <p>Number of hospice service days per 1,000 BPY for beneficiaries aligned to either the ACO or comparison group, calculated as the count of hospice service days during the year (through alignment end date).</p> <p>All hospice days occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, were counted toward the measure. Hospice service days did not need to be continuous to count in the measure.</p> |
| Professional services provided by primary care specialists (PCP services) ^{58^} | <p>Number of claims with E&M services that are “Primary Care Capitation (PCC)-eligible” provided by primary care providers (including FQHCs and RHCs) per 1,000 BPY for beneficiaries aligned to either the ACO or comparison group, calculated as the count of claims with “PCC-eligible” services in a year (through alignment end date).</p> <p>All “PCC-eligible” services that began between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the year, were included in the measure.</p> |
| Urgent care visits ^{59^} | <p>Number of urgent care center (UCC) visits that are identified in carrier claims and outpatient hospital claims, per 1,000 BPY for beneficiaries aligned to either the ACO or comparison group.</p> <p>This outcome was calculated as the count of unique UCC visits with claim service date occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year.</p> |
| Urgent care visits excluding for COVID-19 [^] | <p>Same specifications as urgent care visits, except excluding visits related to COVID-19.</p> <p>Because the COVID-19 pandemic shifted the distribution of primary conditions on UCC visits in 2020–2023 compared with baseline years, we created a version of UCC visits excluding 2020 to 2023 services with a primary diagnosis of COVID-19 or a respiratory condition potentially caused by COVID-19.</p> |

NOTE: BPY=per beneficiary per year, ED=emergency department, PAC=post-acute care; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital; ACO=accountable care organization; E&M=evaluation and management.

[^] Not included in the impact estimation; trend tracked for treatment group.

For measures that count days of utilization (for example, acute care length of stay in days):

- Stays beginning on or before the alignment end date and ending on or after the alignment end date or the end of the reference year will contribute all days in the length of stay to the measure. For example, for reference year 2023 and alignment end date December 31, 2023, a stay beginning on December 15, 2023, and ending January 4, 2024, contributes 20 days to the measure for 2023.
- Stays beginning after the alignment end date do not contribute any days to the measure for that reference year. For example, for reference year 2023 and alignment end date December 15, 2023, a stay beginning on

⁵⁸ PCP services are “PCC-eligible” services that were identified on claims using the list of HCPCS codes for E&M services provided in the PY 2023 Model financial operating guide. <https://www.cms.gov/priorities/innovation/files/aco-reach-py23-financial-operating-guide.pdf>

⁵⁹ Independent Evaluation of Comprehensive Primary Care Plus (CPC+): Appendices to the Final Report, Volume II. December 2023

December 16, 2023, and ending on December 31, 2023, does not contribute any days to the measure for 2023.

For measures that count stays or visits (for example, number of acute care hospitalizations):

- Stays/visits beginning before January 1 of the reference year are not included in the measure. For example, for reference year 2023, a stay beginning on December 31, 2022, and ending on February 1, 2023, is not included in the measure.
- Stays/visits beginning on or before the alignment end date and ending on or after the alignment end date or the end of the reference year are included in the measure. For example, for reference year 2023 and alignment end date December 31, 2023, a stay beginning on December 31, 2023, and ending on January 1, 2024, is included in the measure for 2023.
- Stays/visits beginning after the alignment end date are not included in the measure. For example, for reference year 2023 and alignment end date December 15, 2023, a stay beginning on December 16, 2023, and ending on December 31, 2023, is not included in the measure for 2023.

Examples of qualifying stays for measures for reference year 2023 are provided in **Exhibit H.12**.

Exhibit H.12. Measure-Eligible Stay Start and End Dates, Reference Year 2023

| Reference Year Start Date | Alignment End Date | Stay Start Date | Stay End Date | Stay Included in Measure for Reference Year 2023 | Days Included in Measure for Reference Year 2023 |
|---------------------------|--------------------|-------------------|-------------------|--|--|
| January 1, 2023 | December 31, 2023 | December 15, 2023 | January 4, 2024 | Yes | 20 |
| January 1, 2023 | December 15, 2023 | December 16, 2023 | December 31, 2023 | No | 0 |
| January 1, 2023 | December 1, 2023 | December 2, 2023 | December 4, 2023 | No | 0 |

H.2.3 Medicare Quality of Care Outcomes

Eleven quality of care outcomes, including seven measures which were used for impact analyses and four measures for which trends were tracked descriptively for the treatment group only (**Exhibit H.13**), were created for the treatment group and (as relevant) the comparison group in PY 2023 and its baseline years. These measures were selected to assess the model’s impact on quality of care across different types of health care providers and settings, as well as for beneficiaries with varying levels of risk (for example, beneficiaries with multiple chronic conditions). Similar to the utilization measures, the quality measures are calculated the same way in the treatment and comparison groups and in baseline and performance years.⁶⁰ Additionally, as previously noted, four quality of care measures—mortality, advance care plan, annual wellness visits, and chronic care management for beneficiaries with multiple chronic conditions (MCC)—are not included in the impact estimation; we descriptively track trends in these measures for the treatment group.

⁶⁰ Claim-based pay-for-performance (P4P) quality measures in PY 2023 include all-condition readmissions (ACR), all-cause unplanned admissions for patients with MCCs (UAMCC), timely follow-up after acute exacerbation of chronic conditions (TFU, P4P to Standard and New Entrant ACOs only), and days at home for patients with complex, chronic conditions (DAH, P4P to High Needs ACOs only).

Exhibit H.13. Eleven Claims-Based Quality of Care Measures, PY 2023

| Main Outcome | Specification |
|--|---|
| All-condition readmission ⁶¹ | <p>Rate of beneficiaries who were readmitted to a hospital within 30 days following discharge from the index hospitalization per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group who had an eligible index hospitalization.</p> <p>This measure reflects the share of beneficiaries who had one or more unplanned readmissions in the reference year among those who had an eligible hospitalization. We used ACO REACH’s risk standardized all-condition readmission measure specifications to identify eligible hospitalizations and unplanned readmissions. Beneficiaries eligible for the measure denominator were ACO- or comparison group-aligned beneficiaries with one or more eligible index hospitalizations between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the reference year, who do not meet denominator exclusion criteria.⁶¹ Beneficiaries eligible for the measure numerator were those with one or more unplanned readmissions within 30 days of discharge from their index hospitalization who did not meet numerator exclusion criteria.</p> |
| ACSC hospitalizations ⁶² | <p>Rate of beneficiaries with one or more ACSC acute care hospitalizations per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>This measure reflects the risk of beneficiaries being hospitalized for ACSCs during the year. ACSCs include chronic conditions (diabetes with short-term complications, diabetes with long-term complications, chronic obstructive pulmonary disease or asthma in older adults, heart failure, uncontrolled diabetes, asthma in younger adults, and lower extremity amputation among beneficiaries with diabetes) and acute conditions (community-acquired pneumonia and urinary tract infection). Beneficiaries eligible for the measure denominator are ACO- or comparison group-aligned beneficiaries who did not meet denominator exclusion criteria.⁶² Beneficiaries eligible for the measure numerator were those with at least one inpatient hospital discharge with a primary diagnosis code indicating ACSC between the start and end of the reference year, or between the start and end date of a beneficiary’s alignment to the treatment or comparison group during the reference year, who did not meet numerator exclusion criteria.⁶²</p> |
| Timely follow-up after acute exacerbations of chronic conditions ⁶³ | <p>Rate of beneficiaries who received follow-up care within the timeframe recommended by clinical practice guidelines in a non-emergency outpatient setting per 1,000 BPY during the reference year for beneficiaries aligned to either the ACO or comparison group.</p> <p>Acute events were those that required either an ED visit, observation stay, or hospitalization, not counting events where the beneficiary enters a SNF, non-acute care, or hospice care within the follow-up interval. Beneficiaries eligible for the measure denominator were those with one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disease, and type 1/2 diabetes) who had an acute event with the end of the follow-up period occurring between the start and end of the reference year, or between the start and end date of the beneficiary’s alignment to the treatment or comparison group during the reference year, who did not meet denominator exclusion criteria.⁶³ Beneficiaries eligible for the measure numerator were those who received timely follow-up following their acute event. Recommended timeframe for timely follow-up depends on the condition and severity, ranging from 7 days to 30 days within the date of discharge from the acute events.⁶³ This measure was first used in 2022 as a pay-for-reporting measure for Standard and New Entrant ACOs and transitioned to a pay-for-performance measure in 2023.</p> |

⁶¹ [ACO REACH Model PY 2023 Quality Measurement Methodology \(1/1/2023-12/31/2023\)](https://www.cms.gov/priorities/innovation/files/aco-reach-quality-msr-meth-py23pdf.pdf) (CMS). Available at: <https://www.cms.gov/priorities/innovation/files/aco-reach-quality-msr-meth-py23pdf.pdf>

⁶² 2016 Measure Information About the Hospital Admissions for Acute and Chronic Ambulatory Care-Sensitive Condition (ACSC) Composite Measures (CMS). Available at: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/PhysicianFeedbackProgram/Downloads/2016-ACSC-MIF.pdf>

⁶³ [ACO REACH Model PY 2023 Quality Measurement Methodology \(1/1/2023-12/31/2023\)](https://www.cms.gov/priorities/innovation/files/aco-reach-quality-msr-meth-py23pdf.pdf) (CMS). Available at: <https://www.cms.gov/priorities/innovation/files/aco-reach-quality-msr-meth-py23pdf.pdf>

| Main Outcome | Specification |
|---|--|
| Unplanned admissions for beneficiaries with multiple chronic conditions ⁶⁴ | <p>Rate of beneficiaries with two or more chronic conditions who had at least one acute, unplanned admission per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</p> <p>This measure reflects the share of beneficiaries who had one or more unplanned admissions to an acute care hospital in the reference year among those who had two or more chronic conditions. Beneficiaries eligible for the measure denominator were ACO- or comparison group-aligned beneficiaries who did not meet denominator exclusion criteria and who had two or more of the following chronic conditions in the year prior to the reference year: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease or asthma, depression, heart failure, and stroke or transient ischemic attack (as defined in the MBSF 30 CCW Chronic Conditions Segment⁶⁵). Beneficiaries eligible for the measure numerator were those with one or more unplanned hospitalizations, identified by diagnosis and procedure codes.</p> |
| Days at home ⁶⁶ | <p>Percent of days at home during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group with complex, chronic conditions.</p> <p>Beneficiaries eligible for the measure denominator were those with complex, chronic conditions are those who had a prospective HCC score greater than 2.0 in the year prior to the reference year. Days eligible for the denominator are days during the reference year when the beneficiary was alive and aligned to the ACO or comparison group. Days eligible for the numerator are days during the reference year when the beneficiary is alive, aligned to the ACO or comparison group, and not “in care.” Beneficiaries were considered to be “in care” if they received care on a given day in one of more of the following specified care settings: inpatient acute and post-acute facilities, comprising short-term acute care hospitals, critical access hospitals (CAHs), IRFs, inpatient psychiatric facilities (IPFs), LTCHs, and SNFs; ED visits; and observation stays. Days enrolled in hospice or hospitalized for childbirth, miscarriage, or termination were not counted as “days in care.”</p> |

⁶⁴ ACO #38 Risk-Standardized Acute Admission Rates for Beneficiaries with Multiple Chronic Conditions available at <https://www.cms.gov/files/document/test-february-11th.pdf> and [ACO REACH Model PY 2023 Quality Measurement Methodology \(1/1/2023-12/31/2023\)](#) (CMS)

⁶⁵ Additional information on the 30 CCW Chronic Conditions Algorithms is available at <https://www2.ccwdata.org/documents/10280/19139421/chr-chronic-condition-algorithms.pdf>.

⁶⁶ [ACO REACH Model PY 2023 Quality Measurement Methodology \(1/1/2023-12/31/2023\)](#) (CMS). Although the measure under the model is specified for use only in High Needs beneficiaries, we apply it in the evaluation to beneficiaries aligned to all ACO types and their comparison groups as a measure of population health.

| Main Outcome | Specification |
|---|---|
| Recommended diabetes care ⁶⁷ | <p>Rate of beneficiaries who received the recommended diabetes care per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or the comparison group with a diagnosis of diabetes. This measure reflects the share of beneficiaries who received all four recommended diabetes care services, indicating that they may have had effective care coordination.</p> <p>The measure includes four recommended diabetes care services: hemoglobin A1c (A1C) testing,⁶⁸ eye exam,⁶⁹ LDL-C screening,⁷⁰ and medical attention for nephropathy.⁷¹ Beneficiaries eligible for the measure denominator were those with a documented diagnosis of diabetes (from the MBSF) in the reference year or prior year. Beneficiaries eligible for the measure numerator were those who received all four recommended care services. Beneficiaries who met the eligibility criteria but received hospice services, palliative care, resided in long-term care facilities for more than 90 days during reference year, or had frailty and advanced illness (advance staged cancers, dementia, ESRD, heart failure, etc.) during the reference year or year prior to the reference year are excluded.</p> <p><i>This measure was not evaluated for High Needs ACOs given the complex medical status of beneficiaries aligned to this ACO type.</i></p> |
| Low-value care services | <p>Rate of beneficiaries with at least one low-value care (LVC) service per 1,000 BPY during the reference year (through alignment end date) among beneficiaries aligned to the ACO or comparison group.</p> <p>Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. Reducing patients' use of LVC services could help to achieve better health outcomes and reduce the cost of care.</p> <p>Beneficiaries were eligible for the measure denominator if they met service-specific criteria during the measurement periods. Beneficiaries eligible for the measure numerator were those who received one of 31 LVC services, which fall into six clinical categories: cancer screenings: 1) Cancer screening for patients with CKD receiving dialysis, 2) Cervical cancer screening for women age 65 and over, 3) Colorectal cancer screening for adults over age 85, 4) PSA testing for men age 75 and over; diagnostic testing: 5) Bone mineral density testing at frequent intervals, 6) Homocysteine testing in cardiovascular disease, 7) Hypercoagulability testing for patients with deep vein thrombosis (DVT), 8) PTH measurement for patients with stage 1–3 CKD, 9) Total or free T3 level testing for patients with hypothyroidism, 10) 1,25-dihydroxyvitamin D testing in the absence of hypercalcemia or decreased kidney function, 11) EMG for low back pain; preoperative testing, 12) Preoperative echocardiography, 13) Preoperative PFT, 14) Routine preoperative stress tests; imaging: 15) Computed tomography (CT) of the sinuses for uncomplicated acute rhinosinusitis, 16) Head imaging in the evaluation of syncope, 17) Head imaging for uncomplicated headache, 18) Electroencephalogram (EEG) for headaches, 19) Back imaging for patients with nonspecific low back pain, 20) Screening for carotid artery disease in asymptomatic adults, 21) Screening for carotid artery disease for syncope, 22) Imaging for diagnosis of plantar fasciitis, 23) MRI for rheumatoid arthritis; cardiovascular testing and procedures: 24) Stress testing for stable coronary disease, 25) Percutaneous coronary intervention with balloon angioplasty or stent placement for stable coronary disease, 26) Renal artery angioplasty or stenting, 27) Carotid endarterectomy for asymptomatic patients, 28) Pulmonary artery catheterization in the ICU; and other invasive procedures: 29) Vertebroplasty or kyphoplasty for osteoporotic vertebral fractures, 30) Spinal injection for low back pain, 31) Laminectomy or spinal fusion.^{72, 73, 74}</p> |

⁶⁷ Comprehensive Diabetes Care (CDC) available at: <https://www.ncqa.org/hedis/measures/comprehensive-diabetes-care/>

⁶⁸ Comprehensive Diabetes Care: Hemoglobin A1c (A1C) Testing (NQF#: 0057)

⁶⁹ Comprehensive Diabetes Care: Eye Exam (retinal) performed (NQF#: 0055)

⁷⁰ Comprehensive Diabetes Care: LDL-C Screening (NQF #: 0063)

⁷¹ Comprehensive Diabetes Care: Medical Attention for Nephropathy (NQF#: 0062)

⁷² Schwartz AL, Landon BE, Elshaug AG, Chernew ME, McWilliams JM. Measuring low-value care in Medicare. *JAMA Intern Med.* 2014 Jul;174(7):1067-76. doi: 10.1001/jamainternmed.2014.1541. PMID: 24819824; PMCID: PMC4241845

⁷³ Schwartz AL, Chernew ME, Landon BE, McWilliams JM. Changes in Low-Value Services in Year 1 of the Medicare Pioneer Accountable Care Organization Program. *JAMA Intern Med.* 2015 Nov;175(11):1815-25. doi: 10.1001/jamainternmed.2015.4525. PMID: 26390323; PMCID: PMC4928485.

⁷⁴ Fleming, C., Shin, E., Powell, R. et al. Updating a Claims-Based Measure of Low-Value Services Applicable to Medicare Fee-for-Service Beneficiaries. *J Gen Intern Med.* 37, 3453–3461 (2022). <https://doi.org/10.1007/s11606-022-07654-7>

| Main Outcome | Specification |
|---|--|
| <i>Mortality[^]</i> | <p><i>Rate of beneficiaries who died per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to either the ACO or comparison group.</i></p> <p><i>Beneficiaries eligible for the measure denominator are ACO or comparison group beneficiaries aligned during the reference year. Beneficiaries eligible for the measure numerator were those with a date of death between the start and end of the reference year, or between the start and end date of the beneficiary's alignment to the treatment or comparison group during the reference year.</i></p> |
| <i>Advance care plan^{75^}</i> | <p><i>Rate of beneficiaries who had an advance care plan discussed or documented, per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned to ACO or comparison group.</i></p> <p><i>Beneficiaries eligible for the denominator were those with an eligible physician encounter (for example, not encounters that took place in an ED)⁵⁵ during the reference year and who were not enrolled in hospice during the reference year. Beneficiaries eligible for the numerator were those with a documented advance care plan or documentation in their medical records that an advance care plan was discussed but they did not wish or they were not able to name a surrogate decision maker or provide an advance care plan. Advance care plans are reported in Medicare Part B claims using HCPCS codes 1123F without modifier 8P, 1124F, 99497, and 99498.</i></p> |
| <i>Annual wellness visit^{76^}</i> | <p><i>Rate of beneficiaries who received an annual wellness visit per 1,000 BPY during the reference year (through alignment end date) for beneficiaries aligned the ACO or comparison group.</i></p> <p><i>Beneficiaries eligible for the denominator were those aligned to either the ACO or comparison group during the reference year. Beneficiaries eligible for the numerator were those who received an annual wellness visit, which are reported in outpatient and carrier claims using a Type of Bill (TOB) code 12x, 13X, 22X, 23X, 71X, 77X, or 85X.⁵⁶</i></p> |
| <i>Chronic care management for beneficiaries with multiple chronic conditions^{77^}</i> | <p><i>Rate of beneficiaries with at least one chronic care management (CCM) service per 1,000 BPY during the reference year (through alignment end date) among beneficiaries aligned to the ACO or comparison group who have multiple chronic conditions.</i></p> <p><i>This measure reflects the share of beneficiaries who received one or more CCM services in the reference year among those who had two or more chronic conditions. Beneficiaries eligible for the measure denominator were ACO- or comparison group-aligned beneficiaries who did not meet denominator exclusion criteria⁵⁷ and who had two or more of the following chronic conditions in the year prior to the reference year: acute myocardial infarction, Alzheimer's disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease or asthma, depression, heart failure, and stroke or transient ischemic attack (as defined in the MBSF 30 CCW Chronic Conditions Segment). Beneficiaries eligible for the measure numerator were those with one or more CCM services, which were reported in professional claims using HCPCS codes 99487, 99489, 99490, 99491, 99437, 99424, 99425, 99426, 99427, 99439, G2064, G2065, G0506, G3002, G3003, G0023, G0024, G0140, G0146, G0029, G0022, and in FQHC and RHC claims using HCPCS Code G0511, without a primary diagnosis code for mental health services (ICD-10 codes in the range F00–F99).</i></p> |

NOTE: BPY=beneficiaries per year; ACO=accountable care organization; ACSC=ambulatory care sensitive condition; ED=emergency department; SNF=skilled nursing facility; MBSF=Master Beneficiary Summary File; CCW=Chronic Conditions Data Warehouse; HCC=Hierarchical Condition Category; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital; LDL-C=low-density lipoprotein cholesterol; ESRD=end-stage renal disease; HCPCS=Healthcare Common Procedure Coding System; CKD=chronic kidney disease; PSA=prostate-specific antigen; PTH=parathyroid hormone; EMG=electromyography; PFT=pulmonary function test; MRI=magnetic resonance imaging; ICU=intensive care unit. ^Not included in the impact estimation; trend tracked for treatment group.

⁷⁵ CMS QPP quality measure: Advance Care Plan (NQF# 0326) available at https://qpp.cms.gov/docs/QPP_quality_measure_specifications/Claims-Registry-Measures/2022_Measure_047_MedicarePartBClaims.pdf

⁷⁶ CMS Medicare Learning Network (MLN): Medicare Preventive Services Annual Wellness Visit (AWV) available at <https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/preventive-services/medicare-wellness-visits.html>

⁷⁷ CMS Medicare Learning Network (MLN) Chronic Care Management available at <https://www.cms.gov/outreach-and-education/medicare-learning-network-mln/mlnproducts/downloads/chroniccaremanagement.pdf>; Additional information on the 30 CCW Chronic Conditions Algorithms is available at <https://www2.ccwdata.org/documents/10280/19139421/chr-chronic-condition-algorithms.pdf>

Appendix I: Quantitative Methods

This appendix:

- Explains the process for creating ACO REACH treatment and comparison groups for the evaluation
- Describes the descriptive analyses of beneficiary characteristics conducted on the treatment and comparison groups for Standard, New Entrant, and High Needs ACOs
- Describes the descriptive (unadjusted) analysis of outcome changes
- Describes the difference-in-differences (DID) design and analytic methodology used to assess the ACO REACH Model's adjusted impacts on key outcomes for Standard, New Entrant, and High Needs ACOs in PY 2023 and cumulatively as of PY 2023. We also describe the methods used to assess the ACO REACH Model's impacts by ACO characteristic subgroups for Standard ACOs and by beneficiary subgroups for Standard and High Needs ACOs. Subgroup analyses were not conducted for New Entrant ACOs mainly because the number participating in ACO REACH declined, as most either joined as Standard ACOs or transitioned into Standard ACOs as they grew in their experience and in the number of claims-aligned beneficiaries.
- Describes the methods for estimating concordance between the impact evaluation and financial methodology
- Describes the methods to examine patient experience as reported in the model's CAHPS survey
- Describes the methods to examine the model's reach to communities

I.1 Defining ACO REACH Model Treatment and Comparison Groups for the Evaluation

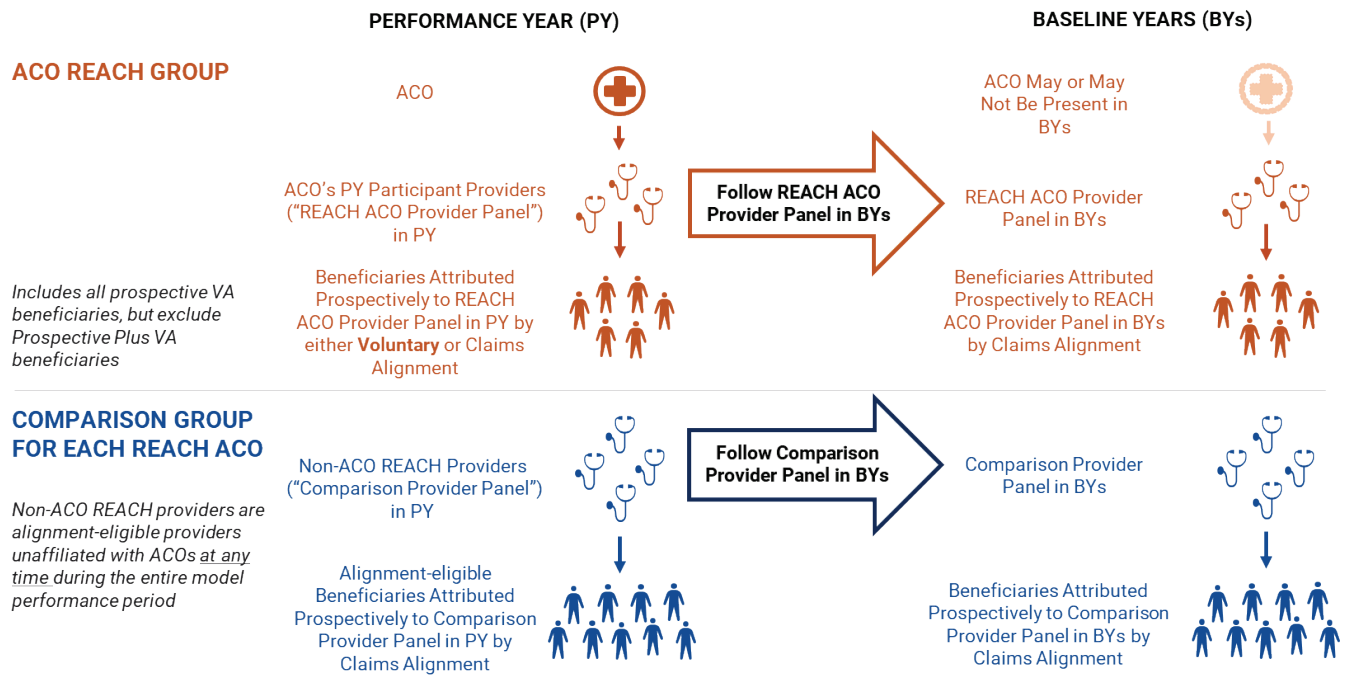
Our approach to defining the treatment and comparison groups for the evaluation is summarized in **Exhibit I.1**. For each cohort, we defined baseline years as the three years prior to the start of participation in the model: 2018–2020 for the 2021 cohort; 2019–2021 for the 2022 cohort; and 2020–2022 for the 2023 cohort.

- Using the ACO REACH Model's alignment rules, we defined the **treatment group** in the evaluation as Original Medicare beneficiaries prospectively aligned to ACO REACH Participant Providers in the performance year (intervention period treatment group) and baseline years (pre-intervention period treatment group). Specifically, for a given performance year, we used the Model's Participant Provider panel in that year to identify treatment group beneficiaries prospectively aligned to these providers in the respective performance year and in the corresponding baseline years, using the model's alignment rules.
- Using the same alignment rules, we defined the evaluation's **comparison group** as Original Medicare beneficiaries in ACO REACH market areas who could be prospectively aligned to non-ACO REACH providers⁷⁸ in the performance year (intervention period comparison group) and baseline years (pre-intervention period

⁷⁸ Non-ACO REACH providers are unaffiliated with ACO REACH (that is, not an ACO REACH Participant or Preferred Provider).

comparison group).⁷⁹ Non-ACO REACH providers may be in Medicare Shared Savings Program ACOs and other value-based care initiatives, as these represent the business decisions for ACO REACH providers if this model had not been implemented.

Exhibit I.1. ACO REACH and Comparison Groups to Evaluate Impact in a Performance Year



⁷⁹ Our evaluation approach aligns with the model's rules for alignment, where beneficiaries are aligned to the model through Primary Care Qualified Evaluation and Management (PQEM) visits to Participant Providers. Preferred Providers are an extension of the Participant Providers' networks and provide necessary services to model beneficiaries but are *unable to align beneficiaries to the model*. Thus, services from Preferred Providers are not captured when we constructed the treatment and comparison beneficiary populations; however, these services will be captured in claims-based measures (for example, acute care stays, SNF stays, IRF/LTCH days, home health episodes).

This section briefly describes the claims-based alignment process before describing in more detail how the treatment and comparison groups were derived. See **Exhibit I.2** for summary definitions.

Exhibit I.2. Definition of ACO REACH Treatment and Comparison Groups in Performance and Baseline Years

| | Baseline Years | Performance Year |
|-------------------------------|--|---|
| Treatment Group | | |
| Standard and New Entrant ACOs | Alignment-eligible beneficiaries residing in ACO market areas in the baseline years who were prospectively aligned to providers in the ACO REACH’s Participant Provider panel from a given performance year using the model’s alignment rules and aligned for at least 30 days in the year. | Alignment-eligible beneficiaries prospectively aligned to ACO REACH Participant Providers in a given performance year using the model’s alignment rules, situated in ACO market areas, and aligned for at least 30 days in the year. Following the model’s rules, we included all prospective VA beneficiaries in this group but excluded Prospective Plus VA beneficiaries. |
| High Needs ACOs | Alignment-eligible beneficiaries with high needs ⁸⁰ residing in ACO market areas in the baseline years who were prospectively aligned to providers in the ACO REACH’s Participant Provider panel from a given performance year using the model’s alignment rules and aligned for at least 30 days in the year. | Alignment-eligible beneficiaries with high needs prospectively aligned to ACO REACH Participant Providers in a given performance year using the model’s alignment rules, situated in ACO market areas, and aligned for at least 30 days in the year. Following the model’s rules, we included all prospective VA beneficiaries in this group but excluded Prospective Plus VA beneficiaries. |
| Comparison Group | | |
| Standard and New Entrant ACOs | Alignment-eligible beneficiaries residing in ACO market areas in the baseline years who were prospectively aligned to non-ACO REACH providers during the given performance year using the model’s alignment rules. Beneficiaries must be aligned for at least 30 days in the year. | Beneficiaries residing in ACO market areas prospectively aligned to non-ACO REACH providers during the performance year using model’s alignment rules and aligned for at least 30 days in the year. |
| High Needs ACOs | Alignment-eligible beneficiaries with high needs residing in ACO market areas in the baseline years who were prospectively aligned to non-ACO REACH providers during the given performance year using the model’s alignment rules. Beneficiaries must be aligned for at least 30 days in the year. | Beneficiaries with high needs residing in ACO market areas prospectively aligned to non-ACO REACH providers during the performance year using model’s alignment rules and aligned for at least 30 days in the year. |

NOTE: Non-ACO REACH providers excludes ACO REACH Participant Providers and Preferred Providers in PY 2021 and PY 2022, and ACO REACH Participant Providers and Preferred Providers in PY 2023. We used a provider panel design to construct a non-ACO REACH provider list for the performance year (similar to the ACO REACH Participant Provider list) by also requiring the non-ACO REACH providers to furnish at least one Primary Care Qualified Evaluation and Management (PQEM)⁸¹ claim to the comparison group beneficiaries during the performance year. We excluded Prospective Plus VA beneficiaries from the ACO REACH group because these beneficiaries did not start their alignment to the model from the beginning of the performance year and may potentially exacerbate imbalance with the comparison group, who started their alignment to the comparison group from the beginning of the performance year. See “Voluntary

⁸⁰ High needs beneficiaries are identified using the model eligibility rules for PY 2023 in the ACO REACH Model Financial Operating Guide: Overview, available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>; this definition will be reviewed and updated each year as needed to ensure agreement with the model’s operating procedures.

⁸¹ A PQEM claim was defined as a claim for a primary care service furnished by a primary care specialist or a selected non-primary care specialist. A primary care service was identified by the Healthcare Common Procedure Coding System (HCPCS) code appearing on the claim line. In the case of claims submitted by a federally qualified health center (FQHC) or rural health clinic (RHC), all services were considered as primary care services. HCPCS codes for primary care services and provider specialty type codes for primary care specialists and selected non-primary care specialists can be found in Tables B.6.3, B.6.4, and B.6.5, respectively, from the PY 2023 ACO REACH financial operating guide: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>.

Alignment” section in **Appendix I.1.1**. A representative sample of non-ACO REACH beneficiaries in ACO markets was drawn to create the comparison group and maintain computationally feasible sample sizes. ACO=accountable care organization; DID=difference-in-differences; VA=voluntary alignment; BY=baseline year; PY=performance year.

Additionally, ACOs may change type (Standard, New Entrant, High Needs) from year to year: for example, if the size or characteristics of their beneficiary population change. For ACOs that changed type from PY 2022 to PY 2023, they were assigned to the ACO type that they were in the respective performance year for the purpose of our analysis. We continued to define the baseline period for these ACOs as the three years prior to starting the model (that is, ACOs in the 2021 cohort that changed type in PY 2023 will continue to have 2018–2020 as their baseline years). The ACOs that changed type from PY 2022 to PY 2023 are shown in **Exhibit I.3**. One ACO changed from High Needs to Standard, and three ACOs changed from New Entrant to Standard. All four ACOs changed their type due to an increase in the size of their respective beneficiary population.

Exhibit I.3. Four ACOs Changed Type from PY 2022 to PY 2023

| ACO ID | Type in PY 2022 | Type in PY 2023 |
|--------|-----------------|-----------------|
| D0006 | New Entrant | Standard |
| D0052 | New Entrant | Standard |
| D0061 | High Needs | Standard |
| D0148 | New Entrant | Standard |

1.1.1 Alignment Approach

The alignment approach used for the evaluation captures both prospectively claims-aligned and prospectively voluntarily-aligned beneficiaries for the ACO REACH and comparison groups through the process detailed later in the document.

Because such an alignment process does not exist for the comparison group, successful replication of the claims-based alignment process is essential in constructing a comparison group. We describe our process later in the document to operationalize the claims alignment algorithm in the evaluation for the comparison group, which involves aligning eligible beneficiaries to non-ACO REACH alignment-eligible providers using the same alignment algorithm as the ACO REACH treatment group.

Claims-based alignment. We used final action claims on the Chronic Conditions Data Warehouse (CCW) and followed the ACO REACH Model’s alignment algorithm to prospectively align eligible beneficiaries to treatment and comparison groups. In accordance with the model’s rules, beneficiary alignment for a given baseline or performance year was based on Medicare claims from a preceding 24-month alignment period ending June 30th prior to the start of the year. The alignment algorithm was used to align beneficiaries to an ACO’s Participant Providers or to comparison providers in each baseline year or performance year based on providers that rendered the largest share of dollars for beneficiaries’ PQEM visits in the alignment period. The following steps

detail the beneficiary alignment process used by the Innovation Center's ACO REACH payment analysis and operational support contractor.⁸²

Step 1: Identify ACO REACH Participant Providers and alignment-eligible providers

For each performance year, we obtained the list of ACO REACH Participant Providers in the first quarter after the performance year ended, including taxpayer identification numbers (TINs), CMS certification numbers (CCNs), and national provider identifiers (NPIs) of ACO REACH practices, facilities, and practitioners, from the Innovation Center's ACO REACH payment analysis and operational support contractor. Alignment-eligible providers include primary care specialists⁸³ or selected non-primary care specialists.⁸⁴

Step 2: Identify alignment-eligible beneficiaries

For all three ACO types, several beneficiary alignment requirements were applied for both the ACO REACH and comparison groups. For our analyses, alignment-eligible beneficiaries must be living, be enrolled in both Medicare Parts A and B, not be enrolled in Medicare Advantage (MA) or another managed care plan, have Medicare as the primary payer, and be a U.S. resident, measured as of January 1st in the baseline year or performance year. An aligned beneficiary ended alignment and could not be aligned again during the baseline year/performance year once they failed to meet all the conditions mentioned earlier, and only the aligned period contributed to the analysis. We defined the ACO REACH and comparison beneficiaries in the evaluation to be residing at the beginning of the year in the ACOs' market area, defined as Hospital Referral Regions (HRRs) with a threshold (that is, $\geq 0.5\%$) of an ACO's aligned beneficiaries.⁸⁵

In addition to meeting the requirements mentioned earlier, alignment-eligible beneficiaries for High Needs ACOs and their comparison group also had to meet *at least one* of the following conditions, per the model's definition of High Needs beneficiaries:

- 1) Had conditions that impaired their mobility based on ICD-10 codes⁸⁶
- 2) Had a CMS-Hierarchical Condition Categories (HCC) risk score of 3.0 or greater for beneficiaries eligible for Medicare due to age or disability (0.35 or greater for beneficiaries eligible due to end-stage renal disease [ESRD])

⁸² For more details on the beneficiary alignment procedures, see Appendix B in the ACO REACH Model Financial Operating Guide: Overview available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁸³ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.4 "Specialty Codes Used to Identify Primary Care Specialists." Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁸⁴ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.5 "Specialty Codes Used to Identify Selected Non-Primary Care Specialists." Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁸⁵ We did not use the model's eligibility criteria of "reside in a county that is included in the ACO service areas" because we defined the ACO market area for the evaluation as a collection of HRRs, which are based on ZIP code, rather than using a county-based definition. We used HRR because HRR is a larger geographic area than county, which allows us to minimize the threat of spillover, which might mitigate any impacts of the ACO REACH Model.

⁸⁶ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.1 "Mobility Impairment ICD-10 Codes for High Needs Population ACOs." Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

- 3) Had a CMS-HCC risk score greater than 2.0 and less than 3.0 for beneficiaries eligible due to age or disability (0.24 to 0.35 for beneficiaries eligible due to ESRD) *and* two or more unplanned hospital admissions in the previous 12 months
- 4) Demonstrated signs of frailty based on claims⁸⁷

Once a beneficiary met the High Needs eligibility criteria and was aligned to an ACO or to a comparison provider, that beneficiary was considered High Needs-eligible for the remainder of the year as long as the beneficiary was alignment-eligible for the ACO REACH Model in general.

Step 3: Pull PQEM claims furnished by alignment-eligible providers during the alignment period and calculate weighted charges

We pulled all carrier and outpatient claims with PQEM services (identified by HCPCS codes)⁸⁸ provided by alignment-eligible providers for the two-year alignment period (**Exhibit I.4**).⁸⁹ Provider specialty was determined by line specialty codes for carrier claims and Medicare Provider Enrollment, Chain, and Ownership System (PECOS) or National Plan and Provider Enumeration System (NPPES) database for outpatient claims based on the provider NPI. In the case of claims furnished by FQHCs or RHCs, all services were considered as primary care services (that is, not restricted to those furnished by alignment-eligible providers). We linked the ACO REACH Participant Provider file and flagged claims furnished by ACO REACH and non-ACO REACH alignment-eligible providers. Beneficiaries with no paid claims for PQEM services during the two-year alignment period were eliminated from further consideration for claims-based alignment. Weighted allowable charges on paid PQEM services were calculated for each beneficiary during the alignment period.⁹⁰

Exhibit I.4. Alignment Period for Performance Years (PYs) and Baseline Years (BYs)

| Cohort | BY/PY | Period | Alignment Year One | Alignment Year Two |
|--------|---------|---------|--------------------|--------------------|
| 2021 | BY | CY 2018 | 7/1/2015–6/30/2016 | 7/1/2016–6/30/2017 |
| 2021 | BY | CY 2019 | 7/1/2016–6/30/2017 | 7/1/2017–6/30/2018 |
| 2021 | BY | CY 2020 | 7/1/2017–6/30/2018 | 7/1/2018–6/30/2019 |
| 2021 | PY 2021 | CY 2021 | 7/1/2018–6/30/2019 | 7/1/2019–6/30/2020 |
| 2021 | PY 2022 | CY 2022 | 7/1/2019–6/30/2020 | 7/1/2020–6/30/2021 |

⁸⁷ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.2 “Frailty codes used to Determine Eligibility for Alignment to a High Needs Population ACO.” Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁸⁸ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.3 “Evaluation & Management Services.” Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁸⁹ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.2.1 “Alignment Years for Each Performance Year and Base Year.” Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁹⁰ Weighted Allowable Charges: ACO REACH Model Financial Operating Guide: Overview. Appendix B.2.2 Claim-Based Alignment Process. Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide> The allowable charge for PQEM Services provided during the first (earlier) alignment year will be weighted by a factor of one-third. The allowable charge for PQEM Services provided during the second (later, or more recent) alignment year will be weighted by a factor of two-thirds.

| Cohort | BY/PY | Period | Alignment Year One | Alignment Year Two |
|--------|---------|---------|--------------------|--------------------|
| 2021 | PY 2023 | CY 2023 | 7/1/2020–6/30/2021 | 7/1/2021–6/30/2022 |
| 2022 | BY | CY 2019 | 7/1/2016–6/30/2017 | 7/1/2017–6/30/2018 |
| 2022 | BY | CY 2020 | 7/1/2017–6/30/2018 | 7/1/2018–6/30/2019 |
| 2022 | BY | CY 2021 | 7/1/2018–6/30/2019 | 7/1/2019–6/30/2020 |
| 2022 | PY 2022 | CY 2022 | 7/1/2019–6/30/2020 | 7/1/2020–6/30/2021 |
| 2022 | PY 2023 | CY 2023 | 7/1/2020–6/30/2021 | 7/1/2021–6/30/2022 |
| 2023 | BY | CY 2020 | 7/1/2017–6/30/2018 | 7/1/2018–6/30/2019 |
| 2023 | BY | CY 2021 | 7/1/2018–6/30/2019 | 7/1/2019–6/30/2020 |
| 2023 | BY | CY 2022 | 7/1/2019–6/30/2020 | 7/1/2020–6/30/2021 |
| 2023 | PY 2023 | CY 2023 | 7/1/2020–6/30/2021 | 7/1/2021–6/30/2022 |

NOTE: BY=baseline year; PY=performance year; CY=calendar year.

Step 4: Align eligible beneficiaries based on plurality of PQEM services

Alignment-eligible beneficiaries were aligned to the ACO REACH or comparison group based on which entity provided the plurality of the PQEM services to the beneficiary over the two-year alignment period (**Exhibit I.5**). We summed the weighted allowable charges of PQEM services for each beneficiary at each ACO and non-ACO practice/facility (that is, TIN/CCNs that were not ACO REACH Participant or Preferred Providers) provided by primary care providers or by selected non-primary care specialists over the two-year alignment period, and we determined the percent of the charges for PQEM services provided by primary care providers. Beneficiaries were aligned to the ACO REACH or non-ACO REACH practice/facility based on the two-track algorithm⁹¹ and tie-breaker rules⁹² of the Innovation Center’s ACO REACH payment analysis and operational support contractor’s alignment algorithm.

We aligned beneficiaries either to an ACO through their participant NPIs or CCNs (for FQHCs and RHCs), or to a non-ACO TIN/CCN, to determine the ACO REACH and comparison groups, respectively. This approach allowed us to align an adequate number of beneficiaries in baseline years while not aligning many additional beneficiaries in the performance year beyond the model’s list of prospectively aligned beneficiaries.

⁹¹ Two-Track Algorithm: ACO REACH Model Financial Operating Guide: Overview. Appendix B.2.2 Claim-Based Alignment Process. Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide> If 10% or more of the charges were provided by primary care providers, then beneficiaries were aligned to the ACO or non-ACO practice/facility based on which entity was responsible for the most weighted allowable charges of PQEM services provided by primary care providers; otherwise, beneficiaries were aligned based on who was responsible for the most weighted allowable charges of PQEM services provided by selected non-primary care specialists.

⁹² Tie-Breaker Rules: ACO REACH Model Financial Operating Guide: Overview. Appendix B.2.2 Claim-Based Alignment Process. Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>. If there was a tie, then alignment was based on who provided the most recent PQEM service to the beneficiary during the two-year alignment period. A beneficiary was considered unaligned if there was still a tie when using the most recent PQEM service date.

Exhibit I.5. Identification and Aggregation of PQEM Claims in Evaluation’s Alignment Approach

| | Identification of PQEM claims (Step 3) | | Aggregation of PQEM claims (Step 4) | |
|---------------------------------|---|--|-------------------------------------|------------------|
| | ACO REACH group | Comparison group | ACO REACH group | Comparison group |
| Evaluation’s Alignment Approach | ACO REACH participant NPIs/participant CCN for FQHCs/RHCs | Non-participant alignment-eligible NPIs/non-participant CCN for FQHCs/RHCs | Each ACO as one group | Non-ACO TIN/CCN |

NOTE: ACO=accountable care organization; PQEM=primary care qualified evaluation and management; NPI=national provider identifier; CCN=CMS certification number; TIN=taxpayer identification number; FQHC=federally qualified health center; RHC=rural health clinic.

Step 5: Add prospective voluntarily aligned beneficiaries and drop Prospective Plus voluntarily aligned beneficiaries (ACO REACH group in PY only)

We included all prospective voluntarily aligned beneficiaries to ACOs in our analysis. Voluntary alignment (VA) was given precedence over claims-based alignment. For instance, if a beneficiary was claims-aligned to a non-ACO REACH provider (defined as a primary care specialist or selected non-primary care specialist who was not a Participant or Preferred Provider for ACO REACH in the performance year), but was voluntarily aligned to an ACO, then this beneficiary was added to the ACO voluntarily selected by the beneficiary and removed from the comparison group. We excluded Prospective Plus voluntarily aligned beneficiaries within a given performance year from the ACO REACH group because their alignment process was not replicable either in the comparison group or in the ACO REACH group for the baseline period. We discuss this further in the subsection later in the document titled “Voluntary alignment (VA).”

Step 6: Check the evaluation’s alignment match rate with the model’s operational list of prospectively aligned beneficiaries (ACO REACH group in PY only)

We checked the match rate between the evaluation’s list of aligned ACO REACH beneficiaries (claims-aligned and prospective voluntarily aligned beneficiaries) and the list of aligned beneficiaries used for model operations by calculating the percentage of beneficiaries who appeared on both files out of those who appeared on each file individually. The match rate for each ACO type is shown in **Exhibit I.6**.⁹³ For all three ACO types, the evaluation captured almost all (99.6%) of the beneficiaries determined by model operations as prospectively aligned in PY 2023 (**Exhibit I.6 Column A**). This was akin to the match rate in PY 2021 (99.4%) and PY 2022 (99.6%). The exclusion of Prospective Plus voluntarily aligned beneficiaries influenced High Needs and New Entrant ACOs who had larger proportions of such beneficiaries as determined by model operations to a greater degree than Standard ACOs (**Exhibit I.6 Column B**). Only one New Entrant ACO lacked an adequate baseline because there were not enough beneficiaries aligned to the Participant Provider NPIs during the base year alignment period. There were no Standard or High Needs ACOs that lacked an adequate baseline.

⁹³ We observed a lower match rate among our list of aligned beneficiaries because we used NPI alignment, which aligned more beneficiaries to the model and allowed us to capture beneficiaries in baseline years.

Exhibit I.6. PY 2023 Match Rate with Model Operations and Baseline Assessment, by ACO Type

| | Column A % of evaluation's aligned beneficiaries matched against the model's operational list of prospectively aligned beneficiaries | Column B % of model's aligned beneficiaries (both prospective and Prospective Plus) matched against the evaluation's list of aligned beneficiaries |
|------------------|---|---|
| Standard ACOs | 99.6% | 90.4% |
| New Entrant ACOs | 99.9% | 85.7% |
| High Needs ACOs | 98.0% | 76.9% |

Step 7: Exclude beneficiaries and determine the ending date for alignment

We ended the alignment of an aligned ACO REACH or comparison group beneficiary once they were not alignment-eligible based on the model exclusion criteria. A beneficiary was aligned to the ACO REACH or comparison group for all months of the reference year until they met any of the following criteria: death, loss of Medicare Part A or Part B coverage, transition to MA or other managed care, residence in non-U.S. locations, or having Medicare as a secondary payer.⁹⁴ For the performance year ACO REACH group only, a beneficiary also lost alignment eligibility and was excluded from the analytic sample if enrolled in other APMs that took precedence over ACO REACH for beneficiary alignment per the ACO REACH Financial Operating Guide.⁹⁵ We used both claims and model operational data (for the ACO REACH group in the performance year only) to determine the date of alignment ending based on the earliest date of exclusions due to the reasons mentioned earlier or the last day of the year if a beneficiary was not excluded for any reason. For each baseline year/performance year, a beneficiary was aligned to the ACO REACH or comparison group from the first day of the year to the alignment end date. We specifically excluded beneficiaries in statewide health care transformation models (Vermont All-Payer ACO Model, Maryland Total Cost of Care Model) from all groups to remove any effects these regional models would have on mitigating estimated impacts of the ACO REACH Model.

Modifications to the Model's Alignment Logic. In addition, to replicate the alignment process using the model's logic, we also made three modifications, to define the ACO REACH group for the evaluation, as follows.

Identification and aggregation of PQEM claims. As mentioned in earlier steps, we used Participant Provider/non-Participant Provider alignment-eligible NPIs to identify PQEM claims furnished by ACO REACH or non-ACO REACH providers. This approach allowed us to establish an adequate baseline for one New Entrant ACO in PY 2023. After identifying PQEM claims through NPIs, we aggregated total allowable PQEM charges to each ACO⁹⁶ or each non-ACO practice⁹⁷ to align beneficiaries to ACO REACH and comparison groups,

⁹⁴ We did not include the criteria for "reside in a county that is included in the ACO service areas" and defined ACO market area as a collection of HRRs because choosing a large geographic area to define the market would allow us to minimize the threat of spillover, which might downward bias results.

⁹⁵ ACO REACH Model Financial Operating Guide: Overview. Appendix B. Table B.6.6 "Initiatives for Which Beneficiary Overlap with ACO REACH Is Prohibited." Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>

⁹⁶ As each ACO includes a range of practices or sets of providers, this set pools all PQEM charges across Participating Providers affiliated within each ACO.

⁹⁷ Non-ACO practices were defined as TINs and CCNs because an alternative organization of NPIs was unknown. Charges were pooled across all providers that contributed toward alignment for each comparison group practice TIN or CCN.

respectively. We discuss this further in the following section “ACO REACH and Comparison Group Providers Used to Determine Beneficiary Alignment.”

Identification of alignment-eligible beneficiaries. Several exclusions on eligibility were applied to beneficiary alignment for both the treatment and comparison groups. For our analyses, alignment-eligible beneficiaries at the beginning of a performance year or baseline year must be living; be enrolled in both Medicare Parts A and B, without MA or other managed care; have Medicare as the primary payer; and be a U.S. resident. As described earlier, alignment-eligible beneficiaries for High Needs ACOs also had to meet at least one of four additional criteria indicating need based on mobility, risk score, utilization, and frailty. We did not apply the model’s logic to require beneficiaries to reside in a county included in the ACO’s service area because a small geographic area may pose larger spillover effect (that is, comparison beneficiaries receiving care from ACO REACH providers). Instead, we defined an ACO’s market area as the collection of HRRs in which the majority of aligned ACO beneficiaries reside. We limited our analytic sample for both ACO REACH and comparison groups in the baseline and performance years to the identified market area for each ACO, to eliminate the risk of exogenous time-varying differences that cannot be captured by the DID model. Although our definition of ACO market area comprises a larger geographic area than that used in the model’s logic, it would cover the model’s ACO service area identified by counties because each ACO’s market area was assessed using the matched sample between the model’s operational list and our list of aligned beneficiaries. We discuss this further in the **Sampling Comparison Beneficiaries from ACO REACH Markets** subsection.

Voluntary alignment (VA). VA is an intervention feature only available in the performance year for ACO REACH and indicates beneficiaries who designate a qualifying ACO REACH Participant Provider as their primary source of care. We identified prospective VA beneficiaries from the model’s operational list, using this list as a reference for comparing with claims-aligned beneficiaries. Because VA strategies will vary by individual ACOs, the process cannot be replicated on claims, which is not a problem for prospective VA beneficiaries who are also claims-aligned. To accommodate beneficiaries who are not claims-aligned, we allowed prospective VA to take precedence over claims alignment for ACO REACH, consistent with the model’s alignment rules. In future reports, we will descriptively examine how VA-only beneficiaries’ demographic characteristics, overall health status (for example, prevalence of chronic conditions), and health care utilization differ from claims-aligned beneficiaries in the performance year.

For the evaluation, we included ACO REACH beneficiaries prospectively aligned to ACO providers by either claims alignment or VA at the start of a performance year, but excluded Prospective Plus VA beneficiaries⁹⁸ from the ACO REACH group because Prospective Plus VA beneficiaries may substantively differ from other prospectively aligned beneficiaries (either through claims alignment or VA) in the type of partial years they contribute to the study. First, Prospective Plus VA beneficiaries could never be aligned for the entire PY because their alignment did not start at the beginning of the performance year. Second, the year-end partial years for the Prospective Plus VA beneficiaries would systematically differ from the early-year partial years for claims-aligned and prospective VA beneficiaries, even if they aligned to the ACO REACH group for the same length of time (for example, Prospective Plus VA beneficiaries aligned between 7/1/2023 and 12/31/2023 versus prospective VA beneficiaries aligned between 1/1/2023 and 6/30/2023). Therefore, inclusion of Prospective Plus

⁹⁸ Prospective Plus VA beneficiaries are prospectively aligned to an ACO Participant Provider in the second, third, and fourth calendar quarters of the performance year, either electronically or via the paper-based VA form. This differs from prospective VA beneficiaries who are aligned prior to the performance year and are aligned for the entire performance year.

VA beneficiaries would potentially exacerbate the imbalance between the ACO REACH and comparison groups, as well as the imbalance between the ACO REACH performance year and the ACO REACH baseline year groups, because comparison beneficiaries and ACO REACH beneficiaries in the baseline were only claims-aligned effective at the beginning of baseline year or performance year.

This approach allowed us to assess the impact of the ACO REACH Model on their prospectively claims-aligned and voluntarily aligned populations, relative to the comparison group's prospectively claims-aligned population, although it excludes the small proportion of Prospective Plus VA beneficiaries (3.8% in PY 2023, 3.3% in PY 2022, 3.8% in PY 2021, across all ACOs) and does not capture the full scale of impacts from Prospective Plus VA for ACO REACH. Consistent with the model's financial methodology and with our approach to identifying the comparison group, we limited the baseline treatment group to only claims-aligned beneficiaries. To ensure comparability in key covariates among these groups, we weighted the comparison group in baseline and performance years and the ACO REACH group in the baseline years (claims-aligned only) to resemble the ACO REACH performance year (claims-aligned and prospective VA beneficiaries) using EB, as detailed later in the document. We used this approach to weighting groups because prospective VA beneficiaries were included in the ACO REACH group in the performance years, while VA was not an option either for the ACO REACH group in the baseline years or for the comparison group.

ACO REACH and Comparison Group Providers Used to Determine Beneficiary Alignment

Our primary approach for identifying ACO REACH beneficiaries in the performance year was via claims-based and prospective VA to ACO REACH Participant Providers in the performance year. We employed the same strategy to construct treatment and comparison groups across all ACO types using a claims-based approach. We expect ACOs to change their mix of Participant Providers across performance years by adding and dropping providers. Therefore, we created a unique baseline corresponding to the performance year to ensure that the baseline and performance years consist of beneficiaries aligned to the same panel of Participant Providers that participated in the respective performance year. Specifically, we identified performance year Participant Providers in the corresponding baseline years. Beneficiaries aligned to these providers in the baseline years comprised the baseline treatment group.

We aligned eligible Medicare beneficiaries to an ACO through either claims-based alignment (described earlier) or VA (aligned beneficiaries designating a qualifying ACO REACH Participant Provider as their primary source of care), with preference for VA, as applicable. Beneficiaries were aligned to ACOs until the end of the year or until they became ineligible based on the alignment eligibility rules described earlier (see [Appendix I.1.1](#)).

Different from the model's alignment logic of identifying Participant Providers via TIN-NPI combination and aligning beneficiaries based on ACO TINs or CCNs (see [Exhibit I.5](#) and [Exhibit I.6](#)), we defined Participant Providers as NPIs and aligned beneficiaries to each ACO as one group (that is, group of Participant Providers) for two reasons. First, it may comprehensively capture their baseline, wherein some TIN-NPI combinations from the performance year might not be present in baseline years. Second, it approximates the model's alignment approach in the performance year where ACO REACH Participant Providers collaborate collectively.⁹⁹ A

⁹⁹ When defining ACO REACH Participant Providers by NPIs and then aligning beneficiaries based on ACO TINs, we would still need to use TIN-NPI combinations. This may cause issues in the baseline years, and the alignment would be either through individual NPI or individual

limitation of aligning beneficiaries to the group of ACO REACH NPIs in the baseline years is that they could also bill visits to non-ACO REACH TINs, and this approach would consider those claims as furnished by ACO REACH providers.¹⁰⁰ The upside of this approach is that it gives us a more comprehensive pool of beneficiaries in the baseline years who were prospectively claims-aligned to the group of ACO REACH NPIs. Thereby we reasonably assess the incremental effect of the ACO REACH Model on total spending and other outcomes for its Participant Providers' aligned beneficiary populations, relative to a comparison group.

Comparison beneficiaries were aligned to non-ACO REACH practices (defined as TINs and CCNs because an alternative organization of NPIs was unknown) through their alignment-eligible practitioners (defined by NPIs; see **Exhibit I.5**). As mentioned earlier, because an NPI can bill under both ACO REACH TIN/CCN and non-ACO REACH TIN/CCN, we further removed 1) comparison beneficiaries aligned to ACO REACH Participant or Preferred Provider TINs/CCNs after alignment and 2) comparison beneficiaries aligned to NPIs who participated in an ACO that left the program in prior performance years. We considered comparison providers as a pool of alignment-eligible non-ACO REACH NPIs billed under non-ACO REACH TINs/CCNs who furnished at least one PQEM claim to aligned comparison beneficiaries in the performance year, and we used this group of providers to align comparison beneficiaries in the baseline years. Comparison group providers could have been in Original Medicare alone or in Medicare ACO initiatives like Next Generation ACO (NGACO) or the Shared Savings Program; ESRD-focused ACO initiatives like Comprehensive ESRD Care (CEC) or Kidney Care Choices (KCC); or primary care initiatives like Comprehensive Primary Care Plus (CPC+) or Primary Care First (PCF). Beneficiaries aligned to comparison providers were further limited to ACO REACH market areas and sampled within the HRR for each baseline year or performance year (see subsection later in the document titled "**Sampling Comparison Beneficiaries from ACO REACH Markets**").

We recognize that ACO REACH and non-ACO REACH providers may differ on observed or unobserved characteristics that motivate the former group to organize into ACOs. Accordingly, in the fourth evaluation report, we will characterize providers based on several variables, including Original Medicare, MA, and ACO experience; health system affiliation; and participation in other Innovation Center initiatives, to use in potential subgroup analyses for total spending (that is, to examine variation in spending impacts based on prior ACO experience). We did not control for differences in provider characteristics in our estimation of the ACO REACH Model's impact because these characteristics could potentially be mediators or moderators or even time-varying confounders. We account for time-invariant differences between ACO REACH and comparison providers through the ACO fixed effect in our DID regression models.

Model-Aligned Beneficiaries Versus the Evaluation Analytic Sample

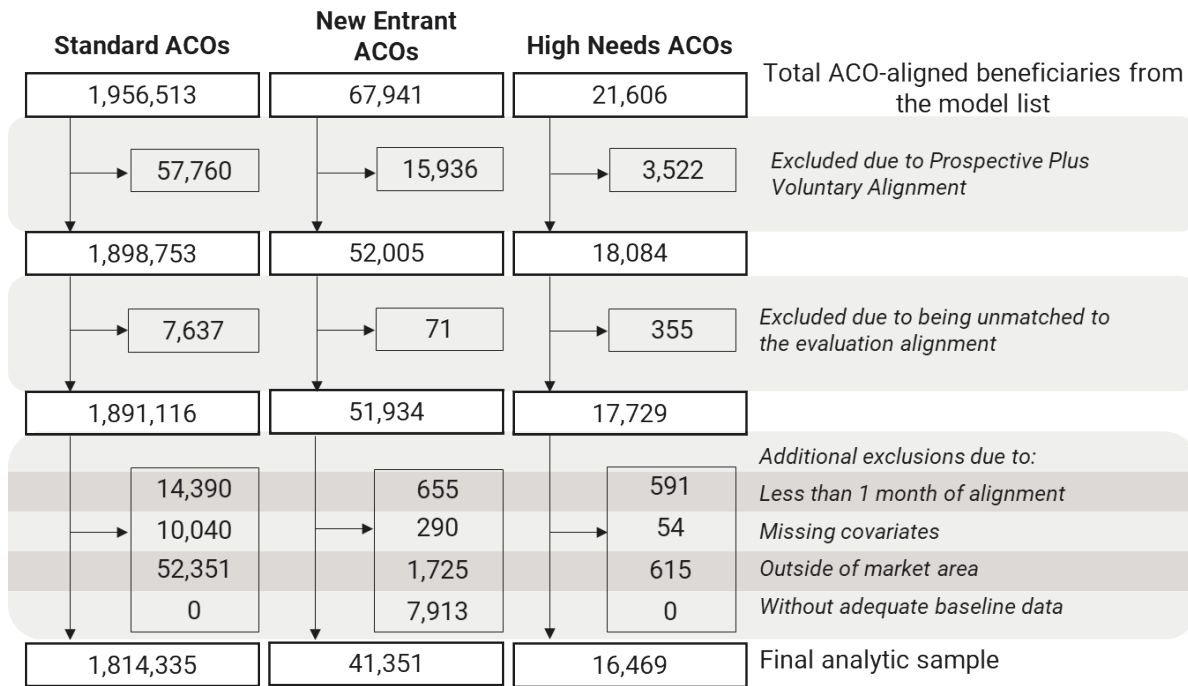
After alignment and assessment of beneficiaries for complete data, the final analytic sample used in the evaluation in PY 2023 comprised 1,814,335 beneficiaries, 41,351 beneficiaries, and 16,469 beneficiaries for the Standard, New Entrant, and High Needs ACOs, respectively. This represented 92.7%, 60.9%, and 76.2% of total beneficiaries aligned to the Standard, New Entrant, and High Needs ACOs in PY 2023. **Exhibit I.7** shows the

ACO as one group. Between these two options, aligning beneficiaries to an individual ACO as one group better reflects that ACO REACH participant providers collaborate collectively.

¹⁰⁰ This limitation only applies to the baseline years because our evaluation sample in the performance years included evaluations of aligned beneficiaries who were also model-aligned.

reasons and numbers for exclusion of beneficiaries in the three ACO types to derive the evaluation’s analytic sample.

Exhibit I.7. Reasons for Exclusion for Standard, New Entrant, and High Needs ACOs to Derive the Analytic Sample



NOTE: Additional reasons for exclusion are not mutually exclusive; for example, a beneficiary could have been excluded both for being aligned for less than one month and for missing covariates. Market area defined as HRRs with at least 0.5% of ACO’s aligned beneficiaries to all ACOs. One New Entrant ACO was excluded from the evaluation due to inadequate baseline data (n=7,913), and one additional High Needs ACO was excluded from the evaluation due to non-convergence of EB weights (n=359).

Sampling Comparison Beneficiaries from ACO REACH Markets

Our approach of drawing ACO REACH and comparison groups from the same market areas recognizes the dynamic nature of these entities, with changes possible in their markets from one performance year to the next. It is important that ACO REACH and comparison groups be drawn from the same markets so that they are exposed in similar ways to key time-varying market factors that influence outcomes, such as provider supply and competition, overlapping area-level Innovation Center initiatives, and widespread shocks to the market, such as the COVID-19 pandemic.

We examined the geographic distribution of providers and beneficiaries for each ACO and across ACO type, cohort, and model, to identify the markets in which ACOs operate and determine if comparison groups can be drawn from the same markets. We defined an ACO’s market area as the HRR(s) in which a meaningful percentage (0.5% or more) of its aligned beneficiaries reside.¹⁰¹ We chose this threshold because it allowed us to capture the majority of an ACO’s aligned beneficiaries while offering a sizable comparison group. This method

¹⁰¹ In PY 2023, we extended the market area to HRRs with at least 0.5% of ACO’s aligned beneficiaries to all ACOs. In PY 2022, only six ACOs were extended to use 0.5% criteria and the rest of the ACOs all used 1% criteria.

allowed us to capture more than 90% of each ACO's aligned beneficiaries (average 97.6% for each ACO, ranging from 90.3% to 99.6%).

The large geographic areas that HRRs cover made it computationally challenging to include *all* non-ACO REACH beneficiaries in each ACO's comparison group due to large file sizes. To ensure computational feasibility, we reduced the size of the final comparison group before conducting EB by choosing a random sample of comparison beneficiaries aligned to non-ACO providers in the ACO HRRs. For Standard and New Entrant ACOs, we randomly selected 10 comparison beneficiaries for each ACO-aligned beneficiary in the HRR to have enough beneficiaries to balance the groups while maintaining computational feasibility for our complex analysis. In HRRs where the ratio of comparison beneficiaries to ACO-aligned beneficiaries was less than 10:1, all comparison beneficiaries in the HRR were included in the comparison group. To maximize comparability for the analysis of High Needs ACOs, we matched ACO REACH beneficiaries with up to 10 comparison beneficiaries in the HRR and who also met the same combination of high needs eligibility criteria.

We used simple random sampling with replacement to ensure that each beneficiary had equal probability to be selected in the sample. Each HRR-ACO-reference year combination was sampled separately to keep these strata mutually exclusive. Because we conducted ACO-level analyses and estimated impacts for each ACO separately, sampling the comparison group in each market reflected the markets in which the ACOs were operating. Each ACO-level impact estimate is independent in the pooled analyses because the comparison group is sampled independently for each ACO from all available comparison beneficiaries in its markets.

Outcomes for ACO REACH and comparison group-aligned beneficiaries each year reflect the performance of ACO REACH and comparison providers in that specific year, respectively. Beneficiaries in our study can be aligned to ACO REACH providers in a year, and to comparison providers in the following year, and vice versa. We expect beneficiaries to switch groups during the model, or between the baseline and performance years, based on how they seek care from providers, as well as providers entering and exiting the model. Our evaluation design accommodates this common occurrence in Original Medicare where beneficiaries have freedom to seek care without restrictions among Original Medicare providers. It is also consistent with how ACOs have financial responsibility to manage their prospectively aligned populations based on the set of providers participating in a given performance year.¹⁰²

Alternative Comparison Group

Stakeholders and policymakers may be interested in understanding the model's impact without a direct comparison to beneficiaries in other Medicare accountable care models. Therefore, we conducted a supplemental analysis of total spending impact relative to an *alternative comparison group* comprised of Original Medicare beneficiaries and those in non-ACO payment model initiatives (see **Appendices J.5 and K.5** for results). Beneficiaries in ACO payment model initiatives (Shared Savings Program, NGACO, CEC, and Kidney Care Choices [KCC]) were excluded from this analysis. Non-ACO initiatives included other shared savings models and

¹⁰² Additionally, ACOs may change type (Standard, New Entrant, High Needs) from PY to PY, for example, as the size and characteristics of their beneficiary population change. For ACOs that changed type from PY 2022 to PY 2023, they were assigned to the ACO type they were in for the respective PY for the purpose of analysis. We continued to define the baseline period for these ACOs as the three years prior to starting the model.

episodic models.¹⁰³ **Our analysis with this alternative comparison group is limited in rigor.** Results may be influenced by changes in composition of the ACO REACH group from baseline to the performance period that were not present in the comparison group. The ACO REACH group's baseline in this analysis included a subset of aligned beneficiaries (of its Participant Providers) who were not in ACO initiatives, while its performance year included all of its (Participant Providers') aligned beneficiaries. We subset the ACO REACH group's baseline so that its pre-trends would be parallel with a similarly subset comparison group. Compositional changes in the ACO REACH group between baseline and performance periods may introduce bias because differences in beneficiary mix could confound the effects of the model.

1.1.2 Entropy Balancing

The following sections describe how EB was used in the evaluation, including our rationale for using EB, our approach to EB, variables used in EB, and the results from EB for Standard, New Entrant, and High Needs ACOs.

Rationale. Beneficiaries in the ACO REACH Model may be systematically different from those in comparison groups due to observed and unobserved differences in characteristics of beneficiaries or of providers to whom they were aligned. Our DID evaluation design accounts for time-invariant differences between the two groups (that is, characteristics that do not change over time, such as location, whether observable or unobservable). However, DID does not account for differences that may be time-varying (for example, if the composition of the treatment and comparison groups differentially change over time).

We conducted EB to ensure the comparability of baseline and comparison beneficiaries in our analytic sample with performance year ACO REACH beneficiaries. We ruled out more traditional propensity score approaches for balancing covariates (for example, regression, generalized boosted models, covariate balancing propensity methods) because slight misspecifications of the propensity score model can bias treatment effects. Instead, we used EB because it bypasses the propensity score estimation by using a maximum entropy reweighting scheme that directly incorporates covariate balance into the weight function. Thus, EB avoids both the iterative process of testing the propensity score model and the potential for misspecification.

The greatest advantage in using EB is that, unlike other weighting methods including covariate balancing propensity scores, ensuring balance between groups is the primary objective of the model. Researchers can specify the desired balance on first, second, or third moments (that is, mean, variance, or skewness) for each covariate between treatment and comparison groups. The EB method also reweights units smoothly to achieve balance so that the weights will be as close as possible to the base weights (one for every unit in unweighted sample), so that as much information as possible can be retained.¹⁰⁴

¹⁰³ The other shared savings initiatives comprised Comprehensive Primary Care Plus (CPC+), Making Care Primary (MCP), Independence at Home (IAH), Financial Alignment Initiative (FAI), and Value in Opioid Use Treatment Demonstration (VIT). Episodic models include Comprehensive Care for Joint Replacement (CJR), Bundled Payments for Care Improvement-Advanced (BPCI-A), Oncology Care Model (OCM), Enhancing Oncology Model (EOM), and End-Stage Renal Disease (ESRD) Treatment Choices (ETC).

¹⁰⁴ Hainmueller J. Entropy balancing for causal effects: A multivariate reweighting method to produce balanced samples in observational studies. *Political analysis*. 2012 Jan;20(1):25-46.

Approach for Entropy Balancing

We used the Stata package *ebalance* to employ the EB method.¹⁰⁵ For the DID design, there are **four** groups to consider:

- 1) ACO REACH beneficiaries in the performance year (includes voluntarily aligned and claims-aligned beneficiaries; reference group)
- 2) ACO REACH beneficiaries in the baseline years (includes claims-aligned beneficiaries only)
- 3) Comparison beneficiaries in the performance year (claims-aligned beneficiaries only)
- 4) Comparison beneficiaries in the baseline years (claims-aligned beneficiaries only)

Because voluntarily aligned beneficiaries exist only in the performance year ACO REACH group, we used that group as a reference and weighted beneficiaries in each year and treatment/comparison group combination to be similar to those beneficiaries. Because the beneficiary populations served by ACO REACH and non-ACO REACH providers may change over time, this approach helps to ensure balance or comparability across all four groups and performance years. We used this approach for Standard and New Entrant ACOs; however, due to the small sample size of High Needs ACOs, we instead pooled each ACO’s treatment group across the three baseline years and weighted the pooled baseline to be similar to the performance year ACO REACH group.

We checked the balance between the treatment group in the baseline and performance years to subsequently weight the baseline treatment group to be balanced with the performance year treatment group, recognizing that there might be differences because VA is allowed in the performance year but not in the baseline. The comparison group in the baseline and performance years was also balanced with the treatment group in the performance year. **Exhibit I.8** visually shows how EB was conducted for each ACO type; we used ACO REACH performance year as the reference group, due to voluntary aligned beneficiaries only being included in this group.

Exhibit I.8. Entropy Balancing Process for each ACO Type

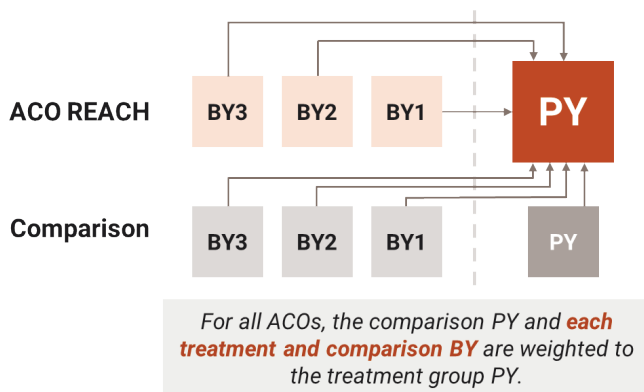


Exhibit I.9 provides the total number of unweighted beneficiaries included in our EB models for all ACOs by comparison group in the performance and baseline years, as well as the distribution of voluntarily aligned beneficiaries in the performance year ACO REACH group. The comparison group includes Original Medicare beneficiaries who were aligned to comparison providers using the ACO REACH alignment algorithm and resided

¹⁰⁵ Hainmueller J, Xu Y. *ebalance*: A Stata package for entropy balancing. *Journal of Statistical Software* 2013;1(54):7.

in the same market as the ACO (that is, a collection of HRRs that comprises at least 1% of aligned ACO REACH beneficiaries). Because we aimed to sample 10 comparison beneficiaries for each ACO REACH beneficiary, the size of the comparison group is about 10 times that of the ACO REACH group. Because the evaluation excluded Prospective Plus voluntarily aligned beneficiaries, the reported percentage of voluntarily aligned beneficiaries in the evaluation’s analytic sample does not reflect the entire group of prospective and Prospective Plus voluntarily aligned beneficiaries.

Exhibit I.9. Distribution of Beneficiaries in Standard, New Entrant, and High Needs ACOs, BYs and PY 2023

| | PY 2023 | | | BYs for 2021 Cohort: 2018–2020 2022 Cohort: 2019–2021 2023 Cohort: 2020–2022 | | |
|-------------------------|------------------|--|--|---|------------------|-------------------|
| | ACO REACH Group | | | Comparison Group | ACO REACH Group | Comparison Group |
| | Total | % of Voluntarily Aligned Beneficiaries | % of Beneficiaries Aligned through VA Only | Total | Total | Total |
| Standard ACOs | 1,814,335 | 7.61% | 1.32% | 13,330,326 | 6,472,867 | 47,861,603 |
| 2021 Cohort | 590,704 | 11.48% | 2.36% | 4,892,637 | 2,088,832 | 17,480,264 |
| 2022 Cohort | 811,786 | 6.21% | 0.88% | 5,043,297 | 2,836,590 | 17,954,996 |
| 2023 Cohort | 411,845 | 4.84% | 0.69% | 3,394,392 | 1,547,445 | 12,426,343 |
| New Entrant ACOs | 41,351 | 57.62% | 18.54% | 431,291 | 116,664 | 1,118,683 |
| 2021 Cohort | 20,097 | 57.55% | 24.63% | 236,788 | 40,467 | 404,416 |
| 2022 Cohort | 13,431 | 78.24% | 14.48% | 110,719 | 49,008 | 445,807 |
| 2023 Cohort | 7,823 | 22.40% | 9.89% | 83,784 | 27,189 | 268,460 |
| High Needs ACOs | 16,110 | 8.78% | 2.94% | 153,471 | 43,010 | 406,208 |
| 2021 Cohort | 5,550 | 7.55% | 3.93% | 50,548 | 14,458 | 138,344 |
| 2022 Cohort | 2,000 | 27.80% | 4.95% | 17,625 | 3,335 | 31,108 |
| 2023 Cohort | 8,560 | 5.13% | 1.83% | 85,298 | 25,217 | 236,756 |

NOTE: One New Entrant ACO (D0333) was excluded from analysis due to having insufficient data in the BYs. BYs comprised 2018–2020 for the 2021 Cohort; 2019–2021 for the 2022 Cohort; and 2020–2022 for the 2023 Cohort. ACO=accountable care organization; VA=voluntary alignment.

Results of Covariate Balance Before and After Entropy Balancing

Variables Selected for Entropy Balancing. We created variables for each baseline year and performance year. The variables we balanced in our EB models (see **Exhibit H.1** for the variable list) were the same variables described in our previous evaluation report.¹⁰⁶ They fell into the following domains:

- *Demographics (beneficiary-level).* Beneficiaries’ health care needs may vary by demographic characteristics.
- *Clinical (beneficiary-level).* Beneficiaries’ clinical characteristics and number of chronic conditions will drive cost and utilization patterns. A beneficiary’s chronic conditions and disease burden will typically be associated with their level and intensity of health care spending and utilization during the year. For High Needs, we also balanced on frailty status.

¹⁰⁶ See **Exhibit G.1** and **Exhibits H.8-H.10** in “Evaluation of the Global and Professional Direct Contracting Model. Annual Report 2: Appendices.” Available at: <https://www.cms.gov/priorities/innovation/data-and-reports/2024/gpdc-2nd-ann-report-app>

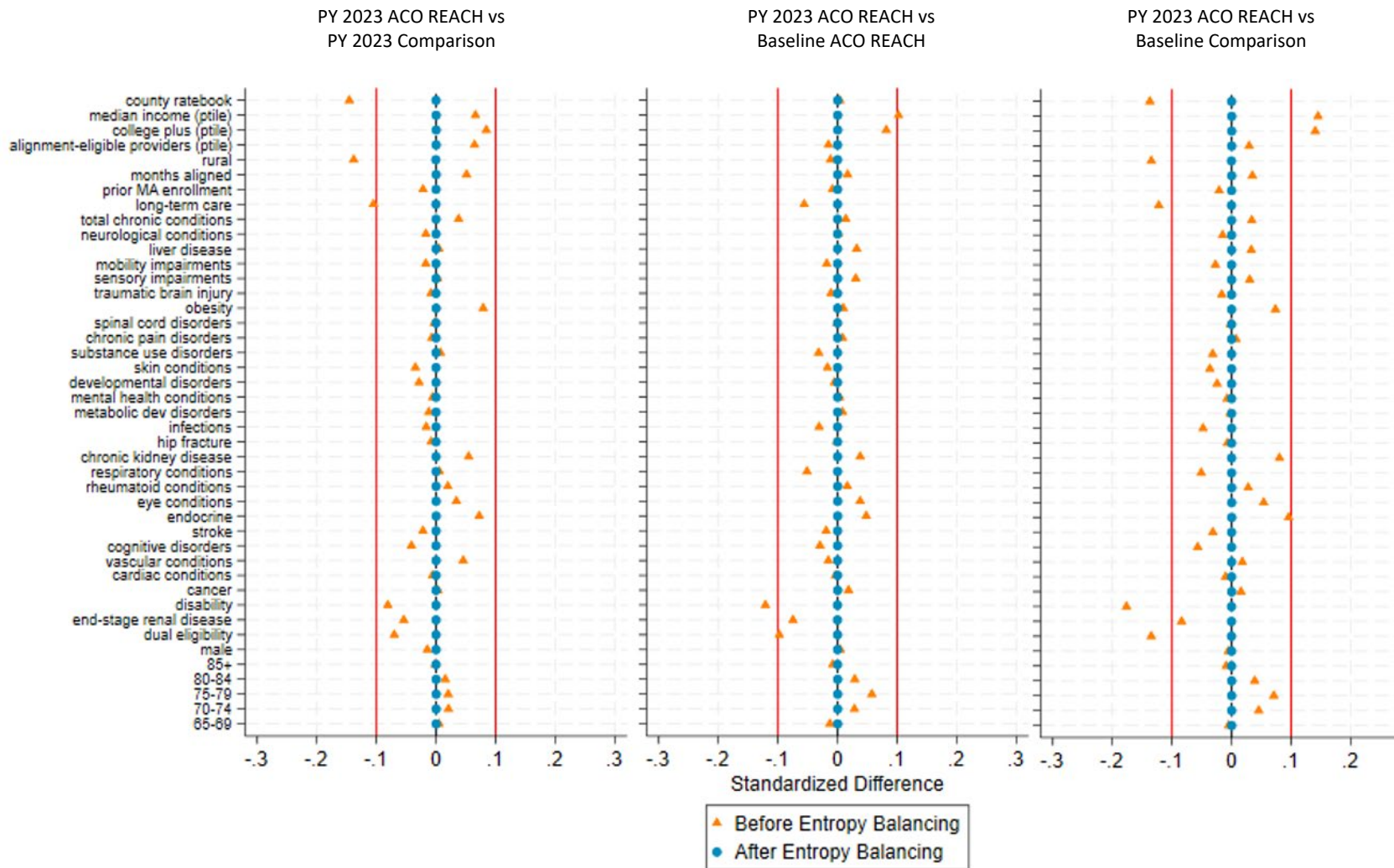
- *Market (ZIP code tabulation area-/ZIP code-/county-level)*. Access to health care services and providers, as well as social determinants of health, vary across regions, affecting beneficiary access to care and, potentially, health outcomes.

Results. In all cases for all ACO types, EB brought imbalanced variables closer to the PY 2023 ACO REACH group and achieved <0.015 standardized differences between the treatment and weighted comparison group for all variables, representing little to no differences between the groups after balancing. The following exhibits show the covariate balance before and after EB for Standard (**Exhibit I.10**), New Entrant (**Exhibit I.11**), and High Needs (**Exhibit I.12**) ACOs. In each exhibit, three comparisons are shown, with the PY 2023 ACO REACH group as the comparator in each.

- PY 2023 ACO REACH group vs. PY 2023 comparison group
- PY 2023 ACO REACH group vs. Baseline ACO REACH group
- PY 2023 ACO REACH group vs. Baseline comparison group

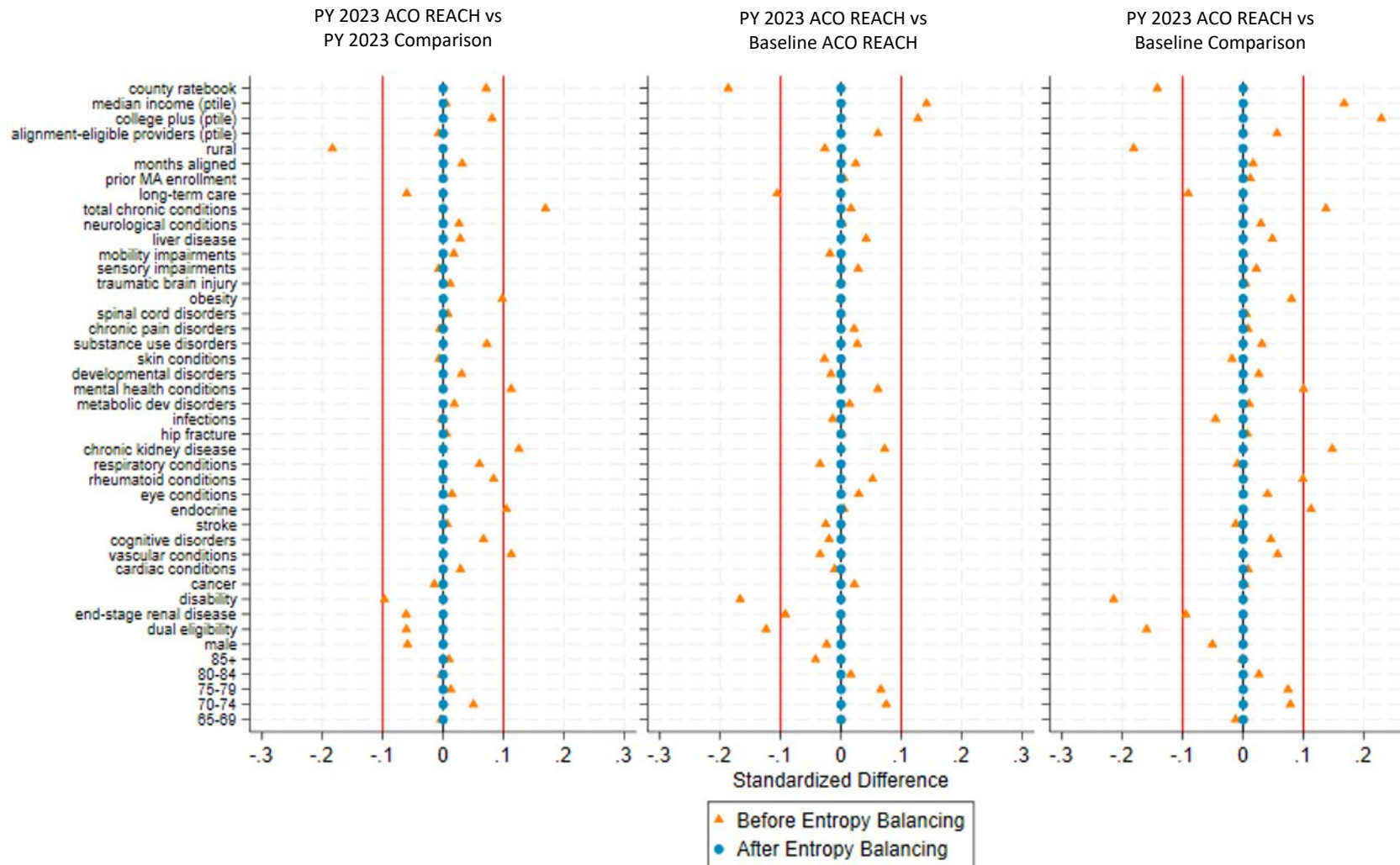
The exhibits show the standardized difference in covariates between the comparator (PY 2023 ACO REACH group) and other groups before EB (orange triangle) and after EB (blue dot). The red lines present cut-off values for ± 0.1 standardized differences, a threshold that is commonly used in assessing variable balance. If the dots fall within two red lines, it indicates well-balanced covariates between two groups.

Exhibit I.10. Standard ACOs—Covariate Balance Before and After Entropy Balancing



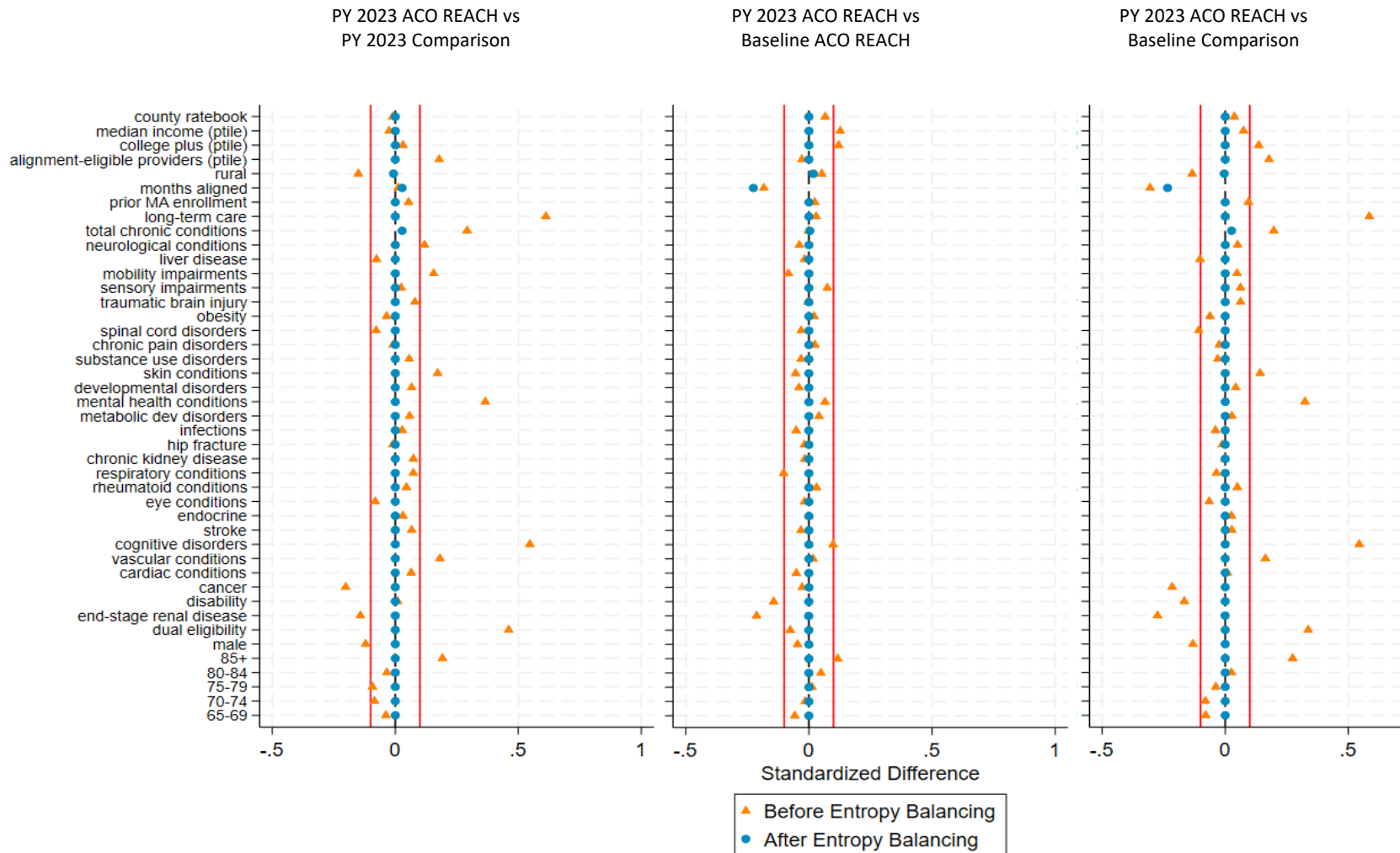
SOURCE: NORC analysis of Medicare demographic, clinical, and market data.

Exhibit I.11. New Entrant ACOs—Covariate Balance Before and After Entropy Balancing



SOURCE: NORC analysis of Medicare demographic, clinical, and market data.

Exhibit I.12. High Needs ACOs—Covariate Balancing



SOURCE: NORC analysis of Medicare demographic, clinical, and market data.

I.2 Analytic Approach for Descriptive Analyses of Beneficiary Characteristics

For all three ACO types, we assessed descriptive characteristics of beneficiaries aligned to ACOs in PY 2023, cumulatively as of PY 2022, and cumulatively as of PY 2023 (**Exhibits I.13 through I.15**), including beneficiaries’ demographic characteristics, enrollment/coverage information, clinical characteristics, and community characteristics. We used percentages to describe categorical and dichotomous variables and used means and standard deviations to describe continuous variables. For High Needs ACOs, we provide additional characteristics relevant to their status as High Needs beneficiaries in PY 2023, cumulatively as of PY 2022, and cumulatively as of PY 2023, including common clinical conditions and criteria used to determine High Needs eligibility (for full eligibility criteria, see **Appendix I.1.1**),^{107,108} including a claim-based index measuring beneficiary frailty.¹⁰⁹

We also assessed descriptive characteristics for beneficiaries in the baseline period (2018–2020 for the 2021 Cohort, 2019–2021 for the 2022 Cohort, and 2020–2022 for the 2023 Cohort) and comparison group (**Exhibits I.16 through I.18**) to better understand the analytic populations used in our impact analyses. Differential change with significance level was also reported for each characteristic. Differential change was calculated as the difference between ACO REACH and comparison groups from baseline years to performance year. Significance level was based on the comparison between the differential changes and zero. As expected, after EB, beneficiary composition was very similar between the ACO REACH and comparison groups (**Appendix I.1.2**).

I.2.1 Descriptive Characteristics of Beneficiaries Aligned in PY 2023, as of PY 2023, and as of PY 2022

Exhibit I.13. Standard ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023, as of PY 2023, and as of PY 2022

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | Cumulatively as of PY 2022 (GPDC only) |
|---------------------------------|--------------------------------|---|--|
| Number of beneficiaries | 1,814,335 | 3,726,292 | 1,911,957 |
| Total person-months | 20,960,140 | 43,167,392 | 22,207,252 |
| Months of alignment (mean ± SD) | 11.6 ± 1.8 | 11.6 ± 1.7 | 11.6 ± 1.7 |
| Demographics | | | |
| Age (mean ± SD) | 73.8 ± 10.0 | 74.2 ± 10.0 | 74.7 ± 10.0 |
| Sex (%) | | | |
| Female | 57.0 | 57.0 | 57.0 |
| Male | 43.0 | 43.0 | 43.0 |

¹⁰⁷ Global and Professional Direct Contracting (GPDC) and Kidney Care Choices Models Risk Adjustment. Available at: <https://innovation.cms.gov/media/document/gpdc-kcc-risk-adjustment>.

¹⁰⁸ ACO REACH Model Financial Operating Guide: Overview. Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-financial-op-guide>.

¹⁰⁹ Kim DH, Schneeweiss S, Glynn RJ, Lipsitz LA, Rockwood K, Avorn J. Measuring frailty in Medicare data: development and validation of a claims-based frailty index. *The Journals of Gerontology: Series A*. 2018 Jun 14;73(7):980-7.

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | Cumulatively as of PY 2022 (GPDC only) |
|---|-----------------------------------|--|--|
| Health Care Coverage (%) | | | |
| Had a disability and/or ESRD | 15.3 | 15.3 | 15.4 |
| Any dual eligibility | 14.9 | 14.3 | 13.9 |
| Any Part D coverage | 76.8 | 76.9 | 77.0 |
| Previously enrolled in MA | 0.9 | 0.8 | 0.8 |
| Clinical Characteristics | | | |
| Number of chronic conditions (mean ± SD) | 6.2 ± 3.7 | 6.1 ± 3.6 | 5.9 ± 3.6 |
| Endocrine conditions (%) | 84.9 | 84.2 | 83.4 |
| Vascular disease (%) | 74.0 | 73.5 | 73.0 |
| Rheumatoid conditions (%) | 45.6 | 44.4 | 43.3 |
| Eye conditions, (%) | 39.6 | 39.3 | 38.9 |
| Behavioral health conditions (%) | 30.2 | 29.6 | 29.1 |
| Cardiac conditions (%) | 32.3 | 31.8 | 31.4 |
| Chronic pain disorders (%) | 24.8 | 24.1 | 23.6 |
| Obesity (%) | 24.8 | 24.0 | 23.2 |
| Chronic kidney disease (%) | 21.1 | 20.6 | 20.1 |
| Respiratory conditions (%) | 20.5 | 20.2 | 20.0 |
| Had long-term care stay in prior year (%) | 1.6 | 1.6 | 1.7 |
| Prospective CMS-HCC Risk Score (mean ± SD) | 1.3 ± 1.1 | 1.2 ± 1.1 | 1.2 ± 1.1 |
| Community Characteristics | | | |
| Census Region (%) | | | |
| Northeast | 16.3 | 16.2 | 16.2 |
| Midwest | 23.9 | 24.7 | 25.5 |
| South | 36.8 | 33.6 | 30.6 |
| West | 23.0 | 25.5 | 27.7 |
| Rurality (%) | | | |
| Rural Zip Code | 5.4 | 5.6 | 5.9 |
| Urban Zip Code | 94.6 | 94.4 | 94.1 |
| Area Deprivation Index (ADI; %) | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 30.9 | 31.7 | 32.6 |
| Percent of aligned beneficiaries with ADI score of 26–50 | 34.4 | 33.8 | 33.1 |
| Percent of aligned beneficiaries with ADI score of 51–75 | 22.0 | 21.8 | 21.7 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 12.7 | 12.7 | 12.6 |
| Percent of population living below the poverty line at ZCTA level (mean ± SD) | 10.8 ± 6.7 | 10.8 ± 6.6 | 10.7 ± 6.6 |
| Percent of population ages 25+ with a college degree at ZCTA level (mean ± SD) | 36.8 ± 16.6 | 36.7 ± 16.8 | 36.6 ± 17.0 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: SD=standard deviation; ESRD=end-stage renal disease; MA=Medicare Advantage; HCC=Hierarchical Condition Category; ZCTA=ZIP Code Tabulation Area.

Exhibit I.14. New Entrant ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023, as of PY 2023, and as of PY 2022

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | Cumulatively as of PY 2022 (GPDC only) |
|--|-----------------------------------|--|--|
| Number of beneficiaries | 41,351 | 118,144 | 76,793 |
| Total person-months | 477,924 | 1,372,650 | 894,727 |
| Months of alignment (mean ± SD) | 11.6 ± 1.8 | 11.6 ± 1.6 | 11.7 ± 1.5 |
| Demographics | | | |
| Age (mean ± SD) | 74.0 ± 9.6 | 74.4 ± 9.6 | 74.7 ± 9.6 |
| Sex (%) | | | |
| Female | 59.0 | 59.5 | 59.7 |
| Male | 41.0 | 40.5 | 40.3 |
| Health Care Coverage (%) | | | |
| Had a disability and/or ESRD | 16.3 | 15.9 | 15.8 |
| Any dual eligibility | 16.4 | 16.5 | 16.0 |
| Any Part D coverage | 77.7 | 76.8 | 76.3 |
| Previously enrolled in MA | 1.0 | 1.2 | 1.3 |
| Clinical Characteristics | | | |
| Number of chronic conditions (mean ± SD) | 6.5 ± 3.8 | 6.4 ± 3.8 | 6.4 ± 3.8 |
| Endocrine conditions (%) | 85.4 | 84.7 | 84.4 |
| Vascular disease (%) | 74.7 | 74.5 | 74.4 |
| Rheumatoid conditions (%) | 47.7 | 47.1 | 46.7 |
| Eye conditions, (%) | 39.2 | 37.8 | 37.0 |
| Behavioral health conditions (%) | 33.9 | 33.6 | 33.5 |
| Cardiac conditions (%) | 32.2 | 32.0 | 31.9 |
| Chronic pain disorders (%) | 24.9 | 23.9 | 23.4 |
| Obesity (%) | 24.2 | 25.0 | 25.3 |
| Chronic kidney disease (%) | 23.6 | 23.7 | 23.8 |
| Respiratory conditions (%) | 22.2 | 22.6 | 23.0 |
| Had long-term care stay in prior year (%) | 1.7 | 2.2 | 2.5 |
| Prospective CMS-HCC Risk Score (mean ± SD) | 1.4 ± 1.2 | 1.3 ± 1.2 | 1.3 ± 1.2 |
| Community Characteristics | | | |
| Census Region (%) | | | |
| Northeast | 18.8 | 12.5 | 9.2 |
| Midwest | 3.1 | 6.4 | 8.1 |
| South | 18.2 | 21.6 | 23.6 |
| West | 59.9 | 59.5 | 59.2 |
| Rurality (%) | | | |
| Rural Zip Code | 3.1 | 2.3 | 2.0 |
| Urban Zip Code | 96.9 | 97.7 | 98.0 |

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | Cumulatively as of PY 2022 (GPDC only) |
|--|--------------------------------|---|--|
| Area Deprivation Index (ADI; %) | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 40.3 | 36.0 | 33.8 |
| Percent of aligned beneficiaries with ADI score of 26–50 | 37.5 | 37.4 | 37.4 |
| Percent of aligned beneficiaries with ADI score of 51–75 | 15.4 | 17.6 | 18.8 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 6.8 | 9.0 | 10.1 |
| Percent of population living below the poverty line at ZCTA level (mean ± SD) | 11.4 ± 6.9 | 11.7 ± 7.0 | 11.8 ± 7.1 |
| Percent of population ages 25+ with a college degree at ZCTA level (mean ± SD) | 37.8 ± 16.4 | 35.5 ± 15.8 | 34.2 ± 15.4 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: SD=standard deviation; ESRD=end-stage renal disease; HCC=Hierarchical Condition Category; ZCTA=ZIP Code Tabulation Area.

Exhibit I.15. High Needs ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023, in PY 2022, and as of PY 2023

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | In PY 2022 (GPDC only) |
|--|--------------------------------|---|---------------------------|
| Number of beneficiaries | 16,110 | 21,681 | 5,571 |
| Total person-months | 156,196 | 208,922 | 52,727 |
| Months of alignment (mean ± SD) | 9.7 ± 3.5 | 9.6 ± 3.5 | 9.5 ± 3.6 |
| Demographics | | | |
| Age (mean ± SD) | 78.5 ± 13.2 | 78.3 ± 13.2 | 77.8 ± 13.5 |
| Sex (%) | | | |
| Female | 63.4 | 63.4 | 63.2 |
| Male | 36.6 | 36.6 | 36.8 |
| Health Care Coverage (%) | | | |
| Had a disability and/or ESRD | 34.7 | 35.3 | 37.0 |
| Any dual eligibility | 57.4 | 60.4 | 68.9 |
| Any Part D coverage | 84.4 | 85.0 | 86.6 |
| Received Part D low-income drug subsidy | 57.7 | 60.4 | 68.3 |
| Clinical Characteristics | | | |
| Number of chronic conditions (mean ± SD) | 12.2 ± 4.2 | 12.2 ± 4.2 | 12.3 ± 4.3 |
| Vascular disease (%) | 94.7 | 94.5 | 94.1 |
| Endocrine conditions (%) | 93.8 | 94.0 | 94.5 |
| Behavioral health conditions (%) | 73.0 | 73.6 | 75.6 |
| Rheumatoid conditions (%) | 65.4 | 65.2 | 64.3 |
| Cardiac conditions (%) | 65.1 | 65.1 | 65.0 |
| Respiratory conditions (%) | 48.4 | 48.5 | 48.8 |

| | In PY 2023 (ACO REACH only) | Cumulatively as of PY 2023 (GPDC + ACO REACH) | In PY 2022 (GPDC only) |
|--|--------------------------------|---|---------------------------|
| Cognitive disorders (%) | 54.1 | 54.6 | 56.1 |
| Chronic kidney disease (%) | 44.7 | 44.8 | 45.3 |
| Chronic pain disorders (%) | 39.7 | 39.6 | 39.3 |
| Substance use disorders (%) | 23.0 | 23.5 | 25.0 |
| Had long-term care stay in prior year (%) | 42.7 | 44.7 | 50.5 |
| Prospective CMS-HCC Risk Score (mean ± SD) | 3.3 ± 1.9 | 3.3 ± 1.9 | 3.2 ± 1.8 |
| Claims-Based Frailty Index (%) | | | |
| 0–≤0.15 (Non-Frail) | 2.9 | 2.8 | 2.5 |
| >0.15–≤0.25 (Pre-Frail) | 26.1 | 25.0 | 22.0 |
| >0.25–≤0.35 (Mildly Frail) | 45.1 | 46.0 | 48.6 |
| >0.35–≤0.45 (Moderately Frail) | 21.4 | 21.9 | 23.0 |
| >0.45 (Severely Frail) | 4.6 | 4.4 | 4.0 |
| Community Characteristics | | | |
| Census Region (%) | | | |
| Northeast | 23.9 | 23.4 | 22.2 |
| Midwest | 7.5 | 6.3 | 2.9 |
| South | 49.1 | 48.5 | 46.6 |
| West | 19.5 | 21.8 | 28.3 |
| Rurality (%) | | | |
| Rural ZIP Code | 3.1 | 3.5 | 4.7 |
| Urban ZIP Code | 96.9 | 96.5 | 95.3 |
| Area Deprivation Index (ADI; %) | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 32.3 | 33.8 | 36.4 |
| Percent of aligned beneficiaries with ADI score of 26–50 | 28.5 | 28.3 | 21.4 |
| Percent of aligned beneficiaries with ADI score of 51–75 | 21.6 | 21.1 | 21.5 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 17.5 | 16.8 | 20.7 |
| Percent of population living below the poverty line at ZCTA level (mean ± SD) | 13.0 ± 8.3 | 13.5 ± 8.5 | 15.0 ± 8.8 |
| Percent of population ages 25+ with a college degree at ZCTA level (mean ± SD) | 36.8 ± 18.3 | 36.0 ± 18.2 | 33.5 ± 17.5 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: SD=standard deviation; ESRD=end-stage renal disease; HCC=Hierarchical Condition Category; ZCTA=ZIP Code Tabulation Area. Table does not include PY 2021 data.

1.2.2 Descriptive Characteristics of Beneficiaries Aligned in PY 2023 and Baseline Years

Exhibit I.16. Standard ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023 and Baseline Years

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ^a |
|---|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Number of beneficiaries | 5,443,005 | 5,443,005 | 1,814,335 | 1,814,335 | - |
| Total person-months | 62,879,920 | 62,879,844 | 20,960,140 | 20,959,900 | - |
| Months of alignment (mean ± SD) | 11.6 ± 1.8 | 11.6 ± 1.8 | 11.6 ± 1.8 | 11.6 ± 1.8 | - |
| Demographics | | | | | |
| Age (mean ± SD) | 73.7 ± 10.0 | 73.7 ± 10.0 | 73.8 ± 10.0 | 73.7 ± 10.0 | - |
| Sex (%) | | | | | |
| Female | 57.0 | 57.0 | 57.0 | 57.0 | - |
| Male | 43.0 | 43.0 | 43.0 | 43.0 | - |
| Health Care Coverage and Case Mix (%) | | | | | |
| Had disability and/or ESRD | 15.8 | 16.3 | 15.3 | 16.0 | -0.17*** |
| Previously enrolled in MA | 0.9 | 0.9 | 0.9 | 0.9 | - |
| Any dual eligibility | 14.9 | 14.9 | 14.9 | 14.9 | - |
| Any Part D coverage | 74.7 | 74.7 | 76.8 | 76.4 | 0.37*** |
| Received Part D Low-Income Drug Subsidy during the year | 16.4 | 16.5 | 15.8 | 15.9 | 0.02 |
| Clinical Characteristics | | | | | |
| Number of chronic conditions (mean ± SD) | 6.2 ± 3.7 | 6.2 ± 3.7 | 6.2 ± 3.7 | 6.2 ± 3.7 | - |
| Endocrine conditions (%) | 84.9 | 84.9 | 84.9 | 84.9 | - |
| Vascular disease (%) | 74.0 | 74.0 | 74.0 | 74.0 | - |
| Rheumatoid conditions (%) | 45.6 | 45.6 | 45.6 | 45.6 | - |
| Eye conditions, (%) | 39.6 | 39.6 | 39.6 | 39.6 | - |
| Behavioral health conditions (%) | 30.2 | 30.2 | 30.2 | 30.2 | - |
| Cardiac conditions (%) | 32.3 | 32.3 | 32.3 | 32.3 | - |
| Chronic pain disorders (%) | 24.8 | 24.8 | 24.8 | 24.8 | - |
| Obesity (%) | 24.8 | 24.8 | 24.8 | 24.8 | - |
| Chronic kidney disease (%) | 21.1 | 21.1 | 21.1 | 21.1 | - |
| Respiratory conditions (%) | 20.5 | 20.5 | 20.5 | 20.5 | - |
| Had long-term care stay in prior year (%) | 1.6 | 1.6 | 1.6 | 1.6 | - |
| Prospective CMS-HCC Risk Score (mean ± SD) | 1.2 ± 1.1 | 1.2 ± 1.1 | 1.3 ± 1.1 | 1.2 ± 1.1 | 0.02*** |
| Community Characteristics | | | | | |
| Percent below poverty line (mean ± SD) | 11.5 ± 7.3 | 11.5 ± 7.5 | 10.8 ± 6.7 | 10.8 ± 6.8 | 0.02** |
| Percent population aged 25+ with college or higher degree (mean ± SD) | 34.7 ± 16.4 | 35.2 ± 17.2 | 36.8 ± 16.6 | 37.3 ± 17.4 | 0.03 |
| Census Region (%) | | | | | |
| Northeast | 16.3 | 16.2 | 16.3 | 16.2 | 0.03 |
| Midwest | 23.9 | 23.7 | 23.9 | 23.4 | 0.17*** |
| South | 36.8 | 36.8 | 36.8 | 37.0 | -0.16*** |
| West | 23.0 | 23.3 | 23.0 | 23.3 | -0.04 |
| Rurality (%) | 5.4 | 5.4 | 5.4 | 5.4 | - |

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ^a |
|--|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Area Deprivation Index (ADI; %) | | | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 30.5 | 31.2 | 30.9 | 31.4 | 0.11* |
| Percent of aligned beneficiaries with ADI score of 26–50 | 34.3 | 32.7 | 34.4 | 32.8 | 0.09 |
| Percent of aligned beneficiaries with ADI score of 51–75 | 22.1 | 22.1 | 22.0 | 22.1 | -0.08 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 13.1 | 14.0 | 12.7 | 13.7 | -0.12*** |
| Alignment-eligible providers per 1,000 Original Medicare population in 10 miles | 23.0 ± 29.1 | 23.1 ± 18.0 | 28.6 ± 46.7 | 28.5 ± 22.4 | 0.18*** |
| Health professional shortage area (HPSA) primary care score (% experiencing primary care shortage) | 91.4 | 90.5 | 87.4 | 86.2 | 0.31*** |
| Participation in Other Alternative Payment Models (%) | | | | | |
| BPCI or BPCI Advanced Initiative | 1.7 | 2.0 | 2.5e-03 | 0.4 | -0.04*** |
| CEC Model | 0.1 | 0.1 | 0 | 0 | 0.006*** |
| CJR Model | 0.3 | 0.3 | 0.2 | 0.2 | 0.07*** |
| CPC+ or PCF Model | 9.3 | 7.4 | 7.2e-06 | 7.6 | -9.51*** |
| ETC | 0.1 | 0.1 | 0.2 | 0.2 | -0.02*** |
| FAI | 0.2 | 0.1 | 0.1 | 0.1 | -0.009* |
| IAH Demonstration | 1.1e-02 | 1.5e-02 | 0 | 5.0e-03 | -0.001* |
| NGACO Model | 17.7 | 2.9 | 0 | 0 | -14.77*** |
| KCC Model | 3.2e-02 | 4.1e-02 | 9.4e-04 | 0.8 | -0.76*** |
| OCM or EOM Model | 0.9 | 1.0 | 0.1 | 0.1 | 0.05*** |
| Medicare Shared Savings Program | 37.2 | 37.2 | 0 | 42.9 | -42.95*** |
| VIT | 2.6e-03 | 2.4e-03 | 8.5e-03 | 6.9e-03 | 0.001 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: Estimates in this table are weighted using EB. [^]Baseline years are calendar years 2018–2020 for the 2021 cohort, 2019–2021 for the 2022 cohort, and 2020–2022 for the 2023 cohort. SD=standard deviation; ESRD=end-stage renal disease; ICU=intensive care unit; HPSA=health professional shortage area; MA=Medicare Advantage; BPCI=Bundled Payments for Care Improvement; CEC=Comprehensive ESRD Care; CJR=Comprehensive Care for Joint Replacement; CPC+=Comprehensive Primary Care Plus; PCF=Primary Care First; ETC=ESRD Treatment Choices; FAI=Financial Alignment Initiative; IAH=Independence at Home; NGACO=Next Generation ACO; KCC=Kidney Care Choices; OCM=Oncology Care Model; VIT=Value in Opioid Use Disorder Treatment. ^aThe change between ACO REACH and comparison groups and baseline to performance years. *p<0.10; **p<0.05; ***p<0.01. Variables that were entropy balanced are denoted with ‘-.’

Exhibit I.17. New Entrant ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023 and Baseline Years

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ^a |
|---|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Number of beneficiaries | 124,053 | 124,053 | 41,351 | 41,351 | - |
| Total person-months | 1,433,764 | 1,433,765 | 477,924 | 477,923 | - |
| Months of alignment (mean ± SD) | 11.6 ± 1.8 | 11.6 ± 1.8 | 11.6 ± 1.8 | 11.6 ± 1.8 | - |
| Demographics | | | | | |
| Age (mean ± SD) | 74.0 ± 9.7 | 73.9 ± 9.7 | 74.0 ± 9.6 | 73.9 ± 9.7 | - |
| Sex (%) | | | | | |
| Female | 59.0 | 59.0 | 59.0 | 59.0 | - |
| Male | 41.0 | 41.0 | 41.0 | 41.0 | - |
| Health Care Coverage and Case Mix (%) | | | | | |
| Had disability and/or ESRD | 16.8 | 16.8 | 16.3 | 16.4 | -0.15 |
| Previously enrolled in MA | 1.0 | 1.0 | 1.0 | 1.0 | - |
| Any dual eligibility | 16.4 | 16.4 | 16.4 | 16.4 | - |
| Any Part D coverage | 75.4 | 75.4 | 77.7 | 77.0 | 0.63* |
| Received Part D Low-Income Drug Subsidy during the year | 17.6 | 17.8 | 17.1 | 17.2 | 0.13 |
| Clinical Characteristics | | | | | |
| Number of chronic conditions (mean ± SD) | 6.5 ± 3.8 | 6.5 ± 3.7 | 6.5 ± 3.8 | 6.5 ± 3.8 | - |
| Endocrine conditions (%) | 85.4 | 85.4 | 85.4 | 85.4 | - |
| Vascular disease (%) | 74.7 | 74.7 | 74.7 | 74.7 | - |
| Rheumatoid conditions (%) | 47.7 | 47.7 | 47.7 | 47.7 | - |
| Eye conditions, (%) | 39.2 | 39.2 | 39.2 | 39.2 | - |
| Behavioral health conditions (%) | 33.9 | 33.9 | 33.9 | 33.9 | - |
| Cardiac conditions (%) | 32.2 | 32.2 | 32.2 | 32.2 | - |
| Chronic pain disorders (%) | 24.9 | 24.9 | 24.9 | 24.9 | - |
| Obesity (%) | 24.2 | 24.2 | 24.2 | 24.2 | - |
| Chronic kidney disease (%) | 23.6 | 23.6 | 23.6 | 23.6 | - |
| Respiratory conditions (%) | 22.2 | 22.2 | 22.2 | 22.2 | - |
| Had long-term care stay in prior year (%) | 1.7 | 1.7 | 1.7 | 1.7 | - |
| Prospective CMS-HCC Risk Score (mean ± SD) | 1.3 ± 1.1 | 1.3 ± 1.2 | 1.4 ± 1.2 | 1.3 ± 1.2 | 0.10*** |
| Community Characteristics | | | | | |
| Percent below poverty line (mean ± SD) | 12.3 ± 7.5 | 12.0 ± 7.7 | 11.4 ± 6.9 | 11.4 ± 7.3 | -0.24*** |
| Percent population aged 25+ with college or higher degree (mean ± SD) | 35.9 ± 16.8 | 36.8 ± 18.0 | 37.8 ± 16.4 | 38.9 ± 17.9 | -0.22 |
| Census Region (%) | | | | | |
| Northeast | 19.3 | 21.3 | 18.8 | 20.2 | 0.65* |
| Midwest | 3.2 | 3.3 | 3.1 | 3.4 | -0.23* |
| South | 22.6 | 21.7 | 18.2 | 18.0 | -0.71* |
| West | 54.8 | 53.6 | 59.9 | 58.5 | 0.29 |
| Rurality (%) | 3.0 | 3.1 | 3.1 | 3.1 | - |

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ^a |
|--|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Area Deprivation Index (ADI; %) | | | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 41.2 | 43.7 | 40.3 | 43.9 | -1.09** |
| Percent of aligned beneficiaries with ADI score of 26–50 | 36.0 | 32.8 | 37.5 | 33.4 | 0.93** |
| Percent of aligned beneficiaries with ADI score of 51–75 | 15.5 | 15.8 | 15.4 | 15.6 | 0.09 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 7.4 | 7.7 | 6.8 | 7.1 | 0.07 |
| Alignment-eligible providers per 1,000 Original Medicare population in 10 miles | 19.6 ± 12.8 | 19.8 ± 13.4 | 24.6 ± 16.3 | 24.8 ± 16.9 | 0.007 |
| Health professional shortage area (HPSA) primary care score (% experiencing primary care shortage) | 95.2 | 94.3 | 91.7 | 90.3 | 0.53** |
| Participation in Other Alternative Payment Models (%) | | | | | |
| BPCI or BPCI Advanced Initiative | 2.0 | 1.8 | 0 | 0.3 | -0.53*** |
| CEC Model | 3.4e-02 | 3.7e-02 | 0 | 0 | 0.003 |
| CJR Model | 0.2 | 0.3 | 0.2 | 0.2 | 0.07* |
| CPC+ or PCF Model | 3.8 | 5.5 | 0 | 8.8 | -7.02*** |
| ETC | 0.1 | 4.6e-02 | 0.2 | 0.2 | 0.02 |
| FAI | 1.0 | 0.7 | 1.1 | 0.6 | 0.20 |
| IAH Demonstration | 0.1 | 1.2e-02 | 0 | 1.3e-02 | -0.10*** |
| NGACO Model | 6.0 | 3.2 | 0 | 0 | -2.82*** |
| KCC Model | 2.2e-02 | 2.6e-02 | 0 | 0.9 | -0.93*** |
| OCM or EOM Model | 0.8 | 0.8 | 0.1 | 0.1 | 0.06 |
| Medicare Shared Savings Program | 27.4 | 30.9 | 0 | 39.5 | -36.00*** |
| VIT | 2.7e-03 | 2.3e-04 | 0 | 5.2e-03 | -0.005 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: Estimates in this table are weighted using EB. [^]Baseline years are calendar years 2018–2020 for the 2021 cohort, 2019–2021 for the 2022 cohort, and 2020–2022 for the 2023 cohort. SD=standard deviation; ESRD=end-stage renal disease; ICU=intensive care unit; HPSA=health professional shortage area; MA=Medicare Advantage; BPCI=Bundled Payments for Care Improvement; CEC=Comprehensive ESRD Care; CJR=Comprehensive Care for Joint Replacement; CPC+=Comprehensive Primary Care Plus; PCF=Primary Care First; ETC=ESRD Treatment Choices; FAI=Financial Alignment Initiative; IAH=Independence at Home; NGACO=Next Generation ACO; KCC=Kidney Care Choices; OCM=Oncology Care Model; VIT=Value in Opioid Use Disorder Treatment. ^aThe change between ACO REACH and comparison groups and baseline to performance years. *p<0.10; **p<0.05; ***p<0.01. Variables that were entropy balanced are denoted with ‘-.’

Exhibit I.18. High Needs ACOs—Descriptive Characteristics of Beneficiaries Aligned in PY 2023 and Baseline Years

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ³ |
|---|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Number of beneficiaries | 48,330 | 48,330 | 16,110 | 16,110 | - |
| Total person-months | 505,002 | 505,012 | 156,196 | 154,647 | - |
| Months of alignment (mean ± SD) | 10.4 ± 3.1 | 10.4 ± 3.1 | 9.7 ± 3.5 | 9.6 ± 3.5 | - |
| Demographics | | | | | |
| Age (mean ± SD) | 78.6 ± 13.0 | 78.2 ± 13.2 | 78.5 ± 13.2 | 78.3 ± 13.1 | - |
| Sex (%) | | | | | |
| Female | 63.4 | 63.4 | 63.4 | 63.4 | - |
| Male | 36.6 | 36.6 | 36.6 | 36.6 | - |
| Health Care Coverage and Case Mix (%) | | | | | |
| Had disability and/or ESRD | 34.9 | 33.5 | 34.7 | 33.1 | 0.24 |
| Previously enrolled in MA | 3.4 | 3.4 | 3.4 | 3.4 | - |
| Any dual eligibility | 57.4 | 57.4 | 57.4 | 57.4 | - |
| Any Part D coverage | 84.1 | 85.2 | 84.4 | 85.6 | 0.01 |
| Received Part D low-income drug subsidy | 58.2 | 58.0 | 57.7 | 57.5 | 0.06 |
| Clinical Characteristics | | | | | |
| Number of chronic conditions (mean ± SD) | 12.2 ± 4.2 | 12.2 ± 4.3 | 12.2 ± 4.2 | 12.2 ± 4.3 | - |
| Vascular disease (%) | 94.7 | 94.7 | 94.7 | 94.7 | - |
| Endocrine conditions (%) | 93.8 | 93.8 | 93.8 | 93.8 | - |
| Behavioral health conditions (%) | 73.0 | 73.0 | 73.0 | 73.0 | - |
| Rheumatoid conditions (%) | 65.4 | 65.4 | 65.4 | 65.4 | - |
| Cardiac conditions (%) | 65.1 | 65.1 | 65.1 | 65.1 | - |
| Respiratory conditions (%) | 48.4 | 48.4 | 48.4 | 48.4 | - |
| Cognitive disorders (%) | 54.1 | 54.1 | 54.1 | 54.1 | - |
| Chronic kidney disease (%) | 44.7 | 44.7 | 44.7 | 44.7 | - |
| Chronic pain disorders (%) | 39.7 | 39.7 | 39.7 | 39.7 | - |
| Substance use disorders (%) | 23.0 | 23.0 | 23.0 | 23.0 | - |
| Prospective CMS-HCC Risk Score (mean ± SD) | 3.5 ± 1.8 | 3.6 ± 1.9 | 3.3 ± 1.9 | 3.3 ± 2.0 | 0.12*** |
| Had long-term care stay in prior year (%) | 42.7 | 42.7 | 42.7 | 42.7 | - |
| Claims-Based Frailty Index (%) | | | | | |
| 0–≤0.15 (Non-Frail) | 3.5 | 5.9 | 2.9 | 4.8 | 0.46* |
| >0.15–≤0.25 (Pre-Frail) | 27.2 | 28.5 | 26.1 | 27.3 | 0.05 |
| >0.25–≤0.35 (Mildly Frail) | 43.4 | 40.1 | 45.1 | 41.0 | 0.86 |
| >0.35–≤0.45 (Moderately Frail) | 21.2 | 20.6 | 21.4 | 21.1 | -0.31 |
| >0.45 (Severely Frail) | 4.8 | 5.0 | 4.6 | 5.8 | -1.06*** |
| Community Characteristics | | | | | |
| Percent below poverty line (mean ± SD) | 13.7 ± 8.9 | 13.6 ± 8.9 | 13.0 ± 8.3 | 13.0 ± 8.2 | -0.06 |
| Percent population aged 25+ with college or higher degree (mean ± SD) | 35.1 ± 18.3 | 35.0 ± 18.1 | 36.8 ± 18.3 | 36.8 ± 18.2 | -0.11 |

| | Baseline Years (2018–2022) [^] | | Performance Year 2023 | | Differential Change for ACO REACH vs. Comparison Group ^a |
|--|--|-------------|--------------------------|-------------|---|
| | ACO REACH | Comparison | ACO REACH | Comparison | |
| Census Region (%) | | | | | |
| Northeast | 24.9 | 25.2 | 23.9 | 23.8 | 0.43 |
| Midwest | 7.8 | 8.8 | 7.5 | 8.5 | 0.02 |
| South | 47.1 | 46.4 | 49.1 | 48.7 | -0.23 |
| West | 20.2 | 19.5 | 19.5 | 19.0 | -0.21 |
| Rurality (%) | 2.8 | 3.2 | 3.1 | 3.3 | 0.22 |
| Area Deprivation Index (ADI; %) | | | | | |
| Percent of aligned beneficiaries with ADI score of 1–25 (lowest socioeconomic disadvantage) | 34.3 | 33.3 | 32.3 | 32.0 | -0.68 |
| Percent of aligned beneficiaries with ADI score of 26–50 | 26.1 | 27.8 | 28.5 | 29.0 | 1.24* |
| Percent of aligned beneficiaries with ADI score of 51–75 | 21.6 | 20.9 | 21.6 | 21.5 | -0.55 |
| Percent of aligned beneficiaries with ADI score of 76–100 (highest socioeconomic disadvantage) | 17.9 | 18.0 | 17.5 | 17.6 | -0.01 |
| Alignment-eligible providers per 1,000 Original Medicare population in 10 miles | 25.8 ± 15.7 | 25.8 ± 15.6 | 31.6 ± 19.9 | 31.6 ± 19.5 | -0.03 |
| Health professional shortage area (HPSA) primary care score (% experiencing primary care shortage) | 94.2 | 93.3 | 90.3 | 90.7 | -1.31*** |
| Participation in Other Alternative Payment Models (%) | | | | | |
| BPCI or BPCI Advanced Initiative | 6.1 | 6.2 | 0.1 | 1.2 | -1.02*** |
| CEC Model | 0.4 | 0.3 | 0 | 0 | -0.02 |
| CJR Model | 0.1 | 0.3 | 0.2 | 0.2 | 0.10 |
| CPC+ or PCF Model | 13.4 | 9.0 | 0 | 7.5 | -11.87*** |
| ETC | 0.1 | 0.2 | 0.3 | 0.5 | -0.10* |
| FAI | 0.1 | 0.1 | 0.1 | 0.1 | -0.04 |
| IAH Demonstration | 1.6 | 0.2 | 0 | 0.1 | -1.44*** |
| NGACO Model | 0.5 | 1.6 | 0 | 0 | 1.10*** |
| KCC Model | 0.2 | 0.3 | 6.2E-03 | 1.9 | -1.80*** |
| OCM or EOM Model | 0.7 | 1.0 | 0.1 | 0.1 | 0.27*** |
| Medicare Shared Savings Program | 11.0 | 25.2 | 0 | 31.0 | -16.78*** |
| VIT | 7.0E-04 | 6.8E-04 | 0 | 6.8E-03 | -0.007 |

SOURCE: NORC analysis of Medicare enrollment, demographic, clinical, and market data.

NOTE: Estimates in this table are weighted using EB. [^]Baseline years are calendar years 2018–2020 for the 2021 cohort, 2019–2021 for the 2022 cohort, and 2020–2022 for the 2023 cohort. SD=standard deviation; ESRD=end-stage renal disease; ICU=intensive care unit; HPSA=health professional shortage area; MA=Medicare Advantage; BPCI=Bundled Payments for Care Improvement; CEC=Comprehensive ESRD Care; CJR=Comprehensive Care for Joint Replacement; CPC+=Comprehensive Primary Care Plus; PCF=Primary Care First; ETC=ESRD Treatment Choices; FAI=Financial Alignment Initiative; IAH=Independence at Home; NGACO=Next Generation ACO; KCC=Kidney Care Choices; OCM=Oncology Care Model; VIT=Value in Opioid Use Disorder Treatment. ^a The change between ACO REACH and comparison groups and baseline to performance years. *p<0.10; **p<0.05; ***p<0.01. Variables that were entropy balanced are denoted with ‘.’

I.3 Analytic Approach for Descriptive Analyses of Outcomes

This section describes our unadjusted analyses of outcomes in performance and baseline years and our methodology for assessing unadjusted trends over time for the ACO REACH group for outcomes in which we were unable to evaluate impacts. These analyses are only descriptive and are not adjusted for any time-varying beneficiary, community, or market characteristics.

I.3.1 Unadjusted Spending, Utilization, and Quality of Care Outcomes in PY 2023 and Baseline Years

We also descriptively assessed outcomes before regression adjustment for Standard, New Entrant, and High Needs ACOs (Exhibits I.19 through I.21). Because these are descriptive analyses and do not account for differences between the ACO REACH and comparison groups on key sociodemographic, clinical, and market-level factors, we do not conduct statistical testing on differences between groups. Unadjusted estimates should not be interpreted as causal for the ACO REACH Model. Medicare spending categories do not sum to total Medicare spending due to differences in how the measures are defined; spending categories reflect what Medicare would have paid absent capitation, while total Medicare spending includes capitation.

Exhibit I.19. Standard ACOs—Unadjusted Spending, Utilization, and Quality of Care Outcomes in PY 2023 and Baseline Years

| | Baseline Years (2018–2022)* | | | | Performance Year 2023 | | | |
|--|--------------------------------|---------|------------|---------|--------------------------|---------|------------|---------|
| | ACO REACH | | Comparison | | ACO REACH | | Comparison | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Spending (\$ PBPY)^ | | | | | | | | |
| Total Medicare spending (Parts A and B) | 12,129 | 24,824 | 12,651 | 25,603 | 12,495 | 25,392 | 13,152 | 26,892 |
| Acute care setting | 3,323 | 12,594 | 3,480 | 13,042 | 3,192 | 12,633 | 3,377 | 13,184 |
| Outpatient facility | 1,786 | 5,616 | 1,916 | 5,863 | 1,988 | 6,618 | 2,183 | 7,092 |
| Skilled nursing facility | 833 | 5,323 | 863 | 5,462 | 787 | 5,385 | 829 | 5,535 |
| Inpatient rehabilitation facility and long-term care hospital | 377 | 4,189 | 396 | 4,278 | 408 | 4,292 | 431 | 4,388 |
| Professional services | 3,145 | 6,764 | 3,168 | 6,873 | 3,378 | 7,543 | 3,383 | 7,719 |
| Specialty care office visits | 202 | 378 | 214 | 402 | 195 | 349 | 205 | 374 |
| Home health | 617 | 2,433 | 660 | 2,567 | 568 | 2,365 | 626 | 2,545 |
| Hospice | 407 | 3,685 | 427 | 3,807 | 413 | 3,773 | 445 | 3,974 |
| Primary care office visits | 597 | 866 | 598 | 902 | 653 | 920 | 655 | 963 |
| Utilization (per 1,000 BPY) | | | | | | | | |
| Acute care hospitalizations | 202.4 | 642.6 | 210.8 | 659.3 | 193.0 | 625.3 | 204.0 | 647.5 |
| Acute care length of stay | 1,271.2 | 5,083.3 | 1,332.5 | 5,255.8 | 1,204.4 | 4,969.7 | 1,282.1 | 5,196.5 |
| ED visits including observation stays | 373.7 | 1,065.9 | 395.3 | 1,105.4 | 382.3 | 1,117.7 | 409.0 | 1,140.3 |
| Inpatient rehabilitation facility and long-term care hospital days | 207.0 | 2,357.1 | 218.4 | 2,421.6 | 216.8 | 2,302.5 | 229.1 | 2,380.1 |
| Skilled nursing facility days | 1,438.2 | 9,096.0 | 1,485.5 | 9,275.5 | 1,321.5 | 8,715.4 | 1,390.0 | 9,002.3 |
| Home health episodes | 318.3 | 1,272.9 | 344.9 | 1,352.3 | 295.2 | 1,225.4 | 331.0 | 1,337.8 |
| Continuous hospice days prior to death | 22.8 | 51.9 | 23.1 | 52.8 | 24.9 | 54.8 | 25.9 | 56.8 |
| Total hospice days | 2.2 | 21.2 | 2.3 | 22.0 | 2.3 | 22.0 | 2.5 | 23.3 |

| | Baseline Years (2018–2022)* | | | | Performance Year 2023 | | | |
|---|--------------------------------|--------------|--------------|--------------|--------------------------|--------------|--------------|--------------|
| | ACO REACH | | Comparison | | ACO REACH | | Comparison | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| <i>Professional services by primary care physician</i> | 5,712.8 | 6,152.8 | 5,759.9 | 6,416.7 | 6,226.0 | 6,926.4 | 6,403.5 | 7,414.9 |
| <i>Urgent care visits</i> | 189.1 | 715.1 | 198.6 | 748.9 | 221.8 | 756.3 | 239.4 | 812.1 |
| <i>Urgent care visits excluding COVID</i> | 152.9 | 647.5 | 161.2 | 677.7 | 201.1 | 730.0 | 217.0 | 783.7 |
| Quality (per 1,000 BPY) | | | | | | | | |
| All-condition readmissions | 135.4 | 342.1 | 139.0 | 345.9 | 134.4 | 341.0 | 139.6 | 346.5 |
| ACSC hospitalizations | 21.3 | 144.5 | 20.2 | 140.7 | 19.1 | 136.9 | 18.9 | 136.3 |
| Timely follow-up | 832.7 | 373.3 | 824.4 | 380.5 | 843.2 | 363.6 | 825.2 | 379.8 |
| Unplanned admissions for patients with multiple chronic conditions | 228.3 | 419.7 | 235.6 | 424.4 | 219.0 | 413.6 | 232.1 | 422.1 |
| Percent of days at home | 95.8 | 10.2 | 95.7 | 10.3 | 96.0 | 10.3 | 95.7 | 10.4 |
| Recommended diabetes care | 409.3 | 491.7 | 381.7 | 485.8 | 442.5 | 496.7 | 409.5 | 491.7 |
| Low-value care | 233.6 | 423.1 | 237.5 | 425.5 | 244.0 | 429.5 | 246.2 | 430.8 |
| <i>Mortality</i> | <i>37.9</i> | <i>190.9</i> | <i>39.5</i> | <i>194.8</i> | <i>34.1</i> | <i>181.5</i> | <i>36.7</i> | <i>188.1</i> |
| <i>Advance care plan</i> | <i>123.4</i> | <i>328.9</i> | <i>116.2</i> | <i>320.4</i> | <i>171.9</i> | <i>377.3</i> | <i>163.4</i> | <i>369.7</i> |
| <i>Annual wellness visits</i> | <i>444.1</i> | <i>496.9</i> | <i>370.7</i> | <i>483.0</i> | <i>549.0</i> | <i>497.6</i> | <i>449.9</i> | <i>497.5</i> |
| <i>Chronic disease management for patients with multiple chronic conditions</i> | <i>94.4</i> | <i>292.4</i> | <i>77.4</i> | <i>267.2</i> | <i>119.9</i> | <i>324.9</i> | <i>106.5</i> | <i>308.5</i> |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Estimates in this table are weighted using entropy balance weights but not regression-adjusted. *Baseline years are calendar years 2018–2020 for 2021 cohort, 2019–2021 for 2022 cohort, and 2020–2022 for 2023 cohort. ^ Total spending and all spending categories are top coded at the 99.9th percentile by ACO market and year. Home health episodes are top coded at 14. Eligible populations for continuous hospice days prior to death are decedents only. Eligible populations for all-condition readmissions are beneficiaries with index hospitalizations. Eligible populations for timely follow-up include beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disease, diabetes). Eligible populations for unplanned admissions and chronic disease management for beneficiaries with multiple chronic conditions are beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). Eligible populations for days at home are beneficiaries with multiple chronic conditions (prospective HCC score in the prior year ≥2.0). Eligible populations for recommended diabetes care are beneficiaries with diabetes. Eligible populations for advance care plan include beneficiaries with eligible physician encounters in the year. Spending estimates are presented per beneficiary per year (PBPY). Utilization and quality estimates (except for “days at home,” “continuous hospice days prior to death,” and “total hospice days”) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). SD=standard deviation; ED=emergency department; ACSC=ambulatory care sensitive condition. Measures in *italics* are secondary measures excluded from impact analyses; descriptive trends for the treatment group are shown for these measures in [Appendix J](#).

Exhibit I.20. New Entrant ACOs—Unadjusted Spending, Utilization, and Quality of Care Outcomes in PY 2023 and Baseline Years

| | Baseline Years (2018–2022)* | | | | Performance Year 2023 | | | |
|---|--------------------------------|----------------|----------------|----------------|--------------------------|----------------|----------------|----------------|
| | ACO REACH | | Comparison | | ACO REACH | | Comparison | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Spending (\$ PBPY)^ | | | | | | | | |
| Total Medicare spending (Parts A and B) | 13,482 | 26,726 | 13,718 | 27,360 | 13,436 | 27,147 | 14,608 | 29,544 |
| Acute care setting | 3,846 | 14,181 | 4,025 | 14,917 | 3,536 | 13,841 | 4,058 | 16,077 |
| Outpatient facility | 1,699 | 5,451 | 1,953 | 6,111 | 1,892 | 6,760 | 2,314 | 7,691 |
| Skilled nursing facility | 1,033 | 6,253 | 1,044 | 6,358 | 932 | 6,170 | 1,068 | 6,746 |
| Inpatient rehabilitation facility and long-term care hospital | 370 | 4,297 | 351 | 4,166 | 402 | 4,294 | 421 | 4,527 |
| Professional services | 3,408 | 6,752 | 3,395 | 6,764 | 3,640 | 7,430 | 3,704 | 7,808 |
| Specialty care office visits | 229 | 402 | 249 | 440 | 218 | 382 | 246 | 424 |
| Home health | 713 | 2,642 | 673 | 2,597 | 657 | 2,663 | 636 | 2,560 |
| Hospice | 707 | 5,403 | 480 | 4,179 | 587 | 4,869 | 476 | 4,306 |
| <i>Primary care office visits</i> | <i>641</i> | <i>891</i> | <i>618</i> | <i>886</i> | <i>654</i> | <i>912</i> | <i>686</i> | <i>979</i> |
| Utilization (per 1,000 BPY) | | | | | | | | |
| Acute care hospitalizations | 222.0 | 681.9 | 228.5 | 701.0 | 202.3 | 639.3 | 223.2 | 705.9 |
| Acute care length of stay | 1,433.4 | 5,604.0 | 1,457.7 | 5,523.8 | 1,270.6 | 5,237.5 | 1,439.2 | 5,865.6 |
| ED visits including observation stays | 389.0 | 1,173.8 | 410.6 | 1,170.5 | 381.1 | 953.9 | 428.0 | 1,323.4 |
| Inpatient rehabilitation facility and long-term care hospital days | 194.4 | 2,399.2 | 180.3 | 2,162.6 | 207.5 | 2,247.1 | 210.1 | 2,268.3 |
| Skilled nursing facility days | 1,602.6 | 9,607.3 | 1,605.0 | 9,581.2 | 1,391.0 | 9,047.8 | 1,596.6 | 9,780.6 |
| Home health episodes | 339.3 | 1,275.1 | 319.0 | 1,255.0 | 306.1 | 1,217.1 | 3,01.2 | 1,208.9 |
| Continuous hospice days prior to death | 29.9 | 62.3 | 23.3 | 51.3 | 27.8 | 59.8 | 22.0 | 50.2 |
| Total hospice days | 3.6 | 28.4 | 2.4 | 21.6 | 3.0 | 25.9 | 2.4 | 23.0 |
| <i>Professional services by primary care physician</i> | <i>6,180.4</i> | <i>6,377.8</i> | <i>5,830.7</i> | <i>6,498.2</i> | <i>6,262.9</i> | <i>6,817.1</i> | <i>6,423.1</i> | <i>7,515.3</i> |
| <i>Urgent care visits</i> | <i>207.5</i> | <i>720.5</i> | <i>236.7</i> | <i>826.0</i> | <i>186.6</i> | <i>664.0</i> | <i>251.0</i> | <i>818.9</i> |
| <i>Urgent care visits excluding COVID</i> | <i>161.8</i> | <i>625.0</i> | <i>186.1</i> | <i>727.7</i> | <i>167.9</i> | <i>637.8</i> | <i>225.4</i> | <i>786.1</i> |
| Quality (per 1,000 BPY) | | | | | | | | |
| All-condition readmissions | 134.0 | 340.7 | 141.3 | 348.3 | 140.2 | 347.2 | 148.8 | 355.9 |
| ACSC hospitalizations | 23.9 | 152.8 | 22.1 | 146.9 | 19.1 | 137.0 | 20.5 | 141.5 |
| Timely follow-up | 822.7 | 382.0 | 830.6 | 375.1 | 834.5 | 371.7 | 820.7 | 383.6 |
| Unplanned admissions for patients with multiple chronic conditions | 236.8 | 425.1 | 247.3 | 431.5 | 221.5 | 415.3 | 236.8 | 425.1 |
| Percent of days at home | 95.6 | 10.4 | 95.7 | 10.5 | 96.2 | 10.1 | 95.5 | 10.7 |
| Recommended diabetes care | 362.9 | 480.9 | 376.0 | 484.4 | 395.9 | 489.1 | 401.0 | 490.1 |
| Low-value care | 257.6 | 437.3 | 244.4 | 429.7 | 269.5 | 443.7 | 254.0 | 435.3 |
| <i>Mortality</i> | <i>45.5</i> | <i>208.4</i> | <i>42.7</i> | <i>202.2</i> | <i>37.8</i> | <i>190.8</i> | <i>40.5</i> | <i>197.2</i> |
| <i>Advance care plan</i> | <i>160.8</i> | <i>367.3</i> | <i>117.3</i> | <i>321.8</i> | <i>190.2</i> | <i>392.5</i> | <i>174.7</i> | <i>379.7</i> |
| <i>Annual wellness visits</i> | <i>327.3</i> | <i>469.2</i> | <i>328.1</i> | <i>469.5</i> | <i>372.2</i> | <i>483.4</i> | <i>408.2</i> | <i>491.5</i> |
| <i>Chronic disease management for patients with multiple chronic conditions</i> | <i>154.8</i> | <i>361.8</i> | <i>80.8</i> | <i>272.6</i> | <i>134.4</i> | <i>341.1</i> | <i>115.2</i> | <i>319.3</i> |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Estimates in this table are weighted using entropy balance weights but not regression-adjusted. *Baseline years are calendar years 2018–2020 for 2021 cohort, 2019–2021 for 2022 cohort, and 2020–2022 for 2023 cohort. ^Total spending and all spending categories are top coded at the 99.9th percentile by ACO market and year. Home health episodes are top coded at 14. Eligible populations for continuous hospice days prior to death are decedents only. Eligible populations for all-condition readmissions are beneficiaries with index hospitalizations. Eligible populations for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disease, diabetes). Eligible populations for unplanned admissions and chronic disease management for beneficiaries with multiple chronic conditions are beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). Eligible populations for days at home are beneficiaries with multiple chronic conditions (prospective HCC score in the prior year ≥ 2.0). Eligible populations for recommended diabetes care are beneficiaries with diabetes. Eligible populations for advance care plan are beneficiaries with eligible physician encounters in the year. Spending estimates are presented per beneficiary per year (PBPY). Utilization and quality estimates (except for “days at home,” “continuous hospice days prior to death,” and “total hospice days”) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). SD=standard deviation; ED=emergency department; ACSC=ambulatory care sensitive condition. Measures in *italics* are secondary measures excluded from impact analyses; descriptive trends for the treatment group are shown for these measures in [Appendix K](#).

Exhibit I.21. High Needs ACOs—Unadjusted Total Spending, Utilization, and Quality of Care Outcomes in BYs and PY 2023

| | Baseline Years (2018–2022)* | | | | Performance Year 2023 | | | |
|---|--------------------------------|-----------------|-----------------|-----------------|--------------------------|-----------------|-----------------|-----------------|
| | ACO REACH | | Comparison | | ACO REACH | | Comparison | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Spending (\$ PBPY)^ | | | | | | | | |
| Total Medicare spending (Parts A and B) | 37,142 | 44,381 | 37,524 | 46,089 | 36,572 | 49,815 | 37,161 | 51,627 |
| Utilization (per 1,000 BPY) | | | | | | | | |
| Acute care hospitalizations | 687.5 | 1,219.7 | 734.3 | 1,262.4 | 621.6 | 1,168.1 | 667.2 | 1,190.3 |
| Acute care length of stay | 5,081.2 | 11,076.0 | 5,327.2 | 11,413.3 | 4,604.3 | 10,995.1 | 4823.5 | 10,730.2 |
| ED visits and observation stays | 699.7 | 1,774.6 | 770.4 | 2,010.0 | 625.9 | 1,361.1 | 724.7 | 1,645.5 |
| Inpatient rehabilitation facility and long-term care hospital days | 1,053.8 | 6,561.8 | 1,031.3 | 6,298.0 | 1,085.4 | 6,196.5 | 1,249.5 | 6,442.8 |
| Skilled nursing facility days | 10,554.3 | 25,914.8 | 11,003.0 | 26,740.7 | 8,653.5 | 23,173.4 | 9,375.8 | 24,421.8 |
| Home health episodes | 1,786.7 | 3,276.1 | 1,554.2 | 3,051.9 | 1,687.5 | 3,187.7 | 1,550.6 | 3,024.8 |
| Continuous hospice days prior to death | 43.3 | 76.8 | 33.4 | 65.9 | 46.9 | 78.0 | 38.9 | 69.3 |
| Total hospice days | 26.2 | 75.3 | 18.8 | 63.3 | 29.1 | 79.2 | 21.2 | 66.7 |
| <i>Professional services by primary care physician</i> | <i>18,140.5</i> | <i>16,536.3</i> | <i>14,543.3</i> | <i>16,015.8</i> | <i>20,255.9</i> | <i>18,061.6</i> | <i>17,012.1</i> | <i>19,811.6</i> |
| <i>Urgent care visits</i> | <i>46.8</i> | <i>417.6</i> | <i>104.7</i> | <i>916.0</i> | <i>127.4</i> | <i>869.3</i> | <i>97.2</i> | <i>596.0</i> |
| <i>Urgent care visits excluding COVID</i> | <i>31.4</i> | <i>266.3</i> | <i>74.4</i> | <i>496.0</i> | <i>124.5</i> | <i>863.9</i> | <i>87.2</i> | <i>529.9</i> |
| Quality of Care (per 1,000 BPY) | | | | | | | | |
| All-condition readmissions | 207.6 | 405.6 | 204.2 | 403.1 | 207.1 | 405.3 | 200.9 | 400.7 |
| ACSC hospitalizations | 104.8 | 306.3 | 82.3 | 274.8 | 95.7 | 294.2 | 80.7 | 272.4 |
| Timely follow-up | 773.3 | 418.8 | 770.3 | 420.7 | 823.4 | 381.5 | 796.7 | 402.4 |
| Unplanned admissions for patients with multiple chronic conditions | 333.6 | 471.5 | 357.5 | 479.3 | 295.2 | 456.2 | 323.4 | 467.8 |
| Percent of days at home | 92.3 | 14.2 | 91.6 | 14.8 | 92.6 | 14.0 | 91.8 | 14.9 |
| Low-value care | 128.2 | 334.3 | 160.1 | 366.7 | 140.0 | 347.0 | 155.8 | 362.6 |
| <i>Mortality</i> | <i>222.6</i> | <i>416.0</i> | <i>208.0</i> | <i>405.9</i> | <i>204.3</i> | <i>403.2</i> | <i>195.5</i> | <i>396.6</i> |
| <i>Advance care plan</i> | <i>297.9</i> | <i>457.3</i> | <i>249.4</i> | <i>432.6</i> | <i>387.1</i> | <i>487.1</i> | <i>297.7</i> | <i>457.3</i> |
| <i>Annual wellness visits</i> | <i>223.0</i> | <i>416.3</i> | <i>181.4</i> | <i>385.3</i> | <i>262.3</i> | <i>439.9</i> | <i>211.9</i> | <i>408.7</i> |
| <i>Chronic disease management for patients with multiple chronic conditions</i> | <i>288.1</i> | <i>452.9</i> | <i>129.6</i> | <i>335.8</i> | <i>428.6</i> | <i>494.9</i> | <i>213.4</i> | <i>409.7</i> |

SOURCE: NORC team analysis of Medicare claims and enrollment data.

NOTE: Estimates in this table are weighted using entropy balance weights but not regression-adjusted. Only total spending is shown given ongoing refinements to the comparison group for High Needs ACOs. *Baseline years are calendar years 2018–2020 for 2021 cohort, 2019–2021 for 2022 cohort, and 2020–2022 for 2023 cohort. ^Total spending and all spending categories are top coded at the 99.9th percentile by ACO market and year. Home health episodes are top coded at 14. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. Eligible populations for continuous hospice days prior to death are decedents only. Eligible populations for all-condition readmissions are beneficiaries with index hospitalizations. Eligible populations for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disease, diabetes). Eligible populations for unplanned admissions and chronic disease management for beneficiaries with multiple chronic conditions are beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). Eligible populations for days at home are beneficiaries with multiple chronic conditions (prospective HCC score in the prior year ≥ 2.0). Eligible populations for advance care plan are beneficiaries with eligible physician encounters in the year. Spending estimates are presented per beneficiary per year (PBPY). Utilization and quality estimates (except for “days at home,” “continuous hospice days prior to death,” and “total hospice days”) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). SD=standard deviation; ED=emergency department; ACSC=ambulatory care sensitive condition. Measures in *italics* are secondary measures excluded from impact analyses; descriptive trends for the treatment group are shown for these measures in [Appendix L](#). Recommended diabetes care was not analyzed as an outcome for High Needs ACOs, as it was not relevant for their medically complex beneficiary population.

1.3.2 Descriptive Analysis of Trends for Secondary Outcomes

Finally, as was noted in Appendix G, we did not include eight measures in the impact estimation owing to their violations of the parallel trends test (see [Appendix I.4.5](#)). Instead, we descriptively assessed unadjusted trends over time for the treatment group for these outcomes only. The outcomes were: primary care visit spending, PCP services, urgent care visits, urgent care visits excluding COVID-related visits, annual wellness visits, chronic care management for beneficiaries with multiple chronic conditions (MCC), advance care plan, and mortality. Because we balanced the ACO REACH and comparison groups on beneficiary characteristics but not provider characteristics, we expected the two groups—for many ACOs and comparators—to differ in their baseline trends for the first six outcomes related to care processes. Regarding mortality, owing to the primary care focus of the ACO REACH Model, this outcome may be less under the control of ACOs and their providers. The trend graphs are presented in [Appendix J](#), [Appendix K](#), and [Appendix L](#).

1.4 Analytic Approach to Estimate Impacts for Standard, New Entrant, and High Needs ACOs

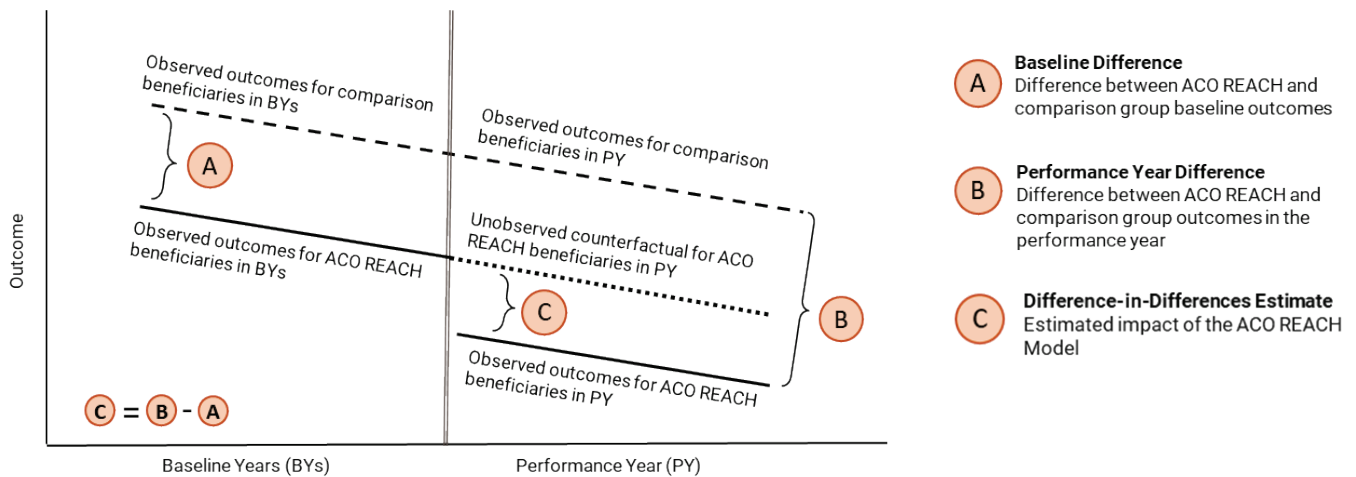
We used a difference-in-differences (DID) design to assess how the ACO REACH Model’s providers impacted Medicare spending, utilization, and quality of care outcomes for their beneficiaries in each performance year, relative to a comparison group and three preceding pre-intervention (“baseline”) years ([Exhibit I.22](#)). Analyses were done separately for each ACO type (Standard, New Entrant, and High Needs ACOs). By observing the outcomes among ACO REACH and comparison beneficiaries before model launch and in performance years, we can estimate the expected outcomes for ACO REACH beneficiaries in the absence of the ACO REACH Model (also known as the untreated counterfactual) by continuing baseline trends for ACO REACH beneficiaries into the performance year. The impact of the ACO REACH Model is the difference between the untreated counterfactual and the observed outcomes in the performance year.

- For Standard and New Entrant ACOs, we ran DID regression models separately for each individual ACO. To aggregate ACO-specific impacts to obtain a model-level estimate (separately for Standard ACOs and New Entrant ACOs), we weighted each ACO impact by the proportion of total model-aligned beneficiaries who were aligned to the ACO.¹¹⁰
- For High Needs ACOs, rather than ACO-specific models, we ran cohort-specific models (separate for 2021, 2022, and 2023 cohorts) by pooling each cohort’s ACOs, because of the small sample sizes for each ACO. A model-level estimate was then calculated by weighting the impact for each cohort with the proportion of total model-aligned beneficiaries for that cohort.

The DID design requires two key assumptions:

1. Unobserved factors affect the treatment and comparison groups similarly. If observed characteristics between the ACO REACH and comparison group are correlated with unobserved characteristics between the two groups, using EB weights mitigates biases that may result from unobserved differences influencing outcomes between the two groups. For instance, we do not observe beneficiary-level income; however, by using ZIP Code Tabulation Area (ZCTA)-level median income in our EB weights, we aim to mitigate bias potentially arising from income differences between the ACO REACH and comparison groups.
2. The changes in outcomes over the baseline years are parallel between the treatment and comparison groups. We tested this assumption by comparing trends for ACO REACH beneficiaries with trends for comparison beneficiaries in the baseline years.

Exhibit I.22. DID Design to Estimate the ACO REACH Model’s Treatment Effect



NOTE: ACO=accountable care organization. The unobserved counterfactual is the expected outcomes for the ACO REACH group in the performance year absent the ACO REACH Model.

1.4.1 Performance and Baseline Years in the DID Design

For PY 2023 analyses, the baseline years were the three preceding calendar years before each cohort of ACOs started the model (2018–2020 for the 2021 cohort, 2019–2021 for 2022 cohort, and 2020–2022 for the 2023

¹¹⁰ When aggregating impacts, we exclude ACOs that failed to converge in the DID regression models. For details of this strategy, please refer to H.4.4 Estimation of Model-Level Impacts.

cohort). The evaluation’s three-year baseline is not the same baseline as the model’s financial benchmarking methodology, which uses 2017–2019 as the baseline for all cohorts¹¹¹ to limit direct effects of the COVID-19 pandemic in 2020.¹¹² We included 2020 in the baseline for three reasons:

- We could capture a baseline for providers newer to serving Original Medicare beneficiaries, particularly among New Entrant ACOs.¹¹³ We included ACOs with adequate data in all baseline years in our analyses. By using the most recent three years, we lose fewer providers from the ACO REACH and comparison performance year panels and can better capture providers who began to serve Original Medicare beneficiaries more recently.
- In PY 2021 and PY 2022, we assessed the extent to which COVID-19 affected the treatment and comparison groups and whether the two groups experienced differential impacts in ways that could not be adjusted for in the model (for instance, a complex nonlinear relationship), by comparing trends in observable COVID-19-related measures (cases, fatalities, and case fatality rates) for ACO REACH and comparison group beneficiaries. Based on the analyses, we determined that including 2020 as a baseline year would not violate any assumptions of the DID method.
- For PY 2021 and PY 2022, we observed no consistent violations of the parallel trends assumption introduced when we added 2020 to the baseline period across all ACOs.

In addition, we used a different baseline period for each cohort (again diverging from the model’s benchmarking methodology that uses 2017–2019 as the baseline for all cohorts) for two reasons:

- It increases the likelihood that we will have an adequate sample size of providers in the baseline years. If providers had not established routine care with Original Medicare beneficiaries (or were not billing Medicare FFS at all) in the baseline years, we are unable to attribute beneficiaries to them in those years. By using baseline years directly prior to the model years, we aim to capture a greater share of ACO REACH providers in the baseline than we would by using years further removed from ACO REACH performance years.
- Using the recent baseline years allows the evaluation to capture the influence of COVID-19 in baseline and performance periods while also reflecting the performance of ACO and non-ACO providers just before the model’s start. This is important because COVID-19 effects will likely endure over the duration of the model and should be accounted for in the baseline.

One potential challenge of this methodology is that, because the year prior to model entry for each cohort may have been a ramp-up year to begin implementation, especially for 2022 and 2023 cohorts that delayed their

¹¹¹ For more details on the model’s financial benchmarking methodology, see: <https://www.cms.gov/priorities/innovation/files/aco-reach-py23-financial-operating-guide.pdf>

¹¹² Including 2017 as a baseline year is also challenging for the evaluation from the update to the chronic conditions algorithms in the CCW in 2017. Because of this change, the 2017 prospective chronic conditions flags (that is, flags using 2016 data) are not comparable to prospective chronic conditions flags in 2018 and beyond.

¹¹³ “Not more than 50% of the DC Participant Providers in a New Entrant ACO may have prior experience in the Medicare Shared Savings Program, the Next Generation ACO Model, the Comprehensive ESRD Care Model, or the Pioneer ACO Model. Organizations found ineligible to participate as New Entrant ACOs on the basis of this criterion will have the opportunity to participate as a Standard ACO, provided all other model requirements are met. New Entrant ACOs may not have more than 3,000 beneficiaries that are ‘alignable’ through claims-based alignment in any of the baseline years (CY 2017, CY 2018, and CY 2019), as this suggests that the organization has significant experience serving Original Medicare beneficiaries.” Taken from: [Direct Contracting Model: Global and Professional Options, Request for Applications](#); 11/25/19.

start from 2021, inclusion of an implementation or pre-implementation period in the baseline could threaten the assumption of parallel trends (see [Appendix I.4.5](#)).

1.4.2 DID Model Specification and Key Covariates

For Standard and New Entrant ACOs, we estimated DID models separately for each ACO relative to its comparison group; for High Needs ACOs we estimated DID models separately for each cohort. We then pooled the ACO-level or cohort-level estimates as beneficiary-weighted averages to obtain the model's impact on spending, utilization, and quality of care outcomes in performance year and cumulatively as of performance year separately for Standard, New Entrant, and High Needs ACOs, relative to their counterfactuals. We established the counterfactual by determining baseline years for all ACOs and a balanced beneficiary comparison group,¹¹⁴ assuming parallel trends in the groups' outcomes within the DID estimation framework. Baseline years were cohort-specific and defined as the three years prior to an ACO beginning in the model. The ACO REACH treatment effect for each ACO type reflects the marginal effect of the model over incentives that existed in the baseline period for its associated providers, relative to the comparison group. We estimated the treatment effect in our DID model as an interaction term capturing the relative change in average spending between treatment and comparison groups from the baseline years to performance year. We included year fixed effects to account for observed trends in Medicare spending for beneficiaries in this evaluation.

Our model within the DID framework for estimating impact in a given performance year for a given ACO (for Standard and New Entrant ACOs) or ACO cohort (for High Needs ACOs), adjusting for beneficiary and community (ZIP code-/ZCTA-/county-level) characteristics, with year and market (HRR) fixed effects (market fixed effects are at ACO level for High Needs), as well as a time-varying market effect, was specified as:

$$g[E(Y_{inkt})] = \beta_0 + \beta_1 \mathbf{I}[i \in ACO] + \theta_1 \mathbf{I}[i \in ACO] \times PY_t \\ + \Upsilon Patient_{inkt} + \Lambda Community_{nkt} + \tau_t + \omega_k + \tau_t \times \omega_k$$

Where:

- Y_{inkt} is the outcome for the beneficiary i , residing in community n , in market (HRR) k and year t . We modeled Y with appropriate distributional form and link function $g(\cdot)$, for each spending, utilization, or quality of care outcome ([Exhibit I.23](#)).
- $\mathbf{I}[i \in ACO]$ is the binary indicator for being in the ACO group in either performance year or baseline years. It is set to the value of "1" if the beneficiary is aligned with an ACO Participant Provider (and "0" otherwise). The coefficient β_1 captures the mean of the difference between the ACO and comparison groups that is constant over time.

¹¹⁴ Comparison group beneficiaries represent beneficiaries in the same markets as treatment group beneficiaries who mainly receive services from non-GPDC/ACO REACH providers. Comparison group beneficiaries and ACO baseline beneficiaries were balanced to be like the ACO beneficiaries in the PY on observed characteristics, including beneficiary demographics, clinical characteristics, and market characteristics. The EB process is described previously in [Appendix I.1.2](#). In the PY, comparison group beneficiaries are prospectively claims-aligned to comparison providers, which are non-GPDC/ACO REACH providers. PY comparison providers are then followed back to the BYs for prospective claims alignment of comparison beneficiaries in the BYs. For additional detail on how beneficiaries were aligned to the BYs and PY 2023 treatment and comparison groups, please see [Appendix I.1.1](#).

- Coefficient θ_1 is the DID estimate for $I[i \in ACO] * PY_t$, the indicator for being in the ACO group in a given performance year of the ACO REACH Model.
- **Patient** and **Community** are sets of beneficiary and community characteristics with coefficient sets γ and λ , respectively.
- τ_t , ω_k , and $\tau_t * \omega_k$ are yearly fixed effects, market fixed effect, and time-varying market effects.

Impacts at the ACO level were adjusted for the following characteristics:

- Beneficiary-level covariates included age (and the square of age), sex, disability, ESRD status, dual eligibility, Part D coverage, number of months of alignment in the year, disease burden at the end of the preceding year (using 25 clinical domain indicators representing for 66 chronic conditions), MA enrollment in the preceding year, and long-term care stay of >100 days in the preceding year.
- Community-level covariates included beneficiary residence in rural area, percentile of ZIP code-level Medicare primary care providers and alignment-eligible specialists per 1,000 Original Medicare population in 10 miles, percentile of ZIP code-level population aged 25 years or older with a college or higher degree, percentile of ZIP code-level median household income, percentile of ZIP code-level poverty rate, HPSA category for primary care, and HPSA category for mental health care.
- Market-level covariates included indicators for each HRR and interactions for HRR and years to account for both time-invariant and time-varying market factors.
- All spending outcomes were top coded at the 99.9th percentile to mitigate any effects of outliers on impact estimates for spending.

1.4.3 Model Specifications for Outcome Measures

Exhibit I.23 summarizes the distributional assumptions and link functions used for modeling the 25 claims-based outcome measures for the Standard, New Entrant, and High Needs ACOs in PY 2023. **Appendix H** gives a complete description of how we defined, operationalized, and calculated all outcome measures. Outcome measures for spending and utilization were modeled as continuous variables, using generalized linear models (GLMs). For outcomes where more than 20% of the sample had zero values, we used two-part models (TPMs) with a probit or logit model to assess the likelihood of a non-zero outcome and GLM to assess levels of the outcome for those with non-zero outcomes. For spending and utilization outcome variables modeled with GLMs or non-zero part in the TPM, we determined the appropriate distributional form using a modified Park test.¹¹⁵ This test examined the empirical relationship between the mean and the variance to ascertain the appropriate distribution. The quality of care measures were modeled as binary measures and therefore used logit models, excepting days at home—which was modelled as a continuous variable using TPM.

¹¹⁵ Manning W, Mullahy J., Estimating log models: To transform or not to transform? *J Health Econ.* 2001;20:461–494.

Exhibit I.23. PY 2023 Statistical Model Specifications for Outcome Measures

| Outcome Measure | Model Specification |
|--|---|
| Spending | |
| Total Medicare spending (Parts A and B) | Generalized linear model (GLM): Poisson distribution and log link |
| Acute care setting | Two-part model (TPM): first part probit; second part GLM with gamma distribution and log link |
| Professional services | GLM: Poisson distribution and log link |
| Outpatient facility | TPM: first part probit; second part GLM with gamma distribution and log link |
| Skilled nursing facility | TPM: first part probit; second part GLM with gamma distribution and log link |
| Inpatient rehabilitation facility and long-term care hospital | TPM: first part probit; second part GLM with inverse Gaussian distribution and log link |
| Specialty care office visits | TPM: first part probit; second part GLM with gamma distribution and log link |
| Home health | TPM: first part probit; second part GLM with gamma distribution and log link |
| Hospice | TPM: first part probit; second part GLM with gamma distribution and log link |
| Utilization | |
| Acute care hospitalizations | TPM: first part probit; second part GLM with inverse Gaussian distribution and log link |
| Acute care length of stay | TPM: first part probit; second part GLM with gamma distribution and log link |
| ED visits including observation stays | TPM: first part probit; second part GLM with inverse Gaussian distribution and log link |
| Inpatient rehabilitation facility and long-term care hospital days | TPM: first part probit; second part GLM with inverse Gaussian distribution and log link |
| Skilled nursing facility days | TPM: first part probit; second part GLM with gamma distribution and log link |
| Home health episodes | TPM: first part probit; second part GLM with gamma distribution and log link |
| Continuous hospice days prior to death | TPM: first part probit; second part GLM with gamma distribution and log link |
| Total hospice days | TPM: first part probit; second part GLM with gamma distribution and log link |
| Quality of Care | |
| All-condition readmissions | Logit |
| ACSC hospitalizations | Logit |
| Timely follow-up | Logit |
| Unplanned admissions for patients with multiple chronic conditions | Logit |
| Percent of days at home | TPM: first part probit; second part GLM with gamma distribution and log link |
| Recommended diabetes care | Logit |
| Low-value care | Logit |

NOTE: ED=emergency department; ACSC=ambulatory care sensitive condition; for “days at home” measure, we modeled percent of days *not* at home in two-part probit model and converted the estimate back to the original scale.

1.4.4 Estimation of Model-Level Impacts

In our approach to estimating the ACO REACH Model’s impacts for Standard and New Entrant ACOs, we calculated the model-level impact in PY 2023 for each ACO type by a weighted average of impacts generated from ACO-specific regression models. For High Needs ACOs, we used the same approach using cohort-specific regression models, rather than ACO-specific models. To aggregate individual ACO/cohort impacts to obtain a model-level estimate, we weighted each ACO/cohort’s impact by the proportion of total model-aligned beneficiaries who were aligned to that ACO/cohort.

$$Model\ Level\ Impact = \sum_{i=1}^n \frac{Impact_{ACO_i} \times N_{ACO_i}}{\sum_{i=1}^n N_{ACO_i}}$$

For example, if 5% of all aligned beneficiaries were aligned to an ACO with an impact estimate of \$45 per beneficiary per year (PBPY) and the remaining beneficiaries were aligned to an ACO with an impact of \$20 PBPY, the combined impact of the two ACOs would be (\$45 * 0.05) + (\$20 * 0.95)=\$21.25 PBPY.

When generating model-level estimates, we excluded ACO-specific results if convergence issues arose during the ACO-level DID regression. In PY 2023, one ACO was excluded for the outcome *Unplanned Admission for beneficiaries with MCC*.

Standard errors for the model-level estimates were calculated as a weighted average of the standard errors associated with ACO-level impacts (for Standard and New Entrant ACOs) or cohort-level impacts (for High Needs ACOs) in the performance year for each ACO type. Standard errors for individual ACO-level estimates were first converted to variances and weighted by the squared proportion of ACO beneficiaries in a given performance year, then converted back to a standard error from the combined variance. This approach offered us the advantage of directly computing the model-level impacts from impacts of individual ACOs with their heterogenous beneficiary populations. We obtained similar model-level impacts from regression models that pooled all ACOs with ACO-level interactions to account for heterogeneity, and we clustered standard errors at the ACO-market level.

The model-level cumulative estimate as of PY 2023 reflects a weighted average of the model-level estimate for each performance year (PY 2021, PY 2022 and PY 2023), weighted by the proportion of total model-aligned beneficiaries that were included in each performance year’s model-level estimate. Standard errors were also similarly calculated as a weighted average. **Exhibits I.24 and I.25** show visually how the model-wide impact in PY 2023, and cumulatively across performance years, was calculated for Standard, New Entrant, and High Needs ACOs, respectively.

Exhibit I.24. Calculation of Model-Wide Impacts for Standard and New Entrant ACOs

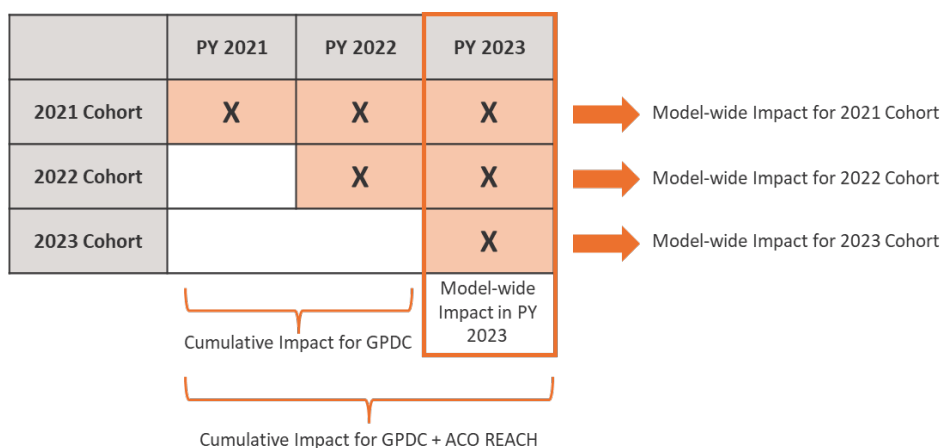
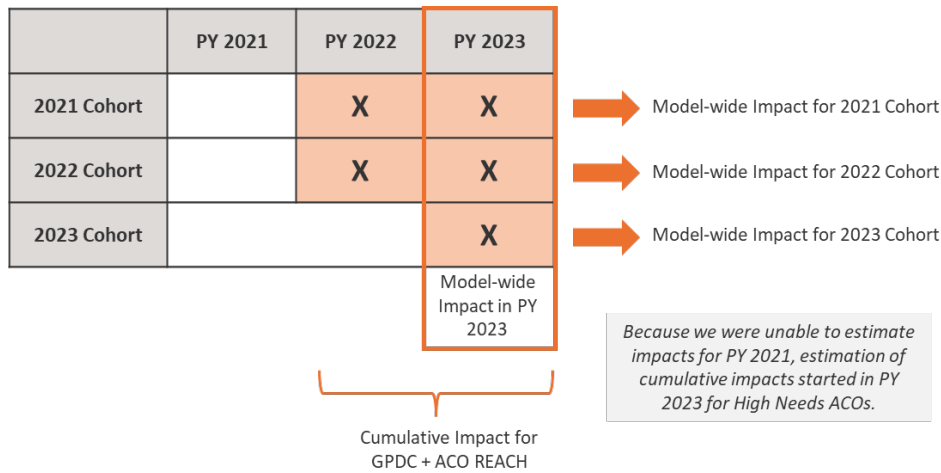


Exhibit I.25. Calculation of Model-Wide Impacts for High Needs ACOs



1.4.5 Assessment of Parallel Baseline Trends

The DID design assumes that time-varying and time-invariant unobservable factors affect the treatment and comparison groups similarly. A key assumption of the DID design is that in the absence of the intervention, the treatment group’s outcomes would have evolved in parallel with the comparison group’s. We supported this assumption by verifying trends for the outcomes in the baseline period prior to performing the DID analysis. For each level of analysis, we tested whether trends in total spending, utilization, and quality of care outcomes between ACO REACH and comparison groups were parallel across the baseline years. We did not assess parallel trends for categories of spending in care settings, as our focus was on evaluating their contributions to total spending.

A DID approach attributes statistical evidence of divergence (or convergence) in outcomes between the treatment (ACO REACH) and comparison groups (non-ACO REACH beneficiaries in ACO REACH market areas) after the performance year began as model impacts. The DID estimation method has two main assumptions:

- The *parallel trends* assumption, which states that the time trends in outcome variables would have been the same in the performance year absent the model. The presence of parallel trends in the outcome variable(s) across the two groups in the baseline years serves as a justification for the assumption of parallel trends in the performance year.
- The assumption of *no anticipation effect*, which states that the model should not have had any effect on the ACOs in the baseline years. A violation of this assumption would be if the model is found to have a non-zero effect on the ACOs in the baseline years. Any presence of a divergence in the outcomes’ trajectory across ACO REACH and comparison groups during the baseline years could constitute a violation of both the parallel trends as well as the no anticipation assumption. Ignoring such a divergence in the baseline years could result in misattribution of the estimated effect to the model and result in biased estimates of the model’s impact.

Approach for Verifying Parallel Trends Assumption

We assessed support for the assumption of parallel trends by verifying that there was no prior evidence of divergence/convergence in outcomes in the baseline years. Verifying that there is no empirical evidence of non-parallel trends in the baseline is an important step in supporting the validity of impacts calculated by DID. As both DID and parallel trend tests are intended to determine evidence of divergence/convergence, our approach to testing the parallel trends assumption mirrors the DID framework to calculate impacts. We verified the assumption of parallel trends for each ACO type by examining the significance of an interaction term between treatment (ACO REACH) and baseline year variables, for each outcome measure:

- Estimating the ACO REACH Model’s effect on outcomes for the baseline years: We modified the model specification, shown in reduced form without covariates in the following equation, dropping performance year data and including treatment effects for the baseline years.

$$\begin{aligned}
 g[E(Y_{inkt})] = & \beta_0 + \beta_1 \mathbf{I}[i \in ACO] + \delta_1 \mathbf{I}[t = BY2] + \delta_2 \mathbf{I}[t = BY1] \\
 & + \theta_{-2} \mathbf{I}[i \in ACO, t = BY2] + \theta_{-1} \mathbf{I}[i \in ACO, t = BY1] \\
 & + \Upsilon Patient_{inkt} + \Lambda Community_{nkt} + \omega_k
 \end{aligned}$$

- After estimating this regression for each ACO type, we tested whether θ_{-2} , and θ_{-1} were jointly statistically different from zero. If yes, we rejected the null hypothesis of no divergence/convergence between the ACO REACH and comparison groups during baseline years for that given outcome. When we found that θ_{-2} , and θ_{-1} were not jointly statistically distinguishable from zero, this combined F test gave us more confidence that any impacts we observe after the model start can be attributed to the ACO REACH Model.

Results of Parallel Trends Tests

In this section, we tested support for the parallel trends assumption using data from the baseline years. If pre-trends were not parallel, we conducted additional analyses to assess whether a significant linear trend was present in the baseline, which we incorporated into the impact estimate. Further sensitivity analyses are presented in the following section titled **“Sensitivity Checks for ACOs Failing Parallel Trends Tests.”**

Impact estimates for utilization and quality measures for the High Needs ACOs should be interpreted with caution because we tested for parallel trends only on gross spending. Further analysis is needed to determine if the comparison group meets the parallel trends assumption for additional outcome measures. (The High Needs ACO comparison group and regression model specifications were updated and refined following publication of the Preview Report in May 2025.)

Exhibits I.26 presents parallel trends test results for Standard ACOs. For total Medicare spending, we implemented these tests for both the original and alternative comparison group (comprising Original Medicare beneficiaries not in accountable care initiatives). As seen from **Exhibit I.26**, for most outcomes, the majority of Standard ACOs complied with the parallel trends assumption (less than 20% of aligned beneficiaries in the ACOs failed the parallel trends assumption, such that the p-value of the joint F test on baseline trends was greater than 0.05).

Exhibit I.26. Standard ACOs—Parallel Trends Test Results, PY 2023

| Outcome Type | Outcome^ | Under parallel trends assumption | | Under linear trends assumption | |
|-----------------|--|--|---|--|---|
| | | Number of ACOs failing parallel baseline trends test | % of Standard ACOs' aligned beneficiaries in these ACOs | Number of ACOs failing parallel baseline trends test with a significant linear trend | % of Standard ACOs' aligned beneficiaries in these ACOs |
| Spending | Total Medicare spending (Part A and B) | 12 | 10.5% | 9 | 7.4% |
| | Total Medicare spending (Part A and B), Alternative comparison group | 14 | 15.5% | 3 | 2.7% |
| Utilization | Acute care hospitalizations | 13 | 19.6% | 11 | 18.0% |
| | Acute care LOS | 10 | 9.7% | 7 | 6.5% |
| | Continuous hospice days prior to death | 9 | 6.7% | 7 | 5.7% |
| | ED visits including observation stays | 16 | 24.5% | 10 | 15.9% |
| | Home health episodes | 6 | 5.5% | 5 | 5.3% |
| | IRF and LTCH days | 3 | 2.4% | 0 | 0.0% |
| | SNF days | 7 | 6.7% | 6 | 6.1% |
| | Total hospice days | 8 | 10.1% | 5 | 6.4% |
| Quality of care | ACSC hospitalizations | 9 | 10.7% | 3 | 7.3% |
| | All-condition readmissions | 6 | 4.5% | 4 | 1.4% |
| | Days at home (per BPY) | 7 | 3.4% | 6 | 3.1% |
| | Low-value care | 19 | 25.2% | 12 | 18.7% |
| | Recommended diabetes care | 19 | 23.6% | 15 | 18.8% |
| | Timely follow-up | 9 | 11.2% | 4 | 4.9% |
| | Unplanned admission (pts w/MCC) | 9 | 12.4% | 8 | 10.3% |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: ED=emergency department; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital; ACSC=ambulatory care sensitive condition; MCC=multiple chronic conditions; LOS=length of stay. ^Total spending is top coded at the 99.9th percentile by ACO market and year. The alternative comparison group is Original Medicare without ACO initiatives. Home health episodes are top coded at 14. Eligible population for unplanned admission are beneficiaries with multiple chronic conditions. Eligible population for recommended diabetes care are beneficiaries with diabetes. Eligible population for all-condition readmissions are beneficiaries with index hospitalizations. Eligible population for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disorder, diabetes). Eligible population for continuous hospice days prior to death are decedents in the year only. Eligible population for days at home are beneficiaries with chronic complex conditions.

Exhibit I.27 presents parallel trends test results for total Medicare spending for New Entrant ACOs with the model using the original comparison group and the model using the alternative comparison group. For all other outcomes, we only present the results of parallel trends tests for the original comparison group. For most outcomes, most New Entrant ACOs had parallel trends at 0.05 significance level, and all ACOs passed the parallel trends test for outcomes such as total spending, ED visits, and ambulatory care sensitive condition (ACSC) hospitalizations.

Exhibit I.27. New Entrant ACOs—Parallel Trends Test Results, PY 2023

| Outcome Type | Outcome [^] | Under parallel trends assumption | | Under linear trends assumption | |
|-----------------|--|--|--|--|--|
| | | Number of ACOs failing parallel baseline trends test | % of New Entrant ACOs' aligned beneficiaries in these ACOs | Number of ACOs failing parallel baseline trends test with a significant linear trend | % of New Entrant ACOs' aligned beneficiaries in these ACOs |
| Spending | Total Medicare spending (Part A and B) | 0 | 0% | N/A | N/A |
| | Total Medicare spending (Part A and B), Alternative comparison group | 0 | 0% | N/A | N/A |
| Utilization | Acute care hospitalizations | 1 | 4.1% | 0 | 0.0% |
| | Acute care LOS | 1 | 2.9% | 1 | 2.9% |
| | Continuous hospice days prior to death | 1 | 3.3% | 1 | 3.3% |
| | ED visits including observation stays | 0 | 0.0% | N/A | N/A |
| | Home health episodes | 1 | 28.8% | 0 | 0.0% |
| | IRF and LTCH days | 0 | 0.0% | N/A | N/A |
| | SNF days | 0 | 0.0% | N/A | N/A |
| | Total hospice days | 2 | 7.6% | 1 | 4.3% |
| Quality of care | ACSC hospitalizations | 0 | 0.0% | N/A | N/A |
| | All-condition readmissions | 1 | 26.6% | 1 | 26.6% |
| | Days at home (per BPY) | 2 | 32.5% | 2 | 32.5% |
| | Low-value care | 3 | 36.9% | 3 | 36.9% |
| | Recommended diabetes care | 3 | 13.0% | 3 | 13.0% |
| | Timely follow-up | 2 | 7.7% | 1 | 2.9% |
| | Unplanned admission (pts w/MCC) | 0 | 0.0% | N/A | N/A |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: ED=emergency department; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital; ACSC=ambulatory care sensitive condition; MCC=multiple chronic conditions; LOS=length of stay. [^]Total spending and is top coded at the 99.9th percentile by ACO market and year. The alternative comparison group is Original Medicare without ACO initiatives. Home health episodes are top coded at 14. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. Eligible population for unplanned admission are beneficiaries with multiple chronic conditions. Eligible population for recommended diabetes care are beneficiaries with diabetes. Eligible population for all-condition readmissions are beneficiaries with index hospitalizations. Eligible population for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disorder, diabetes). Eligible population for continuous hospice days prior to death are decedents in the year only. Eligible population for days at home are beneficiaries with chronic complex conditions.

For High Needs ACOs, we tested compliance with the parallel trends assumption at the cohort level, since impacts were generated for each cohort rather than ACO for this ACO type. This was only done for gross spending, and we did not find any violations of the parallel trends assumption at the 0.05 significance level.

Sensitivity Checks for ACOs Failing Parallel Trends Tests

If an ACO fails the parallel trends test for a given outcome, the underlying assumption for the DID model is compromised, bringing into question the credibility of the impact estimate. Therefore, we conducted additional sensitivity checks to verify impacts.

Exhibits I.28 and I.29 compare pooled model-wide impact estimates from all ACOs and two sensitivity checks, for Standard and New Entrant ACOs. The first only included ACOs complying with parallel baseline trends. The second added a linear trend term for ACOs that failed the parallel trends assumption and that exhibited a linear trend for capturing it in the impact estimate. These sensitivity checks were done for the impact estimates in PY 2023. Because, for most outcomes, the number of ACOs (for Standard and New Entrant ACOs) that failed the parallel trends test was small, we relied on models without any adjustment for parallel trends as the main estimates in our report.

Exhibit I.28 compares model-wide impact estimates for Standard ACOs with two sensitivity checks: 1) excluding ACOs failing the parallel trends test for total spending, and 2) substituting estimates for ACOs failing the parallel trends test from an alternative model that includes a linear trend term if the linear term was statistically significant. For all models, with the original comparison group and with the alternative comparison group, spending impact estimates under both sensitivity analyses did not appreciably change from the overall spending impact estimates derived from all ACOs, and they remained significant. However, the results from the models adding a linear trend to ACOs failing parallel trends tended to be smaller in magnitude.

Exhibit I.28. Standard ACOs—Sensitivity of Impacts on Spending, Utilization, and Quality of Care Outcomes in PY 2023, Overall Sample Versus Excluding ACOs Failing Parallel Baseline Trends or Adding a Linear Trend Term

| Outcome Type | Outcome [^] | Overall | | Excluding ACOs that Failed Parallel Baseline Trends Test | | Adding a Linear Trend to ACOs that Failed Parallel Baseline Trends Test | |
|--------------|--|-------------------------------|----------|--|----------|---|----------|
| | | Impact Estimate | % Impact | Impact Estimate | % Impact | Impact Estimate | % Impact |
| Spending | Total Medicare spending (Part A and B) | -109*** (-147, -70) | -0.9 | -133*** (-174, -92) | -1.0 | -72*** (-115, -30) | -0.6 |
| | Total Medicare spending (Part A and B), alternative comparison group | -408*** (-462, -354) | -3.2 | -408*** (-467, -349) | -3.1 | -346*** (-425, -268) | -3.0 |
| Utilization | Acute care hospitalizations | -2.94*** (-3.87, -2.01) | -1.4 | -3.66*** (-4.70, -2.62) | -1.7 | -2.65*** (-3.88, -1.43) | -1.3 |
| | Acute care LOS | -22.93*** (-30.65, -15.20) | -1.7 | -21.81*** (-29.95, -13.67) | -1.6 | -30.72*** (-39.74, -21.70) | -2.2 |
| | Continuous hospice days prior to death | -0.31 (-0.72, 0.11) | -1.2 | -0.30 (-0.73, 0.13) | -1.2 | -0.94*** (-1.53, -0.35) | -3.6 |
| | ED visits including observation stays | -4.21*** (-5.68, -2.73) | -1.0 | -6.38*** (-8.06, -4.70) | -1.5 | -4.89*** (-6.81, -2.96) | -1.2 |
| | Home health episodes | -5.65*** (-7.47, -3.82) | -1.8 | -5.59*** (-7.48, -3.70) | -1.7 | -4.27*** (-6.21, -2.33) | -1.3 |
| | IRF and LTCH days | 0.29 (-3.40, 3.99) | 0.1 | 0.63 (-3.10, 4.36) | 0.3 | 0.63 (-3.10, 4.36) | 0.3 |
| | SNF days | -16.73* (-31.27, -2.19) | -1.1 | -16.87* (-31.99, -1.75) | -1.1 | -18.27* (-34.60, -1.93) | -1.2 |
| | Total hospice days | -0.07*** (-0.10, -0.03) | -2.5 | -0.07*** (-0.11, -0.03) | -2.5 | -0.11*** (-0.16, -0.06) | -4.2 |

| Outcome Type | Outcome [^] | Overall | | Excluding ACOs that Failed Parallel Baseline Trends Test | | Adding a Linear Trend to ACOs that Failed Parallel Baseline Trends Test | |
|-----------------|---------------------------------|----------------------------|----------|--|----------|---|----------|
| | | Impact Estimate | % Impact | Impact Estimate | % Impact | Impact Estimate | % Impact |
| Quality of Care | ACSC hospitalizations | -0.95*** (-1.17, -0.73) | -4.7 | -0.88*** (-1.11, -0.65) | -4.4 | -0.77*** (-1.02, -0.53) | -3.9 |
| | All-condition readmissions | -1.79* (-3.40, -0.18) | -1.3 | -1.90* (-3.55, -0.25) | -1.4 | -2.39** (-4.09, -0.70) | -1.8 |
| | Days at home (per BPY) | 0.17*** (0.12, 0.21) | 0.2 | 0.17*** (0.13, 0.22) | 0.2 | 0.22*** (0.17, 0.27) | 0.2 |
| | Low-value care | 1.83*** (1.11, 2.54) | 0.8 | 1.22** (0.39, 2.04) | 0.5 | 1.11* (0.14, 2.08) | 0.5 |
| | Recommended diabetes care | 5.81*** (4.22, 7.40) | 1.3 | 3.94*** (2.13, 5.74) | 0.9 | 4.30*** (2.23, 6.37) | 1.0 |
| | Timely follow-up | 10.56*** (7.60, 13.52) | 1.3 | 9.83*** (6.69, 12.96) | 1.2 | 6.87*** (3.66, 10.08) | 0.8 |
| | Unplanned admission (pts w/MCC) | -4.46*** (-5.95, -2.96) | -2.0 | -5.48*** (-7.07, -3.88) | -2.4 | -7.27*** (-9.22, -5.32) | -3.2 |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: ED=emergency department; ACSC=ambulatory care sensitive condition; LOS=length of stay; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital. Estimates in this table are weighted and regression-adjusted. Spending estimates are presented per beneficiary per year (BPY). The alternative comparison group is Original Medicare without ACO initiatives. Utilization and quality estimates (except for “days at home” and “continuous hospice days prior to death”) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. Estimates for “continuous hospice days prior to death” and “days at home” are presented per beneficiary per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. [^]Total spending and all spending categories are top coded at the 99.9th percentile by ACO market and year. Home health episodes are top coded at 14. Eligible population for unplanned admission are beneficiaries with multiple chronic conditions. Eligible population for recommended diabetes care are beneficiaries with diabetes. Eligible population for all-condition readmissions are beneficiaries with index hospitalizations. Eligible population for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disorder, diabetes). Eligible population for continuous hospice days prior to death are decedents in the year only. Eligible population for days at home are beneficiaries with chronic complex conditions. p<0.10, **p<0.05, ***p<0.01. **Bold** values indicate outcomes that changed statistical significance in sensitivity analyses.

For New Entrant ACOs as well, as **Exhibit I.29** shows, the main estimates were largely robust in sensitivity checks; NA values indicate when a sensitivity check was not applicable because all ACOs for that outcome passed the parallel trends test.

Exhibit I.29. New Entrant ACOs—Sensitivity of Impact on Spending, Utilization, and Quality of Care Outcomes in PY 2023, Overall Sample Versus Excluding ACOs Failing Parallel Baseline Trends or Adding a Linear Trend Term

| Outcome Type | Outcome [^] | Overall | | Excluding ACOs that Failed Parallel Baseline Trends Test | | Adding a Linear Trend to ACOs that Failed Parallel Baseline Trends Test | |
|-----------------|--|-----------------------------|----------|--|----------|---|----------|
| | | Impact Estimate | % Impact | Impact Estimate | % Impact | Impact Estimate | % Impact |
| Spending | Total Medicare spending (Part A and B) | -890*** (-1206, -574) | -6.2 | N/A | N/A | N/A | N/A |
| | Total Medicare spending (Part A and B), alternative comparison group | -1,214*** (-1,612, -816) | -8.3 | N/A | N/A | N/A | N/A |
| Utilization | Acute care hospitalizations | -7.73* (-14.42, -1.04) | -3.6 | -5.43 (-11.83, 0.97) | -2.6 | -5.43 (-11.83, 0.97) | -2.6 |
| | Acute care LOS | -63.53* (-120.74, -6.32) | -4.5 | -61.52* (-119.73, -3.31) | -4.4 | -82.11** (-141.75, -22.47) | -5.7 |
| | Continuous hospice days prior to death | -1.99 (-5.73, 1.76) | -7.6 | -2.41 (-6.26, 1.45) | -9.1 | -1.47 (-5.21, 2.27) | -5.7 |
| | ED visits including observation stays | -15.06** (-25.17, -4.96) | -3.6 | N/A | N/A | N/A | N/A |
| | Home health episodes | -11.82 (-24.89, 1.25) | -3.8 | -10.98 (-27.46, 5.50) | -3.2 | -10.98 (-27.46, 5.50) | -3.2 |
| | IRF and LTCH days | -26.23 (-83.45, 31.00) | -10.3 | N/A | N/A | N/A | N/A |
| | SNF days | -95.60 (-199.71, 8.51) | -6.0 | N/A | N/A | N/A | N/A |
| | Total hospice days | -0.40** (-0.69, -0.12) | -13.7 | -0.49*** (-0.79, -0.19) | -16.2 | -0.34* (-0.64, -0.05) | -11.9 |
| Quality of care | ACSC hospitalizations | -2.57** (-4.31, -0.84) | -11.7 | N/A | N/A | N/A | N/A |
| | All-condition readmissions | -2.65 (-14.17, 8.88) | -1.9 | 1.14 (-11.70, 13.98) | 0.8 | -69.99** (-118.75, -21.22) | -33.5 |
| | Days at home (per BPY) | 0.55** (0.20, 0.90) | 0.6 | 0.73*** (0.27, 1.18) | 0.8 | 1.75** (0.46, 3.04) | 1.9 |
| | Low-value care | 2.82 (-2.25, 7.89) | 1.1 | -0.84 (-7.38, 5.71) | -0.4 | -10.98** (-18.78, -3.17) | -3.9 |
| | Recommended diabetes care | 8.17 (-2.55, 18.88) | 2.1 | 0.33 (-11.27, 11.92) | 0.1 | -18.31** (-33.51, -3.10) | -4.4 |
| | Timely follow-up | 16.92 (-3.72, 37.56) | 2.1 | 3.88 (-16.85, 24.60) | 0.5 | 2.01 (-18.38, 22.41) | 0.2 |
| | Unplanned admission (pts w/MCC) | -2.25 (-12.66, 8.16) | -1.0 | N/A | N/A | N/A | N/A |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: ED=emergency department; ACSC=ambulatory care sensitive condition; LOS=length of stay; SNF=skilled nursing facility; IRF=inpatient rehabilitation facility; LTCH=long-term care hospital. Estimates in this table are weighted and regression-adjusted. Spending estimates are presented per beneficiary per year (BPY). The alternative comparison group is Original Medicare without ACO initiatives. Utilization and quality estimates (except for “days at home” and “continuous hospice days prior to death”) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. Estimates for “continuous hospice days prior to death” and “days at home” are presented per beneficiary per year (BPY). “Impact (%)”

was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. [†]Total spending and all spending categories are top coded at the 99.9th percentile by ACO market and year. Home health episodes are top coded at 14. Eligible population for unplanned admission are beneficiaries with multiple chronic conditions. Eligible population for recommended diabetes care are beneficiaries with diabetes. Eligible population for all-condition readmissions are beneficiaries with index hospitalizations. Eligible population for timely follow-up are beneficiaries with one or more acute events related to one of six chronic conditions (hypertension, asthma, heart failure, coronary artery disease, chronic obstructive pulmonary disorder, diabetes). Eligible population for continuous hospice days prior to death are decedents in the year only. Eligible population for days at home are beneficiaries with chronic complex conditions. *p<0.10; **p<0.05; ***p<0.01. **Bold** values indicate outcomes that changed statistical significance in sensitivity analyses. NA values indicate when a sensitivity check was not applicable since all ACOs for that outcome passed the parallel trends test.

1.4.6. Estimation of ACO-Level Subgroup Impacts for Standard ACOs

We conducted subgroup impact analyses for Standard ACOs for gross spending, utilization, and quality of care measures by ACO-level characteristics (ACO organizational structure, capitation and risk level, ACO functional role, and ACO lead organization type). For this, we weighted the individual ACO-level impact estimates by the proportion of aligned beneficiaries in each ACO subgroup out of the total number of aligned beneficiaries. Impact analyses of outcomes by ACO subgroups were only conducted for Standard ACOs. Subgroup analyses for New Entrant ACOs were not feasible given the declining volume of New Entrant ACOs over time and limited variation in ACO-level characteristics. Subgroup analyses were not considered for High Needs ACOs because the impact analysis was not done at the ACO level for this ACO type.

1.4.7. Estimation of Beneficiary-Level Subgroup Impacts

To understand the effects of the model on gross spending, utilization, and quality of care on different beneficiary subgroups, we conducted subgroup impact analysis for Standard and High Needs ACOs by select beneficiary characteristics. For Standard ACOs, we modified our DID design by splitting the original treatment effect $ACO_j * PY_t$ into triple-interaction terms $ACO_j * PY_t * Subgroup_l$ for a total of i categories in a beneficiary subgroup.¹¹⁶ The model also included two-way interaction terms between the ACO group indicator and subgroup $ACO_j * Subgroup_l$ (to control for differences between the ACO REACH and comparison groups for the beneficiary subgroups) and between the performance year indicator and subgroup $PY_t * Subgroup_l$ (to control for differences between baseline years and performance years for the beneficiary subgroups). Once DID impact estimates were calculated for each subgroup in each ACO, subgroup-specific impact estimates were weighted and averaged as described earlier (with weights comprising the proportion of aligned beneficiaries in each subgroup in each ACO out of the total number of aligned beneficiaries in that subgroup) to create model-level subgroup impact estimates. For High Needs ACOs, the triple-interaction terms were directly applied to each cohort. DID models for beneficiary subgroups were not estimated for New Entrant ACOs due to the decreasing number of New Entrant ACOs participating in the model over time.

We examined a subset of claims-based outcomes in the beneficiary subgroup analyses: total spending, acute care utilization, ED visits and observational stays, and low-value care. Outcomes were selected based on analytic feasibility (for example, sufficient sample size and distributional variation) for all subgroups in our analytic design. The two utilization measures (ED visits and observational stays, acute care utilization) approximate timely and appropriate care. We expected low-value care to be an example of a leading indicator of the model's effects on quality of care.

¹¹⁶ Note that, for the smaller-sized High Needs ACOs, we pooled the ACOs into cohorts for analyses of beneficiary subgroups.

We included four beneficiary-level characteristics to create the subgroups shown in the report:

- *Dual eligibility for Medicare and Medicaid*: defined as beneficiaries with one or more months of dual eligibility, versus beneficiaries with no months of dual eligibility.
- *Chronic conditions burden*: defined by the number of chronic conditions. We created categories empirically based on the distribution of chronic conditions in the data for each ACO type. Standard ACOs: Low (0-4); Medium (5-7); High (8+). High Needs ACOs: Low (0-10); Medium (11-14); High (15+).
- *Medicare eligibility due to disability or ESRD*: defined as beneficiaries originally eligible for Medicare due to disability or ESRD in the MBSF, versus beneficiaries eligible for Medicare for reasons other than these conditions.
- *Area-level social need*: defined by the Area Deprivation Index (ADI), a ranking of neighborhoods (that is, census blocks) by socioeconomic disadvantage at the national level. The ADI incorporates factors for the domains of income, education, employment, and housing quality and has been used to inform health delivery and policy. To create subgroups, we categorized beneficiaries' ADI values into quartiles, with higher values representing higher disadvantage.

I.5 Estimating Concordance Between the Impact Evaluation and Financial Results

The purpose of this analysis is to understand how our evaluation's results on net Medicare spending aligned with the model's financial calculations of shared savings. We only conducted this analysis for Standard and New Entrant ACOs because model impacts could not be estimated for individual High Needs ACOs given their small number of aligned beneficiaries, and for the cumulative period from PY 2021–PY 2023. Furthermore, net Medicare spending impacts used in this analysis accounted only for CMS' shared savings payouts to REACH ACOs. ([Appendix J](#) and [Appendix K](#) present the financial and evaluation results in PY 2023 for individual Standard ACOs ([Exhibit J.7](#)) and New Entrant ACOs ([Exhibit K.7](#)).

Cumulatively as of PY 2023 ([Exhibit I.30](#)), the model was favorable for ACOs but not for the Medicare program because the shared savings payments to ACOs exceeded their Medicare spending reductions relative to the comparison group in our evaluation. We considered ACOs:

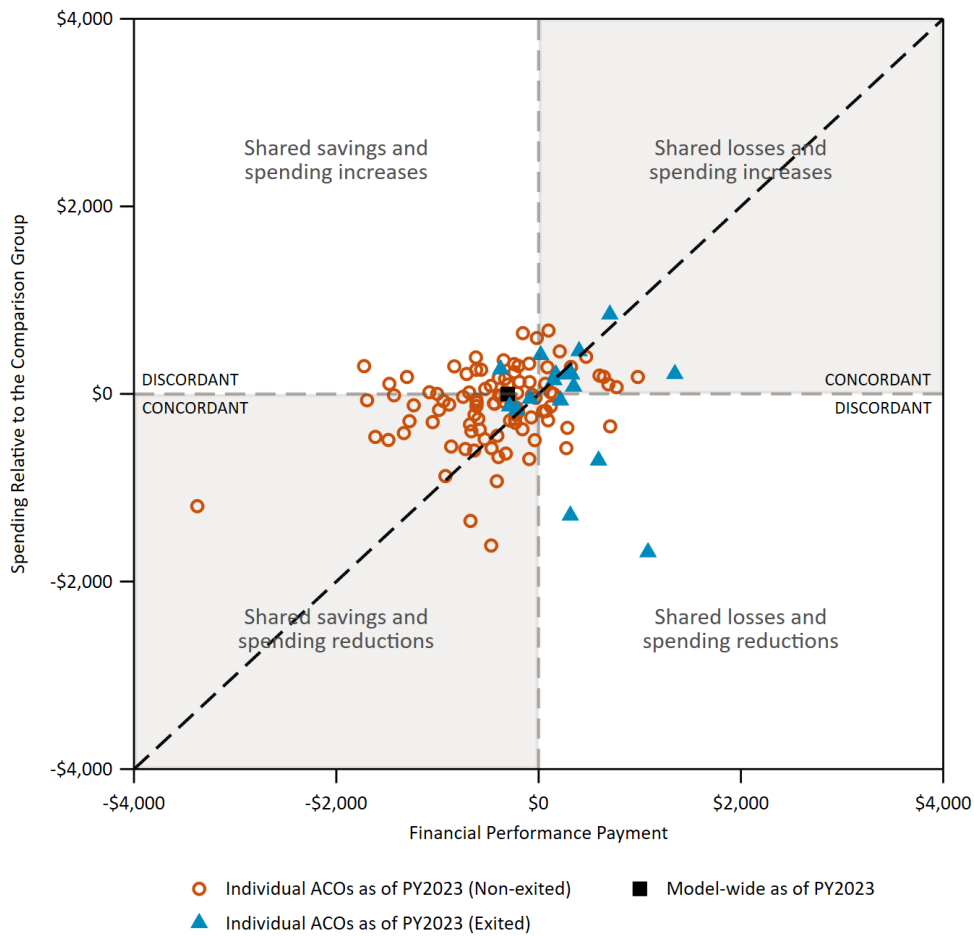
- Concordant when they: 1) decreased spending according to the evaluation and earned shared savings according to the financial calculations or 2) increased spending and incurred shared losses.
- Discordant when they: 1) decreased spending according to the evaluation but incurred shared losses or 2) increased spending but earned shared savings.

ACOs above the diagonal line in [Exhibit I.30](#) increased net Medicare spending, while ACOs below the diagonal line decreased net Medicare spending. There were many more ACOs above the diagonal than below (n=76 vs. 40). When considering the 116 Standard ACOs ever in the model as of PY 2023 (105 ACOs in PY 2023 and 11 ACOs that exited the model in PY 2022, for a total of 212 ACO-years), we found the following:

- About two-thirds of ACOs (n=77 or 66%) had concordant financial results and evaluation findings.
- About one-third of ACOs (n=39 or 34%) had discordant financial results and evaluation findings.

- ACOs in the top left quadrant also had lower levels of baseline spending than did their counterparts in other quadrants.
- Most ACOs that exited the model incurred shared losses.

Exhibit I.30. Cumulatively as of PY 2023, Two-Thirds of Standard ACOs Had Concordant Financial Results and Evaluation Findings



SOURCE: NORC analysis of Medicare claims and enrollment data.

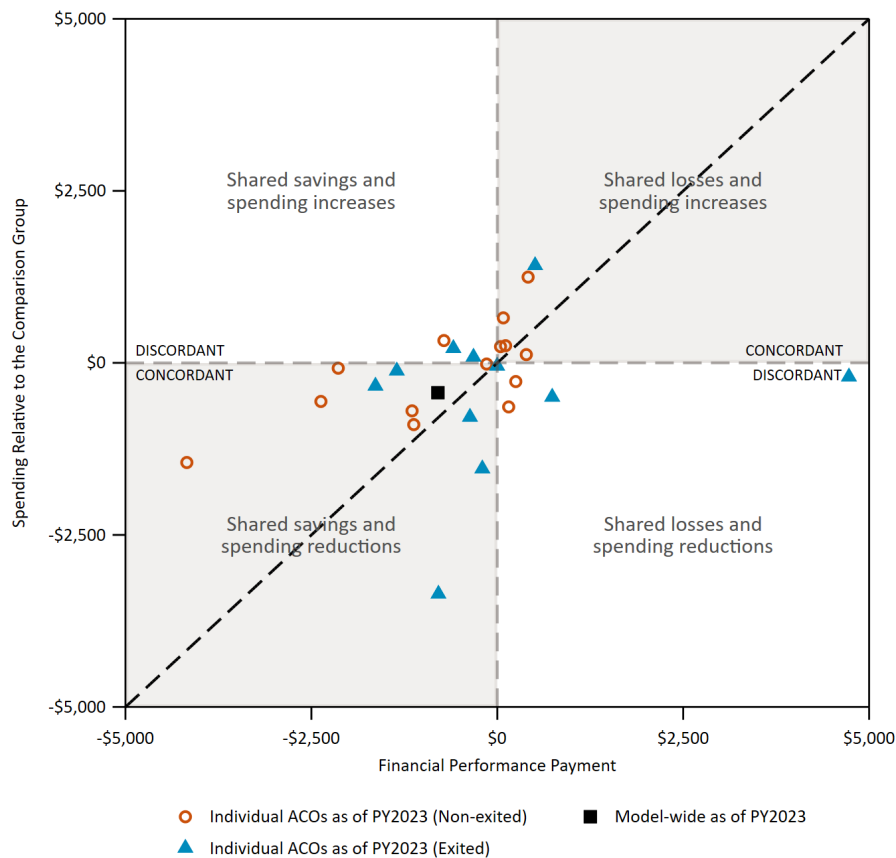
NOTE: PBPY=per beneficiary per year. Each ACO contributes one dot to the chart, representing its cumulative gross spending impact and average financial performance payments across all years of participation in the model. Financial performance payments in PY 2023 included shared savings and losses plus high-performer payouts. Negative values on the Y-axis represent gross spending reductions (from the evaluation), and positive values represent gross spending increases. Negative values on the X-axis represent shared savings earned by ACOs, and positive values represent shared losses. In the upper right quadrant, 40.9% of ACOs (9 of 22) exited. In the upper left quadrant, 3.6% of ACOs (1 of 28) exited. In the lower left quadrant, 5.5% of ACOs (3 of 55) exited. In the lower right quadrant, 36.4% of ACOs (4 of 11) exited.

As of PY 2023, nearly twice as many New Entrant ACOs were above the diagonal (16 ACOs) than below (9 ACOs), indicating that the model was overall favorable for ACOs but not for the Medicare program.

We considered the 25 ACOs with impact estimates ever in the model as New Entrant ACOs, including 12 ACOs active in PY 2023, 6 ACOs that exited, and 7 ACOs that joined the model as New Entrant ACOs and later switched to Standard ACOs, for a total of 39 ACO-years. We found the following (**Exhibit I.31**):

- Almost three-quarters of ACOs (n=18 or 72%) had concordant financial results and evaluation findings.
- Over one-quarter of ACOs (n=7 or 28%) had discordant financial results and evaluation findings.
- Unlike Standard ACOs, New Entrant ACOs that incurred shared losses were not more likely to exit relative to New Entrant ACOs that earned shared savings.

Exhibit I.31. Cumulatively as of PY 2023, Almost Three-Quarters of New Entrant ACOs had Concordant Financial Results and Evaluation Findings



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: PBPY=per beneficiary per year. Each ACO contributes one dot to the chart, representing its cumulative gross spending impact and average financial performance payments across all years of participation in the model as a New Entrant ACO. Financial performance payments in PY 2023 included only shared savings and losses; no New Entrant ACO received high-performer payouts. Negative values on the Y-axis represent gross spending reductions (from the evaluation), and positive values represent gross spending increases. Negative values on the X-axis represent shared savings earned by ACOs, and positive values represent shared losses. In the upper right quadrant, 16.7% of ACOs (1 of 6) exited. In the upper left quadrant, 66.7% of ACOs (2 of 3) exited. In the lower left quadrant, 50.0% of ACOs (6 of 12) exited. In the lower right quadrant, 50.0% of ACOs (2 out of 4) exited. ACOs in the top left quadrant had lower levels of baseline spending than did their counterparts in other quadrants.

There were key differences between the evaluation’s approach and the model’s financial benchmark used to calculate shared savings and losses. First, the model estimated financial benchmark prospectively, whereas the evaluation set up the counterfactuals retrospectively. Second, the financial benchmark was calculated based on a reference group sample that included Shared Savings Program beneficiaries and was representative of Original Medicare beneficiaries nationwide, whereas the evaluation selected the comparison group within the same market. Third, historical and regional expenditures weighed differently in financial benchmark and evaluation. In PY 2023, the financial benchmark was a blend of 60% historical expenditures and 40% regional expenditures (based on the ACO REACH/KCC rate book developed by the model team¹¹⁷) for claims-aligned beneficiaries in Standard ACOs¹¹⁸ and was based on regional expenditures only for New Entrant ACOs and all voluntarily aligned beneficiaries,¹¹⁹ whereas the evaluation’s baseline was based on historical expenditures in baseline years only. In addition, the evaluation’s approach was also different from the financial benchmark in selection of baseline years and exclusion of Prospective Plus voluntarily aligned beneficiaries.

Model financial calculations and the impact evaluation of Medicare spending differ in their purpose and methodology, which can lead to differences in findings.

- Financial calculations for determining shared savings reflect differences between ACOs’ actual and benchmark Medicare spending in a performance year—where the benchmark is a projection of their regional and/or historical spending before the model’s initiation.
- The evaluation’s estimated impacts to understand the ACO REACH Model’s effects reflect differences between ACOs’ actual and counterfactual Medicare spending absent the model in a performance year—where the counterfactual is determined by comparing REACH ACOs and a comparison group in their markets before and after the model’s initiation.
- There are differences in the time periods before the model’s initiation (baseline years) used by each type of calculation.

¹¹⁷ PY2023 ACO REACH/KCC Rate Book Development. Available at: <https://www.cms.gov/priorities/innovation/media/document/aco-reach-py2023-kcc-ratebook-development>

¹¹⁸ In PY 2021 and PY 2022, the blended benchmark reflected 65% historical expenditures and 35% county rate book, but starting in PY 2023, the proportion of the benchmark based on regional expenditures from the county rate book increased to 40%. In PY 2024, 45% of the benchmark will be based on regional expenditures, and in PY 2025 and PY 2026, it will increase to 50%. The evaluation’s BYs were 2018–2020 for the 2021 cohort and 2019–2021 for the 2022 cohort. The model’s BYs for historical expenditures were 2017–2019, while its baseline for the rate book was 2017–2019 for PY 2021 rates, 2018–2020 for PY 2022 rates, and 2019–2021 for PY 2023 rates.

¹¹⁹ This approach will be used through PY 2024; starting in PY 2025, benchmarks for New Entrant ACOs and all voluntarily aligned beneficiaries will be based on a blend of historical expenditures and the county rate book.

I.6 CAHPS Analysis

We descriptively examined beneficiaries' experience of care measured by ACO-administered Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey. We presented CAHPS outcome scores for each ACO type and compared the overlapping CAHPS measures between ACO REACH beneficiaries and Original Medicare beneficiaries (measured by FFS CAHPS¹²⁰) and Shared Savings Program beneficiaries (measured by MIPS CAHPS).

We descriptively analyzed 11 CAHPS measures common to all ACO types. The first eight measures were used in calculating an ACO's quality score, and the last three were collected but not used in calculating quality scores. For each CAHPS measure, we calculated the average scores on a scale of 0-100 following the recommended approach for scoring them.¹²¹ The original CAHPS survey weight was used when calculating CAHPS scores to make them representative of the survey-eligible population. Some measures cannot be aligned perfectly across CAHPS surveys (GPDC/ACO REACH, FFS, MIPS) due to different question wording or if the question was not administered, and we acknowledged them when reporting findings. High needs-specific measures of family support, emotional support, pain, and emergency health for High Needs ACOs were not presented visually.¹²²

As **Exhibit I.32** shows, for each ACO type, average scores for most CAHPS composite measures were as expected. As **Exhibit I.33** shows, across most measures, average scores for ACO REACH beneficiaries were similar to those of Shared Savings Program ACO and Original Medicare beneficiaries.

ACO REACH CAHPS Measures for Analysis

1. Getting Timely Care, Appointments, and Information
2. How Well Providers Communicate
3. Patient's Rating
4. Shared Decision Making
5. Care Coordination
6. Courteous and Helpful Office Staff
7. Health Promotion and Education
8. Stewardship of Patient Resources
9. Health Status and Functional Status*
10. Access to Specialist*
11. Activities of Daily Living*

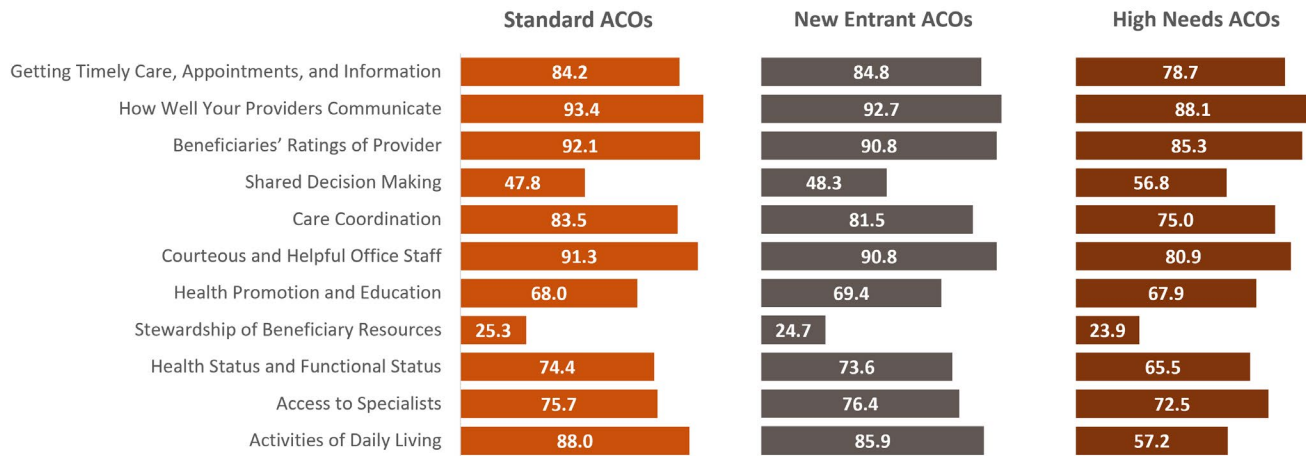
* Not included in calculation of an ACO's quality score

¹²⁰ CMS. Fee-for-Service (FFS) CAHPS. <https://www.cms.gov/data-research/research/consumer-assessment-healthcare-providers-systems/fee-service-cahps>. Data were accessed through CCW Virtual Research Data Center (VRDC).

¹²¹ Proposed ACO REACH CAHPS survey measures are based on the information available on the ACO REACH CAHPS website ("FAQs for ACOs" page; <https://acoreachcahps.org/General-Information/FAQs/FAQs-for-REACH-ACOs>). Each item analyzed was scored using an approach consistent with standard CAHPS reporting on a 0-100 scale and averaged. (See page 10 of <https://www.ahrq.gov/sites/default/files/wysiwyg/cahps/surveys-guidance/cg/cgkit/HowtoReportResultsofCGCAHPS080610FINAL.pdf>)

¹²² These High Needs-specific CAHPS domains had average scores of 86.1 in family support, 44.3 in emotional support, 85.7 in pain, and 60.8 in health emergency using pooled PY 2022 and PY 2023 ACO REACH CAHPS HN data.

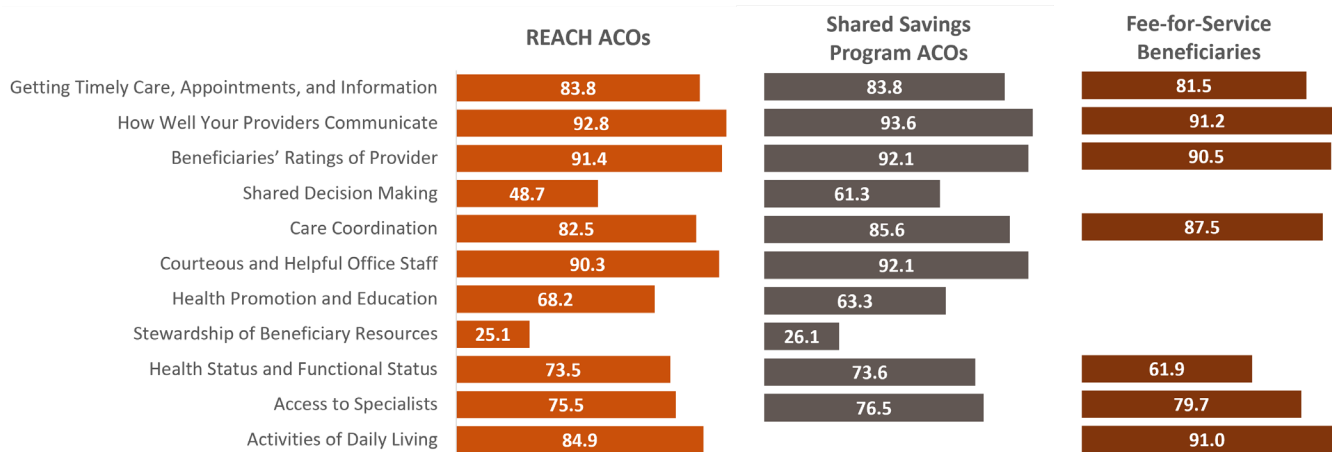
Exhibit I.32. Average CAHPS Scores Across ACO Types for ACO REACH Beneficiaries



SOURCE: NORC team analysis of CAHPS data.

NOTE: ACO-level average scores for each ACO type presented using pooled data from PY 2022 GPDC CAHPS and PY 2023 ACO REACH CAHPS. Only the first eight measures are included in the calculation of an ACO's quality score.

Exhibit I.33. Average CAHPS Scores Across ACO REACH, Shared Savings Program ACOs, and Original Medicare Beneficiaries



SOURCE: NORC team analysis of CAHPS data.

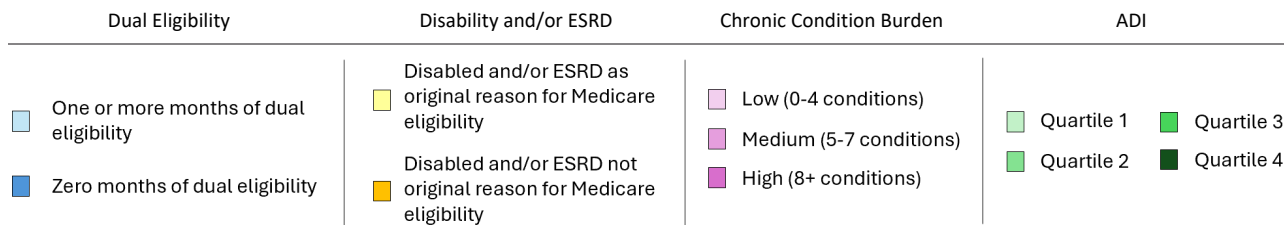
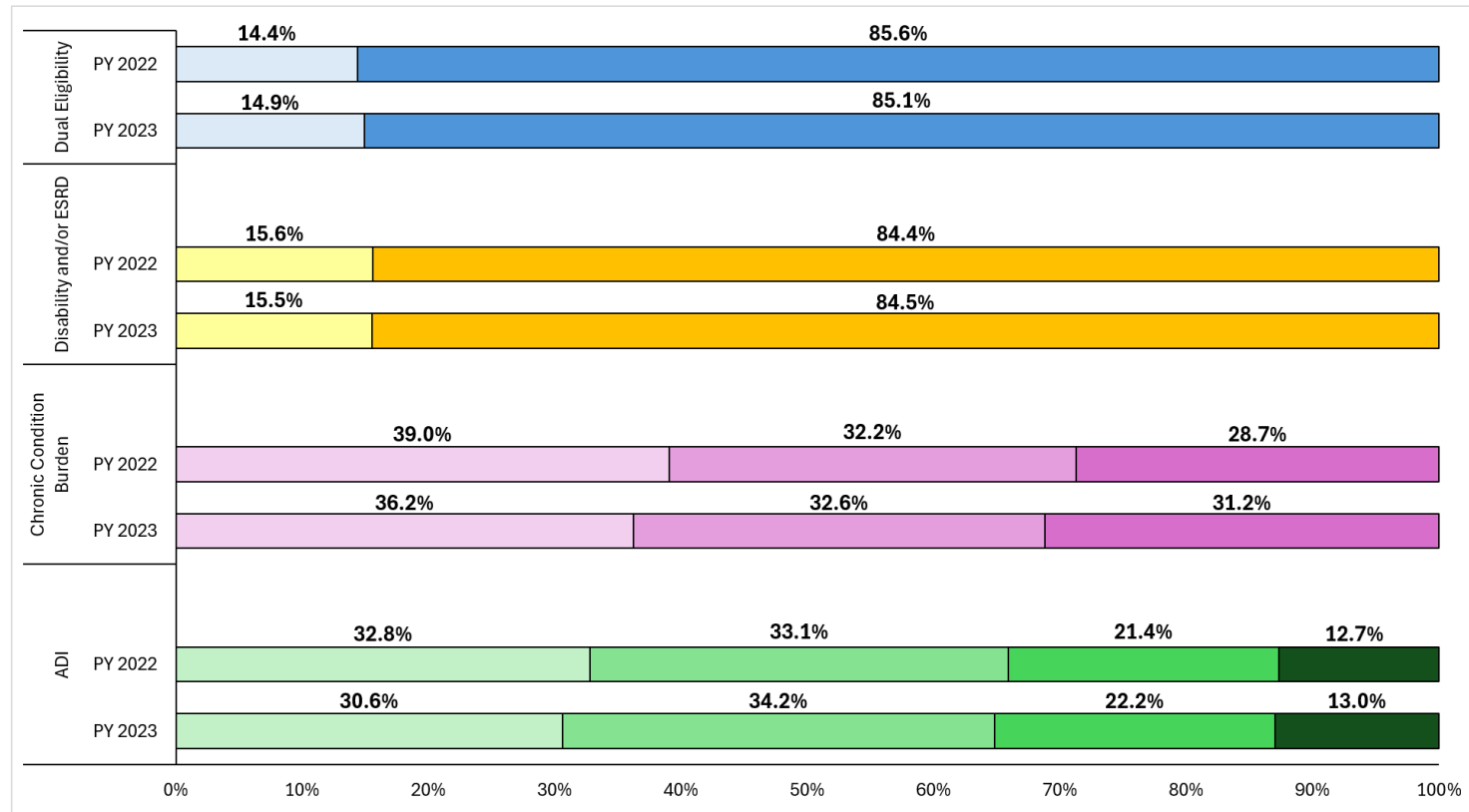
NOTE: ACO REACH and Shared Savings Program ACOs' scores are ACO-level average scores, and FFS scores are beneficiary-level average scores. All are presented using pooled PY 2022 and PY 2023 data. Missing scores indicate CAHPS domains not collected in the respective survey. The FFS CAHPS items are not fully aligned with ACO REACH and MIPS CAHPS for two domains: getting timely care, appointments, and information; and health status and functional status. For this reason, the scores are not fully comparable.

I.7 Analysis of Model Reach

To examine the model's reach to beneficiary subgroups, we descriptively examined the proportion of each ACO type's population that belonged to the subgroup populations detailed in [Appendix I.4.7](#). Using the model team's list of aligned beneficiaries, we generated unweighted percentages of treatment and comparison group beneficiaries in each performance year to provide insight into whether model redesign (from GPDC to ACO REACH) affected the composition of aligned beneficiaries.

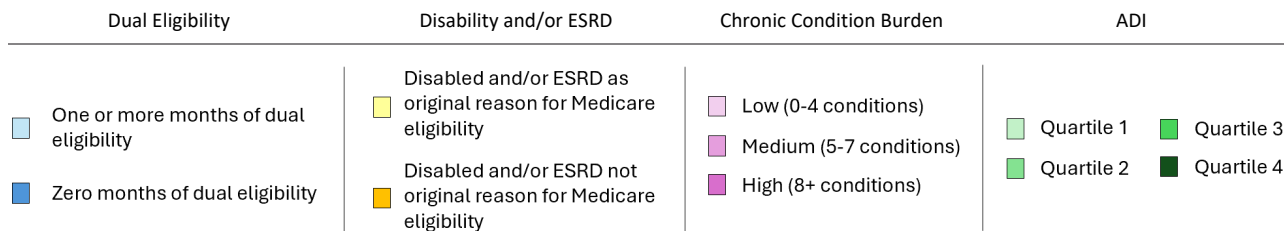
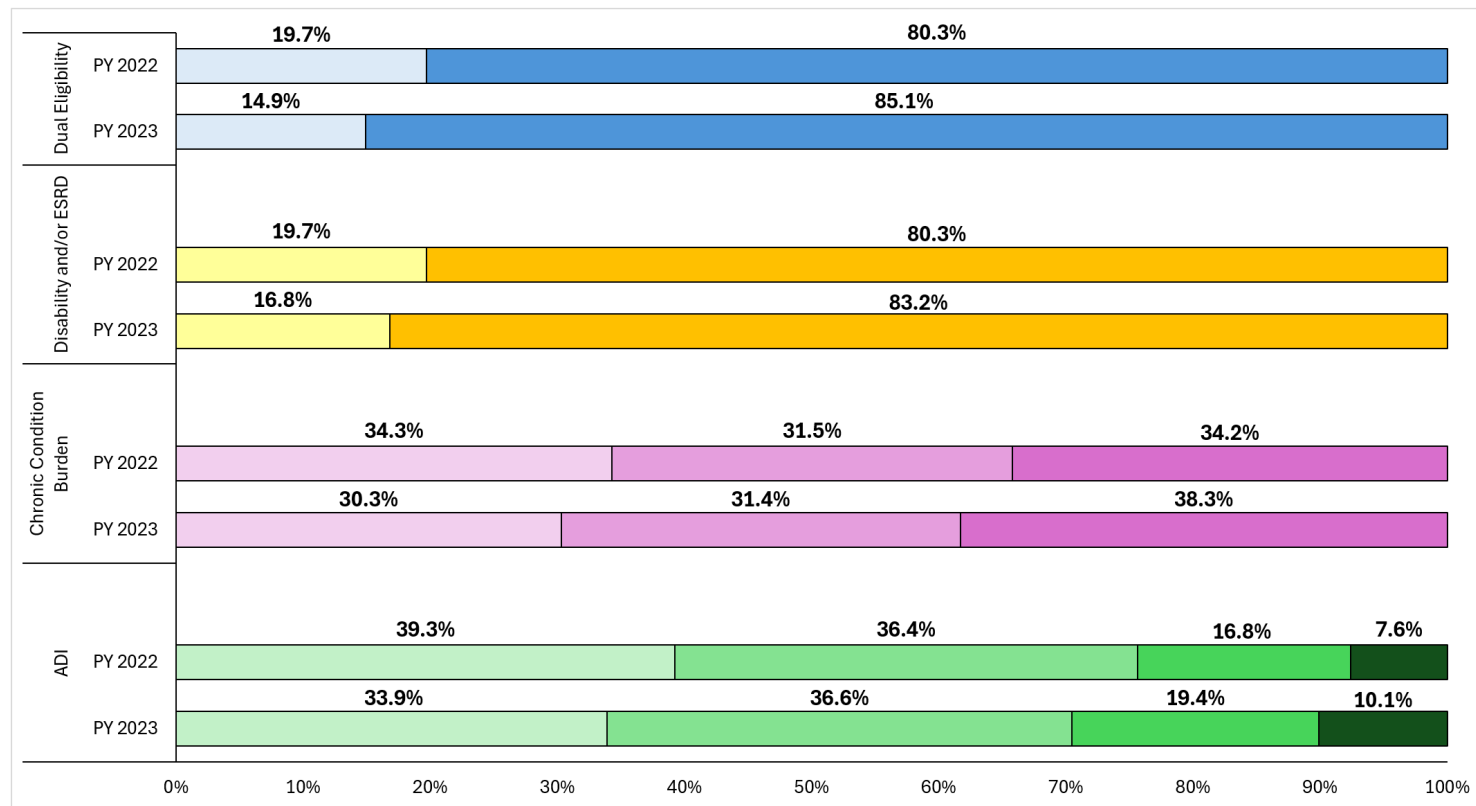
Compared to PY 2022, in PY 2023 Standard ACOs had a higher share of beneficiaries with more than eight chronic conditions (2.5% increase) and a 2.2% decrease in the share of beneficiaries living in the least socioeconomically disadvantaged areas ([Exhibit I.34](#)). There were no changes in the proportion of dually eligible beneficiaries or beneficiaries with a disability and/or ESRD.

Exhibit I.34. Standard DCEs—Representation of Beneficiaries by Population in PY 2022 and PY 2023



Compared to PY 2022, in PY 2023 New Entrant ACOs had fewer dual eligible beneficiaries (4.8% decrease), as well as beneficiaries with a disability and/or with ESRD (2.9% decrease; **Exhibit I.35**). PY 2023 New Entrant ACOs also had a larger share of beneficiaries with more than eight chronic conditions (4.1% increase) and beneficiaries living in the most socioeconomic disadvantaged areas (2.5% increase).

Exhibit I.35. New Entrant DCEs—Representation of Beneficiaries by Population in PY 2022 and PY 2023



Compared to PY 2022, High Needs ACOs in PY 2023 had a higher share of dually eligible beneficiaries (7.1% increase), but no meaningful shifts in beneficiaries with a disability and/or ESRD, beneficiaries with more chronic conditions, or beneficiaries living in more socioeconomically disadvantaged areas (**Exhibit I.36**).

Exhibit I.36. High Needs DCEs—Representation of Beneficiaries by Population in PY 2022 and PY 2023

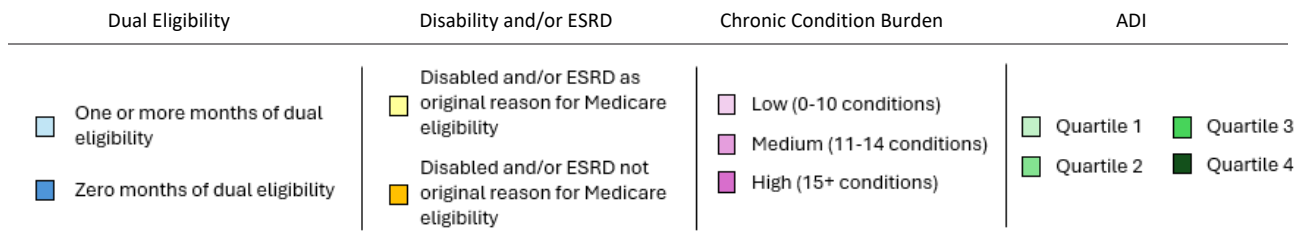
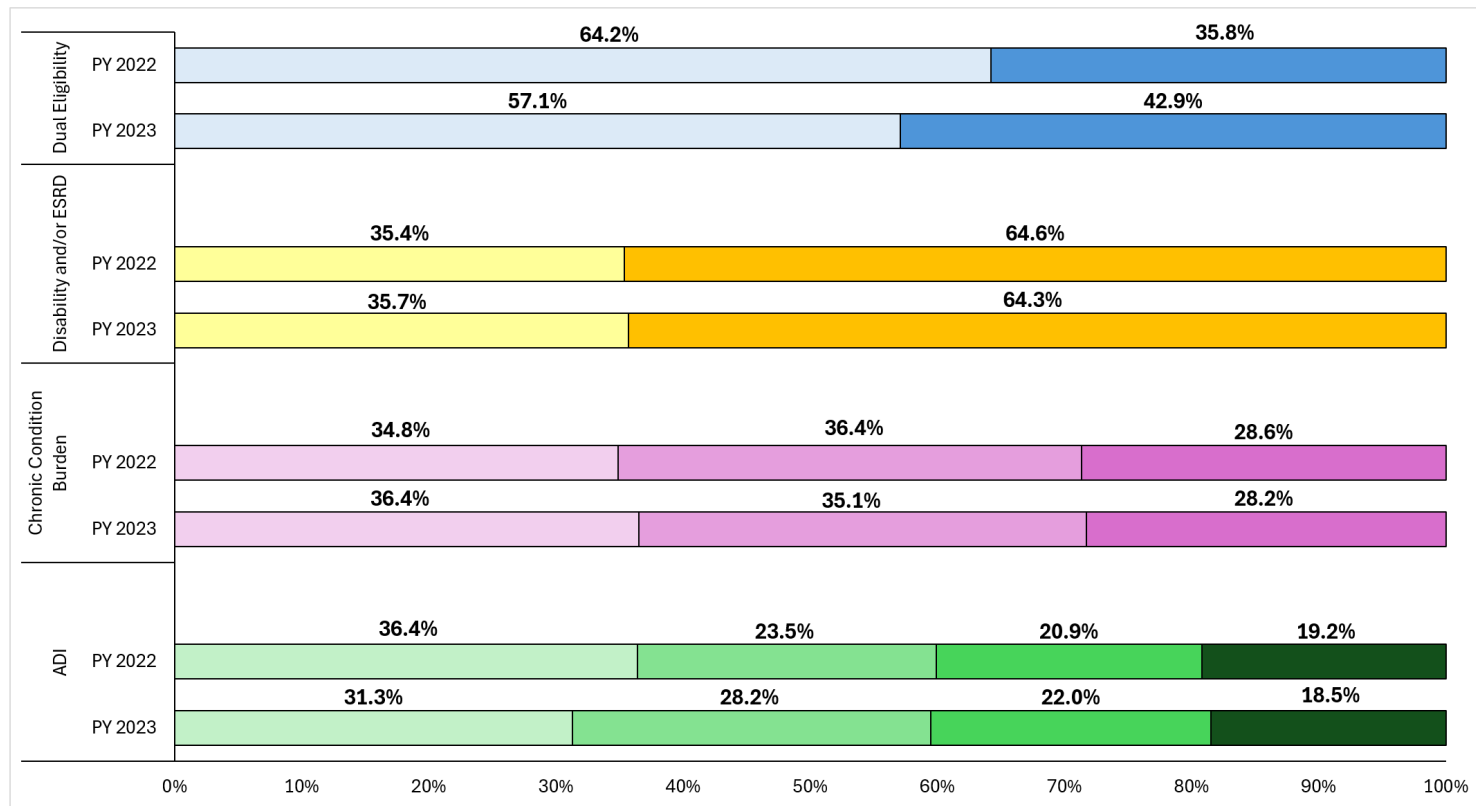


Exhibit I.37 summarizes the ACO REACH beneficiary population distribution across counties in PY 2023. In PY 2023, 49 counties had more than 10,000 aligned beneficiaries, and 42.8% of all aligned beneficiaries resided in these counties. Over 86% of all REACH beneficiaries resided in just 350 counties (12% of all counties).

Exhibit I.37. Summary Table of ACO REACH Beneficiary Population Distribution in PY 2023

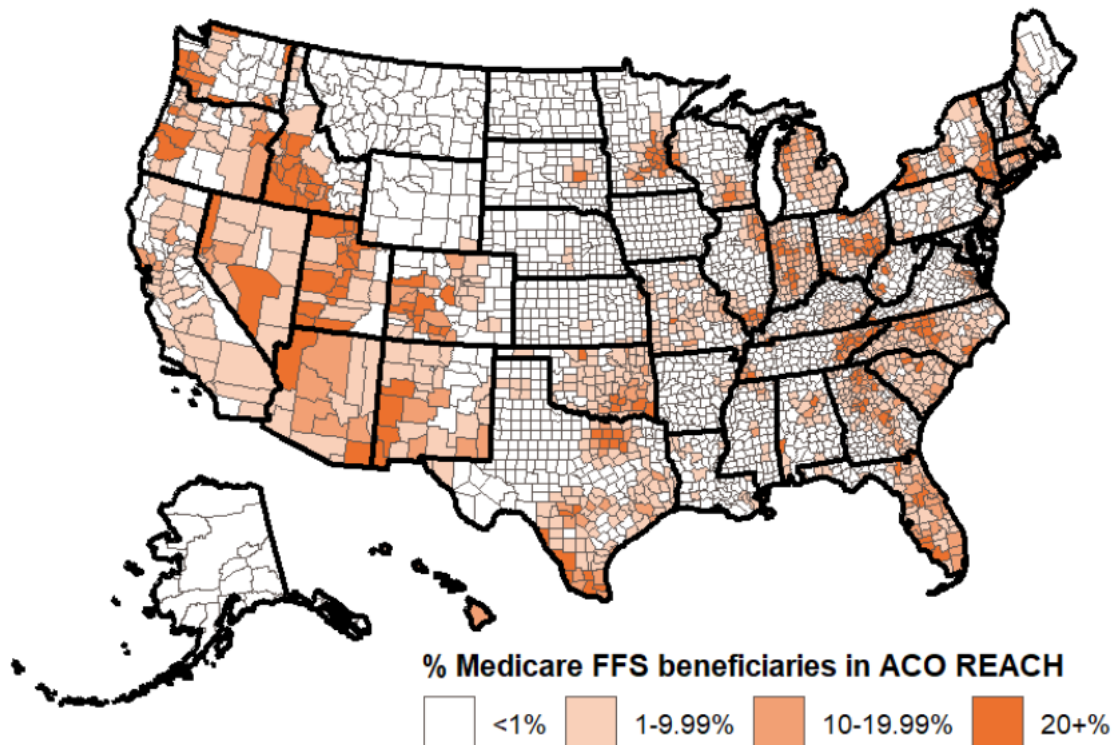
| REACH beneficiaries in county | Counties | | REACH beneficiaries | |
|-------------------------------|---------------|---------------|--------------------------|--------------------------|
| | # of counties | % of counties | # of REACH beneficiaries | % of REACH beneficiaries |
| 0-99 beneficiaries | 1,901 | 65.3% | 31,640 | 1.5% |
| 100-999 beneficiaries | 662 | 22.7% | 237,702 | 11.6% |
| 1,000-9,999 beneficiaries | 301 | 10.3% | 899,991 | 44.0% |
| 10,000+ beneficiaries | 49 | 1.7% | 875,989 | 42.8% |

SOURCE: Medicare claims and enrollment data.

NOTE: Excluding 64 beneficiaries residing in US territories.

Exhibit I.38 shows the regional distribution of aligned ACO REACH beneficiaries as a percentage of all Original Medicare beneficiaries at the county level. ACOs achieved high REACH market penetration in clusters, typically around urban areas, and also across the Southwest including Nevada, Arizona, Utah, and New Mexico, and Mountain West states (such as Oklahoma). ACOs had market penetration of over 50% in 30 counties; the highest rate of market penetration in any county was 70.9%.

Exhibit I.38. County-Level ACO REACH Market Penetration in PY 2023



SOURCE: Medicare claims and enrollment data.

NOTE: Provider overlap is prohibited with the following statewide models: Maryland Total Cost of Care Model and Vermont All-Payer ACO Model. ACO REACH-aligned beneficiaries residing in Maryland and Vermont received care from ACO REACH providers in other states

Exhibit I.39 summarizes the ACO REACH market penetration across counties in PY 2023, in support of **Exhibit I.38**. In PY 2023, 223 counties had a REACH market penetration rate of over 20%, and 44.5% of all aligned beneficiaries resided in these counties.

Exhibit I.39. Summary Table of ACO REACH Market Penetration in PY 2023

| REACH market penetration in county | Counties | | REACH beneficiaries | |
|------------------------------------|---------------|---------------|--------------------------|--------------------------|
| | # of counties | % of counties | # of REACH beneficiaries | % of REACH beneficiaries |
| 0-0.99% | 1,836 | 58.4% | 26,882 | 1.3% |
| 1-9.99% | 869 | 27.6% | 492,933 | 24.1% |
| 10-19.99% | 217 | 6.9% | 614,483 | 30.0% |
| 20+% | 223 | 7.1% | 911,297 | 44.5% |

SOURCE: Medicare claims and enrollment data.

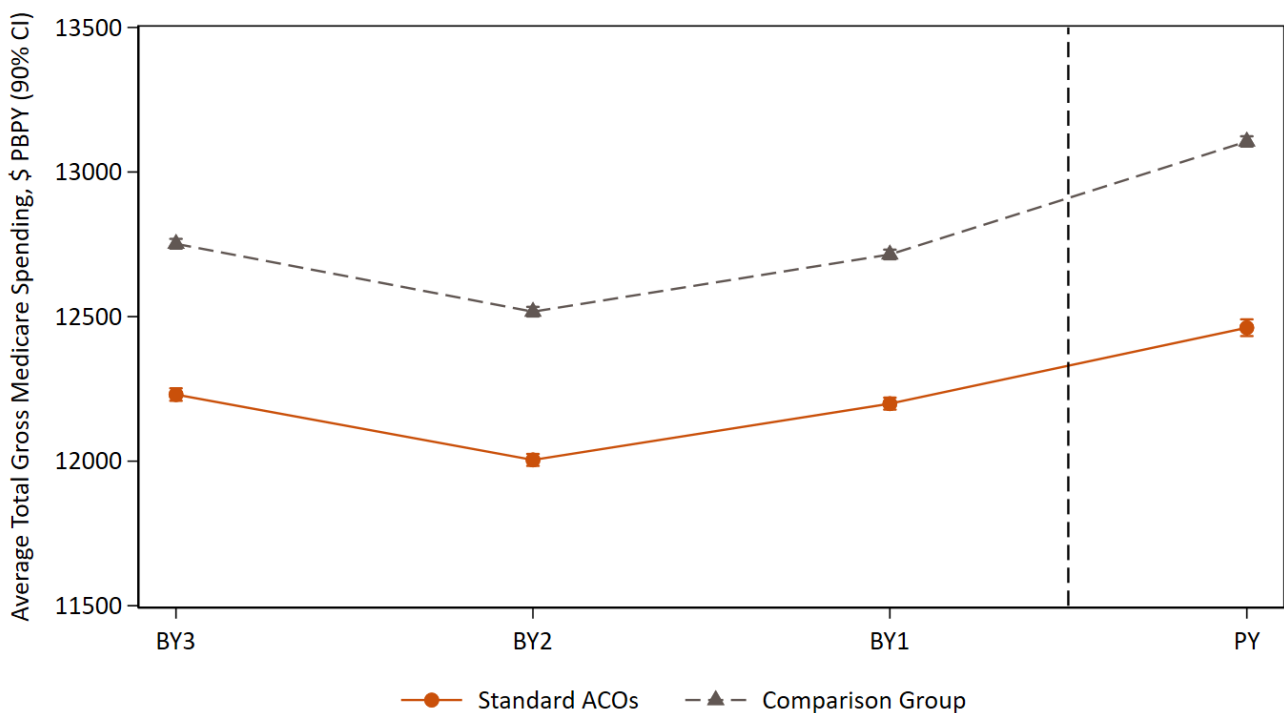
NOTE: Excluding 64 beneficiaries residing in US territories.

Appendix J: Exhibits to Support Chapter 6 (Standard ACOs)

J.1 Average Trends in Gross Medicare Spending for Standard ACOs

Exhibit J.1 shows the average trends in gross Medicare spending from baseline years to PY 2023 for Standard ACOs and their comparison group. Compared to the baseline years, both Standard ACOs and their comparison group increased gross spending in PY 2023, but the increase was lower for Standard ACOs. Standard ACOs had lower gross spending for all years compared with their comparison group.

Exhibit J.1. Adjusted Gross Medicare Spending Trend for Standard ACOs from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Point estimates are the adjusted gross Medicare Parts A and B spending for ACO REACH or comparison beneficiaries in each year. Confidence intervals at the 90% level are displayed as bars around the point estimates. PBPY=per beneficiary per year. Performance year (PY) includes calendar year 2023 for all three cohorts. Baseline years (BYs), defined as BY3 through BY1 (with BY3 being the earliest and BY1 the most recent), span calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

J.2 Gross Medicare Spending Impacts by Cohort for Standard ACOs

Exhibit J.2 shows gross spending impacts in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022, by cohort, for Standard ACOs. Gross spending fell by \$109 PBPY (0.9%) in PY 2023 relative to the comparison group, driven by declines in the 2021 (1.7%) and 2023 (0.7%) cohorts. The larger reduction for the 2021 cohort reflected the exit of underperforming ACOs and improvements among continuing ones in the redesigned model. However, the immediate reduction in spending seen in the 2023 cohort was unexpected, contradicting expectations that savings would take time to be realized for ACOs. The overall decrease in gross spending in PY 2023 was offset by the increase of 1.0% in PY 2022. As a result, there was no change in gross spending cumulatively over the first three years of the model.

Exhibit J.2. Gross Medicare Spending Impact Estimates for Standard ACOs, Overall and by Cohort

| | In PY 2023 (ACO REACH only) 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|-------------------------------|---|----------|-----------------------------|--|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | -0.9 | -\$109*** (-\$147, -\$70) | 3,726,292 | -0.01 | -\$1 (-\$27, \$25) | 1,911,957 | 0.8 | \$101*** (\$65, \$137) |
| 2021 Cohort | 590,704 | -1.7 | -\$211*** (-\$276, -\$146) | 1,467,621 | -0.6 | -\$71*** (-\$111, -\$31) | 876,917 | 0.2 | \$23 (-\$27, \$73) |
| 2022 Cohort | 811,786 | -0.4 | -\$45 (-\$105, \$15) | 1,846,826 | 0.6 | \$74*** (\$35, \$113) | 1,035,040 | 1.4 | \$167*** (\$117, \$218) |
| 2023 Cohort | 411,845 | -0.7 | -\$88* (-\$166, -\$10) | 411,845 | -0.7 | -\$88* (-\$166, -\$10) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

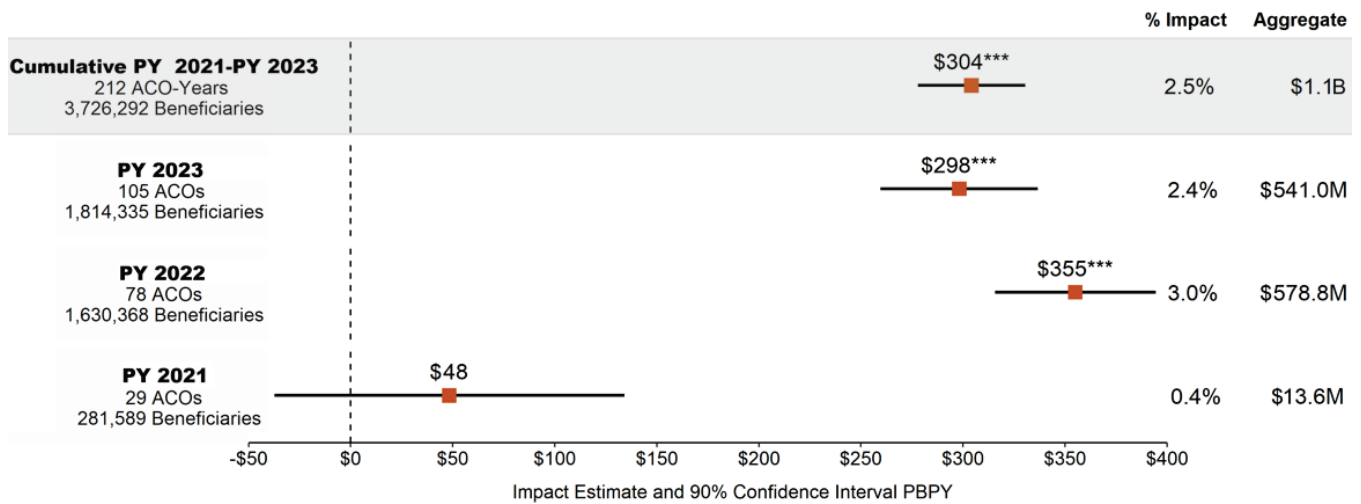
J.3 Net Medicare Spending Impacts Factoring in REACH Payouts, Overall and by Cohort for Standard ACOs

Prior to PY 2023, the methods used in the evaluation of GPDC only accounted for financial incentives related to the model when calculating net spending. For PY 2023 analysis of ACO REACH, the methodology was updated to further account for financial incentives received by both the intervention group and the comparison groups in the baseline period as well as by the comparison groups in the performance period. This report provides net spending results using both methods to ensure consistency with prior evaluation reports. First, we present net

spending results using the methods followed in the GPDC evaluation prior to reviewing results using the updated methods in section J.4 of the technical appendix.

Net spending using the original calculation method increased in PY 2023 by 2.4% (\$298 PBPY), a smaller increase than in PY 2022 (3.0%, or \$355 PBPY; **Exhibit J.3**). The significant increase in net spending in PY 2023 reflected a large significant increase in the 2021 cohort (4.5%, or \$578 PBPY), which outweighed significant increases in net spending in the 2022 cohort and non-significant increases for the 2023 cohort (by 1.7% and 0.5%, respectively; cohort level results are in **Exhibit J.4**). Cumulatively as of PY 2023, net Medicare spending increased by \$1.1 billion (2.5%) for Standard ACOs, reflecting the increases in PY 2022 and PY 2023.¹²³ However, the impact estimates for net spending shown in **Exhibit J.3** do not account for any ACO shared savings or losses incurred for the comparison groups, or for the ACO REACH group in the baseline period.

Exhibit J.3. After Factoring in Payouts Only to REACH ACOs, Cumulatively as of PY 2023, Net Medicare Spending Increased for Standard ACOs, Reflecting Increases in Net Spending in PY 2022 and in PY 2023



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model impact was estimated relative to the comparison groups and baseline years using a DID model. Only payouts to REACH ACOs were included. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Impact estimate and 90% confidence interval are shown per beneficiary per year (PBPY). “Aggregate” is the total impact for all aligned beneficiaries. The number of beneficiaries represents the number aligned to the ACO REACH group in the performance year. *p<0.1, ***p<0.01.

Exhibit J.4 shows net spending impacts in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022, by cohort, for Standard ACOs. These estimates account for CMS’ shared savings payouts to REACH ACOs only. Standard ACOs significantly increased net Medicare spending in PY 2023 and cumulatively as of PY 2023, continuing the trend seen as of PY 2022. Yet, we observed different impacts across cohorts. Increases in net spending in PY 2023 were primarily driven by the 2021 cohort. Cumulatively as of PY 2023, net Medicare spending increased by \$1.1 billion (2.5%) for Standard ACOs, reflecting the increases in PY 2023 and PY 2022.

¹²³ We also evaluated net spending for Standard ACOs relative to the alternative comparison group (that excluded beneficiaries in accountable care), and found neither significant increase nor decline in net spending (**Appendix Exhibit J.5**).

Exhibit J.4. Net Medicare Spending Estimates for Standard ACOs After Factoring in Payouts to REACH ACOs, Overall and by Cohort

| | In PY 2023 (ACO REACH only) <i>105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort</i> | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) <i>212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort</i> | | | Cumulatively as of PY 2022 (GPDC) <i>107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort</i> | | |
|--------------------|--|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | 2.4 | 298*** (260, 337) | 3,726,292 | 2.5 | 304*** (278, 330) | 1,911,957 | 2.6 | 310*** (274, 346) |
| 2021 Cohort | 590,704 | 4.5 | 578*** (514, 643) | 1,467,621 | 3.2 | 402*** (362, 442) | 876,917 | 2.3 | 283*** (233, 334) |
| 2022 Cohort | 811,786 | 1.7 | 213*** (152, 273) | 1,846,826 | 2.3 | 280*** (241, 319) | 1,035,040 | 2.8 | 332*** (282, 383) |
| 2023 Cohort | 411,845 | 0.5 | 65 (-13, 143) | 411,845 | 0.5 | 65 (-13, 143) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Only payouts to REACH ACOs were included. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

J.4 Net Medicare Spending Impacts Factoring in REACH and Comparison Group Payouts, Overall and by Cohort for Standard ACOs

After factoring in ACO shared savings or losses and performance bonus payments for both ACO REACH and comparison groups, cumulative net spending increases were much smaller but still significant for Standard ACOs (\$310.5 million, or 0.7%), as shown in **Exhibit J.5**.

Exhibit J.5. Net Medicare Spending Estimates for Standard ACOs After Factoring in Payouts to REACH ACOs and the Comparison Group, Overall and by Cohort

| | In PY 2023 (ACO REACH only) <i>105 ACOs</i> <i>35 ACOs in 2021 Cohort</i> <i>36 ACOs in 2022 Cohort</i> <i>34 ACOs in 2023 Cohort</i> | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) <i>212 ACO-Years</i> <i>101 ACO-Years in 2021 Cohort</i> <i>77 ACO-Years in 2022 Cohort</i> <i>34 ACO-Years in 2023 Cohort</i> | | | Cumulatively as of PY 2022 (GPDC) <i>107 ACO-Years</i> <i>66 ACO-Years in 2021 Cohort</i> <i>41 ACO-Years in 2022 Cohort</i> | | |
|--------------------|--|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | 0.5 | 59** (20, 97) | 3,726,292 | 0.7 | 83*** (57, 110) | 1,911,957 | 0.9 | 107*** (71, 143) |
| 2021 Cohort | 590,704 | 2.7 | 344*** (280, 409) | 1,467,621 | 1.8 | 219*** (179, 259) | 876,917 | 1.1 | 135*** (85, 185) |
| 2022 Cohort | 811,786 | -0.6 | -78** (-138, -18) | 1,846,826 | 0.1 | 12 (-27, 51) | 1,035,040 | 0.7 | 83*** (32, 134) |
| 2023 Cohort | 411,845 | -0.7 | -82* (-160, -3) | 411,845 | -0.7 | -82* (-160, -3) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years, accounted for by Shared Savings Program and NGACO shared savings/losses payments in the comparison group during the performance and baseline periods and in the treatment group during the baseline period. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

J.5. Gross and Net Medicare Spending Impacts Relative to an Alternative Comparison Group for Standard ACOs

Exhibit J.6 shows results on gross and net spending from a supplemental analysis that compared Standard ACOs to the alternative comparison group that excluded beneficiaries in accountable care. Reductions in gross spending were larger relative to this alternative comparison group; gross spending decreased by \$408 PBPY (or 3.2%) in PY 2023 and by \$291 PBPY (or 2.3%) cumulatively as of PY 2023. Net spending for Standard ACOs neither significantly increased nor declined relative to the alternative comparison group.

Exhibit J.6. Gross Medicare Spending and Net Medicare Spending Estimates Relative to an Alternative Comparison Group for Standard ACOs

| | In PY 2023 | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | Cumulatively as of PY 2022 (GPDC) | | |
|---|-------------------------|----------|----------------------------|--|----------|--------------------------|--------------------------------------|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Gross Spending | | | | | | | | | |
| Original | 1,814,335 | -0.9 | -109*** (-\$147, -\$70) | 3,726,292 | -0.01 | -1 (-\$27, \$25) | 1,911,957 | 0.8 | 101*** (\$65, \$137) |
| Alternative comparison group | 1,814,335 | -3.2 | -408*** (-462, -354) | 3,722,856 | -2.3 | -291*** (-327, -254) | 1,908,521 | -1.5 | -179*** (-229, -129) |
| Net Spending After Factoring in Payments to REACH ACOs | | | | | | | | | |
| Original | 1,814,335 | 2.4 | 298*** (260, 337) | 3,726,292 | 2.5 | 304*** (278, 330) | 1,911,957 | 2.6 | 310*** (274, 346) |
| Alternative comparison group | 1,814,335 | -0.01 | -1 (-55, 53) | 3,722,856 | 0.1 | 15 (-22, 51) | 1,908,521 | 0.2 | 29 (-21, 79) |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

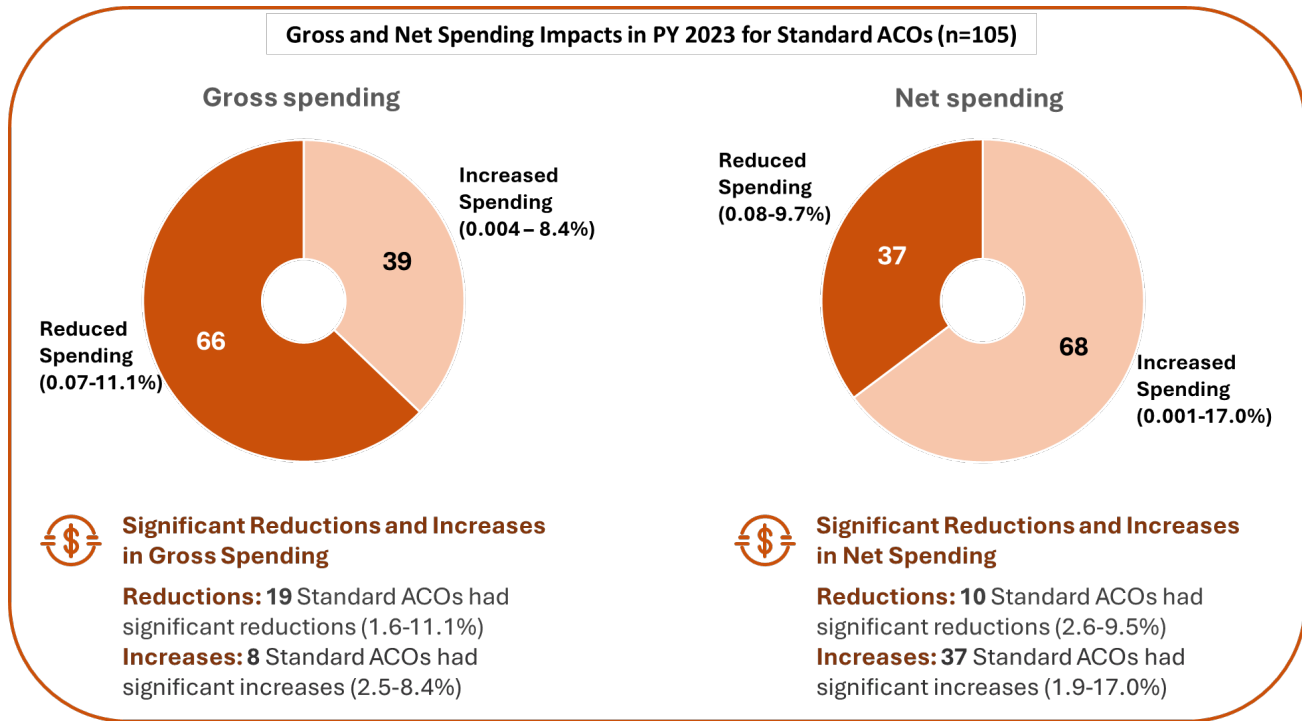
NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.6 ACO-Level Gross and Net Medicare Spending Impacts for Standard ACOs

J.6.1 Summary of ACO-Level Gross and Net Spending Impacts for Standard ACOs

Exhibit J.7 shows the gross and net spending impacts in PY 2023 for Standard ACOs. Net spending estimates here account only for payouts to REACH ACOs. Two-thirds of Standard ACOs reduced gross spending, and one-third increased net spending in PY 2023. Among the Standard ACOs that reduced gross spending, roughly one-quarter achieved significant reductions; conversely, among Standard ACOs that increased gross spending, 20% had significant increases. For Standard ACOs that increased net spending, slightly more than half had significant increases, whereas, for Standard ACOs that reduced net spending, roughly one-quarter achieved significant reductions. Notably, far more ACOs had significant increases in gross or net spending than decreases.

Exhibit J.7. Standard ACOs’ Gross and Net Spending Impacts in PY 2023



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

J.6.2 ACO-Level Gross Spending Impact Estimates

Exhibit J.8 presents detailed ACO-level impact results for spending for Standard ACOs. We present mean outcomes in the baseline (2018–2020 for 2021 Cohort ACOs; 2019–2021 for 2022 Cohort ACOs; and 2020–2022 for 2023 Cohort ACOs) and performance (2023) years, and the change from baseline to performance years in the ACO REACH and comparison groups. The impact estimate, 90% confidence interval (CI), and percent impact are estimated from the DID model.

Our DID estimate is based on satisfying the parallel trends assumption, which allows us to establish the counterfactual when—absent the model—time trends in the outcome variable between the ACO REACH and comparison groups would be the same in the performance year. The presence of parallel trends in the outcome variable across the two groups in the baseline years justifies the assumption of parallel trends in the performance year. Twelve (nine with the linear trend term) Standard ACOs were found to have violations of the parallel trends test for total spending. Failing the parallel trends test (that is, the p-value of the joint F test is less than 0.05) indicates that the DID estimate for the ACO needs to be interpreted with caution (affected entities are **bolded** to highlight these results).

Exhibit J.8. Standard ACOs—ACO-Level Gross Spending Impacts in Baseline Years and PY 2023

| Standard ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/ losses (\$PBPY) | |
|---|---------------------------------|----------------------|---------------|---------------------|---------------|---------------------------|------------------|------------|------------------------------|---------------------------------|--------------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | % Impact | | | |
| ilumed, LLC | 50,296 | 12,578 | 13,010 | 12,473 | 12,698 | -202* | -402 | -3 | -1.6 | 0.188 | 444 |
| Arizona Health Advantage, Inc. | 3,718 | 12,062 | 12,881 | 11,587 | 11,680 | -694 | -1443 | 56 | -5.6 | 0.797 | 93 |
| Genuine Health Direct, LLC | 17,389 | 15,007 | 15,909 | 13,886 | 14,152 | -569** | -946 | -192 | -3.9 | 0.934 | 795 |
| Primary Care Alliance, LLC | 9,299 | 13,006 | 13,718 | 11,738 | 12,616 | 236 | -233 | 704 | 1.9 | 0.035 | 1,527 |
| Renovis Choice Company | 3,271 | 20,706 | 21,655 | 21,936 | 20,394 | -2,548*** | -4104 | -992 | -11.1 | 0.608 | 852 |
| Temple Care, Inc. | 6,016 | 12,379 | 12,436 | 11,918 | 12,984 | 1,011** | 296 | 1726 | 8.4 | 0.419 | -228 |
| Rancho Health Management, LLC | 16,232 | 12,047 | 12,726 | 11,346 | 11,966 | -19 | -398 | 359 | -0.2 | 0.829 | 559 |
| CareMount Value Partners IPA | 44,374 | 14,125 | 14,715 | 14,020 | 14,504 | -101 | -361 | 158 | -0.7 | 0.258 | 272 |
| Collaborative Care Partners LLC | 7,812 | 11,284 | 11,067 | 11,331 | 11,514 | 401 | -84 | 886 | 3.6 | 0.008 | 178 |
| VillageMD Houston ACO, LLC | 22,553 | 13,610 | 14,402 | 13,071 | 13,432 | -399* | -753 | -45 | -2.9 | 0.192 | 1,777 |
| On Belay Health Solutions, LLC | 7,661 | 12,375 | 12,682 | 11,879 | 12,243 | 70 | -485 | 625 | 0.6 | 0.776 | -345 |
| agilon health Texas ACO, Inc. (DBA: Senior Health Connect ACO 7) | 7,195 | 11,742 | 11,916 | 11,424 | 11,643 | 50 | -474 | 574 | 0.4 | 0.546 | 1,683 |
| Indiana University Health ACO, Inc. | 44,121 | 11,007 | 11,422 | 11,172 | 11,540 | -52 | -283 | 179 | -0.4 | 0.790 | 322 |
| Complete Health Accountable Care LLC | 8,302 | 12,866 | 13,299 | 12,146 | 11,646 | -908*** | -1415 | -401 | -7.2 | 0.652 | 2,510 |
| Revere Health Collaborative Network, LLC | 14,151 | 11,699 | 11,844 | 11,304 | 11,734 | 290 | -125 | 706 | 2.5 | 0.200 | -101 |
| CareAllies Accountable Care Solutions, LLC | 5,340 | 13,517 | 13,943 | 13,114 | 13,509 | -18 | -711 | 674 | -0.1 | 0.858 | 526 |
| Pathways Accountable Care, LLC d/b/a Pathways Health Partners | 13,924 | 14,550 | 15,067 | 14,397 | 14,197 | -711*** | -1122 | -301 | -4.8 | 0.588 | 1,177 |
| Bluerock Care Community LLC (DBA: Penn Ave Health) | 7,487 | 9,516 | 10,472 | 9,308 | 9,606 | -636** | -1134 | -139 | -6.2 | 0.691 | 324 |
| agilon health Northeast Ohio ACO, Inc. (DBA: Senior Health Connect ACO 2) | 9,463 | 11,119 | 11,172 | 10,198 | 10,531 | 285 | -185 | 756 | 2.8 | 0.835 | 1,455 |
| St. Luke's Clinic Coordinated Care, Ltd. | 24,786 | 10,529 | 11,417 | 10,129 | 10,988 | 5 | -337 | 347 | 0.05 | 0.494 | 345 |

| Standard ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/ losses (\$PBPY) | |
|---|---------------------------------|----------------------|---------------|---------------------|---------------|---------------------------|------------------|------------|------------------------------|---------------------------------|--------------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | % Impact | | | |
| CVS Accountable Care Organization, Inc. | 70,785 | 15,882 | 16,316 | 15,532 | 15,975 | 18 | -201 | 236 | 0.1 | 0.522 | -118 |
| PraxisCare, Inc. | 21,293 | 10,035 | 10,468 | 91,82 | 9,868 | 291* | 10 | 572 | 3.0 | 0.491 | 99 |
| Oak Street Health Medicare Partners LLC | 6,797 | 15,326 | 15,486 | 14,478 | 13,340 | -1,289*** | -2,069 | -509 | -8.8 | 0.503 | 3,451 |
| Northern Michigan Health Network dba NPO-CIN | 7,778 | 10,039 | 10,644 | 97,81 | 9,857 | -514 | -1042 | 14 | -5.0 | 0.007 | 33 |
| Physicians Healthcare Collaborative | 82,538 | 12,514 | 12,833 | 11,878 | 12,339 | 158 | -1 | 318 | 1.3 | 0.956 | 1,464 |
| Asaar Medical, LLC | 5,161 | 12,810 | 13,188 | 12,714 | 12,847 | -242 | -883 | 399 | -1.8 | 0.722 | -152 |
| Regal Medical Group dba Heritage Innovation Center | 3,368 | 12,804 | 14,014 | 12,479 | 14,563 | 905 | -134 | 1,944 | 6.6 | 0.264 | -250 |
| Central Valley Community Partners LLC | 4,324 | 17,735 | 19,540 | 17,373 | 18,569 | -571 | -1,788 | 645 | -3.0 | 0.341 | -814 |
| Health Partners for the Elderly LLC | 6,880 | 14,499 | 14,692 | 13,817 | 13,595 | -405 | -975 | 164 | -2.9 | <0.001 | 1,078 |
| American Choice Healthcare, LLC | 60,892 | 15,277 | 16,027 | 14,301 | 14,468 | -534*** | -755 | -313 | -3.6 | 0.379 | 654 |
| VillageMD Primary Providers ACO III, LLC | 19,258 | 12,490 | 13,577 | 12,128 | 12,434 | -750*** | -1,112 | -388 | -5.7 | 0.212 | 505 |
| VillageMD Primary Providers ACO IV, LLC | 12,883 | 12,413 | 13,209 | 12,286 | 12,200 | -873*** | -1293 | -454 | -6.7 | 0.117 | 1,238 |
| Auxilium Health Network | 2,705 | 18,035 | 19,648 | 17,920 | 20,504 | 981 | -483 | 2,446 | 5.0 | 0.207 | -2,840 |
| VillageMD Primary Providers ACO, LLC | 12,299 | 11,149 | 11,611 | 10,808 | 10,907 | -349 | -747 | 49 | -3.1 | 0.705 | 268 |
| VillageMD Primary Providers ACO V, LLC | 4,805 | 15,341 | 15,576 | 13,809 | 13,506 | -515 | -1,240 | 211 | -3.7 | 0.234 | 2,424 |
| VillageMD New Hampshire ACO, LLC | 8,282 | 12,334 | 12,777 | 11,965 | 11,619 | -776** | -1,305 | -246 | -6.3 | 0.796 | 2,380 |
| agilon health Coastal ACO, Inc. | 5,669 | 10,032 | 11,287 | 9,369 | 10,682 | 142 | -458 | 741 | 1.3 | 0.657 | 25 |
| agilon health Northeastern ACO, Inc. (DBA: Senior Health Connect ACO 6) | 12,609 | 11,932 | 11,974 | 11,256 | 10,919 | -377 | -811 | 57 | -3.3 | 0.408 | 1,591 |
| Accountable Care Coalition of Southeast Texas, Inc. | 10,028 | 15,438 | 16,289 | 14,337 | 15,090 | -38 | -633 | 558 | -0.2 | 0.341 | 493 |

| Standard ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/ losses (\$PBPY) | |
|---|---------------------------------|----------------------|---------------|---------------------|---------------|---------------------------|------------------|-----------|------------------------------|---------------------------------|------------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | % Impact | | | |
| agilon health Pennsylvania ACO, Inc. (DBA: Senior Health Connect ACO 4) | 5,558 | 10,549 | 10,990 | 9,943 | 10,565 | 206 | -384 | 796 | 2.0 | 0.715 | 357 |
| agilon health Columbus Ohio ACO, Inc. (DBA: Senior Health Connect 1) | 27,223 | 11,317 | 11,709 | 10,116 | 10,225 | -241 | -533 | 51 | -2.3 | 0.356 | 1,236 |
| Accountable Care Coalition of Direct Contracting, LLC | 44,344 | 11,926 | 12,596 | 11,541 | 11,867 | -322** | -545 | -99 | -2.6 | 0.288 | 0.38 |
| agilon health Ohio ACO, Inc. (DBA: Senior Health Connect ACO 3) | 8,338 | 11,994 | 12,213 | 11,611 | 11,468 | -355 | -890 | 180 | -3.0 | 0.412 | 2,036 |
| Cityblock Health DCE, LLC | 2,961 | 12,205 | 11,565 | 11,681 | 11,635 | 567 | -715 | 1,850 | 5.1 | 0.890 | 0 |
| AdventHealth ACO Plus, LLC | 4,378 | 12,491 | 13,195 | 11,696 | 11,782 | -574 | -1256 | 109 | -4.6 | 0.932 | 901 |
| Q Point Health, LLC (DBA Equality Health Direct) | 11,953 | 10,461 | 11,209 | 10,301 | 11,047 | 9 | -415 | 434 | 0.1 | 0.182 | -196 |
| CareMax Health Partners, LLC | 8,186 | 13,101 | 13,759 | 12,124 | 12,491 | -241 | -757 | 274 | -1.9 | 0.054 | 45 |
| Clover Health Partners LLC | 49,766 | 13,320 | 13,731 | 12,491 | 13,266 | 390*** | 182 | 597 | 3.0 | 0.324 | -96 |
| Renown Direct Contracting Entity, LLC | 11,514 | 10,794 | 11,259 | 10,113 | 11,067 | 519* | 78 | 959 | 4.9 | 0.164 | -657 |
| Castell Accountable Care, LLC | 52,216 | 11,592 | 11,946 | 11,025 | 11,232 | -130 | -347 | 87 | -1.1 | 0.759 | 1,279 |
| Esse Health ACO, LLC | 36,518 | 11,397 | 11,842 | 10,825 | 11,170 | -77 | -318 | 163 | -0.7 | 0.063 | 681 |
| 360 Health DCE Inc. | 7,177 | 14,931 | 16,359 | 14,864 | 15,933 | -352 | -1,194 | 489 | -2.2 | 0.783 | -677 |
| Fairview Health Services | 27,150 | 12,368 | 12,838 | 11,824 | 11,805 | -468** | -815 | -121 | -3.8 | 0.677 | 165 |
| United Physicians Association, Inc. | 3,612 | 16,265 | 17,556 | 14,584 | 14,811 | -930 | -2,088 | 228 | -5.9 | 0.700 | 413 |
| NeueHealth Advantage ACO, LLC | 38,305 | 14,117 | 15,070 | 13,313 | 14,574 | 362* | 52 | 671 | 2.5 | 0.704 | -1,102 |
| PeaceHealth Direct Contracting LLC | 23,573 | 11,162 | 11,439 | 11,237 | 11,259 | -257 | -556 | 42 | -2.2 | 0.022 | 272 |
| America's MDE, LLC | 3,149 | 13,146 | 13,612 | 13,504 | 13,026 | -957 | -2062 | 148 | -6.8 | 0.299 | 1,100 |
| agilon health Mid-Atlantic ACO, Inc. (DBA: Senior Health Connect ACO 5) | 9,608 | 11,354 | 11,588 | 10,857 | 10,813 | -268 | -766 | 229 | -2.4 | 0.408 | 1,519 |
| Physician Leaders Direct Contracting Entity, LLC | 26,166 | 16,674 | 16,986 | 16,223 | 15,741 | -785*** | -1,106 | -465 | -4.8 | 0.138 | 169 |

| Standard ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/ losses (\$PBPY) | |
|--|---------------------------------|----------------------|---------------|---------------------|---------------|---------------------------|------------------|--------------|------------------------------|---------------------------------|-------------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | % Impact | | | |
| Subsero Healthcare, LLC d/b/a MAX Healthcare #1 | 6,718 | 14,389 | 14,702 | 12,875 | 12,773 | -381 | -956 | 194 | -2.9 | 0.818 | 2,150 |
| Alignment Health ACO, LLC | 7,591 | 15,254 | 16,666 | 14,814 | 15,760 | -425 | -1293 | 443 | -2.6 | 0.469 | -486 |
| NW Momentum Health Partners ACO | 22,606 | 10,613 | 10,659 | 10,699 | 11,412 | 668*** | 329 | 1,006 | 6.2 | 0.035 | -73 |
| NeueHealth Premier ACO, LLC | 6,264 | 11,272 | 11,705 | 11,015 | 11,703 | 265 | -313 | 843 | 2.3 | 0.014 | 633 |
| Hudson Accountable Care, LLC | 7,535 | 14,250 | 14,609 | 13,859 | 13,570 | -638 | -1,409 | 133 | -4.5 | 0.221 | -2 |
| Humana Direct Contracting Entity, Inc. | 47,520 | 11,333 | 11,771 | 10,790 | 11,261 | 53 | -171 | 277 | 0.5 | 0.100 | 288 |
| Park Nicollet Health Services ACO LLC d/b/a HealthPartners ACO | 35,182 | 11,832 | 12,353 | 11,213 | 11,660 | -48 | -372 | 277 | -0.4 | 0.825 | -106 |
| Triad HealthCare Network, LLC | 21,778 | 11,078 | 11,485 | 10,570 | 10,816 | -143 | -577 | 292 | -1.3 | 0.223 | 403 |
| UT Southwestern Accountable Care Network | 95,790 | 13,079 | 13,102 | 12,395 | 12,418 | 2 | -179 | 183 | 0.01 | 0.433 | 374 |
| APA ACO Inc. | 31,185 | 16,350 | 17,639 | 14,463 | 15,272 | -331 | -725 | 64 | -2.1 | 0.070 | 402 |
| UW Health ACO, Inc. | 25,987 | 92,86 | 9,524 | 9,491 | 10,116 | 382* | 60 | 705 | 3.9 | 0.035 | -248 |
| Reliant Medical Group, Inc. | 10,895 | 14,436 | 14,445 | 12,857 | 12,906 | 42 | -471 | 555 | 0.3 | 0.674 | 1,850 |
| Commonwealth Primary Care ACO LLC | 4,282 | 12,071 | 12,959 | 12,264 | 11,812 | -1,354*** | -2,040 | -667 | -10.3 | 0.111 | 674 |
| Mirra Reach, LLC | 4,555 | 14,561 | 14,910 | 12,704 | 13,116 | 108 | -612 | 828 | 0.8 | 0.732 | 1,476 |
| Honest ACO of Michigan LLC | 4,528 | 12,500 | 12,932 | 11,029 | 11,085 | -325 | -980 | 331 | -2.8 | 0.416 | 678 |
| CHESS Genesis, LLC | 18,972 | 11,192 | 11,629 | 11,598 | 12,010 | -40 | -399 | 319 | -0.3 | 0.424 | 30 |
| Honest ACO of New York LLC | 6,223 | 12,063 | 12,079 | 11,117 | 11,124 | -8 | -638 | 621 | -0.1 | 0.449 | 65 |
| Pearl Primary Care Network, LLC | 26,207 | 14,498 | 14,902 | 14,774 | 15,582 | 396** | 82 | 710 | 2.6 | 0.577 | -470 |
| Pearl Network, LLC | 6,497 | 13,340 | 13,777 | 12,509 | 12,992 | 73 | -538 | 684 | 0.6 | 0.559 | -771 |
| UpStream GAP Q, LLC | 29,600 | 10,497 | 10,654 | 10,230 | 10,615 | 232 | -2 | 466 | 2.2 | 0.945 | 239 |
| Allina Health System | 28,627 | 12,387 | 12,723 | 11,263 | 11,300 | -270 | -574 | 35 | -2.3 | 0.381 | 233 |
| UpStream Carolinas, LLC | 24,688 | 10,527 | 10,838 | 10,985 | 11,490 | 182 | -84 | 447 | 1.6 | 0.047 | -981 |
| North East Medical Service | 7,989 | 10,992 | 10,544 | 9,127 | 8,178 | -578 | -1,624 | 468 | -6.6 | 0.900 | -274 |
| RGV ACO Health Providers, LLC | 5,311 | 14,287 | 14,605 | 13,024 | 13,528 | 214 | -558 | 986 | 1.6 | 0.928 | 712 |

| Standard ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/ losses (\$PBPY) | |
|---|---------------------------------|----------------------|---------------|---------------------|---------------|---------------------------|------------------|------------|------------------------------|---------------------------------|-------------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | % Impact | | | |
| Accountable Care Organization of Advocate Aurora Health, LLC | 5,108 | 13,851 | 14,174 | 13,345 | 13,259 | -397 | -1,059 | 265 | -2.9 | 0.459 | 665 |
| DULY HEALTH AND CARE ACCOUNTABLE CARE ORGANIZATION | 42,471 | 11,919 | 12,321 | 11,916 | 12,288 | -30 | -249 | 189 | -0.2 | 0.792 | 747 |
| Physician Partners ACO Reach, LLC | 4,844 | 12,694 | 13,398 | 11,802 | 12,714 | 258 | -384 | 899 | 2.1 | 0.557 | 618 |
| Aledade Accountable Care 128, LLC | 7,520 | 11,024 | 11,267 | 10,271 | 10,277 | -221 | -697 | 255 | -2.1 | 0.626 | 634 |
| ACO REACH South Texas, LLC | 7,106 | 14,187 | 14,381 | 13,617 | 12,928 | -875** | -1,487 | -263 | -6.3 | 0.265 | 921 |
| CINQCARE ACO REACH LLC | 4,545 | 13,251 | 13,122 | 12,437 | 12,707 | 390 | -412 | 1,192 | 3.2 | 0.696 | 620 |
| COMMUNITY CARE COOPERATIVE, INC. | 10,283 | 13,292 | 13,224 | 13,133 | 12,487 | -578 | -1,182 | 25 | -4.4 | 0.094 | 465 |
| Optimum NY Independent Practice Association, LLC | 12,164 | 11,947 | 11,946 | 11,063 | 10,580 | -482* | -935 | -29 | -4.4 | 0.196 | 533 |
| Catholic Medical Partners-Accountable Care IPA, Inc. | 9,097 | 11,972 | 11,923 | 10,641 | 10,009 | -587* | -1,136 | -38 | -5.5 | 0.078 | 725 |
| Community Care Contracting, LLC | 14,529 | 10,768 | 10,861 | 10,301 | 10,516 | 127 | -239 | 493 | 1.2 | 0.508 | 89 |
| Vytalize Health 9 ACO LLC | 14,196 | 12,055 | 12,312 | 12,012 | 11,987 | -281 | -676 | 115 | -2.3 | 0.233 | -94 |
| Medical Home Network REACH ACO | 21,323 | 13,625 | 13,747 | 13,536 | 13,475 | -183 | -563 | 197 | -1.3 | 0.370 | -72 |
| Best IPA LLC | 5,925 | 15,111 | 15,968 | 13,608 | 14,035 | -345 | -1,545 | 855 | -2.4 | 0.952 | -707 |
| Innovation Care Partners REACH LLC | 4,472 | 11,832 | 12,675 | 11,132 | 11,926 | 0.45 | -689 | 690 | 0.004 | 0.406 | -147 |
| NeueHealth Community ACO, LLC | 19,204 | 11,015 | 11,227 | 10,883 | 11,013 | -81 | -427 | 266 | -0.7 | 0.006 | 346 |
| P3 Health Partners REACH ACO | 6,675 | 13,139 | 13,616 | 12,327 | 12,715 | -59 | -715 | 597 | -0.5 | 0.602 | 617 |
| PRIME HEALTHCARE ACO, LLC | 3,903 | 11,435 | 11,550 | 10,658 | 10,483 | -282 | -926 | 362 | -2.6 | 0.749 | 283 |
| Wellvana Premier Care, LLC | 30,519 | 12,318 | 12,867 | 11,433 | 11,797 | -145 | -405 | 114 | -1.2 | <0.001 | 221 |
| BH ACO, LLC | 2,941 | 14,927 | 15,101 | 13,582 | 13,902 | 162 | -913 | 1,236 | 1.2 | 0.189 | 332 |
| Prime Accountable Care East LLC | 9,043 | 10,691 | 11,013 | 10,764 | 11,285 | 196 | -268 | 660 | 1.8 | 0.924 | -602 |
| Arizona Best Care Network LLC | 5,865 | 10,100 | 10,656 | 9,774 | 10,416 | 103 | -520 | 725 | 1.0 | 0.040 | -690 |
| Central Virginia Coalition of Healthcare Providers, LLC d/b/a Jericho REACH ACO | 2,633 | 11,996 | 12,356 | 11,249 | 10,984 | -603 | -1,609 | 402 | -5.2 | 0.694 | 637 |

SOURCE: NORC team analysis of Medicare claims and enrollment data.

NOTE: PBPY=per beneficiary per year; CI=confidence interval. Estimates in this table are weighted and regression-adjusted. Total spending is top coded at the 99.9th percentile by ACO market and year. Shared savings/losses for each ACO from financial settlement results were scaled to the number of beneficiary-months included in our analysis. Baseline years (BYs) BY3–BY1 span calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. **Bold** values indicate failing the parallel trends test.

J.7 Gross Medicare Spending Impacts by ACO Subgroups and Beneficiary Subgroups for Standard ACOs

We focused our hypotheses (see Chapter 2 in the main report) on subgroups defined by ACO organizational structure, risk/capitation levels, and beneficiary characteristics because NORC and the Innovation Center agreed that it was challenging to formulate hypotheses for some of the other ACO-level characteristics included in this appendix (namely, ACO lead organization and ACO functional role). Findings for subgroups included only in the appendix (and not in the main report) can be viewed as exploratory.

J.7.1 Gross Spending Impacts for Standard ACOs by Risk Level and Capitation

Exhibit J.8 shows gross spending impacts by levels of risk and capitation combined for Standard ACOs cumulatively as of PY 2023 and cumulatively as of PY 2022. We expected ACOs electing higher risk/capitation to show greater reductions in gross spending, given their higher expectation to outperform benchmark targets. Consistent with this hypothesis, cumulatively as of PY 2023, Standard ACOs that elected the highest level of risk and capitation (Global TCC) were associated with significant decreases in gross Medicare spending, whereas Standard ACOs that elected the lowest level of risk and capitation (Professional PCC/PCC + APO) were associated with significant increases in gross Medicare spending. These findings contrast with results as of PY 2022, where Standard ACOs experienced significant increases in gross spending regardless of combined risk and capitation level. For Standard ACOs, one-quarter elected Global risk and TCC, slightly less than one-quarter elected Professional risk and PCC / PCC+APO, and the remainder elected Global risk and PCC / PCC+APO.

Exhibit J.9. Gross Medicare Spending Impact Estimates by Risk and Capitation Level for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|------------------------------|-------------|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Global TCC | 27 | 406,292 | -1.9 | -243*** (-325, -160) | 55 | 842,897 | -0.5 | -65* (-121, -10) | 28 | 436,605 | 0.8 | 100** (25, 175) |
| Global PCC/ PCC+APO | 58 | 992,952 | -0.8 | -95*** (-146, -44) | 111 | 1,946,254 | -0.1 | -8 (-43, 28) | 53 | 953,302 | 0.7 | 83*** (34, 132) |
| Professional PCC/ PCC+APO | 20 | 415,091 | -0.1 | -11 (-94, 72) | 46 | 937,141 | 0.6 | 70** (15, 125) | 26 | 522,050 | 1.1 | 135*** (62, 208) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their risk and capitation level. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

Exhibit J.10 shows gross spending impacts by risk levels cumulatively as of PY 2023 and cumulatively as of PY 2022. We examined gross Medicare spending impacts by two levels of risk, with higher risk for Global and lower risk for

Professional. Cumulatively as of PY 2023, only Standard ACOs that elected Professional risk were associated with significant increases in gross Medicare spending (consistent with our hypothesis), in contrast with results as of PY 2022, where Standard ACOs experienced significant increases in gross spending regardless of risk level. For Standard ACOs, roughly three-quarters elected Global risk, and one-quarter elected Professional risk.

Exhibit J.10. Gross Medicare Spending Impact Estimates by Risk Level for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--------------|-------------|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Global | 85 | 1,399,244 | -1.1 | -138*** (-181, -94) | 166 | 2,789,151 | -0.2 | -25 (-55, 5) | 81 | 1,389,907 | 0.7 | 88*** (47, 129) |
| Professional | 20 | 415,091 | -0.1 | -11 (-94, 72) | 46 | 937,141 | 0.6 | 70** (15, 125) | 26 | 522,050 | 1.1 | 135*** (62, 208) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their risk level. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (BPY) with 90% confidence interval (CI). "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

Exhibit J.11 shows gross spending impacts by capitation levels for Standard ACOs cumulatively as of PY 2023 and cumulatively as of PY 2022. We examined gross Medicare spending impacts by two levels of capitation, with higher capitation for Total Cost Capitation (TCC) and lower capitation for Primary Care Capitation (PCC) with or without the advanced payment option (PCC+APO). Cumulatively as of PY 2023, ACOs selecting the highest level of capitation were associated with significant reductions in gross Medicare spending (consistent with our hypothesis), in contrast with results as of PY 2022, where Standard ACOs demonstrated significant increases in gross spending regardless of capitation level. For Standard ACOs, one-quarter elected TCC, almost one-third elected PCC, and the remainder elected PCC+APO.

Exhibit J.11. Gross Medicare Spending Impact Estimates by Capitation Level for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--------------|-------------|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| TCC | 27 | 406,292 | -1.9 | -243*** (-325, -160) | 55 | 842,897 | -0.5 | -65* (-121, -10) | 28 | 436,605 | 0.8 | 100** (25, 175) |
| PCC | 30 | 543,043 | -0.3 | -34 (-104, 37) | 65 | 1,109,078 | 0.3 | 40 (-9, 88) | 35 | 566,035 | 1.0 | 111*** (43, 178) |
| PCC+APO | 48 | 865,000 | -0.7 | -93*** (-149, -37) | 92 | 1,774,317 | 0.03 | 4 (-34, 42) | 44 | 909,317 | 0.8 | 96*** (44, 147) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their capitation level. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and

comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.7.2 Gross Spending Impacts for Standard ACOs by ACO Organizational Structure

Exhibit J.12 shows gross Medicare spending impacts by ACO organizational structure for Standard ACOs cumulatively as of PY 2023 and cumulatively as of PY 2022. We expected smaller reductions in gross spending among IDS/hospital system ACOs because of their overarching incentive structures to increase hospital-based inpatient and outpatient care for increasing overall revenue. Accordingly, ACOs that were IDS/hospital systems had significant gross Medicare spending increases both cumulatively as of PY 2023 and as of PY 2022. ACOs that were networks of individual practices were associated with significant spending reductions only as of PY 2023. No changes were seen for ACOs that were medical group practices for either year.

Exhibit J.12. Gross Medicare Spending Impact Estimates by ACO Organizational Structure for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|-------------|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Integrated Delivery/Hospital System | 25 | 560,381 | -0.3 | -38 (-109, 32) | 53 | 1,487,841 | 0.8 | 91*** (49, 134) | 28 | 927,460 | 1.4 | 170*** (117, 222) |
| Medical Group Practice | 19 | 317,357 | -0.3 | -39 (-123, 46) | 55 | 724,813 | 0.1 | 12 (-43, 68) | 36 | 407,456 | 0.5 | 52 (-21, 125) |
| Network of Individual Practices | 61 | 936,597 | -1.3 | -175*** (-229, -120) | 104 | 1,513,638 | -0.8 | -98*** (-140, -57) | 43 | 577,041 | 0.2 | 26 (-40, 91) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their organizational structure. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.7.3 Gross Spending Impacts for Standard ACOs by ACO Lead Organization

Exhibit J.13 shows gross Medicare spending impacts by lead organization types for Standard ACOs cumulatively as of PY 2023 and cumulatively as of PY 2022.¹²⁴ We hypothesized that health system-led ACOs may have fewer opportunities to reduce gross spending relative to ACOs led by other entities.

¹²⁴ Leveraging application data (for example, ACOs’ descriptions of their organization and composition), additional documentation (such as an updated organization chart and ownership information), and publicly available information (that is, ACO websites and

For Standard ACOs, those led by primary care companies (15% as of PY 2023) were associated with significant gross Medicare spending reductions both as of PY 2023 and as of PY 2022. Consistent with our hypothesis, those led by health systems (23%) were associated with the largest significant increases in gross Medicare spending for both time periods. ACOs led by insurers (15%) were also associated with significant increases in gross spending for both time periods, although to a smaller extent than those led by health systems. ACOs led by physician practices (16%) significantly increased spending as of PY 2022 (counter to our hypothesis) but then showed no significant spending changes as of PY 2023. Gross spending impacts for Standard ACOs led by MSOs (32%) were not statistically significant as of either year.

Exhibit J.13. Gross Medicare Spending Impact Estimates by ACO Lead Organization Type for Standard ACOs

| ACO subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|----------------------|-------------|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Health System | 23 | 484,205 | -0.5 | -55 (-131, 22) | 48 | 1,193,876 | 0.8 | 90*** (42, 137) | 25 | 709,671 | 1.7 | 188*** (127, 248) |
| Insurer | 16 | 371,978 | 0.2 | 30 (-58, 118) | 32 | 788,571 | 0.5 | 68* (10, 127) | 16 | 416,593 | 0.8 | 102** (24, 180) |
| MSO | 35 | 478,923 | -0.6 | -74* (-146, -2) | 67 | 883,017 | -0.1 | -16 (-68, 36) | 32 | 404,094 | 0.4 | 53 (-23, 128) |
| Physician Practice | 19 | 306,557 | -1.3 | -159*** (-249, -68) | 34 | 495,621 | -0.3 | -33 (-102, 36) | 15 | 189,064 | 1.5 | 171*** (64, 277) |
| Primary Care Company | 12 | 172,672 | -4.1 | -569*** (-697, -441) | 31 | 365,207 | -2.8 | -368*** (-453, -283) | 19 | 192,535 | -1.5 | -188*** (-301, -75) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their lead organization type. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.7.4 Gross Spending Impacts for Standard ACOs by ACO Functional Role

Exhibit J.14 shows gross Medicare spending impacts by functional role for Standard ACOs cumulatively as of PY 2023 and cumulatively as of PY 2022. As of PY 2023, there were no significant differences in gross spending by functional role.

environmental scans for mergers and acquisitions), the NORC team first identified the organizations leading each ACO and then categorized them into types of organization using a typology informed by existing literature.

Exhibit J.14. Gross Medicare Spending Impact Estimates by ACO Functional Role for Standard ACOs

| ACO subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|----------------------|-------------|-------------------------|----------|--------------------------|--|-------------------------|----------|--------------------------|--------------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Convener | 8 | 119,896 | -0.3 | -46 (-205, 112) | 23 | 333,597 | 0.4 | 44 (-45, 133) | 15 | 213,701 | 0.8 | 94 (-12, 201) |
| Direct Care Provider | 41 | 821,362 | -0.9 | -105*** (-161, -48) | 87 | 1,684,380 | 0.01 | 1 (-38, 41) | 46 | 863,018 | 0.9 | 102*** (48, 156) |
| Enabler | 56 | 873,077 | -0.9 | -122*** (-177, -66) | 102 | 1,708,315 | -0.1 | -12 (-51, 26) | 46 | 835,238 | 0.8 | 102*** (48, 155) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on gross Medicare spending in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their functional role. Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.7.5 Gross Spending Impacts for Standard ACOs by Beneficiary Characteristics

Exhibit J.15 shows impact estimates for total gross Medicare spending by beneficiary subgroups for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Overall, greater spending reductions were seen for beneficiaries who had the highest social disadvantage, had more chronic conditions, were dually eligible, and/or had a disability or ESRD. This was consistent with our hypothesis that gross spending will (initially) increase for beneficiary subpopulations with greater clinical and social risk factors because these beneficiaries received access to care and began to use health care resources to address previously unmet health care needs.

Exhibit J.15. Gross Medicare Spending Impact Estimates by Beneficiary Characteristics for Standard ACOs

| Beneficiary Subgroup | In PY 2023 105 ACOs | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years | | |
|---|-------------------------|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | -0.9 | -109*** (-147, -70) | 3,726,292 | -0.01 | -1 (-27, 25) | 1,911,957 | 0.8 | 101*** (65, 137) |
| Area Deprivation Index | | | | | | | | | |
| ADI score of 1–25 (lowest disadvantage) | 552,549 | -0.6 | -77* (-152, -2) | 1,167,543 | 0.2 | 26 (-24, 76) | 614,994 | 1.0 | 119*** (52, 186) |
| ADI score of 26–50 | 615,998 | -0.7 | -87** (-152, -22) | 1,241,806 | 0.2 | 22 (-23, 66) | 625,808 | 1.1 | 128*** (68, 189) |
| ADI score of 51–75 | 394,667 | -1.1 | -136*** (-214, -57) | 803,467 | -0.1 | -17 (-71, 36) | 408,800 | 0.8 | 97** (23, 171) |
| ADI score of 76–100 (highest disadvantage) | 227,161 | -1.1 | -140** (-243, -36) | 465,557 | -0.2 | -29 (-100, 42) | 238,396 | 0.6 | 77 (-21, 175) |

| Beneficiary Subgroup | In PY 2023 105 ACOs | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years | | |
|---------------------------------|-------------------------|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Chronic Condition Burden | | | | | | | | | |
| Low (0–4 chronic conditions) | 655,472 | 3.5 | 206*** (164, 247) | 1,397,216 | 4.3 | 249*** (221, 277) | 741,744 | 5.0 | 287*** (249, 325) |
| Medium (5–7 chronic conditions) | 596,357 | -0.1 | -6 (-64, 53) | 1,219,901 | 0.7 | 72*** (31, 112) | 623,544 | 1.4 | 146*** (90, 201) |
| High (8+ chronic conditions) | 562,506 | -2.6 | -588*** (-682, -494) | 1,109,175 | -1.7 | -375*** (-441, -310) | 546,669 | -0.7 | -157*** (-249, -65) |
| Disability and/or ESRD | | | | | | | | | |
| No | 1,536,686 | -0.7 | -82*** (-122, -42) | 3,154,565 | 0.1 | 12 (-15, 39) | 1,617,879 | 0.9 | 101*** (65, 138) |
| Yes | 277,649 | -1.5 | -261*** (-384, -138) | 571,727 | -0.3 | -56 (-140, 28) | 294,078 | 0.8 | 138* (22, 254) |
| Dual Eligibility | | | | | | | | | |
| No | 1,544,771 | -0.5 | -58** (-97, -18) | 3,190,629 | 0.4 | 50*** (23, 76) | 1,645,858 | 1.3 | 150*** (114, 187) |
| Yes | 269,564 | -2.1 | -350*** (-476, -223) | 535,663 | -1.2 | -199*** (-286, -112) | 266,099 | -0.3 | -47 (-166, 73) |

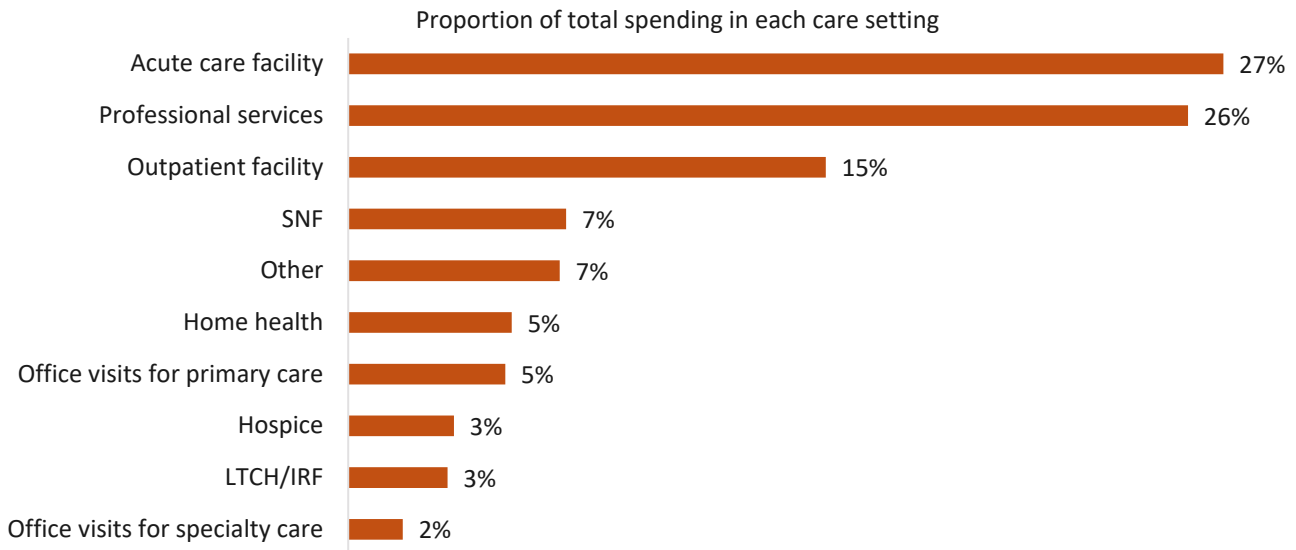
SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Estimated gross spending impact estimate is the DID estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented per beneficiary per year (PBPY) with 90% confidence interval (CI) for all beneficiaries aligned to Standard ACOs (Overall) and subgroups of beneficiaries based on their characteristics. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.8 Setting-Specific Utilization and Spending Impacts for Standard ACOs

Examination of baseline spending categories provides a window into the care settings where Standard ACOs had the largest proportion of spending, suggesting areas where participating providers can have improved care delivery to reduce total spending. The largest proportion of baseline total spending for Standard ACOs occurred in the acute care, professional services, and outpatient settings (**Exhibit J.16**).

Exhibit J.16. Baseline Spending for Standard ACOs Was Concentrated in the Acute Care, Professional Services, and Outpatient Facility Settings



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Contributions of spending categories to total Medicare Parts A and B spending shown for Standard ACOs’ beneficiaries in evaluation’s baseline years. Ambulatory care setting included professional services, outpatient facility, and office visits for primary and specialty care. Post-acute care settings included skilled nursing facility (SNF) and inpatient rehabilitation facility (IRF)/long-term care hospital (LTCH).

J.8.1 Impacts for Ambulatory, Acute Care, and Post-Acute Care Utilization and Spending for Standard ACOs

Exhibit J.17 presents impact results for ambulatory, acute care, and post-acute care utilization and spending outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022, by cohort, for Standard ACOs. Differences in impacts for cohorts may reflect additional years of experience in the model or differences in their ACOs’ organization and markets. Standard ACOs significantly decreased ED utilization, outpatient spending, and acute care utilization in PY 2023 and as of PY 2023, mainly driven by large decreases in the 2021 cohort. In contrast, Standard ACOs significantly increased spending on professional services and specialty care in all time periods, the former of which was primarily driven by the 2021 and 2022 cohorts. The decrease in acute care utilization as of PY 2023 was a change from the significant increase seen as of PY 2022 (which was mainly driven by the 2022 cohort). Acute care spending significantly decreased in PY 2023, driven by the 2021 cohort. However, acute care spending as of PY 2023 showed no significant change, likely due to the significant increase seen as of PY 2022 (driven by the 2022 cohort). No changes were seen for IRF and LTCH utilization and spending in any time period. SNF utilization and spending significantly decreased in PY 2023 and as of PY 2023, driven mainly by decreases in the 2021 cohort.

Exhibit J.17. Ambulatory, Acute Care, and PAC Utilization and Spending Impact Estimates for Standard ACOs, Overall and by Cohort

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--|--|----------|-------------------------------|--|----------|----------------------------|--|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.0 | -4.21*** (-5.68, -2.73) | 3,726,292 | -0.6 | -2.49*** (-3.51, -1.47) | 1,911,957 | -0.2 | -0.86 (-2.26, 0.54) |
| 2021 Cohort | 590,704 | -3.4 | -13.67*** (-15.99, -11.35) | 1,467,621 | -1.7 | -6.56*** (-8.04, -5.09) | 876,917 | -0.5 | -1.78 (-3.70, 0.14) |
| 2022 Cohort | 811,786 | 0.1 | 0.62 (-1.73, 2.97) | 1,846,826 | 0.1 | 0.23 (-1.30, 1.76) | 1,035,040 | -0.02 | -0.08 (-2.09, 1.94) |
| 2023 Cohort | 411,845 | 0.04 | -0.15 (-3.26, 2.95) | 411,845 | 0.04 | -0.15 (-3.26, 2.95) | - | - | - |
| Spending on outpatient facility (↓) | | | | | | | | | |
| Overall | 1,814,335 | -2.2 | -46*** (-57, -35) | 3,726,292 | -1.1 | -22*** (-30, -15) | 1,911,957 | 0.001 | 0.02 (-10, 10) |
| 2021 Cohort | 590,704 | -3.9 | -77*** (-94, -61) | 1,467,621 | -2.4 | -47*** (-57, -36) | 876,917 | -1.4 | -26*** (-39, -13) |
| 2022 Cohort | 811,786 | -0.5 | -11 (-29, 6) | 1,846,826 | 0.3 | 7 (-4, 19) | 1,035,040 | 1.0 | 22** (8, 37) |
| 2023 Cohort | 411,845 | -3.4 | -69*** (-91, -48) | 411,845 | -3.4 | -69*** (-91, -48) | - | - | - |
| Spending on professional services (↓) | | | | | | | | | |
| Overall | 1,814,335 | 0.6 | 21*** (10, 33) | 3,726,292 | 0.8 | 27*** (20, 35) | 1,911,957 | 1.1 | 33*** (23, 43) |
| 2021 Cohort | 590,704 | 0.6 | 22* (1, 43) | 1,467,621 | 0.9 | 30*** (18, 42) | 876,917 | 1.1 | 36*** (21, 50) |
| 2022 Cohort | 811,786 | 1.0 | 31*** (14, 49) | 1,846,826 | 1.0 | 31*** (20, 42) | 1,035,040 | 1.0 | 31*** (16, 45) |
| 2023 Cohort | 411,845 | 0.1 | 2 (-22, 25) | 411,845 | 0.1 | 2 (-22, 25) | - | - | - |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|---|--|----------|-------------------------------|--|----------|-----------------------------|--|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Spending on specialty care office visits (↓) | | | | | | | | | |
| Overall | 1,814,335 | 1.4 | 3*** (2, 3) | 3,726,292 | 1.4 | 3*** (2, 3) | 1,911,957 | 1.4 | 3*** (2, 3) |
| 2021 Cohort | 590,704 | 0.4 | 1* (0, 2) | 1,467,621 | 0.9 | 2*** (1, 2) | 876,917 | 1.1 | 36*** (21, 50) |
| 2022 Cohort | 811,786 | 1.7 | 3*** (3, 4) | 1,846,826 | 1.7 | 3*** (3, 4) | 1,035,040 | 1.6 | 3*** (2, 4) |
| 2023 Cohort | 411,845 | 2.1 | 3*** (2, 4) | 411,845 | 2.1 | 3*** (2, 4) | - | - | - |
| Acute Care | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.7 | -22.93*** (-30.65, -15.20) | 3,726,292 | -0.5 | -6.38* (-11.79, -0.98) | 1,911,957 | 0.7 | 9.32** (1.75, 16.88) |
| 2021 Cohort | 590,704 | -2.3 | -31.26*** (-43.92, -18.60) | 1,467,621 | -0.8 | -11.19** (-19.45, -2.92) | 876,917 | 0.2 | 2.33 (-8.56, 13.23) |
| 2022 Cohort | 811,786 | -1.3 | -17.92** (-29.94, -5.89) | 1,846,826 | 0.1 | 0.66 (-7.24, 8.57) | 1,035,040 | 1.2 | 15.24** (4.74, 25.73) |
| 2023 Cohort | 411,845 | -1.5 | -20.86** (-37.22, -4.50) | 411,845 | -1.5 | -20.86** (-37.22, -4.50) | - | - | - |
| Acute care hospitalizations (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.4 | -2.94*** (-3.87, -2.01) | 3,726,292 | -0.5 | -0.94** (-1.58, -0.30) | 1,911,957 | 0.5 | 0.96* (0.08, 1.83) |
| 2021 Cohort | 590,704 | -2.2 | -4.56*** (-6.10, -3.01) | 1,467,621 | -0.9 | -1.86*** (-2.83, -0.88) | 876,917 | -0.02 | -0.04 (-1.29, 1.21) |
| 2022 Cohort | 811,786 | -1.1 | -2.37*** (-3.82, -0.93) | 1,846,826 | -0.02 | -0.03 (-0.97, 0.90) | 1,035,040 | 0.9 | 1.80** (0.58, 3.02) |
| 2023 Cohort | 411,845 | -0.8 | -1.75 (-3.67, 0.16) | 411,845 | -0.8 | -1.75 (-3.67, 0.16) | - | - | - |
| Spending on acute care setting (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.2 | -40*** (-60, -21) | 3,726,292 | 0.01 | 0.2 (-13, 14) | 1,911,957 | 1.2 | 39*** (20, 58) |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|-------------------------------------|--|----------|----------------------------|--|----------|----------------------------|--|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2021 Cohort | 590,704 | -2.2 | -74*** (-105, -43) | 1,467,621 | -0.8 | -29** (-48, -9) | 876,917 | 0.1 | 2 (-24, 27) |
| 2022 Cohort | 811,786 | -0.5 | -18 (-50, 13) | 1,846,826 | 0.9 | 31** (10, 52) | 1,035,040 | 2.1 | 70*** (43, 97) |
| 2023 Cohort | 411,845 | -1.1 | -35 (-77, 6) | 411,845 | -1.1 | -35 (-77, 6) | - | - | - |
| Post-Acute Care | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | |
| Overall | 1,814,335 | 0.1 | 0.29 (-3.40, 3.99) | 3,726,292 | 0.7 | 1.64 (-0.91, 4.18) | 1,911,957 | 1.4 | 2.91 (-0.59, 6.41) |
| 2021 Cohort | 590,704 | 1.3 | 3.29 (-3.14, 9.72) | 1,467,621 | 0.6 | 1.34 (-2.68, 5.37) | 876,917 | 0.01 | 0.03 (-5.13, 5.19) |
| 2022 Cohort | 811,786 | -0.2 | -0.44 (-6.19, 5.31) | 1,846,826 | 1.4 | 2.81 (-0.87, 6.48) | 1,035,040 | 2.8 | 5.35* (0.58, 10.12) |
| 2023 Cohort | 411,845 | -1.2 | -2.56 (-9.77, 4.65) | 411,845 | -1.2 | -2.56 (-9.77, 4.65) | - | - | - |
| Spending on IRF and LTCH (↓) | | | | | | | | | |
| Overall | 1,814,335 | 0.2 | 1 (-6, 8) | 3,726,292 | 0.8 | 3 (-2, 8) | 1,911,957 | 1.4 | 5 (-1, 12) |
| 2021 Cohort | 590,704 | 2.1 | 10 (-2, 22) | 1,467,621 | 0.8 | 3 (-4, 11) | 876,917 | -0.2 | -1 (-10, 8) |
| 2022 Cohort | 811,786 | -1.1 | -5 (-16, 7) | 1,846,826 | 1.0 | 4 (-3, 11) | 1,035,040 | 3.0 | 11** (2, 20) |
| 2023 Cohort | 411,845 | -0.2 | -1 (-17, 15) | 411,845 | -0.2 | -1 (-17, 15) | - | - | - |
| SNF days (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.1 | -16.73* (-31.27, -2.19) | 3,726,292 | -0.7 | -10.27* (-20.48, -0.07) | 1,911,957 | -0.3 | -4.15 (-18.47, 10.18) |
| 2021 Cohort | 590,704 | -1.6 | -23.70* (-46.64, -0.77) | 1,467,621 | -1.1 | -16.31* (-31.38, -1.23) | 876,917 | -0.7 | -11.32 (-31.27, 8.63) |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|----------------------------|--|----------|--------------------------|--|----------|--------------------------|--|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2022 Cohort | 811,786 | -1.3 | -20.63 (-43.70, 2.44) | 1,846,826 | -0.5 | -7.98 (-23.25, 7.28) | 1,035,040 | 0.1 | 1.94 (-18.43, 22.30) |
| 2023 Cohort | 411,845 | 0.1 | 0.97 (-29.91, 31.85) | 411,845 | 0.1 | 0.97 (-29.91, 31.85) | - | - | - |
| Spending on SNF (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.1 | -10* (-19, -2) | 3,726,292 | -0.7 | -6* (-13, 0) | 1,911,957 | -0.3 | -3 (-11, 6) |
| 2021 Cohort | 590,704 | -1.9 | -15** (-28, -3) | 1,467,621 | -1.5 | -13** (-21, -5) | 876,917 | -1.2 | -11* (-23, 0) |
| 2022 Cohort | 811,786 | -1.0 | -10 (-24, 4) | 1,846,826 | -0.2 | -2 (-11, 7) | 1,035,040 | 0.4 | 4 (-8, 17) |
| 2023 Cohort | 411,845 | -0.4 | -4 (-23, 15) | 411,845 | -0.4 | -4 (-23, 15) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility; IRF=Inpatient Rehabilitation Facility; LTCH=Long-Term Care Hospital; LOS=length of stay. Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Spending estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. The professional services spending measure includes all physician, non-physician, and ancillary services (for example, tests, imaging, ambulance services, Part B drugs administered in physician offices). The specialty care visits spending measure includes paid E&M services for specialty care practitioners. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.8.2 Impacts for Hospice and Home Health Utilization and Spending for Standard ACOs

Exhibit J.18 presents impact results for hospice and home health utilization and spending outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022, by cohort, for Standard ACOs. As shown in the exhibit, continuous hospice days prior to death decreased significantly for Standard ACOs as of PY 2023 and as of PY 2022, mainly driven by the 2022 cohort. Hospice spending significantly decreased in PY 2023 alongside decreases in total hospice days, both driven by decreases in the 2021 and 2022 cohorts. Standard ACOs also had significant reductions in home health episodes and spending in all time periods, primarily driven by decreases in the 2021 and 2022 cohorts.

Exhibit J.18. Hospice and Home Health Utilization and Spending Impact Estimates for Standard ACOs, Overall and by Cohort

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--|--|----------|----------------------------|--|----------|----------------------------|--|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Hospice | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | |
| Overall | 61,900 | -1.2 | -0.31 (-0.72, 0.11) | 131,200 | -2.5 | -0.61*** (-0.90, -0.33) | 69,300 | -3.7 | -0.89*** (-1.28, -0.50) |
| 2021 Cohort | 20,110 | -0.9 | -0.22 (-0.90, 0.47) | 51,063 | -1.3 | -0.30 (-0.73, 0.13) | 30,953 | -1.5 | -0.36 (-0.90, 0.19) |
| 2022 Cohort | 27,263 | -3.6 | -0.93** (-1.60, -0.27) | 65,610 | -4.6 | -1.16*** (-1.58, -0.74) | 38,347 | -5.3 | -1.32*** (-1.87, -0.77) |
| 2023 Cohort | 14,527 | 3.1 | 0.75 (-0.07, 1.56) | 14,527 | 3.1 | 0.75 (-0.07, 1.56) | - | - | - |
| Total hospice days (↑) or (↓) | | | | | | | | | |
| Overall | 1,814,335 | -2.5 | -0.07*** (-0.10, -0.03) | 3,726,292 | -0.9 | -0.02 (-0.05, 0.00) | 1,911,957 | 0.7 | 0.02 (-0.02, 0.05) |
| 2021 Cohort | 590,704 | -4.8 | -0.13*** (-0.19, -0.07) | 1,467,621 | -0.6 | -0.01 (-0.05, 0.02) | 876,917 | 2.6 | 0.06** (0.01, 0.11) |
| 2022 Cohort | 811,786 | -2.7 | -0.07** (-0.13, -0.01) | 1,846,826 | -1.7 | -0.04* (-0.08, -0.01) | 1,035,040 | -0.9 | -0.02 (-0.07, 0.03) |
| 2023 Cohort | 411,845 | 1.2 | 0.03 (-0.04, 0.11) | 411,845 | 1.2 | 0.03 (-0.04, 0.11) | - | - | - |
| Spending on hospice (↑) or (↓) | | | | | | | | | |
| Overall | 1,814,335 | -2.5 | -12*** (-17, -6) | 3,726,292 | -0.4 | -2 (-6, 2) | 1,911,957 | 1.9 | 8** (3, 13) |
| 2021 Cohort | 590,704 | -3.8 | -17*** (-27, -8) | 1,467,621 | 0.01 | 0.05 (-6, 6) | 876,917 | 2.9 | 12*** (5, 19) |
| 2022 Cohort | 811,786 | -2.8 | -13** (-22, -4) | 1,846,826 | -0.7 | -3 (-9, 3) | 1,035,040 | 1.1 | 5 (-3, 12) |
| 2023 Cohort | 411,845 | -0.3 | -1 (-13, 10) | 411,845 | -0.3 | -1 (-13, 10) | - | - | - |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|---|--|----------|-----------------------------|--|----------|----------------------------|--|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Home Health | | | | | | | | | |
| Home health episodes (↑) or (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.7 | -5.65*** (-7.47, -3.82) | 3,726,292 | -1.4 | -4.49*** (-5.75, -3.22) | 1,911,957 | -1.1 | -3.38*** (-5.15, -1.62) |
| 2021 Cohort | 590,704 | -2.2 | -7.25*** (-10.26, -4.25) | 1,467,621 | -1.7 | -5.58*** (-7.48, -3.69) | 876,917 | -1.4 | -4.46*** (-6.89, -2.03) |
| 2022 Cohort | 811,786 | -1.5 | -5.01*** (-7.96, -2.05) | 1,846,826 | -1.1 | -3.59*** (-5.51, -1.67) | 1,035,040 | -0.8 | -2.47 (-4.99, 0.05) |
| 2023 Cohort | 411,845 | -1.6 | -4.61** (-8.08, -1.14) | 411,845 | -1.6 | -4.61** (-8.08, -1.14) | - | - | - |
| Spending on home health (↑) or (↓) | | | | | | | | | |
| Overall | 1,814,335 | -1.7 | -10*** (-14, -7) | 3,726,292 | -1.4 | -8*** (-11, -6) | 1,911,957 | -1.1 | -7*** (-10, -4) |
| 2021 Cohort | 590,704 | -1.8 | -11*** (-16, -6) | 1,467,621 | -1.7 | -10*** (-14, -7) | 876,917 | -1.7 | -10*** (-14, -5) |
| 2022 Cohort | 811,786 | -1.9 | -12*** (-17, -6) | 1,846,826 | -1.2 | -8*** (-11, -4) | 1,035,040 | -0.7 | -4 (-9, 0) |
| 2023 Cohort | 411,845 | -1.1 | -6 (-12, 1) | 411,845 | -1.1 | -6 (-12, 1) | - | - | - |

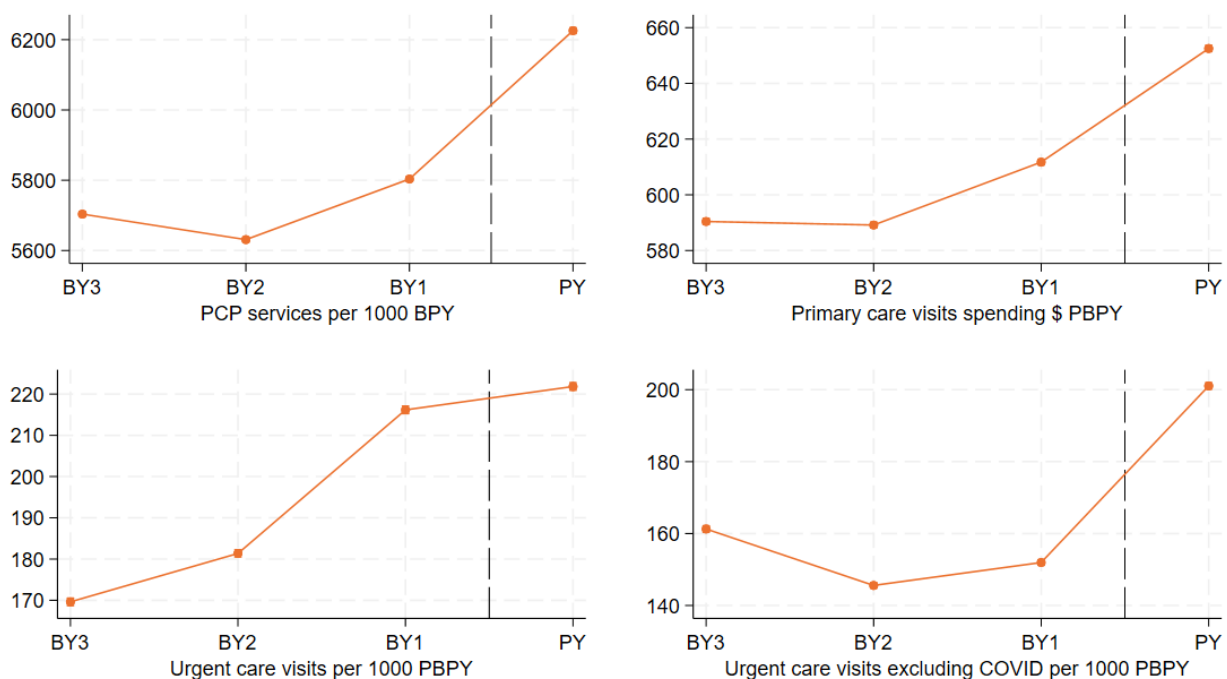
SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility; IRF=Inpatient Rehabilitation Facility; LTCH=Long-Term Care Hospital; LOS=length of stay. Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Spending estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.8.3 Descriptive Trends for Secondary Utilization Measures

Exhibit J.19 presents trends over time for Standard ACOs in PY 2023 for the following measures not included in the impact analyses: primary care practitioner services (PCP services), Medicare spending for primary care visits, and urgent care visits (with and without COVID-19). See [Appendix I.3.2](#) for an explanation of why these measures were not included in the impact estimation. We show unadjusted trends for these measures for beneficiaries in the Standard ACO group from baseline to performance years in PY 2023. Compared to the baseline years, these four secondary measures increased among Standard ACO beneficiaries in PY 2023, suggesting greater overall emphasis on primary care.

Exhibit J.19. Trends over Time in Secondary Utilization and Spending Outcomes from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: PBY=beneficiary per year; PY=performance year; BY=baseline year; PCP=primary care practitioner. BYs (with BY3 being the earliest and BY1 the most recent) represent calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

J.9 Utilization Impacts by ACO Subgroups and Beneficiary Subgroups for Standard ACOs

J.9.1 Utilization Impacts for Standard ACOs by ACO Organizational Structure

Exhibit J.20 shows impact estimates for setting-specific utilization outcomes by ACO organizational structure for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. We hypothesized that individual or medical group practice ACOs may have had greater capacity to reduce utilization and associated spending in ED and acute care settings compared with IDS/hospital system ACOs. The greatest decreases in ED visits were seen in medical group practices. Both acute care length of stay and hospitalizations significantly decreased in networks of individual practices as of PY 2023 but increased in IDS/hospital systems as of PY 2022. IRF and LTCH utilization significantly increased in IDS/hospital systems in both time periods. Significant decreases in continuous hospice days prior to death were seen in IDS/hospital systems and medical group practices. Finally, the largest decreases in home health episodes were seen in networks of individual practices, followed by medical group practices.

Exhibit J.20. Utilization Impact Estimates by ACO Organizational Structure for Standard ACOs

| ACO Subgroup | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|----------------------------|-------------|-------------------------------|--|----------------------------|-------------|-----------------------------|--------------------------------------|----------------------------|-------------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | | | | |
| Integrated Delivery/ Hospital System | 25 | 560,381 | 0.7 | 2.96 (-0.06, 5.98) | 53 | 1,487,841 | 0.5 | 2.16** (0.42, 3.91) | 28 | 927,460 | 0.4 | 1.68 (-0.45, 3.81) |
| Medical Group Practice | 19 | 317,357 | -3.2 | -12.51*** (-15.74, -9.29-) | 55 | 724,813 | -2.3 | -9.05*** (-11.21, -6.89) | 36 | 407,456 | -1.6 | -6.35*** (-9.25, -3.45) |
| Network of Individual Practices | 61 | 936,597 | -1.4 | -5.69*** (-7.61, -3.76) | 104 | 1,513,638 | -1.0 | -3.92*** (-5.42, -2.42) | 43 | 577,041 | -0.3 | -1.06 (-3.44, 1.32) |
| Acute Care | | | | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | | | | |
| Integrated Delivery/ Hospital System | 25 | 560,381 | -1.6 | -20.25** (-34.77, -5.72) | 53 | 1,487,841 | 0.5 | 6.67 (-2.09, 15.43) | 28 | 927,460 | 1.8 | 22.93*** (11.95, 33.91) |
| Medical Group Practice | 19 | 317,357 | -0.4 | -5.73 (-23.38, 11.93) | 55 | 724,813 | -0.2 | -1.99 (-13.66, 9.69) | 36 | 407,456 | 0.1 | 0.93 (-14.64, 16.49) |

| ACO Subgroup | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|----------------------------|-------------|-------------------------------|--|----------------------------|----------|-------------------------------|--------------------------------------|----------------------------|-------------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Network of Individual Practices | 61 | 936,597 | -2.1 | -30.36*** (-40.98, -19.74) | 104 | 1,513,638 | -1.5 | -21.32*** (-29.78, -12.85) | 43 | 577,041 | -0.5 | -6.64 (-20.65, 7.38) |
| Acute care hospitalizations (↓) | | | | | | | | | | | | |
| Integrated Delivery/ Hospital System | 25 | 560,381 | -0.9 | -1.88* (-3.66, -0.09) | 53 | 1,487,841 | 0.5 | 0.97 (-0.08, 2.01) | 28 | 927,460 | 1.4 | 2.69*** (1.40, 3.97) |
| Medical Group Practice | 19 | 317,357 | -0.7 | -1.39 (-3.54, 0.75) | 55 | 724,813 | -0.5 | -1.07 (-2.47, 0.32) | 36 | 407,456 | -0.4 | -0.83 (-2.66, 1.01) |
| Network of Individual Practices | 61 | 936,597 | -1.9 | -4.11*** (-5.36, -2.85) | 104 | 1,513,638 | -1.3 | -2.75*** (-3.73, -1.77) | 43 | 577,041 | -0.3 | -0.56 (-2.14, 1.02) |
| Post-Acute Care | | | | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | | | | |
| Integrated Delivery/ Hospital System | 25 | 560,381 | 2.9 | 6.92 (-0.45, 14.28) | 53 | 1,487,841 | 3.6 | 7.48*** (3.30, 11.67) | 28 | 927,460 | 4.1 | 7.83** (2.80, 12.86) |
| Medical Group Practice | 19 | 317,357 | -2.9 | -5.67 (-13.53, 2.19) | 55 | 724,813 | -1.0 | -1.98 (-7.24, 3.27) | 36 | 407,456 | 0.5 | 0.89 (-6.18, 7.96) |
| Network of Individual Practices | 61 | 936,597 | -0.7 | -1.65 (-6.63, 3.34) | 104 | 1,513,638 | -1.0 | -2.38 (-6.37, 1.62) | 43 | 577,041 | -1.4 | -3.56 (-10.23, 3.10) |
| SNF days (↓) | | | | | | | | | | | | |
| Integrated Delivery/ Hospital System | 25 | 560,381 | -2.0 | -28.24* (-55.26, -1.23) | 53 | 1,487,841 | -0.4 | -6.82 (-23.37, 9.72) | 28 | 927,460 | 0.4 | 6.12 (-14.81, 27.05) |
| Medical Group Practice | 19 | 317,357 | -0.2 | -2.17 (-34.26, 29.93) | 55 | 724,813 | -0.5 | -7.76 (-29.41, 13.90) | 36 | 407,456 | -0.8 | -12.11 (-41.41, 17.19) |
| Network of Individual Practices | 61 | 936,597 | -0.9 | -14.77 (-35.12, 5.57) | 104 | 1,513,638 | -0.9 | -14.87 (-30.97, 1.23) | 43 | 577,041 | -0.9 | -15.02 (-41.34, 11.31) |
| Hospice | | | | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | | | | |
| Integrated Delivery/ | 25 | 19,294 | -2.0 | -0.57 (-1.43, 0.28) | 53 | 53,770 | -3.6 | -0.96*** (-1.44, -0.48) | 28 | 34,476 | -4.7 | -1.18*** (-1.75, -0.61) |

| ACO Subgroup | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|----------------------------|-------------|-----------------------------|--|----------------------------|-------------|-----------------------------|--------------------------------------|----------------------------|-------------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Hospital System | | | | | | | | | | | | |
| Medical Group Practice | 19 | 10,041 | -0.9 | -0.23 (-1.23, 0.77) | 55 | 23,762 | -2.8 | -0.69* (-1.35, -0.04) | 36 | 13,721 | -4.1 | -1.03* (-1.90, -0.16) |
| Network of Individual Practices | 61 | 32,565 | -0.8 | -0.17 (-0.69, 0.34) | 104 | 53,668 | -1.0 | -0.23 (-0.64, 0.18) | 43 | 21,103 | -1.4 | -0.33 (-1.00, 0.35) |
| Total hospice days (↑) or (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 560,381 | -1.6 | -0.05 (-0.12, 0.03) | 53 | 1,487,841 | -0.4 | -0.01 (-0.05, 0.03) | 28 | 927,460 | 0.5 | 0.01 (-0.04, 0.06) |
| Medical Group Practice | 19 | 317,357 | -4.0 | -0.09* (-0.17, -0.01) | 55 | 724,813 | -0.9 | -0.02 (-0.08, 0.03) | 36 | 407,456 | 1.5 | 0.03 (-0.04, 0.11) |
| Network of Individual Practices | 61 | 936,597 | -2.7 | -0.07** (-0.11, -0.02) | 104 | 1,513,638 | -1.5 | -0.04 (-0.07, 0.00) | 43 | 577,041 | 0.5 | 0.01 (-0.05, 0.07) |
| Home Health | | | | | | | | | | | | |
| Home health episodes (↑) or (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 560,381 | -0.4 | -1.12 (-4.81, 2.57) | 53 | 1,487,841 | -0.2 | -0.63 (-2.74, 1.47) | 28 | 927,460 | -0.1 | -0.34 (-2.88, 2.20) |
| Medical Group Practice | 19 | 317,357 | -0.9 | -2.57 (-6.38, 1.24) | 55 | 724,813 | -1.1 | -3.53** (-6.16, -0.89) | 36 | 407,456 | -1.3 | -4.27* (-7.90, -0.65) |
| Network of Individual Practices | 61 | 936,597 | -2.8 | -9.40*** (-11.84, -6.96) | 104 | 1,513,638 | -2.5 | -8.73*** (-10.70, -6.77) | 43 | 577,041 | -2.1 | -7.65*** (-10.96, -4.34) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility; IRF=Inpatient Rehabilitation Facility; LTCH=Long-Term Care Hospital; LOS=length of stay. Impacts on utilization outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their organizational structure. Utilization estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.9.2 Utilization Impacts for Standard ACOs by ACO Lead Organization

Exhibit J.21 shows impact estimates for utilization outcomes by ACO lead organization type for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Decreases in ED visits were seen for all lead organizations except for health systems overall as of PY 2023 and in PY 2023. Acute care hospitalizations decreased for various lead organizations across time periods. There were decreases in continuous hospice days prior to death for physician practices and primary care companies overall as of PY 2023, but not in PY 2023. For total hospice days, decreases were seen for physician practices and primary care companies as of PY 2023 and in PY 2023, but not as of PY 2022. As of PY 2022, there were decreases in IRF and LTCH days for physician practices and increases in IRF and LTCH days for health systems. The pattern was similar, although less consistent as of PY 2023. There were decreases seen in SNF days for primary care companies and physician practices across time periods.

Exhibit J.21. Utilization Impact Estimates by ACO Lead Organization Type for Standard ACOs

| | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|-------------------------|----------|-------------------------------|--|-------------------------|----------|------------------------------|-----------------------------------|-------------------------|----------|-----------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | 0.5 | 2.10 (-1.25, 5.44) | 48 | 1,193,876 | 0.4 | 1.76 (-0.28, 3.81) | 25 | 709,671 | 0.4 | 1.54 (-1.04, 4.11) |
| Insurer | 16 | 371,978 | -1.2 | -4.71** (-7.75, -1.67) | 32 | 788,571 | -0.7 | -2.58** (-4.61, -0.55) | 16 | 416,593 | -0.2 | -0.67 (-3.39, 2.04) |
| MSO | 35 | 478,923 | -0.7 | -2.94* (-5.67, -0.20) | 67 | 883,017 | -0.5 | -2.15* (-4.13, -0.17) | 32 | 404,094 | -0.3 | -1.22 (-4.09, 1.66) |
| Physician Practice | 19 | 306,557 | -2.5 | -9.43*** (-12.70, -6.17) | 34 | 495,621 | -1.7 | -6.40*** (-8.96, -3.84) | 15 | 189,064 | -0.4 | -1.48 (-5.60, 2.64) |
| Primary Care Company | 12 | 172,672 | -3.8 | -15.05*** (-19.31, -10.79) | 31 | 365,207 | -3.0 | -11.72*** (-14.65, -8.79) | 19 | 192,535 | -2.3 | -8.73*** (-12.77, -4.69) |
| Acute Care | | | | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -1.9 | -24.54** (-40.21, -8.88) | 48 | 1,193,876 | 0.2 | 2.42 (-7.40, 12.24) | 25 | 709,671 | 1.7 | 20.81*** (8.22, 33.41) |
| Insurer | 16 | 371,978 | -0.8 | -12.04 (-29.15, 5.07) | 32 | 788,571 | 0.1 | 1.89 (-10.03, 13.81) | 16 | 16,593 | 1.0 | 14.33 (-2.28, 30.93) |
| MSO | 35 | 478,923 | -1.4 | -18.96** (-33.47, -4.46) | 67 | 883,017 | -0.7 | -9.33 (-20.12, 1.46) | 32 | 404,094 | 0.2 | 2.09 (-14.04, 18.23) |

| | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|-------------------------|----------|-------------------------------|--|-------------------------|----------|-------------------------------|-----------------------------------|-------------------------|----------|------------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Physician Practice | 19 | 306,557 | -1.2 | -16.36 (-35.03, 2.31) | 34 | 495,621 | -0.5 | -6.36 (-20.87, 8.15) | 15 | 189,064 | 0.7 | 9.85 (-13.17, 32.87) |
| Primary Care Company | 12 | 172,672 | -4.5 | -64.51*** (-88.73, -40.28) | 31 | 365,207 | -3.2 | -45.92*** (-62.70, -29.14) | 19 | 192,535 | -2.0 | -29.25** (-52.50, -5.99) |
| Acute care hospitalizations (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -1.3 | -2.58** (-4.51, -0.64) | 48 | 1,193,876 | 0.2 | 0.43 (-0.75, 1.61) | 25 | 709,671 | 1.3 | 2.48*** (1.00, 3.96) |
| Insurer | 16 | 371,978 | -0.7 | -1.48 (-3.47, 0.52) | 32 | 788,571 | 0.2 | 0.43 (-0.93, 1.79) | 16 | 16,593 | 1.0 | 2.14* (0.28, 4.00) |
| MSO | 35 | 478,923 | -1.4 | -2.97*** (-4.70, -1.24) | 67 | 883,017 | -0.8 | -1.69** (-2.96, -0.42) | 32 | 404,094 | -0.1 | -0.17 (-2.04, 1.70) |
| Physician Practice | 19 | 306,557 | -0.6 | -1.26 (-3.51, 1.00) | 34 | 495,621 | -0.3 | -0.56 (-2.28, 1.17) | 15 | 189,064 | 0.3 | 0.57 (-2.09, 3.24) |
| Primary Care Company | 12 | 172,672 | -4.6 | -10.06*** (-12.94, -7.19) | 31 | 365,207 | -3.3 | -7.11*** (-9.08, -5.15) | 19 | 192,535 | -2.1 | -4.47*** (-7.17, -1.78) |
| Post-Acute Care | | | | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | 2.2 | 4.89 (-3.03, 12.81) | 48 | 1,193,876 | 3.8 | 7.80*** (3.00, 12.60) | 25 | 709,671 | 5.1 | 9.79*** (3.79, 15.79) |
| Insurer | 16 | 371,978 | 0.4 | 0.80 (-6.72, 8.31) | 32 | 788,571 | 0.6 | 1.30 (-3.79, 6.40) | 16 | 16,593 | 0.9 | 1.75 (-5.17, 8.67) |
| MSO | 35 | 478,923 | 4.5 | 10.44** (3.58, 17.30) | 67 | 883,017 | 3.9 | 8.75*** (3.64, 13.85) | 32 | 404,094 | 3.1 | 6.74 (-0.90, 14.38) |
| Physician Practice | 19 | 306,557 | -8.7 | -19.44*** (-28.04, -10.85) | 34 | 495,621 | -8.4 | -17.95*** (-24.47, -11.42) | 15 | 189,064 | -7.7 | -15.52*** (-25.42, -5.62) |
| Primary Care Company | 12 | 172,672 | -2.3 | -6.77 (-19.42, 5.87) | 31 | 365,207 | -2.8 | -8.41 (-17.14, 0.31) | 19 | 192,535 | -3.3 | -9.89 (-21.94, 2.17) |
| SNF days (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -2.0 | -28.16 (-56.85, 0.53) | 48 | 1,193,876 | -0.6 | -8.47 (-26.62, 9.69) | 25 | 709,671 | 0.3 | 4.97 (-18.46, 28.41) |
| Insurer | 16 | 371,978 | -1.0 | -17.95 (-51.22, 15.32) | 32 | 788,571 | 0.1 | 1.22 (-22.34, 24.77) | 16 | 16,593 | 0.9 | 18.33 (-14.93, 51.59) |
| MSO | 35 | 478,923 | 1.3 | 19.27 (-8.15, 46.69) | 67 | 883,017 | 0.7 | 10.66 (-9.96, 31.29) | 32 | 404,094 | 0.03 | 0.46 (-30.77, 31.69) |

| | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|-------------------------|----------|----------------------------|--|-------------------------|----------|-------------------------------|-----------------------------------|-------------------------|----------|--------------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Physician Practice | 19 | 306,557 | -2.5 | -39.92* (-75.91, -3.92) | 34 | 495,621 | -1.9 | -29.81* (-57.12, -2.49) | 15 | 189,064 | -0.9 | -13.41 (-54.90, 28.07) |
| Primary Care Company | 12 | 172,672 | -2.7 | -40.72 (-83.95, 2.51) | 31 | 365,207 | -4.2 | -65.09*** (-94.65, -35.54) | 19 | 192,535 | -5.5 | -86.96*** (-127.46, -46.46) |
| Hospice | | | | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | | | | |
| Health System | 23 | 16,339 | -2.5 | -0.73 (-1.69, 0.23) | 48 | 42,354 | -3.9 | -1.08*** (-1.65, -0.51) | 25 | 26,015 | -4.8 | -1.29*** (-2.00, -0.59) |
| Insurer | 16 | 13,029 | 4.7 | 0.97** (0.20, 1.74) | 32 | 28,387 | 0.5 | 0.10 (-0.41, 0.61) | 16 | 15,358 | -3.2 | -0.63 (-1.32, 0.05) |
| MSO | 35 | 17,080 | -2.2 | -0.56 (-1.31, 0.19) | 67 | 31,644 | -1.2 | -0.29 (-0.85, 0.28) | 32 | 14,564 | 0.2 | 0.04 (-0.81, 0.89) |
| Physician Practice | 19 | 10,021 | -2.3 | -0.57 (-1.55, 0.42) | 34 | 16,618 | -3.4 | -0.86* (-1.66, -0.07) | 15 | 6,597 | -5.0 | -1.31 (-2.63, 0.01) |
| Primary Care Company | 12 | 5,431 | -3.3 | -0.79 (-2.07, 0.49) | 31 | 12,197 | -5.0 | -1.19** (-2.05, -0.33) | 19 | 6,766 | -6.3 | -1.51** (-2.66, -0.36) |
| Total hospice days (↑) or (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -1.5 | -0.04 (-0.12, 0.04) | 48 | 1,193,876 | -0.9 | -0.02 (-0.07, 0.02) | 25 | 709,671 | -0.4 | -0.01 (-0.07, 0.05) |
| Insurer | 16 | 371,978 | 0.1 | 0.00 (-0.06, 0.07) | 32 | 788,571 | 2.0 | 0.04 (0.00, 0.09) | 16 | 16,593 | 3.8 | 0.08** (0.02, 0.14) |
| MSO | 35 | 478,923 | -1.0 | -0.03 (-0.10, 0.04) | 67 | 883,017 | 0.04 | 0.00 (-0.05, 0.05) | 32 | 404,094 | 1.4 | 0.04 (-0.04, 0.11) |
| Physician Practice | 19 | 306,557 | -5.6 | -0.14** (-0.22, -0.05) | 34 | 495,621 | -3.7 | -0.09** (-0.16, -0.02) | 15 | 189,064 | -0.7 | -0.02 (-0.13, 0.09) |
| Primary Care Company | 12 | 172,672 | -9.9 | -0.25*** (-0.36, -0.14) | 31 | 365,207 | -5.1 | -0.13*** (-0.20, -0.05) | 19 | 192,535 | -0.6 | -0.01 (-0.12, 0.09) |
| Home Health | | | | | | | | | | | | |
| Home health episodes (↑) or (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -1.2 | -3.84 (-7.90, 0.22) | 48 | 1,193,876 | -1.0 | -2.82* (-5.27, -0.37) | 25 | 709,671 | -0.7 | -2.12 (-5.18, 0.93) |
| Insurer | 16 | 371,978 | -1.3 | -4.26* (-7.92, -0.60) | 32 | 788,571 | -0.7 | -2.20 (-4.69, 0.30) | 16 | 16,593 | -0.1 | -0.35 (-3.77, 3.06) |
| MSO | 35 | 478,923 | -1.7 | -5.65** (-9.09, -2.22) | 67 | 883,017 | -1.7 | -5.96*** (-8.54, -3.37) | 32 | 404,094 | -1.8 | -6.32*** (-10.23, -2.40) |

| | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|----------------------|---------------------------|-------------------------|----------|-------------------------------|--|-------------------------|----------|-------------------------------|-----------------------------------|-------------------------|----------|-------------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Physician Practice | 19 | 306,557 | -1.3 | -4.14* (-8.16, -0.12) | 34 | 495,621 | -0.4 | -1.07 (-4.26, 2.13) | 15 | 189,064 | 1.3 | 3.92 (-1.33, 9.17) |
| Primary Care Company | 12 | 172,672 | -4.5 | -16.35*** (-22.16, -10.55) | 31 | 365,207 | -4.3 | -15.96*** (-19.99, -11.93) | 19 | 192,535 | -4.1 | -15.61*** (-21.21, -10.00) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility; IRF=Inpatient Rehabilitation Facility; LTCH=Long-Term Care Hospital; LOS=length of stay. Impacts on utilization outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their lead organization type. Utilization estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.9.3 Utilization Impacts for Standard ACOs by ACO Functional Role

Exhibit J.22 shows impact estimates for utilization outcomes by ACO functional role for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Decreases in acute care lengths of stay and ED visits were seen across functional roles as of PY 2023 and in PY 2023, but there were mixed or no differences between functional roles as of PY 2022. Direct Care Providers and Enablers had decreases in acute care hospitalizations as of PY 2023 and in PY 2023, but there were some increases for these two functional roles as of PY 2022. Decreases in SNF days were seen for Direct Care Providers as of PY 2023 and in PY 2023, but no differences were seen between functional roles as of PY 2022. Direct Care Providers and Enablers also had decreases in home health episodes across time periods.

Exhibit J.22. Utilization Impact Estimates by ACO Functional Role for Standard ACOs

| ACO Subgroup | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|----------------------------|----------|-------------------------------|--|----------------------------|----------|-----------------------------|-----------------------------------|----------------------------|----------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | -3.2 | -11.69*** (-16.83, -6.55) | 23 | 333,597 | -1.5 | -6.05*** (-9.31, -2.80) | 15 | 213,701 | -0.7 | -2.89 (-7.08, 1.30) |
| Direct Care Provider | 41 | 821,362 | -0.8 | -3.59** (-5.92, -1.25) | 87 | 1,684,380 | -0.5 | -2.03** (-3.64, -0.42) | 46 | 863,018 | -0.1 | -0.55 (-2.78, 1.68) |
| Enabler | 56 | 873,077 | -0.9 | -3.77*** (-5.79, -1.75) | 102 | 1,708,315 | -0.6 | -2.25*** (-3.66, -0.84) | 46 | 835,238 | -0.2 | -0.66 (-2.62, 1.30) |
| Acute Care | | | | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | -2.3 | -32.31* (-63.29, -1.34) | 23 | 333,597 | -0.9 | -11.56 (-29.28, 6.17) | 15 | 213,701 | 0.01 | 0.09 (-21.44, 21.61) |
| Direct Care Provider | 41 | 821,362 | -1.8 | -23.05*** (-34.72, -11.37) | 87 | 1,684,380 | -0.6 | -7.05 (-15.13, 1.03) | 46 | 863,018 | 0.7 | 8.17 (-3.03, 19.38) |
| Enabler | 56 | 873,077 | -1.5 | -21.53*** (-32.45, -10.61) | 102 | 1,708,315 | -0.3 | -4.71 (-12.69, 3.26) | 46 | 835,238 | 0.9 | 12.86* (1.21, 24.51) |
| Acute care hospitalizations (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | -1.0 | -1.98 (-5.43, 1.48) | 23 | 333,597 | 0.3 | 0.61 (-1.43, 2.65) | 15 | 213,701 | 1.1 | 2.07 (-0.46, 4.59) |
| Direct Care Provider | 41 | 821,362 | -1.3 | -2.77*** (-4.21, -1.33) | 87 | 1,684,380 | -0.6 | -1.19** (-2.17, -0.21) | 46 | 863,018 | 0.2 | 0.32 (-1.02, 1.65) |
| Enabler | 56 | 873,077 | -1.5 | -3.24*** (-4.53, -1.95) | 102 | 1,708,315 | -0.5 | -1.00* (-1.92, -0.08) | 46 | 835,238 | 0.6 | 1.34* (0.03, 2.64) |
| Post-Acute Care | | | | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | 7.7 | 12.35 (-0.55, 25.25) | 23 | 333,597 | 3.6 | 6.55 (-1.17, 14.28) | 15 | 213,701 | 1.7 | 3.30 (-6.34, 12.95) |
| Direct Care Provider | 41 | 821,362 | -1.0 | -2.46 (-8.38, 3.46) | 87 | 1,684,380 | -0.02 | -0.04 (-4.08, 4.00) | 46 | 863,018 | 1.0 | 2.26 (-3.27, 7.79) |
| Enabler | 56 | 873,077 | 0.5 | 1.23 (-3.76, 6.22) | 102 | 1,708,315 | 1.1 | 2.33 (-1.22, 5.88) | 46 | 835,238 | 1.7 | 3.48 (-1.57, 8.53) |
| SNF days (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | -1.8 | -31.54 (-91.95, 28.87) | 23 | 333,597 | 0.2 | 3.38 (-31.79, 38.56) | 15 | 213,701 | 1.4 | 22.98 (-20.22, 66.17) |

| ACO Subgroup | In PY 2023 (ACO REACH) | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|---------------------------|----------------------------|----------|-----------------------------|--|----------------------------|-------------|------------------------------|-----------------------------------|----------------------------|-------------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Direct Care Provider | 41 | 821,362 | -2.0 | -28.42** (-50.14, -6.71) | 87 | 1,684,380 | -1.6 | -23.55*** (-38.57, -8.54) | 46 | 863,018 | -1.3 | -18.92 (-39.70, 1.86) |
| Enabler | 56 | 873,077 | -0.2 | -3.69 (-24.36, 16.97) | 102 | 1,708,315 | 0.01 | 0.16 (-14.98, 15.29) | 46 | 835,238 | 0.2 | 4.18 (-18.01, 26.37) |
| Hospice | | | | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | | | | |
| Convener | 8 | 4,064 | 13.8 | 2.63*** (1.19, 4.07) | 23 | 12,462 | 0.9 | 0.20 (-0.66, 1.05) | 15 | 8,398 | -4.3 | -0.98 (-2.04, 0.08) |
| Direct Care Provider | 41 | 26,622 | -3.6 | -1.00** (-1.69, -0.30) | 87 | 56,498 | -3.8 | -1.05*** (-1.52, -0.57) | 46 | 29,876 | -4.0 | -1.09*** (-1.75, -0.44) |
| Enabler | 56 | 31,214 | -0.4 | -0.10 (-0.63, 0.43) | 102 | 62,240 | -1.7 | -0.38* (-0.76, -0.01) | 46 | 31,026 | -3.1 | -0.67** (-1.20, -0.14) |
| Total hospice days (↑) or (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | 7.8 | 0.16** (0.03, 0.28) | 23 | 333,597 | 0.8 | 0.02 (-0.06, 0.09) | 15 | 213,701 | -2.6 | -0.06 (-0.15, 0.03) |
| Direct Care Provider | 41 | 821,362 | -4.6 | -0.13*** (-0.18, -0.07) | 87 | 1,684,380 | -2.3 | -0.06** (-0.10, -0.02) | 46 | 863,018 | 0.02 | 0.00 (-0.05, 0.05) |
| Enabler | 56 | 873,077 | -1.5 | -0.04 (-0.09, 0.01) | 102 | 1,708,315 | 0.3 | 0.01 (-0.03, 0.04) | 46 | 835,238 | 2.4 | 0.05* (0.01, 0.10) |
| Home Health | | | | | | | | | | | | |
| Home health episodes (↑) or (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | 0.5 | 1.56 (-4.84, 7.96) | 23 | 333,597 | 0.3 | 0.88 (-2.78, 4.54) | 15 | 213,701 | 0.2 | 0.50 (-3.94, 4.93) |
| Direct Care Provider | 41 | 821,362 | -1.1 | -3.55** (-6.45, -0.66) | 87 | 1,684,380 | -0.9 | -2.94** (-4.95, -0.92) | 46 | 863,018 | -0.7 | -2.35 (-5.16, 0.46) |
| Enabler | 56 | 873,077 | -2.6 | -8.61*** (-11.09, -6.12) | 102 | 1,708,315 | -2.1 | -7.06*** (-8.85, -5.28) | 46 | 835,238 | -1.6 | -5.45*** (-8.01, -2.89) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility; IRF=Inpatient Rehabilitation Facility; LTCH=Long-Term Care Hospital; LOS=length of stay. Impacts on utilization outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their functional role. Utilization estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.9.4 Utilization Impacts for Standard ACOs by Beneficiary Characteristics

Exhibits J.23 and J.24 show impact estimates for utilization measures by beneficiary subgroups for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Greater reductions in acute care hospitalizations were seen for beneficiaries with the lowest social disadvantage and beneficiaries with more chronic conditions. However, there were no substantial differences seen in the impact estimates between beneficiary subgroups for ED visits and observational stays.

Exhibit J.23. Impact Estimates for Acute Care Hospitalizations for Standard ACOs, by Beneficiary Characteristics

| Beneficiary Subgroup | In PY 2023 105 ACOs | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years | | |
|--|-------------------------|----------|-----------------------------|---|----------|----------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | -1.4 | -2.94*** (-3.87, -2.01) | 3,726,292 | -0.5 | -0.94** (-1.58, -0.30) | 1,911,957 | 0.5 | 0.96* (0.08, 1.83) |
| Area Deprivation Index | | | | | | | | | |
| ADI score of 1–25 (lowest disadvantage) | 552,549 | -1.7 | -3.08*** (-4.67, -1.49) | 1,167,543 | -0.7 | -1.24* (-2.29, -0.18) | 614,994 | 0.2 | 0.42 (-0.99, 1.83) |
| ADI score of 26–50 | 615,998 | -1.5 | -3.00*** (-4.55, -1.46) | 1,241,806 | -0.6 | -1.11* (-2.17, -0.04) | 625,808 | 0.4 | 0.76 (-0.72, 2.23) |
| ADI score of 51–75 | 394,667 | -1.3 | -2.86** (-4.84, -0.89) | 803,467 | -0.2 | -0.42 (-1.78, 0.94) | 408,800 | 0.9 | 1.93* (0.05, 3.80) |
| ADI score of 76–100 (highest disadvantage) | 227,161 | -0.5 | -1.26 (-3.99, 1.46) | 465,557 | 0.4 | 1.04 (-0.86, 2.93) | 238,396 | 1.4 | 3.23** (0.59, 5.87) |
| Chronic Condition Burden | | | | | | | | | |
| Low (0–4 chronic conditions) | 655,472 | 0.5 | 0.35 (-0.54, 1.24) | 1,397,216 | 1.5 | 1.11*** (0.51, 1.70) | 741,744 | 2.4 | 1.77*** (0.97, 2.58) |
| Medium (5–7 chronic conditions) | 596,357 | -1.3 | -1.99** (-3.34, -0.65) | 1,219,901 | -0.3 | -0.47 (-1.39, 0.45) | 623,544 | 0.7 | 1.00 (-0.27, 2.26) |
| High (8+ chronic conditions) | 562,506 | -2.0 | -8.99*** (-11.54, -6.44) | 1,109,175 | -1.1 | -5.02*** (-6.80, -3.24) | 546,669 | -0.2 | -0.94 (-3.43, 1.55) |
| Disability and/or ESRD | | | | | | | | | |
| No | 1,536,686 | -1.5 | -2.77*** (-3.69, -1.85) | 3,154,565 | -0.6 | -0.99*** (-1.62, -0.36) | 1,617,879 | 0.4 | 0.71 (-0.16, 1.57) |
| Yes | 277,649 | -0.8 | -2.31 (-5.20, 0.58) | 571,727 | 0.0 | 0.03 (-1.97, 2.03) | 294,078 | 0.8 | 2.23 (-0.54, 5.00) |
| Dual Eligibility | | | | | | | | | |
| No | 1,544,771 | -1.3 | -2.32*** (-3.22, -1.42) | 3,190,629 | -0.1 | -0.21 (-0.83, 0.40) | 1,645,858 | 1.1 | 1.77*** (0.92, 2.61) |
| Yes | 269,564 | -1.4 | -4.66** (-7.89, -1.44) | 535,663 | -0.9 | -3.02** (-5.27, -0.78) | 266,099 | -0.4 | -1.36 (-4.48, 1.75) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on acute care hospitalizations in PY 2023, as of PY 2023, and as of PY 2022 shown for all beneficiaries aligned to Standard ACOs (Overall) and subgroups of beneficiaries based on their characteristics. Impact estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

Exhibit J.24. Impact Estimates for ED Visits and Observational Stays for Standard ACOs, by Beneficiary Characteristics

| Beneficiary Subgroup | In PY 2023 105 ACOs | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years | | |
|---|-------------------------|----------|----------------------------|---|----------|----------------------------|---|----------|---------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,814,335 | -1.0 | -4.21*** (-5.68, -2.73) | 3,726,292 | -0.6 | -2.49*** (-3.51, -1.47) | 1,911,957 | -0.2 | -0.86 (-2.26, 0.54) |
| Area Deprivation Index | | | | | | | | | |
| ADI score of 1–25 (lowest disadvantage) | 552,549 | -0.7 | -2.44* (-4.80, -0.08) | 1,167,543 | -0.6 | -2.05** (-3.63, -0.47) | 614,994 | -0.5 | -1.70 (-3.82, 0.41) |
| ADI score of 26–50 | 615,998 | -1.3 | -4.95*** (-7.36, -2.54) | 1,241,806 | -0.7 | -2.58** (-4.26, -0.91) | 625,808 | -0.1 | -0.25 (-2.58, 2.07) |
| ADI score of 51–75 | 394,667 | -1.3 | -5.78*** (-8.96, -2.59) | 803,467 | -0.8 | -3.70*** (-5.91, -1.49) | 408,800 | -0.4 | -1.70 (-4.76, 1.37) |
| ADI score of 76–100 (highest disadvantage) | 227,161 | -0.4 | -2.13 (-6.67, 2.41) | 465,557 | 0.2 | 1.10 (-2.05, 4.25) | 238,396 | 0.8 | 4.18 (-0.20, 8.56) |
| Chronic Condition Burden | | | | | | | | | |
| Low (0–4 chronic conditions) | 655,472 | -1.5 | -3.47*** (-5.14, -1.79) | 1,397,216 | -0.5 | -1.09 (-2.23, 0.04) | 741,744 | 0.4 | 1.00 (-0.53, 2.54) |
| Medium (5–7 chronic conditions) | 596,357 | -1.0 | -3.66*** (-5.98, -1.34) | 1,219,901 | -0.5 | -1.85* (-3.45, -0.25) | 623,544 | -0.0 | -0.12 (-2.32, 2.09) |
| High (8+ chronic conditions) | 562,506 | -0.7 | -5.26** (-9.01, -1.51) | 1,109,175 | -0.7 | -5.04*** (-7.66, -2.43) | 546,669 | -0.7 | -4.82** (-8.47, -1.17) |
| Disability and/or ESRD | | | | | | | | | |
| No | 1,536,686 | -1.2 | -4.08*** (-5.45, -2.70) | 3,154,565 | -0.7 | -2.50*** (-3.44, -1.55) | 1,617,879 | -0.3 | -1.00 (-2.30, 0.30) |
| Yes | 277,649 | -0.6 | -4.06 (-9.52, 1.41) | 571,727 | -0.3 | -1.82 (-5.58, 1.93) | 294,078 | 0.0 | 0.28 (-4.87, 5.44) |
| Dual Eligibility | | | | | | | | | |
| No | 1,544,771 | -1.2 | -4.24*** (-5.61, -2.86) | 3,190,629 | -0.7 | -2.53*** (-3.48, -1.58) | 1,645,858 | -0.3 | -0.93 (-2.24, 0.38) |
| Yes | 269,564 | -0.2 | -1.49 (-7.39, 4.42) | 535,663 | 0.1 | 0.64 (-3.37, 4.66) | 266,099 | 0.4 | 2.80 (-2.64, 8.24) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on ED visits and observational stays in PY 2023, as of PY 2023, and as of PY 2022 shown for all beneficiaries aligned to Standard ACOs (Overall) and subgroups of beneficiaries based on their characteristics. Impact estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

J.10 Quality of Care Impacts for Standard ACOs

J.10.1 Quality Impacts for Standard ACOs

Exhibit J.25 presents impact results for quality of care outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022 by cohort for Standard ACOs. Standard ACOs had significant reductions in ACSC hospitalizations and unplanned admissions among patients with MCC in all time periods and across cohorts. All-condition readmissions decreased significantly in PY 2023 and showed no differences between cohorts. Recommended diabetes care, timely follow-up, and days at home all significantly increased in PY 2023 and as of PY 2023. Changes in recommended diabetes care were driven by increases in the 2022 and 2023 cohorts, whereas changes in days at home were primarily driven by increases in the 2021 and 2022 cohorts. The only quality of care outcome that worsened was low-value care, which showed increases in all time periods and increases across all cohorts. It is unclear why low-value services increased during these timeframes.

Exhibit J.25. Quality of Care Impact Estimates for Standard ACOs, Overall and by Cohort

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|----------------------------------|--|----------|----------------------------|---|----------|----------------------------|--|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | |
| Overall | 1,814,335 | -4.7 | -0.95*** (-1.17, -0.73) | 3,726,292 | -3.3 | -0.63*** (-0.78, -0.48) | 1,911,957 | -1.8 | -0.32*** (-0.52, -0.12) |
| 2021 Cohort | 590,704 | -7.5 | -1.56*** (-1.92, -1.19) | 1,467,621 | -4.5 | -0.90*** (-1.12, -0.67) | 876,917 | -2.4 | -0.45*** (-0.74, -0.17) |
| 2022 Cohort | 811,786 | -3.0 | -0.58*** (-0.91, -0.25) | 1,846,826 | -2.0 | -0.37*** (-0.59, -0.16) | 1,035,040 | -1.2 | -0.21 (-0.49, 0.07) |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--|--|----------|----------------------------|---|----------|----------------------------|--|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2023 Cohort | 411,845 | -3.9 | -0.83*** (-1.30, -0.36) | 411,845 | -3.9 | -0.83*** (-1.30, -0.36) | - | - | - |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | |
| Overall | 358,724 | -2.0 | -4.46*** (-5.95, -2.96) | 722,588 | -1.6 | -3.63*** (-4.70, -2.57) | 363,864 | -1.3 | -2.82*** (-4.33, -1.31) |
| 2021 Cohort | 129,387 | -2.8 | -6.18*** (-8.58, -3.77) | 305,923 | -1.9 | -4.24*** (-5.86, -2.62) | 176,536 | -1.2 | -2.82** (-5.00, -0.64) |
| 2022 Cohort | 154,801 | -1.7 | -3.74*** (-6.10, -1.38) | 342,129 | -1.5 | -3.24*** (-4.81, -1.67) | 187,328 | -1.3 | -2.83** (-4.92, -0.73) |
| 2023 Cohort | 74,536 | -1.3 | -2.95 (-6.16, 0.26) | 74,536 | -1.3 | -2.95 (-6.16, 0.26) | - | - | - |
| All-condition readmissions (↓) | | | | | | | | | |
| Overall | 202,837 | -1.3 | -1.79* (-3.40, -0.18) | 408,558 | -0.4 | -0.58 (-1.75, 0.59) | 205,721 | 0.4 | 0.62 (-1.09, 2.32) |
| 2021 Cohort | 68,271 | -1.8 | -2.39 (-5.04, 0.26) | 165,700 | -0.4 | -0.59 (-2.36, 1.18) | 97,429 | 0.4 | 0.66 (-1.70, 3.03) |
| 2022 Cohort | 89,743 | -1.6 | -2.08 (-4.58, 0.42) | 198,035 | -0.4 | -0.63 (-2.38, 1.12) | 108,292 | 0.4 | 0.57 (-1.87, 3.02) |
| 2023 Cohort | 44,823 | -0.2 | -0.30 (-3.73, 3.12) | 44,823 | -0.2 | -0.30 (-3.73, 3.12) | - | - | - |
| Low-value care (↓) | | | | | | | | | |
| Overall | 1,632,646 | 0.8 | 1.83*** (1.11, 2.54) | 3,396,358 | 0.7 | 1.76*** (1.27, 2.25) | 1,763,712 | 0.7 | 1.70*** (1.03, 2.38) |
| 2021 Cohort | 533,456 | 0.7 | 1.95*** (0.71, 3.19) | 1,354,465 | 0.6 | 1.65*** (0.88, 2.42) | 821,009 | 0.6 | 1.46** (0.48, 2.44) |
| 2022 Cohort | 733,709 | 0.2 | 0.52 (-0.57, 1.61) | 1,676,412 | 0.6 | 1.30*** (0.59, 2.01) | 942,703 | 0.9 | 1.91*** (0.98, 2.85) |
| 2023 Cohort | 365,481 | 1.9 | 4.28*** (2.85, 5.71) | 365,481 | 1.9 | 4.28*** (2.85, 5.71) | - | - | - |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--------------------------------------|--|----------|----------------------------|---|----------|---------------------------|--|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Recommended diabetes care (↑) | | | | | | | | | |
| Overall | 422,509 | 1.3 | 5.81*** (4.22, 7.40) | 926,412 | 1.0 | 4.12*** (3.06, 5.19) | 503,903 | 0.7 | 2.71*** (1.28, 4.15) |
| 2021 Cohort | 143,881 | -0.1 | -0.66 (-3.29, 1.98) | 384,873 | 0.2 | 0.82 (-0.76, 2.40) | 240,992 | 0.4 | 1.70 (-0.28, 3.67) |
| 2022 Cohort | 186,924 | 2.6 | 11.55*** (9.04, 14.05) | 449,835 | 1.7 | 6.93*** (5.33, 8.52) | 262,911 | 0.9 | 3.64*** (1.57, 5.71) |
| 2023 Cohort | 91,704 | 1.1 | 4.26** (0.97, 7.56) | 91,704 | 1.1 | 4.26** (0.97, 7.56) | - | - | - |
| Timely follow-up (↑) | | | | | | | | | |
| Overall | 68,015 | 1.3 | 10.56*** (7.60, 13.52) | 134,903 | 0.8 | 6.22*** (4.05, 8.38) | 66,888 | 0.2 | 1.80 (-1.36, 4.96) |
| 2021 Cohort | 22,115 | 2.4 | 20.48*** (15.72, 25.24) | 53,595 | 1.3 | 10.84*** (7.62, 14.06) | 31,480 | 0.5 | 4.08 (-0.27, 8.42) |
| 2022 Cohort | 30,062 | 0.7 | 5.36* (0.62, 10.11) | 65,470 | 0.3 | 2.34 (-0.95, 5.64) | 35,408 | -0.03 | -0.22 (-4.78, 4.34) |
| 2023 Cohort | 15,838 | 0.8 | 6.58* (0.57, 12.59) | 15,838 | 0.8 | 6.58* (0.57, 12.59) | - | - | - |
| Days at home (per BPY) (↑) | | | | | | | | | |
| Overall | 307,703 | 0.2 | 0.17*** (0.12, 0.21) | 603,525 | 0.1 | 0.10*** (0.07, 0.13) | 295,822 | 0.03 | 0.03 (-0.01, 0.07) |
| 2021 Cohort | 113,930 | 0.2 | 0.23*** (0.16, 0.30) | 254,375 | 0.2 | 0.15*** (0.10, 0.19) | 140,445 | 0.1 | 0.08** (0.02, 0.14) |
| 2022 Cohort | 131,426 | 0.2 | 0.16*** (0.09, 0.23) | 286,803 | 0.1 | 0.07** (0.02, 0.11) | 155,377 | -0.02 | -0.02 (-0.08, 0.05) |
| 2023 Cohort | 62,347 | 0.1 | 0.05 (-0.04, 0.15) | 62,347 | 0.1 | 0.05 (-0.04, 0.15) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

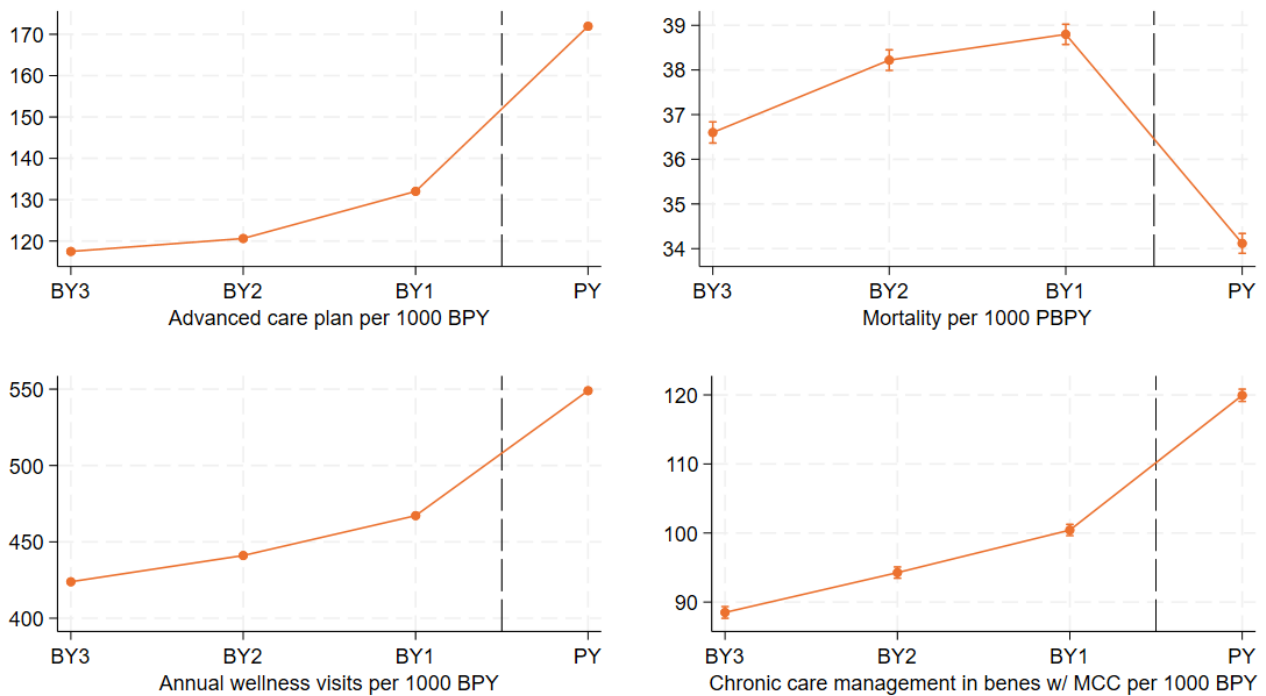
NOTE: Overall impact in PY 2023 includes impacts for all three cohorts of ACOs. Spending estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Utilization and quality estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries.

Arrows in parentheses after the outcome represent the hypothesized direction of change. The Recommended Care for Diabetes measure is calculated for beneficiaries with diabetes. The unplanned hospitalization among beneficiaries with MCC measure is calculated for beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer's disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). The all-condition readmissions measure is calculated for beneficiaries with at least one acute care hospitalization. The timely follow-up measure is calculated for beneficiaries with one or more acute events related to one of six chronic conditions: hypertension, asthma, heart failure, coronary artery disease (CAD), COPD, and diabetes. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.10.2 Descriptive Trends for Secondary Quality of Care Measures

Exhibit J.26 presents trends over time for Standard ACOs in PY 2023 for the following measures that were not included in the impact analysis: annual wellness visits, advanced care planning, chronic care management in beneficiaries with MCC, and mortality. See [Appendix I.3.2](#) for an explanation for why these measures were not included in the impact estimation. We show unadjusted trends for beneficiaries in the Standard ACO group from baseline to performance years in PY 2023. Compared to the baseline years, advanced care planning, annual wellness visits, and chronic care management in beneficiaries with MCC increased among Standard ACO beneficiaries in PY 2023, while mortality decreased in PY 2023. The trends as of PY 2023 for these secondary measures were very similar to the trends in PY 2023.

Exhibit J.26. Trends over Time in Secondary Quality of Care Outcomes among Standard ACO Beneficiaries from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: BPY=beneficiary per year; PY=performance year; BY=baseline year. BYs (with BY3 being the earliest and BY1 the most recent) represent calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

J.11 Quality of Care Impact Estimates by ACO Subgroups and Beneficiary Subgroups for Standard ACOs

J.11.1 Quality Impacts for Standard ACOs by Risk Level and Capitation

Exhibit J.27 shows impact estimates for quality of care outcomes by levels of risk and capitation for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Similar to spending and utilization outcomes, we expected quality of care improvements to be greater for more risk-tolerant ACOs. ACOs that elected Global TCC and Global PCC/PCC+APO had significant decreases in ACSC hospitalizations. Significant decreases in unplanned admissions among patients with MCC were seen in all risk and capitation levels for both time periods. Finally, significant and non-significant increases were seen for nearly all risk and capitation levels in recommended diabetes care, timely follow-up, and days at home, with no consistent patterns by subgroup. Overall, we observed no declines in quality of care for any risk/capitation election subgroup.

Exhibit J.27. Quality of Care Impact Estimates by Risk and Capitation Level for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|-------------|-------------------------|----------|-----------------------------|---|-------------------------|----------|----------------------------|-----------------------------------|-------------------------|----------|----------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | | | | |
| Global TCC | 27 | 406,292 | -8.4 | -1.75*** (-2.20, -1.29) | 111 | 1,946,254 | -2.8 | -0.55*** (-0.75, -0.34) | 53 | 953,302 | -1.1 | -0.21 (-0.50, 0.07) |
| Global PCC/PCC+APO | 58 | 992,952 | -4.4 | -0.87*** (-1.16, -0.58) | 55 | 842,897 | -6.0 | -1.19*** (-1.50, -0.89) | 28 | 436,605 | -3.6 | -0.68*** (-1.09, -0.27) |
| Professional PCC/PCC+APO | 20 | 415,091 | -1.9 | -0.38 (-0.87, -0.11) | 46 | 937,141 | -1.6 | -0.29 (-0.60, 0.01) | 26 | 522,050 | -1.3 | -0.22 (-0.61, 0.16) |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | | | | |
| Global TCC | 27 | 80,565 | -4.1 | -9.58*** (-12.69, -6.47) | 111 | 394,777 | -1.3 | -2.84*** (-4.29, -1.39) | 53 | 192,004 | -1.2 | -2.58** (-4.73, -0.44) |
| Global PCC/PCC+APO | 58 | 202,773 | -1.4 | -3.08** (-5.03, -1.13) | 55 | 161,708 | -2.3 | -5.19*** (-7.35, -3.03) | 28 | 81,143 | -0.4 | -0.83 (-3.84, 2.18) |
| Professional PCC/PCC+APO | 20 | 75,386 | -1.2 | -2.67 (-6.12, 0.78) | 46 | 166,103 | -1.8 | -4.01*** (-6.26, -1.75) | 26 | 90,717 | -2.3 | -5.11*** (-8.09, -2.14) |

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|---------------------------------------|-------------|-------------------------|----------|----------------------------|---|-------------------------|----------|---------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| All-condition readmissions (↓) | | | | | | | | | | | | |
| Global TCC | 27 | 45,982 | -1.5 | -2.07 (-5.37, 1.23) | 111 | 215,968 | -0.1 | -0.13 (-1.71, 1.46) | 53 | 104,798 | 0.7 | 1.17 (-1.19, 3.53) |
| Global PCC/PCC+APO | 58 | 111,170 | -1.0 | -1.35 (-3.46, 0.77) | 55 | 93,130 | -1.2 | -1.88 (-4.28, 0.52) | 28 | 47,148 | -1.0 | -1.69 (-5.17, 1.79) |
| Professional PCC/PCC+APO | 20 | 45,685 | -1.9 | -2.60 (-6.29, 1.09) | 46 | 99,460 | -0.2 | -0.35 (-2.88, 2.18) | 26 | 53,775 | 1.0 | 1.56 (-1.92, 5.04) |
| Low-value care (↓) | | | | | | | | | | | | |
| Global TCC | 27 | 364,816 | 2.1 | 5.16*** (-3.67, 6.64) | 111 | 1,776,306 | 0.2 | 0.38 (-0.30, 1.07) | 53 | 882,308 | 0.6 | 1.41** (0.45, 2.38) |
| Global PCC/PCC+APO | 58 | 893,998 | -0.3 | -0.63 (-1.59, 0.33) | 55 | 765,313 | 1.3 | 3.32*** (2.30, 4.34) | 28 | 400,497 | 0.7 | 1.65* (0.25, 3.06) |
| Professional PCC/PCC+APO | 20 | 373,832 | 2.2 | 4.45*** (2.94, 5.96) | 46 | 854,739 | 1.6 | 3.23*** (2.25, 4.21) | 26 | 480,907 | 1.1 | 2.28*** (0.99, 3.56) |
| Recommended diabetes care (↑) | | | | | | | | | | | | |
| Global TCC | 27 | 97,766 | 0.1 | 0.58 (-2.66, 3.82) | 111 | 499,032 | 0.7 | 2.92*** (1.48, 4.36) | 53 | 260,815 | 0.7 | 2.73** (0.73, 4.72) |
| Global PCC/PCC+APO | 58 | 238,217 | 0.7 | 3.14** (1.06, 5.22) | 55 | 213,916 | 0.2 | 0.65 (-1.50, 2.79) | 28 | 116,150 | 0.2 | 0.70 (-2.17, 3.57) |
| Professional PCC/PCC+APO | 20 | 86,526 | 4.7 | 19.07*** (15.29, 22.86) | 46 | 213,464 | 2.6 | 10.42*** (8.09, 12.75) | 26 | 126,938 | 1.1 | 4.52** (1.56, 7.48) |
| Timely follow-up (↑) | | | | | | | | | | | | |
| Global TCC | 27 | 15,044 | 1.7 | 14.16*** (8.08, 20.24) | 111 | 71,573 | 0.8 | 6.31*** (3.42, 9.20) | 53 | 34,060 | 0.01 | 0.12 (-4.24, 4.47) |
| Global PCC/PCC+APO | 58 | 37,513 | 1.4 | 11.94*** (8.09, 15.78) | 55 | 30,215 | 0.9 | 7.68*** (3.24, 12.13) | 28 | 15,171 | 0.2 | 1.26 (-5.22, 7.74) |
| Professional PCC/PCC+APO | 20 | 15,458 | 0.5 | 3.72 (-3.17, 10.61) | 46 | 33,115 | 0.6 | 4.68 (-0.04, 9.40) | 26 | 17,657 | 0.7 | 5.52 (-0.95, 11.99) |
| Days at home (per BPY) (↑) | | | | | | | | | | | | |
| Global TCC | 27 | 71,823 | 0.3 | 0.30*** (0.21, 0.39) | 111 | 326,070 | 0.1 | 0.10*** (0.05, 0.14) | 53 | 151,719 | 0.04 | 0.04 (-0.02, 0.10) |
| Global PCC/PCC+APO | 58 | 174,351 | 0.2 | 0.15*** (0.09, 0.20) | 55 | 143,453 | 0.2 | 0.19*** (0.13, 0.26) | 28 | 71,630 | 0.1 | 0.09 (0.00, 0.18) |
| Professional PCC/PCC+APO | 20 | 61,529 | 0.1 | 0.07 (-0.03, 0.16) | 46 | 134,002 | 0.0 | 0.01 (-0.06, 0.07) | 26 | 72,473 | -0.04 | -0.04 (-0.13, 0.05) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on quality of care outcomes in PY 2023, as of PY 2023, and as of PY 2022 are shown for subgroups of Standard ACOs based on their risk and capitation level. Quality of care estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.11.2 Quality Impacts for Standard ACOs by ACO Organizational Structure

Exhibit J.28 shows impact estimates for quality of care outcomes by ACO organizational structure for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Similar to spending and utilization outcomes, we expected quality of care improvements to be greater for smaller-sized (individual or medical practices) ACOs compared with larger (IDS/hospital system) ACOs. Standard ACOs that were networks of individual practices had the largest decreases in ACSC hospitalizations and unplanned admissions among patients with MCC both as of PY 2023 and as of PY 2022. Both medical group practices and networks of individual practices showed significant increases in timely follow-up and days at home, while IDS/hospital systems and medical group practices showed significant increases in recommended diabetes care. Increases in low-value care were seen for every organizational structure. We observed no declines in quality of care for any organizational structure subgroup.

Exhibit J.28. Quality of Care Impact Estimates by ACO Organizational Structure for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|-------------|-------------------------|----------|----------------------------|--|-------------------------|----------|----------------------------|-----------------------------------|-------------------------|----------|----------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 560,381 | -2.5 | -0.46* (-0.88, -0.05) | 53 | 1,487,841 | -1.3 | -0.25* (-0.49, -0.01) | 28 | 927,460 | -0.6 | -0.12 (-0.41, 0.18) |
| Medical Group Practice | 19 | 317,357 | -5.4 | -1.01*** (-1.51, -0.51) | 55 | 724,813 | -3.7 | -0.66*** (-0.98, -0.34) | 36 | 407,456 | -2.2 | -0.38 (-0.79, 0.03) |
| Network of Individual Practices | 61 | 936,597 | -5.8 | -1.23*** (-1.52, -0.93) | 104 | 1,513,638 | -4.8 | -0.99*** (-1.22, -0.76) | 43 | 577,041 | -3.1 | -0.61*** (-0.98, -0.25) |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 105,201 | -1.0 | -2.19 (-5.14, 0.76) | 53 | 269,047 | -1.3 | -2.81*** (-4.59, -1.03) | 28 | 163,846 | -1.5 | -3.21** (-5.44, -0.98) |

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|---------------------------------------|-------------|-------------------------|----------|----------------------------|--|-------------------------|----------|----------------------------|-----------------------------------|-------------------------|----------|---------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Medical Group Practice | 19 | 67,050 | -1.5 | -3.20 (-6.61, 0.20) | 55 | 150,078 | -1.0 | -2.10 (-4.54, 0.33) | 36 | 83,028 | -0.6 | -1.21 (-4.66, 2.23) |
| Network of Individual Practices | 61 | 186,473 | -2.7 | -6.19*** (-8.18, -4.19) | 104 | 303,463 | -2.2 | -5.12*** (-6.68, -3.56) | 43 | 116,990 | -1.5 | -3.42** (-5.94, -0.91) |
| All-condition readmissions (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 60,649 | -2.1 | -2.83 (-5.98, 0.32) | 53 | 158,971 | 0.4 | 0.63 (-1.34, 2.61) | 28 | 98,322 | 1.7 | 2.77* (0.23, 5.30) |
| Medical Group Practice | 19 | 35,320 | -0.9 | -1.11 (-4.83, 2.60) | 55 | 77,855 | -0.7 | -1.00 (-3.61, 1.60) | 36 | 42,535 | -0.6 | -0.91 (-4.54, 2.71) |
| Network of Individual Practices | 61 | 106,868 | -1.0 | -1.43 (-3.58, 0.72) | 104 | 171,732 | -1.0 | -1.51 (-3.26, 0.24) | 43 | 64,864 | -1.0 | -1.64 (-4.62, 1.34) |
| Low-value care (↓) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 503,719 | 1.2 | 2.48*** (1.17, 3.80) | 53 | 1,356,020 | 0.8 | 1.68*** (0.90, 2.46) | 28 | 852,301 | 0.6 | 1.20** (0.24, 2.17) |
| Medical Group Practice | 19 | 289,474 | 0.5 | 1.34 (-0.39, 3.06) | 55 | 668,250 | 0.9 | 2.12*** (1.01, 3.24) | 36 | 378,776 | 1.2 | 2.73*** (1.26, 4.19) |
| Network of Individual Practices | 61 | 839,453 | 0.6 | 1.60** (0.63, 2.57) | 104 | 1,372,088 | 0.6 | 1.67*** (0.91, 2.43) | 43 | 532,635 | 0.7 | 1.78** (0.54, 3.02) |
| Recommended diabetes care (↑) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 120,380 | 3.1 | 12.83*** (9.56, 16.10) | 53 | 355,482 | 1.6 | 6.41*** (4.61, 8.22) | 28 | 235,102 | 0.8 | 3.13** (0.97, 5.29) |
| Medical Group Practice | 19 | 68,622 | 4.2 | 19.92*** (15.98, 23.85) | 55 | 170,979 | 2.3 | 10.25*** (7.79, 12.71) | 36 | 102,357 | 0.9 | 3.77** (0.63, 6.91) |
| Network of Individual Practices | 61 | 233,507 | -0.45 | -1.95 (-3.99, 0.08) | 104 | 399,951 | -0.1 | -0.53 (-2.09, 1.03) | 43 | 166,444 | 0.4 | 1.47 (-0.95, 3.89) |
| Timely follow-up (↑) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 20,749 | 0.3 | 2.72 (-3.19, 8.63) | 53 | 52,896 | -0.1 | -0.86 (-4.57, 2.84) | 28 | 32,147 | -0.4 | -3.18 (-7.94, 1.58) |
| Medical Group Practice | 19 | 11,294 | 2.5 | 21.18*** (14.31, 28.05) | 55 | 25,216 | 1.6 | 12.73*** (7.89, 17.57) | 36 | 13,922 | 0.7 | 5.87 (-0.90, 12.63) |
| Network of Individual Practices | 61 | 35,972 | 1.4 | 11.75*** (7.87, 15.63) | 104 | 56,791 | 1.2 | 9.93*** (6.78, 13.07) | 43 | 20,819 | 0.8 | 6.77** (1.40, 12.14) |

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|-------------------------------------|-------------|-------------------------|----------|--------------------------|--|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Days at home (per BPY) (↑) | | | | | | | | | | | | |
| Integrated Delivery/Hospital System | 25 | 86,440 | 0.1 | 0.11** (0.03, 0.19) | 53 | 219,428 | 0.03 | 0.03 (-0.02, 0.08) | 28 | 132,988 | -0.03 | -0.03 (-0.09, 0.04) |
| Medical Group Practice | 19 | 58,885 | 0.2 | 0.22*** (0.13, 0.32) | 55 | 122,303 | 0.2 | 0.16*** (0.09, 0.22) | 36 | 63,418 | 0.1 | 0.10* (0.01, 0.18) |
| Network of Individual Practices | 61 | 162,378 | 0.2 | 0.18*** (0.12, 0.24) | 104 | 261,794 | 0.1 | 0.13*** (0.09, 0.18) | 43 | 99,416 | 0.1 | 0.07 (-0.01, 0.14) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on quality of care outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their organizational structure. Quality of care estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.11.3 Quality Impacts for Standard ACOs by ACO Lead Organization

Exhibit J.29 shows impact estimates for all quality of care outcomes by lead organization type for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Improvements in ACSC hospitalizations and unplanned admissions among patients with MCC were seen across lead organization types and across time periods, with the exception of Insurers, where no improvements were seen generally. Improvements in all-condition readmissions were seen for health systems and Insurers across time periods. Mixed results were seen in low-value care across time periods and lead organization types. Insurers had decreases in recommended diabetes care as of PY 2023 and in PY 2023. Improvements in timely follow-up tended to occur in MSOs, physician practices, and primary care companies across the three time periods. Improvements in days at home were seen for primary care companies in all time periods, but improvements were also seen for physician practices as of PY 2023 and for other lead organization types in PY 2023.

Exhibit J.29. Quality of Care Impact Estimates by ACO Lead Organization Type for Standard ACOs

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--|-----------------|----------------------------|-------------|------------------------------|--|----------------------------|-------------|-----------------------------|-----------------------------------|----------------------------|-------------|-----------------------------|
| | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO- Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | | | | |
| Health System | 23 | 484,205 | -2.5 | -0.45 (-0.89, 0.00) | 48 | 1,193,876 | -2.0 | -0.34** (-0.61, -0.070) | 25 | 709,671 | -1.6 | -0.26 (-0.60, 0.072) |
| Insurer | 16 | 371,978 | -3.1 | -0.67** (-1.13, -0.20) | 32 | 788,571 | -1.1 | -0.22 (-0.54, 0.090) | 16 | 416,593 | 0.9 | 0.17 (-0.25, 0.60) |
| MSO | 35 | 478,923 | -5.7 | -1.17*** (-1.59, -0.75) | 67 | 883,017 | -4.5 | -0.89*** (-1.19, -0.59) | 32 | 404,094 | -3.0 | -0.55** (-0.98, -0.12) |
| Physician Practice | 19 | 306,557 | -4.0 | -0.78** (-1.30, -0.26) | 34 | 495,621 | -2.8 | -0.53** (-0.93, -0.13) | 15 | 189,064 | -0.7 | -0.13 (-0.75, 0.49) |
| Primary Care Company | 12 | 172,672 | -12.0 | -2.67*** (-3.37, -1.98) | 31 | 365,207 | -9.0 | -1.97*** (-2.44, -1.50) | 19 | 192,535 | -6.2 | -1.33*** (-1.97, -0.69) |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | | | | |
| Health System | 23 | 90,118 | -1.9 | -4.13** (-7.38, -0.88) | 48 | 214,135 | -1.7 | -3.53*** (-5.59, -1.48) | 25 | 124,017 | -1.5 | -3.10* (-5.74, -0.46) |
| Insurer | 16 | 70,885 | -0.3 | -0.62 (-3.86, 2.61) | 32 | 145,958 | -0.3 | -0.60 (-2.83, 1.64) | 16 | 75,073 | -0.2 | -0.57 (-3.66, 2.52) |
| MSO | 35 | 96,736 | -2.3 | -5.08*** (-7.85, -2.32) | 67 | 179,023 | -1.5 | -3.17** (-5.19, -1.16) | 32 | 82,287 | -0.4 | -0.93 (-3.87, 2.01) |
| Physician Practice | 19 | 63,434 | -1.8 | -4.15* (-7.67, -0.63) | 34 | 101,190 | -2.4 | -5.40*** (-8.16, -2.64) | 15 | 37,756 | -3.4 | -7.51*** (-11.96, -3.07) |
| Primary Care Company | 12 | 37,551 | -4.9 | -11.38*** (-15.79, -6.98) | 31 | 82,282 | -3.4 | -8.11*** (-11.58, -4.63) | 19 | 44,731 | -2.3 | -5.36* (-10.57, -0.14) |
| All-condition readmissions (↓) | | | | | | | | | | | | |
| Health System | 23 | 51,597 | -2.8 | -3.64* (-7.12, -0.16) | 48 | 123,680 | -0.7 | -0.96 (-3.25, 1.33) | 25 | 72,083 | 0.6 | 0.96 (-2.08, 4.01) |
| Insurer | 16 | 42,537 | -2.3 | -3.35 (-6.74, 0.04) | 32 | 89,245 | 0.7 | 1.11 (-1.32, 3.53) | 16 | 46,708 | 3.1 | 5.16** (1.72, 8.61) |
| MSO | 35 | 53,161 | 0.2 | 0.32 (-2.72, 3.35) | 67 | 97,083 | -0.6 | -0.93 (-3.27, 1.40) | 32 | 43,922 | -1.5 | -2.45 (-6.06, 1.16) |
| Physician Practice | 19 | 35,641 | 0.4 | -2.04 (-5.80, 1.72) | 34 | 56,523 | -1.4 | -1.93 (-4.98, 1.12) | 15 | 20,882 | -1.1 | -1.74 (-6.94, 3.45) |
| Primary Care Company | 12 | 19,901 | 0.8 | 1.13 (-3.79, 6.06) | 31 | 42,027 | -0.3 | -0.41 (-3.93, 3.11) | 19 | 22,126 | -1.1 | -1.80 (-6.81, 3.21) |

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|--------------------------------------|-------------|-------------------------|----------|----------------------------|--|-------------------------|----------|----------------------------|-----------------------------------|-------------------------|----------|----------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Low-value care (↓) | | | | | | | | | | | | |
| Health System | 23 | 437,191 | 1.0 | 1.89** (0.46, 3.33) | 48 | 1,088,666 | 0.6 | 1.10** (0.23, 1.98) | 25 | 651,475 | 0.3 | 0.57 (-0.54, 1.68) |
| Insurer | 16 | 332,958 | -2.3 | -5.92*** (-7.42, -4.42) | 32 | 716,587 | -0.9 | -2.33*** (-3.36, -1.30) | 16 | 383,629 | 0.3 | 0.79 (-0.63, 2.21) |
| MSO | 35 | 430,049 | 1.8 | 4.45*** (3.07, 5.83) | 67 | 804,810 | 1.5 | 3.81*** (2.79, 4.83) | 32 | 374,761 | 1.2 | 3.07*** (1.56, 4.58) |
| Physician Practice | 19 | 277,119 | -0.1 | -0.32 (-2.05, 1.41) | 34 | 452,311 | 0.3 | 0.68 (-0.66, 2.02) | 15 | 175,192 | 0.9 | 2.26* (0.12, 4.40) |
| Primary Care Company | 12 | 155,329 | 5.1 | 14.80*** (12.48, 17.12) | 31 | 333,984 | 3.3 | 9.23*** (7.66, 10.79) | 19 | 178,655 | 1.6 | 4.38*** (2.26, 6.50) |
| Recommended diabetes care (↑) | | | | | | | | | | | | |
| Health System | 23 | 102,410 | 4.0 | 16.87*** (13.23, 20.51) | 48 | 270,225 | 2.0 | 8.33*** (6.16, 10.49) | 25 | 167,815 | 0.8 | 3.11* (0.43, 5.79) |
| Insurer | 16 | 87,179 | -1.2 | -5.21** (-8.49, -1.93) | 32 | 203,040 | -0.2 | -0.75 (-2.88, 1.38) | 16 | 115,861 | 0.7 | 2.60 (-0.20, 5.40) |
| MSO | 35 | 117,976 | 0.9 | 3.66** (0.75, 6.58) | 67 | 230,100 | 0.8 | 3.45*** (1.37, 5.54) | 32 | 112,124 | 0.8 | 3.23* (0.25, 6.21) |
| Physician Practice | 19 | 70,324 | 3.1 | 14.58*** (10.74, 18.42) | 34 | 123,648 | 2.0 | 8.95*** (6.06, 11.84) | 15 | 53,324 | 0.4 | 1.53 (-2.86, 5.92) |
| Primary Care Company | 12 | 44,620 | -1.5 | -6.20** (-10.77, -1.62) | 31 | 99,399 | -0.4 | -1.79 (-4.82, 1.24) | 19 | 54,779 | 0.5 | 1.79 (-2.25, 5.84) |
| Timely follow-up (↑) | | | | | | | | | | | | |
| Health System | 23 | 17,997 | 0.6 | 4.65 (-1.91, 11.21) | 48 | 42,556 | 0.2 | 1.46 (-2.82, 5.75) | 25 | 24,559 | -0.1 | -0.87 (-6.54, 4.79) |
| Insurer | 16 | 14,398 | 0.2 | 2.05 (-4.02, 8.11) | 32 | 29,094 | -0.2 | -1.89 (-6.33, 2.55) | 16 | 14,696 | -0.7 | -5.75 (-12.22, 0.73) |
| MSO | 35 | 18,034 | 1.7 | 13.82*** (8.36, 19.28) | 67 | 31,616 | 1.1 | 9.25*** (5.03, 13.47) | 32 | 13,582 | 0.4 | 3.18 (-3.45, 9.80) |
| Physician Practice | 19 | 11,147 | 2.4 | 20.30*** (13.41, 27.19) | 34 | 17,860 | 1.8 | 14.94*** (9.34, 20.53) | 15 | 6,713 | 0.7 | 6.02 (-3.50, 15.54) |
| Primary Care Company | 12 | 6,439 | 2.4 | 20.11*** (11.13, 29.09) | 31 | 13,777 | 2.4 | 19.8*** (13.5, 26.06) | 19 | 7,338 | 2.4 | 19.47*** (10.66, 28.27) |
| Days at home (per BPY) (↑) | | | | | | | | | | | | |
| Health System | 23 | 73,296 | 0.1 | 0.14** (0.05, 0.23) | 48 | 172,720 | 0.04 | 0.04 (-0.02, 0.09) | 25 | 99,424 | -0.04 | -0.03 (-0.11, 0.04) |

| ACO Subgroup | In PY 2023 | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | | Cumulatively as of PY 2022 (GPDC) | | | |
|----------------------|-------------|-------------------------|----------|--------------------------|--|-------------------------|----------|--------------------------|-----------------------------------|-------------------------|----------|--------------------------|
| | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO-Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Insurer | 16 | 63,361 | 0.2 | 0.16** (0.06, 0.26) | 32 | 126,696 | 0.06 | 0.06 (-0.01, 0.13) | 16 | 63,335 | -0.04 | -0.04 (-0.13, 0.06) |
| MSO | 35 | 81,286 | 0.1 | 0.06 (-0.02, 0.14) | 67 | 149,027 | 0.04 | 0.04 (-0.02, 0.10) | 32 | 67,741 | 0.02 | 0.01 (-0.08, 0.11) |
| Physician Practice | 19 | 55,605 | 0.2 | 0.22*** (0.12, 0.32) | 34 | 85,588 | 0.2 | 0.17*** (0.09, 0.25) | 15 | 29,983 | 0.07 | 0.07 (-0.06, 0.20) |
| Primary Care Company | 12 | 34,155 | 0.4 | 0.39*** (0.26, 0.52) | 31 | 69,494 | 0.4 | 0.36*** (0.28, 0.45) | 19 | 35,339 | 0.4 | 0.34*** (0.22, 0.45) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on quality of care outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their lead organization type. Quality of care estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.11.4 Quality Impacts for Standard ACOs by ACO Functional Role

Exhibit J.30 shows impact estimates for all quality of care outcomes by functional role for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. As of PY 2023, reductions were seen in ACSC hospitalizations for Conveners and Direct Care Providers overall. However, in PY 2023 reductions were seen for all functional roles, and, as of PY 2022, reductions were seen for Direct Care Providers and Enablers. As of PY 2023 and as of PY 2022, increases were seen in low-value care for most functional roles, but mixed results were seen in PY 2023. As of PY 2023, Direct Care Providers and Enablers had improvements overall in days at home (similar results in PY 2023 but no changes as of PY 2022), timely follow-up (similar results were seen in PY 2023), and unplanned admissions among patients with MCC (similar results in PY 2023 but only improvements for Direct Care Providers as of PY 2022).

Exhibit J.30. Quality of Care Impact Estimates by Functional Role for Standard ACOs

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | | |
|--|--|-------------------------|----------|----------------------------|---|-------------------------|----------|----------------------------|---|-------------------------|----------|----------------------------|
| | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | | | | |
| Convener | 8 | 119,896 | -7.7 | -1.47*** (-2.27, -0.67) | 23 | 333,597 | -1.8 | -0.35 (-0.84, 0.14) | 15 | 213,701 | 1.5 | 0.28 (-0.34, 0.90) |
| Direct Care Provider | 41 | 821,362 | -4.5 | -0.84*** (-1.17, -0.51) | 87 | 1,684,380 | -3.6 | -0.64*** (-0.86, -0.41) | 46 | 863,018 | -2.6 | -0.45** (-0.75, -0.15) |
| Enabler | 56 | 873,077 | -4.6 | -0.99*** (-1.30, -0.68) | 102 | 1,708,315 | -3.3 | -0.68*** (-0.89, -0.46) | 46 | 835,238 | -1.8 | -0.35* (-0.65, -0.05) |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | | | | |
| Convener | 8 | 23,085 | -1.6 | -3.67 (-9.55, 2.20) | 23 | 62,906 | 0.2 | 0.40 (-3.09, 3.89) | 15 | 39,821 | 1.3 | 2.77 (-1.58, 7.11) |
| Direct Care Provider | 41 | 159,101 | -1.9 | -4.22*** (-6.56, -1.87) | 87 | 320,686 | -2.1 | -4.64*** (-6.34, -2.95) | 46 | 161,585 | -2.3 | -5.06*** (-7.51, -2.62) |
| Enabler | 56 | 176,538 | -2.1 | -4.77*** (-6.81, -2.74) | 102 | 338,996 | -1.5 | -3.43*** (-4.89, -1.97) | 46 | 162,458 | -0.9 | -1.96 (-4.06, 0.13) |
| All-condition readmissions (↓) | | | | | | | | | | | | |
| Convener | 8 | 13,158 | -3.8 | -5.17 (-11.33, 1.00) | 23 | 35,933 | -1.8 | -2.66 (-6.60, 1.28) | 15 | 22,775 | -0.8 | -1.22 (-6.31, 3.87) |
| Direct Care Provider | 41 | 90,200 | -1.1 | -1.42 (-3.93, 1.10) | 87 | 180,200 | -0.6 | -0.83 (-2.66, 1.00) | 46 | 90,000 | -0.1 | -0.24 (-2.90, 2.42) |
| Enabler | 56 | 99,479 | -1.2 | -1.69 (-3.91, 0.53) | 102 | 192,425 | 0.03 | 0.04 (-1.61, 1.70) | 46 | 92,946 | 1.2 | 1.90 (-0.56, 4.36) |
| Low-value care (↓) | | | | | | | | | | | | |
| Convener | 8 | 108,293 | -0.7 | -1.74 (-4.50, 1.02) | 23 | 303,845 | 1.7 | 4.06*** (2.44, 5.67) | 15 | 195,552 | 3.1 | 7.27*** (5.27, 9.26) |
| Direct Care Provider | 41 | 742,598 | 1.8 | 3.96*** (2.88, 5.04) | 87 | 1,540,183 | 1.3 | 2.82*** (2.08, 3.56) | 46 | 797,585 | 0.9 | 1.76*** (0.75, 2.77) |
| Enabler | 56 | 781,755 | 0.1 | 0.30 (-0.71, 1.30) | 102 | 1,552,330 | 0.1 | 0.27 (-0.45, 0.98) | 46 | 770,575 | 0.1 | 0.23 (-0.79, 1.26) |

| | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | | |
|--------------------------------------|--|-------------------------|----------|----------------------------|---|-------------------------|----------|--------------------------|---|-------------------------|----------|--------------------------|
| | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # ACO Years | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Recommended diabetes care (↑) | | | | | | | | | | | | |
| Convener | 8 | 28,778 | -0.3 | -1.60 (-7.62, 4.42) | 23 | 82,394 | 0.8 | 3.32 (-0.20, 6.84) | 15 | 53,616 | 1.5 | 5.96** (1.62, 10.30) |
| Direct Care Provider | 41 | 176,054 | 3.4 | 14.82*** (12.19, 17.45) | 87 | 386,217 | 1.7 | 7.15*** (5.40, 8.89) | 46 | 210,163 | 0.2 | 0.72 (-1.62, 3.06) |
| Enabler | 56 | 217,677 | -0.1 | -0.50 (-2.60, 1.60) | 102 | 457,801 | 0.4 | 1.72* (0.28, 3.16) | 46 | 240,124 | 0.9 | 3.73*** (1.74, 5.72) |
| Timely follow-up (↑) | | | | | | | | | | | | |
| Convener | 8 | 4,149 | 0.2 | 1.42 (-10.00, 12.84) | 23 | 11,886 | -0.1 | -1.20 (-8.20, 5.81) | 15 | 7,737 | -0.3 | -2.60 (-11.44, 6.25) |
| Direct Care Provider | 41 | 30,042 | 1.5 | 12.33*** (7.62, 17.03) | 87 | 60,009 | 1.0 | 7.76*** (4.34, 11.18) | 46 | 29,967 | 0.4 | 3.18 (-1.79, 8.15) |
| Enabler | 56 | 33,824 | 1.2 | 10.11*** (6.12, 14.11) | 102 | 63,008 | 0.8 | 6.15*** (3.13, 9.17) | 46 | 29,184 | 0.2 | 1.55 (-3.03, 6.13) |
| Days at home (per BPY) (↑) | | | | | | | | | | | | |
| Convener | 8 | 20,430 | 0.2 | 0.16 (-0.02, 0.33) | 23 | 53,696 | 0.03 | 0.03 (-0.07, 0.14) | 15 | 33,266 | -0.1 | -0.04 (-0.17, 0.08) |
| Direct Care Provider | 41 | 135,351 | 0.2 | 0.19*** (0.12, 0.25) | 87 | 262,591 | 0.1 | 0.12*** (0.08, 0.17) | 46 | 127,240 | 0.1 | 0.06 (-0.01, 0.12) |
| Enabler | 56 | 151,922 | 0.2 | 0.15*** (0.09, 0.21) | 102 | 287,238 | 0.1 | 0.09*** (0.04, 0.13) | 46 | 135,316 | 0.0 | 0.02 (-0.04, 0.09) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Impacts on quality of care outcomes in PY 2023, as of PY 2023, and as of PY 2022 shown for subgroups of Standard ACOs based on their functional role. Quality of care estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

J.11.5 Quality Impacts for Standard ACOs by Beneficiary Characteristics

Exhibit J.31 shows subgroup impact estimates for low-value care—the only quality measure evaluated within beneficiary subgroups—for Standard ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. Not many differences were seen in the impact estimates for beneficiary subgroups for low-value care.

Exhibit J.31. Impact Estimates for Low-Value Care for Standard ACOs, by Beneficiary Characteristics

| Beneficiary Subgroup | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|--|--|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 1,632,646 | 0.8 | 1.83*** (1.11, 2.54) | 3,396,358 | 0.7 | 1.76*** (1.27, 2.25) | 1,763,712 | 0.7 | 1.70*** (1.03, 2.38) |
| Area Deprivation Index | | | | | | | | | |
| ADI score of 1–25 (lowest disadvantage) | 498,539 | -0.2 | -0.64 (-2.01, 0.73) | 1,067,305 | 0.6 | 1.63*** (0.71, 2.54) | 568,766 | 1.4 | 3.62*** (2.39, 4.85) |
| ADI score of 26–50 | 557,876 | 1.3 | 3.08*** (1.85, 4.31) | 1,129,781 | 0.9 | 2.08*** (1.22, 2.93) | 571,905 | 0.5 | 1.10 (-0.09, 2.29) |
| ADI score of 51–75 | 351,550 | 1.1 | 2.41*** (0.93, 3.89) | 719,851 | 0.6 | 1.33** (0.31, 2.36) | 368,301 | 0.1 | 0.31 (-1.11, 1.72) |
| ADI score of 76–100 (highest disadvantage) | 196,343 | 2.0 | 4.12*** (2.25, 5.98) | 405,790 | 1.2 | 2.46*** (1.18, 3.74) | 209,447 | 0.5 | 0.91 (-0.86, 2.68) |
| Chronic Condition Burden | | | | | | | | | |
| Low (0–4 chronic conditions) | 600,516 | 1.1 | 1.95*** (0.89, 3.02) | 1,289,227 | 1.0 | 1.86*** (1.14, 2.58) | 688,711 | 1.0 | 1.78*** (0.80, 2.76) |
| Medium (5–7 chronic conditions) | 548,790 | 1.0 | 2.61*** (1.35, 3.86) | 1,127,074 | 0.7 | 1.67*** (0.80, 2.54) | 578,284 | 0.3 | 0.79 (-0.41, 1.99) |
| High (8+ chronic conditions) | 483,340 | 0.2 | 0.51 (-0.89, 1.91) | 956,114 | 0.6 | 1.67*** (0.69, 2.65) | 472,774 | 1.0 | 2.85*** (1.48, 4.22) |
| Disability and/or ESRD | | | | | | | | | |
| No | 1,402,560 | 0.8 | 1.90*** (1.12, 2.69) | 2,893,001 | 0.8 | 1.93*** (1.39, 2.47) | 1,490,441 | 0.8 | 1.95*** (1.20, 2.69) |
| Yes | 230,086 | 0.5 | 0.90 (-0.69, 2.49) | 479,414 | 0.3 | 0.44 (-0.65, 1.52) | 249,328 | 0.0 | 0.01 (-1.47, 1.49) |

| Beneficiary Subgroup | In PY 2023 105 ACOs 35 ACOs in 2021 Cohort 36 ACOs in 2022 Cohort 34 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 212 ACO-Years 101 ACO-Years in 2021 Cohort 77 ACO-Years in 2022 Cohort 34 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 107 ACO-Years 66 ACO-Years in 2021 Cohort 41 ACO-Years in 2022 Cohort | | |
|-------------------------|--|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Dual Eligibility | | | | | | | | | |
| No | 1,422,858 | 0.7 | 1.72*** (0.94, 2.49) | 2,946,616 | 0.6 | 1.57*** (1.04, 2.10) | 1,523,758 | 0.6 | 1.43*** (0.69, 2.17) |
| Yes | 209,788 | 1.5 | 2.40** (0.71, 4.10) | 425,799 | 2.1 | 3.44*** (2.29, 4.59) | 216,011 | 2.8 | 4.45*** (2.89, 6.00) |

SOURCE: NORC analysis of Medicare claims and enrollment data.

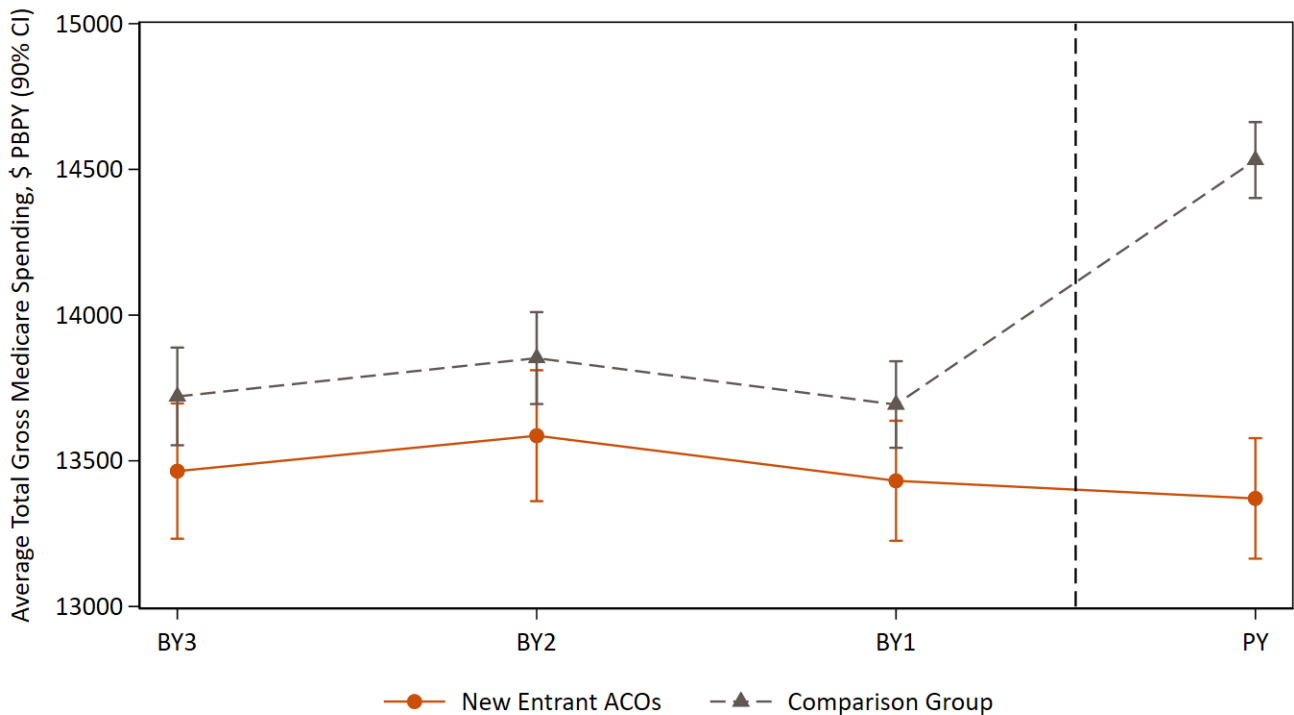
NOTE: Impacts on low-value care in PY 2023, as of PY 2023, and as of PY 2022 shown for all beneficiaries aligned to Standard ACOs (Overall) and subgroups of beneficiaries based on their characteristics. Quality of care estimates and 90% confidence interval (CI) are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. *p<0.10; **p<0.05; ***p<0.01.

Appendix K: Exhibits to Support Chapter 7 (New Entrant ACOs)

K.1 Average Trends in Gross Medicare Spending for New Entrant ACOs

Exhibit K.1 shows the average trends in gross Medicare spending from baseline years to the PY 2023 for New Entrant ACOs and their comparison group. Compared to the baseline years, New Entrant ACOs decreased their gross spending in PY 2023, while the comparison group increased spending. New Entrant ACOs had lower gross spending for all years relative to their comparison group.

Exhibit K.1. Adjusted Gross Medicare Spending Trend for New Entrant ACOs from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Point estimates are the adjusted gross Medicare Parts A and B spending for ACO REACH or comparison beneficiaries in each year. Confidence intervals at the 90% level are displayed as bars around the point estimates. PBPY=per beneficiary per year. Performance year (PY) 2023 includes calendar year 2023 for all three cohorts. Baseline years (BY), defined as BY3 through BY1 (with BY3 being the earliest and BY1 the most recent), span calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

K.2 Gross Medicare Spending Impacts by Cohort for New Entrant ACOs

Exhibit K.2 shows gross spending impacts overall and by cohort for New Entrant ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. New Entrant ACOs significantly decreased gross Medicare spending in PY 2023 and as of PY 2023, which was primarily driven by large and consistent spending reductions for the 2021 cohort.

Exhibit K.2. Gross Medicare Spending Impact Estimates for New Entrant ACOs, Overall and by Cohort

| Cohort | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|-----------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 41,351 | -6.2 | -890*** (-1206, -574) | 118,144 | -3.2 | -433*** (-604, -261) | 76,793 | -1.4 | -186 (-387, 15) |
| 2021 Cohort | 20,097 | -9.2 | -1,305*** (-1,808, -803) | 86,612 | -3.7 | -507*** (-711, -304) | 66,515 | -2.0 | -266** (-483, -49) |
| 2022 Cohort | 13,431 | -4.9 | -742** (-1,232, -252) | 23,709 | -2.0 | -277 (-639, 84) | 10,278 | 2.7 | 331 (-203, 865) |
| 2023 Cohort | 7,823 | -0.6 | -78 (-722, 566) | 7,823 | -0.6 | -78 (-722, 566) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

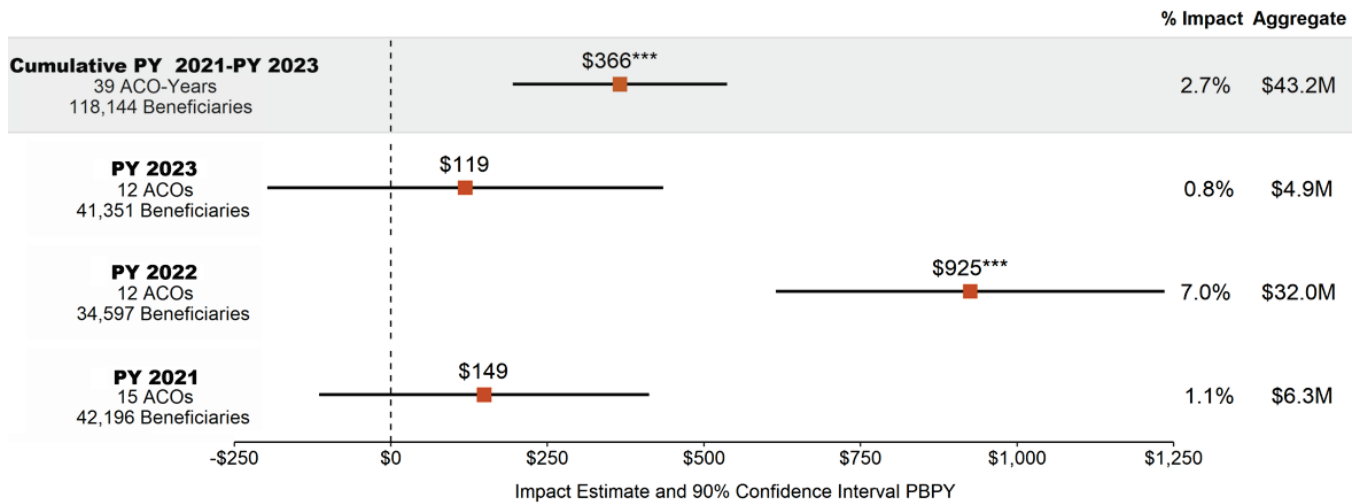
K.3 Net Medicare Spending Impacts Factoring in REACH Payouts, Overall and by Cohort for New Entrant ACOs

Prior to PY 2023, the methods used in the evaluation of GPDC only accounted for financial incentives related to the model when calculating net spending. For PY 2023 analysis of ACO REACH, the methodology was updated to further account for financial incentives received by ACOs within the baseline period for both the intervention group and the comparison groups as well as for the comparison groups in the performance period. This report provides net spending results using both methods to ensure consistency with prior evaluation reports. First, we present net spending results using the methods followed in the GPDC evaluation prior to reviewing results using the updated methods in section K.4 of the technical appendix.

After accounting for shared savings payments only to REACH ACOs, New Entrant ACOs increased **net Medicare spending** by \$43.2 million (2.7%) cumulatively relative to the comparison groups (**Exhibit K.3**). However, the

impact estimates for net spending shown in **Exhibit K.3** do not account for any ACO shared savings or losses incurred for the comparison groups, or for the ACO REACH group in the baseline period.¹²⁵ In PY 2023, there was no significant impact on net spending for New Entrant ACOs, but there was a significant increase of 6.9% for the 2021 cohort and a significant decrease of 8.3% for the 2022 cohort (results by ACO cohort presented in **Exhibit K.4**).

Exhibit K.3. After Factoring in Payouts Only to REACH ACOs, Cumulatively as of PY 2023, Net Medicare Spending Significantly Increased for New Entrant ACOs; However, in PY 2023, There Were Non-Significant Changes



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model impact was estimated relative to the comparison groups and baseline years using a DID model. Only payouts to REACH ACOs were included. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) (PY) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Impact estimate and 90% confidence interval are shown per beneficiary per year (PBPY). “Aggregate” was the total impact for all aligned beneficiaries. The number of beneficiaries represents the number aligned to the ACO REACH group in the performance year. Not all New Entrant ACOs could be evaluated because of availability of baseline data.

***p<0.01.

Exhibit K.4 shows the net spending impacts overall and by cohort for New Entrant ACOs in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022. These estimates account for CMS’ shared savings payouts to REACH ACOs. Net spending impacts differed for the 2021 and 2022 cohorts of ACOs. New Entrant ACOs did not experience a significant change in net spending in PY 2023, due to a significant increase for the 2021 cohort and a significant reduction for the 2022 cohort that paid back shared losses. New Entrant ACOs also significantly increased net Medicare spending cumulatively as of PY 2023 and as of PY 2022, where again the 2021 cohort showed significant spending increases, but the 2022 cohort showed spending reductions due to payback of shared losses (that were significant as of PY 2023).

¹²⁵ New Entrant ACOs did not significantly increase or decrease net spending relative to the alternative comparison group that excluded beneficiaries in accountable care (**Appendix Exhibit K.5**).

Exhibit K.4. Net Medicare Spending Estimates for New Entrant ACOs After Factoring in Payouts to REACH ACOs, Overall and by Cohort

| Cohort | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|-----------------------------|---|----------|---------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 41,351 | 0.8 | 119 (-197, 435) | 118,144 | 2.7 | 366*** (195, 537) | 76,793 | 3.8 | 499*** (298, 700) |
| 2021 Cohort | 20,097 | 6.9 | 981*** (478, 1483) | 86,612 | 5.2 | 701*** (498, 905) | 66,515 | 4.6 | 617*** (399, 834) |
| 2022 Cohort | 13,431 | -8.3 | -1,256*** (-1,746, -766) | 23,709 | -6.0 | -826*** (-1,187, -465) | 10,278 | -2.2 | -264 (-798, 270) |
| 2023 Cohort | 7,823 | 2.0 | 265 (-379, 909) | 7,823 | 2.0 | 265 (-379, 909) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Only payouts to REACH ACOs were included. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

K.4 Net Medicare Spending Impacts Factoring in REACH and Comparison Group Payments, Overall and by Cohort for New Entrant ACOs

After factoring in ACO shared savings or losses and performance bonus payments for both ACO REACH and comparison groups, cumulative net spending increases were smaller but still significant for New Entrant ACOs (\$259 million, or 1.9%), as shown in **Exhibit K.5**.

Exhibit K.5. Net Medicare Spending Estimates for New Entrant ACOs After Factoring in Payouts to REACH ACOs and the Comparison Group, Overall and by Cohort

| Cohort | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|-----------------------------|---|----------|---------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 41,351 | 0.02 | 2 (-314, 318) | 118,144 | 1.9 | 259** (88, 431) | 76,793 | 3.0 | 398*** (197, 599) |
| 2021 Cohort | 20,097 | 6.0 | 849*** (347, 1352) | 86,612 | 4.4 | 594*** (390, 797) | 66,515 | 3.9 | 516*** (299, 733) |
| 2022 Cohort | 13,431 | -9.1 | -1,378*** (-1,868, -888) | 23,709 | -6.8 | -941*** (-1,302, -580) | 10,278 | -3.0 | -369 (-903, 164) |
| 2023 Cohort | 7,823 | 1.5 | 197 (-447, 841) | 7,823 | 1.5 | 197 (-447, 841) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years, accounted for by Shared Savings Program and NGACO shared savings/losses payments in the comparison group during performance and baseline periods and in the treatment group during the baseline period. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

K.5 Gross and Net Medicare Spending Impacts Relative to an Alternative Comparison Group for New Entrant ACOs

Results on gross and net spending from a supplemental analysis that compared New Entrant ACOs to the alternative comparison group that excluded beneficiaries in accountable care are shown in **Exhibit K.6**. Reductions in gross spending were larger relative to this alternative comparison group; gross spending decreased by \$1,214 PBPY (or 8.3%) in PY 2023 and by \$767 PBPY (or 5.5%) cumulatively as of PY 2023. Net spending for New Entrant ACOs neither significantly increased nor declined relative to the alternative comparison group. See **Appendix I.1** for further information on the alternative comparison group methodology and limitations.

Exhibit K.6. Gross Medicare Spending and Net Medicare Spending Impact Estimates Relative to an Alternative Comparison Group for New Entrant ACOs

| | In PY 2023 | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) | | | Cumulatively as of PY 2022 (GPDC) | | |
|--|-------------------------|----------|-----------------------------|--|----------|--------------------------|--------------------------------------|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Gross Spending | | | | | | | | | |
| Original | 41,351 | -6.2 | -890*** (-1,206, -574) | 118,144 | -3.2 | -433*** (-604, -261) | 76,793 | -1.4 | -186 (-387, 15) |
| Alternative comparison group | 41,351 | -8.3 | -1,214*** (-1,612, -816) | 118,144 | -5.5 | -767*** (-989, -544) | 76,793 | -3.9 | -526*** (-793, -259) |
| Net Spending Impact After Factor in Payouts to REACH ACOs | | | | | | | | | |
| Original | 41,351 | 0.8 | 119 (-197, 435) | 118,144 | 2.7 | 366*** (195, 537) | 76,793 | 3.8 | 499*** (298, 700) |
| Alternative comparison group | 41,351 | -1.4 | -205 (-603, 193) | 118,144 | 0.2 | 32 (-191, 254) | 76,793 | 1.2 | 159 (-108, 426) |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

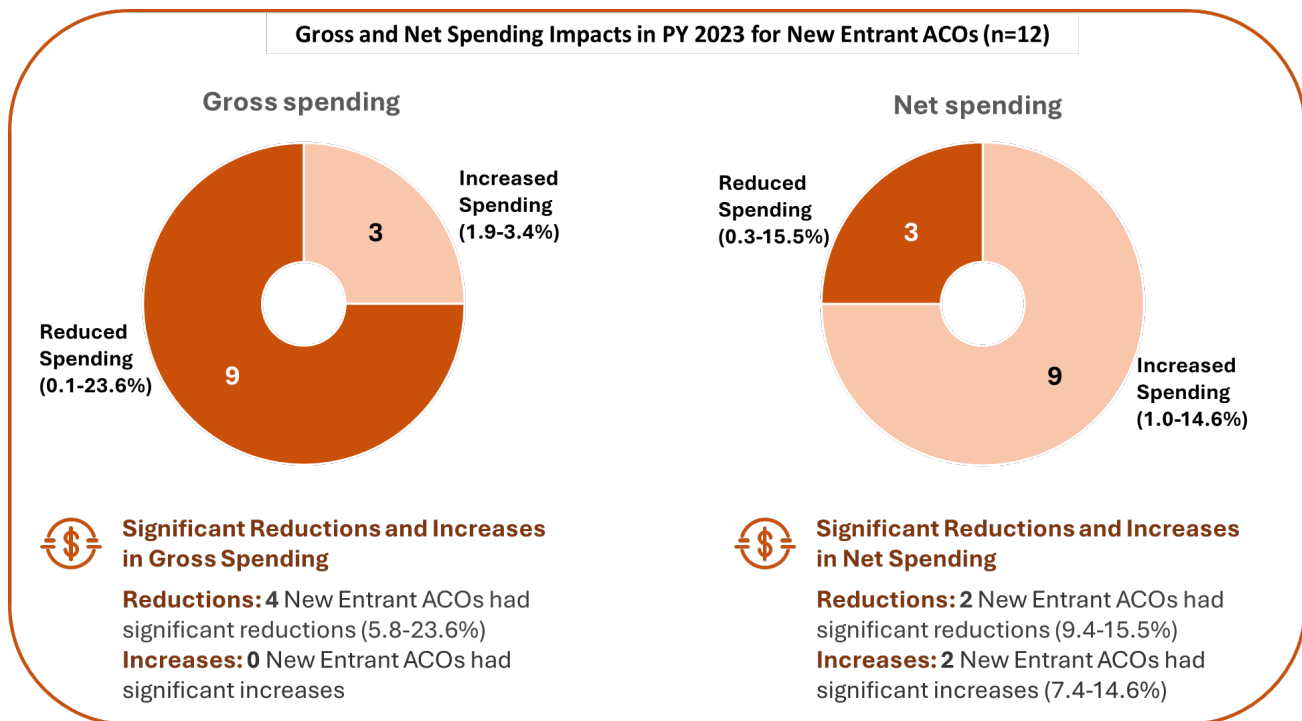
NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

K.5 ACO-Level Gross and Net Medicare Spending Impacts for New Entrant ACOs

K.5.1 Summary of ACO-Level Gross and Net Spending Impacts

Exhibit K.7. shows the gross and net spending impacts in PY 2023 for New Entrant ACOs. Net spending estimates here account only for payouts to REACH ACOs. Three-quarters of New Entrant ACOs reduced gross spending, and three-quarters increased net spending in PY 2023. Slightly less than half of the New Entrant ACOs that reduced gross spending achieved significant reductions. Roughly one-quarter of the New Entrant ACOs that increased net spending experienced significant increases, while the two-thirds that decreased net spending had significant decreases.

Exhibit K.7. New Entrant ACOs’ Gross and Net Spending Impacts in PY 2023



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

K.5.2 ACO-Level Gross Spending Impact Estimates

Exhibit K.8 presents detailed ACO-level impact results for spending for PY 2023 New Entrant ACOs. We present mean outcomes in the baseline (2018–2020 for 2021 Cohort ACOs; 2019–2021 for 2022 Cohort ACOs; and 2020–2022 for 2023 Cohort ACOs) and performance (2023) years, as well as the change from baseline to performance years in the ACO REACH and comparison groups. The impact estimate, 90% confidence interval, and percent impact are estimated from the DID model.

Our DID estimate is based on satisfying the parallel trends assumption, which allows us to establish the counterfactual when—absent the model—time trends in the outcome variable between the ACO REACH and comparison groups would be the same in the performance year. The presence of parallel trends in the outcome variable across the two groups in the baseline years justifies the assumption of parallel trends in the performance year. All New Entrant ACOs passed the parallel trends test (also including the linear trend term).

Exhibit K.8. New Entrant ACOs—ACO-Level Gross Spending Impacts in PY 2023

| New Entrant ACO Name | Number of aligned beneficiaries | Comparison (\$ PBPY) | | ACO REACH (\$ PBPY) | | Difference-in-Difference | | | Parallel trends test p-value | Shared savings/losses (\$ PBPY) | |
|---|---------------------------------|----------------------|---------|---------------------|---------|---------------------------|------------------|--------|------------------------------|---------------------------------|----------|
| | | Baseline | PY 2023 | Baseline | PY 2023 | Impact Estimate (\$ PBPY) | 90% CI (\$ PBPY) | | | | % Impact |
| Iora Health NE DCE, LLC | 11,918 | 11,591 | 12,499 | 11,824 | 11,880 | -871** | -1,448 | -293 | -6.83 | 0.360 | 2,726 |
| Best Value Transportation, LLC, d/b/a MAX Healthcare #2 | 1,761 | 14,189 | 14,488 | 12,653 | 12,754 | -166 | -1,318 | 986 | -1.28 | 0.868 | 659 |
| Midwest DCE, LLC | 1,369 | 14,741 | 15,266 | 13,800 | 14,777 | 485 | -934 | 1,904 | 3.39 | 0.788 | -148 |
| Perfect Health DCE, LLC | 1,703 | 21,242 | 22,390 | 24,619 | 19,834 | -6,114*** | -9,656 | -2,572 | -23.56 | 0.527 | 2,088 |
| CenterWell Care Solutions, Inc. | 3,572 | 12,844 | 13,688 | 11,970 | 11,891 | -865* | -1,672 | -59 | -6.78 | 0.549 | 1,815 |
| Florence CIN II LLC | 12,062 | 14,704 | 15,437 | 14,563 | 14,407 | -882*** | -1,403 | -360 | -5.77 | 0.171 | -555 |
| Nivano Physicians, Inc. IPA | 1,143 | 18,618 | 20,862 | 15,669 | 15,754 | -1,804 | -3,904 | 295 | -10.28 | 0.926 | 1,976 |
| Hudson Heights REACH ACO, Inc. | 1,364 | 18,378 | 18,811 | 14,640 | 14,089 | -897 | -2,637 | 844 | -5.98 | 0.207 | 1,123 |
| MNO REACH-MI LLC | 1,026 | 12,150 | 12,426 | 12,675 | 13,213 | 251 | -1,277 | 1,778 | 1.93 | 0.203 | -111 |
| Harbor Health ACO, LLC | 1,516 | 10,882 | 11,076 | 10,184 | 10,690 | 325 | -804 | 1,454 | 3.14 | 0.815 | 718 |
| One Medical ACO, LLC | 2,708 | 12,277 | 13,310 | 12,219 | 13,204 | -43 | -1,315 | 1,229 | -0.33 | 0.790 | 2 |
| 'N HEALTH NETWORK PARTNERS, LLC | 1,209 | 14,497 | 14,255 | 13,355 | 13,116 | -16 | -1,323 | 1,291 | -0.12 | 0.650 | 143 |

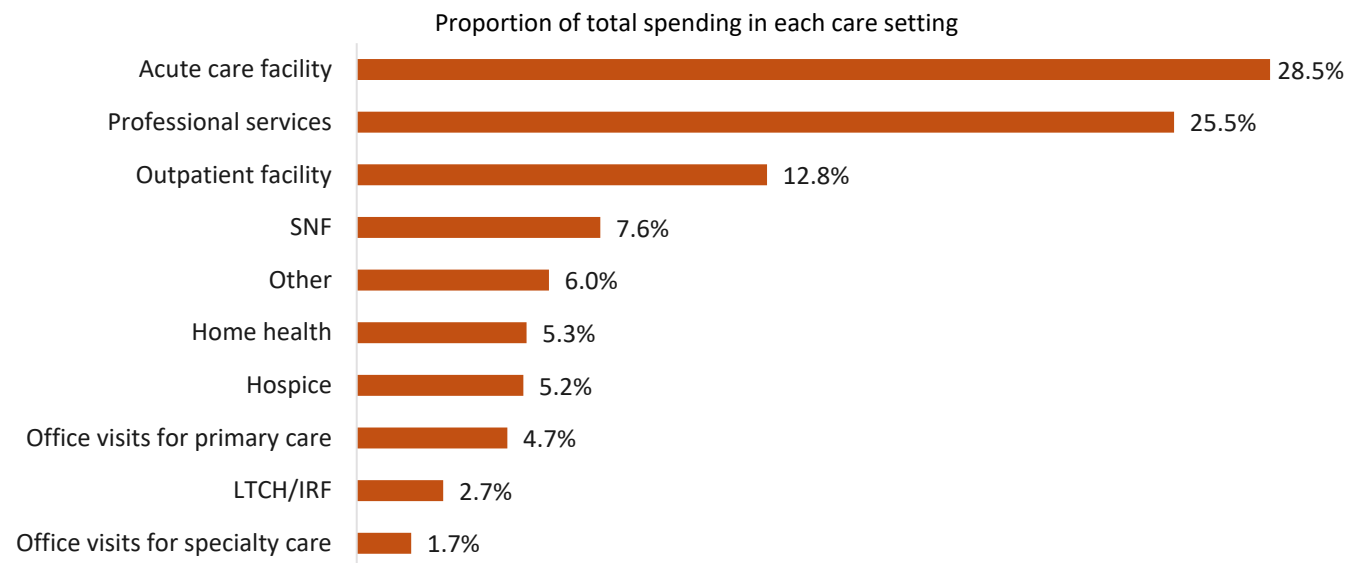
SOURCE: NORC team analysis of Medicare claims and enrollment data.

NOTE: Estimates in this table are weighted and regression-adjusted. Total spending is top coded at the 99.9th percentile by ACO market and year. Shared savings/losses for each ACO from financial settlement results were scaled to the number of beneficiary-months included in our analysis. Baseline years (BY) BY3–BY1 span calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs. Negative impact estimate values are spending decreases; positive impact estimate values are spending increases. Positive shared savings/losses values are shared savings; negative shared savings/losses values are shared losses. *p<0.10; **p<0.05; ***p<0.01. PBPY=per beneficiary per year; CI=confidence interval.

K.6 Setting-Specific Utilization and Spending Impacts for New Entrant ACOs

Acute care, professional services, and outpatient facilities made up the majority of total spending for New Entrant ACOs in the baseline period. These categories represented opportunities for ACOs to further reduce spending in these areas.

Exhibit K.9. Spending for New Entrant ACOs Was Concentrated in the Acute Care, Professional Services, and Outpatient Care Settings



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Contributions of spending categories to total Medicare Parts A & B spending shown for New Entrant ACOs’ beneficiaries in evaluation’s baseline years. Ambulatory care setting included professional services, outpatient facility, and office visits for primary and specialty care. Post-acute care settings included skilled nursing facility (SNF) and inpatient rehabilitation facility (IRF)/long-term care hospital (LTCH).

K.6.1 Impacts for Ambulatory, Acute Care, and Post-Acute Care Utilization and Spending

Exhibit K.10 presents impact results for ambulatory, acute care, and PAC utilization and spending outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022 by cohort for New Entrant ACOs. Differences in impacts for cohorts may reflect additional years of experience in the model or differences in their ACOs’ organization and markets. New Entrant ACOs significantly reduced ED visits in all time periods, primarily driven by decreases for the 2021 and 2022 cohorts. New Entrant ACOs also significantly reduced spending on outpatient facilities in PY 2023 and as of PY 2023, mainly driven by consistent decreases for the 2021 cohort. Spending on specialty care office visits significantly decreased as of PY 2023 and as of PY 2022, driven by decreases for the 2021 cohort. There were no changes in spending on professional services. New Entrant ACOs significantly reduced acute care hospitalizations, lengths of stay, and spending in PY 2023. Acute care spending also decreased significantly as of PY 2023. Overall, there were no significant changes in post-acute care utilization and spending in all time periods, although there were some decreases seen for the 2021 cohort.

Exhibit K.10. Ambulatory, Acute Care, and PAC Utilization and Spending Impact Estimates for New Entrant ACOs, Overall and by Cohort

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|-------------------------------|---|----------|-------------------------------|---|----------|------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | |
| Overall | 41,351 | -3.6 | -15.06** (-25.17, -4.96) | 118,144 | -3.2 | -12.66*** (-18.55, -6.77) | 76,793 | -2.9 | -11.37*** (-18.61, -4.13) |
| 2021 Cohort | 20,097 | -1.6 | -6.49 (-22.31, 9.34) | 86,612 | -2.7 | -10.57** (-17.66, -3.48) | 66,515 | -3.0 | -11.80** (-19.70, -3.90) |
| 2022 Cohort | 13,431 | -8.3 | -34.16*** (-49.51, -18.80) | 23,709 | -5.8 | -23.06*** (-34.65, -11.46) | 10,278 | -2.3 | -8.55 (-26.25, 9.15) |
| 2023 Cohort | 7,823 | -1.1 | -4.32 (-26.81, 18.16) | 7,823 | -1.1 | -4.32 (-26.81, 18.16) | - | - | - |
| Spending on outpatient facility (↓) | | | | | | | | | |
| Overall | 41,351 | -4.8 | -95** (-165, -25) | 118,144 | -2.9 | -53** (-91, -15) | 76,793 | -1.7 | -31 (-75, 14) |
| 2021 Cohort | 20,097 | -5.5 | -99* (-198, -1) | 86,612 | -3.4 | -60** (-102, -17) | 66,515 | -2.7 | -48* (-94, -1) |
| 2022 Cohort | 13,431 | -6.4 | -141* (-265, -18) | 23,709 | -2.2 | -45 (-137, 47) | 10,278 | 4.2 | 80 (-58, 217) |
| 2023 Cohort | 7,823 | -0.3 | -6 (-173, 161) | 7,823 | -0.3 | -6 (-173, 161) | - | - | - |
| Spending on professional services (↓) | | | | | | | | | |
| Overall | 41,351 | -1.4 | -53 (-138, 32) | 118,144 | -0.7 | -24 (-71, 23) | 76,793 | -0.2 | -8 (-64, 47) |
| 2021 Cohort | 20,097 | -1.8 | -68 (-215, 78) | 86,612 | -1.0 | -37 (-96, 21) | 66,515 | -0.8 | -28 (-90, 34) |
| 2022 Cohort | 13,431 | -0.5 | -19 (-128, 90) | 23,709 | 1.3 | 41 (-37, 119) | 10,278 | 4.2 | 120* (11, 230) |
| 2023 Cohort | 7,823 | -2.0 | -72 (-234, 91) | 7,823 | -2.0 | -72 (-234, 91) | - | - | - |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|---|--|----------|------------------------------|---|----------|----------------------------|---|----------|---------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Spending on specialty care office visits (↓) | | | | | | | | | |
| Overall | 41,351 | -1.6 | -3 (-7, 0) | 118,144 | -1.6 | -3** (-5, -1) | 76,793 | -1.6 | -3** (-6, -1) |
| 2021 Cohort | 20,097 | -3.0 | -6* (-11, 0) | 86,612 | -2.0 | -4*** (-7, -2) | 66,515 | -1.8 | -4** (-7, -1) |
| 2022 Cohort | 13,431 | -2.6 | -6 (-12, 0) | 23,709 | -1.6 | -3 (-7, 1) | 10,278 | 0.2 | 0.3 (-5, 6) |
| 2023 Cohort | 7,823 | 2.6 | 7 (-3, 16) | 7,823 | 2.6 | 7 (-3, 16) | - | - | - |
| Acute Care | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | |
| Overall | 41,351 | -4.5 | -63.53* (-120.74, -6.32) | 118,144 | -0.8 | -11.18 (-42.40, 20.04) | 76,793 | 1.3 | 17.01 (-19.83, 53.86) |
| 2021 Cohort | 20,097 | -3.9 | -53.56 (-145.57, 38.45) | 86,612 | -0.2 | -2.50 (-39.67, 34.67) | 66,515 | 1.0 | 12.93 (-26.69, 52.54) |
| 2022 Cohort | 13,431 | -6.5 | -88.96* (-167.56, -10.37) | 23,709 | -2.3 | -31.55 (-93.79, 30.69) | 10,278 | 3.3 | 43.47 (-56.85, 143.80) |
| 2023 Cohort | 7,823 | -2.9 | -45.46 (-177.25, 86.33) | 7,823 | -2.9 | -45.46 (-177.25, 86.33) | - | - | - |
| Acute care hospitalizations (↓) | | | | | | | | | |
| Overall | 41,351 | -3.6 | -7.73* (-14.42, -1.04) | 118,144 | -1.3 | -2.64 (-6.41, 1.13) | 76,793 | 0.1 | 0.10 (-4.45, 4.66) |
| 2021 Cohort | 20,097 | -5.3 | -11.40* (-21.99, -0.81) | 86,612 | -1.5 | -3.12 (-7.63, 1.38) | 66,515 | -0.3 | -0.62 (-5.54, 4.30) |
| 2022 Cohort | 13,431 | -4.0 | -8.32 (-18.05, 1.42) | 23,709 | -1.3 | -2.63 (-10.22, 4.95) | 10,278 | 2.3 | 4.80 (-7.21, 16.80) |
| 2023 Cohort | 7,823 | 1.2 | 2.69 (-12.50, 17.87) | 7,823 | 1.2 | 2.69 (-12.50, 17.87) | - | - | - |
| Spending on acute care setting (↓) | | | | | | | | | |
| Overall | 41,351 | -6.6 | -262*** (-414, -109) | 118,144 | -3.0 | -107** (-188, -26) | 76,793 | -0.7 | -24 (-118, 70) |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|-------------------------------------|--|----------|--------------------------------|---|----------|-----------------------------|---|----------|---------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2021 Cohort | 20,097 | -6.4 | -231* (-446, -15) | 86,612 | -2.6 | -89 (-180, 2) | 66,515 | -1.4 | -46 (-145, 53) |
| 2022 Cohort | 13,431 | -9.1 | -388*** (-625, -150) | 23,709 | -4.2 | -169 (-351, 14) | 10,278 | 3.2 | 118 (-167, 402) |
| 2023 Cohort | 7,823 | -2.9 | -126 (-546, 294) | 7,823 | -2.9 | -126 (-546, 294) | - | - | - |
| Post-Acute Care | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | |
| Overall | 41,351 | -10.3 | -26.23 (-83.45, 31.00) | 118,144 | 0.6 | 1.20 (-21.68, 24.07) | 76,793 | 8.6 | 15.96 (-1.04, 32.97) |
| 2021 Cohort | 20,097 | -15.3 | -48.48 (-104.61, 7.65) | 86,612 | 0.4 | 0.81 (-18.68, 20.30) | 66,515 | 8.1 | 15.70 (-3.18, 34.58) |
| 2022 Cohort | 13,431 | 17.7 | 24.80 (-5.59, 55.18) | 23,709 | 15.4 | 21.71 (-1.19, 44.61) | 10,278 | 12.4 | 17.68 (-17.16, 52.51) |
| 2023 Cohort | 7,823 | -19.2 | -56.68 (-317.41, 204.05) | 7,823 | -19.2 | -56.68 (-317.41, 204.05) | - | - | - |
| Spending on IRF and LTCH (↓) | | | | | | | | | |
| Overall | 41,351 | -12.7 | -62 (-180, 57) | 118,144 | 2.3 | 10 (-49, 69) | 76,793 | 12.6 | 48 (-16, 113) |
| 2021 Cohort | 20,097 | -22.0 | -144 (-380, 92) | 86,612 | 1.1 | 5 (-73, 83) | 66,515 | 12.6 | 50 (-23, 123) |
| 2022 Cohort | 13,431 | 15.9 | 49 (-16, 114) | 23,709 | 14.4 | 44 (-5, 93) | 10,278 | 12.5 | 37 (-36, 111) |
| 2023 Cohort | 7,823 | -11.4 | -40 (-154, 73) | 7,823 | -11.4 | -40 (-154, 73) | - | - | - |
| SNF days (↓) | | | | | | | | | |
| Overall | 41,351 | -6.0 | -95.60 (-199.71, 8.51) | 118,144 | -3.2 | -50.40 (-109.51, 8.72) | 76,793 | -1.7 | -26.05 (-97.66, 45.55) |
| 2021 Cohort | 20,097 | -15.6 | -220.09** (-370.09, -70.08) | 86,612 | -4.3 | -64.12 (-132.55, 4.31) | 66,515 | -1.1 | -17.00 (-93.72, 59.73) |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|----------------------------|--|----------|----------------------------|---|----------|----------------------------|---|----------|-----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2022 Cohort | 13,431 | 0.1 | 1.77 (-173.21, 176.75) | 23,709 | -2.0 | -35.70 (-167.19, 95.78) | 10,278 | -5.1 | -84.67 (-283.93, 114.58) |
| 2023 Cohort | 7,823 | 3.5 | 57.03 (-196.13, 310.18) | 7,823 | 3.5 | 57.03 (-196.13, 310.18) | - | - | - |
| Spending on SNF (↓) | | | | | | | | | |
| Overall | 41,351 | -5.2 | -57 (-129, 15) | 118,144 | -3.1 | -31 (-69, 7) | 76,793 | -1.8 | -16 (-60, 27) |
| 2021 Cohort | 20,097 | -18.1 | -153*** (-242, -63) | 86,612 | -6.0 | -53** (-94, -12) | 66,515 | -2.6 | -23 (-69, 23) |
| 2022 Cohort | 13,431 | 2.7 | 37 (-95, 168) | 23,709 | 2.7 | 32 (-62, 126) | 10,278 | 2.7 | 27 (-106, 160) |
| 2023 Cohort | 7,823 | 2.3 | 28 (-180, 236) | 7,823 | 2.3 | 28 (-180, 236) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility. IRF=Inpatient Rehabilitation Facility. LTCH=Long Term Care Hospital. LOS=length of stay. Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Spending estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. The professional services spending measure includes all physician, non-physician, and ancillary services (for example, tests, imaging, ambulance services, Part B drugs administered in physician offices). The specialty care visits spending measure includes paid E&M services for specialty care practitioners. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10, **p<0.05, ***p<0.01.

K.6.2 Impacts for Hospice and Home Health Utilization and Spending for New Entrant ACOs

Exhibit K.11 presents impact results for hospice and home health utilization and spending outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022 by cohort for New Entrant ACOs. New Entrant ACOs showed significant decreases in continuous hospice days prior to death as of PY 2023 and as of PY 2022, primarily driven by decreases for the 2022 cohort. Total hospice days and hospice spending also decreased significantly in PY 2023. Overall, no significant changes were seen for home health utilization or spending for New Entrant ACOs in any time period, although some significant decreases were seen in the 2022 cohort.

Exhibit K.11. Hospice and Home Health Utilization and Spending Impact Estimates for New Entrant ACOs, Overall and by Cohort

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|---------------------------|---|----------|---------------------------|---|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Hospice | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | |
| Overall | 1,564 | -7.6 | -1.99 (-5.73, 1.76) | 4,433 | -10.6 | -3.23** (-5.67, -0.79) | 2,869 | -11.9 | -3.91** (-7.08, -0.74) |
| 2021 Cohort | 820 | -8.9 | -2.88 (-9.50, 3.73) | 3,317 | -10.0 | -3.44* (-6.61, -0.28) | 2,497 | -10.3 | -3.63* (-7.23, -0.02) |
| 2022 Cohort | 532 | -9.5 | -1.87 (-5.22, 1.48) | 904 | -18.3 | -3.50** (-5.94, -1.06) | 372 | -31.8 | -5.83*** (-9.31, -2.34) |
| 2023 Cohort | 212 | 6.5 | 1.18 (-5.05, 7.41) | 212 | 6.5 | 1.18 (-5.05, 7.41) | - | - | - |
| Total hospice days (↑) or (↓) | | | | | | | | | |
| Overall | 41,351 | -13.7 | -0.40** (-0.69, -0.12) | 118,144 | -4.1 | -0.12 (-0.29, 0.04) | 76,793 | 1.1 | 0.03 (-0.17, 0.23) |
| 2021 Cohort | 20,097 | -16.1 | -0.61** (-1.11, -0.11) | 86,612 | -2.6 | -0.08 (-0.29, 0.13) | 66,515 | 2.4 | 0.07 (-0.15, 0.30) |
| 2022 Cohort | 13,431 | -9.7 | -0.21 (-0.51, 0.10) | 23,709 | -11.5 | -0.23 (-0.46, 0.01) | 10,278 | -14.4 | -0.25 (-0.62, 0.11) |
| 2023 Cohort | 7,823 | -9.9 | -0.22 (-0.81, 0.37) | 7,823 | -9.9 | -0.22 (-0.81, 0.37) | - | - | - |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|---|--|----------|-----------------------------|---|----------|-----------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Spending on hospice (▲) or (▼) | | | | | | | | | |
| Overall | 41,351 | -10.5 | -58* (-110, -7) | 118,144 | -4.4 | -24 (-52, 4) | 76,793 | -1.0 | -5 (-38, 28) |
| 2021 Cohort | 20,097 | -11.4 | -75 (-158, 8) | 86,612 | -2.8 | -16.49 (-51, 18) | 66,515 | 0.2 | 1.25 (-36, 38) |
| 2022 Cohort | 13,431 | -12.1 | -54 (-111, 4) | 23,709 | -13.1 | -51** (-94, -9) | 10,278 | -15.1 | -48.29 (-110, 13) |
| 2023 Cohort | 7,823 | -4.7 | -23 (-157, 112) | 7,823 | -4.7 | -23 (-157, 112) | - | - | - |
| Home Health | | | | | | | | | |
| Home health episodes (▲) or (▼) | | | | | | | | | |
| Overall | 41,351 | -3.8 | -11.82 (-24.89, 1.25) | 118,144 | -1.2 | -3.73 (-10.89, 3.42) | 76,793 | 0.2 | 0.62 (-7.84, 9.08) |
| 2021 Cohort | 20,097 | -4.1 | -14.20 (-36.85, 8.45) | 86,612 | -0.8 | -2.63 (-11.56, 6.29) | 66,515 | 0.3 | 0.86 (-8.53, 10.26) |
| 2022 Cohort | 13,431 | -8.3 | -25.27** (-42.35, -8.18) | 23,709 | -5.5 | -14.73** (-27.01, -2.45) | 10,278 | -0.4 | -0.96 (-18.41, 16.49) |
| 2023 Cohort | 7,823 | 7.2 | 17.38 (-5.58, 40.33) | 7,823 | 7.2 | 17.38 (-5.58, 40.33) | - | - | - |
| Spending on home health (▲) or (▼) | | | | | | | | | |
| Overall | 41,351 | -3.5 | -23 (-51, 5) | 118,144 | -1.6 | -11 (-25, 4) | 76,793 | -0.6 | -4 (-24, 17) |
| 2021 Cohort | 20,097 | -4.0 | -27 (-72, 18) | 86,612 | -1.6 | -10 (-28, 8) | 66,515 | -0.8 | -5 (-28, 17) |
| 2022 Cohort | 13,431 | -7.1 | -49** (-87, -10) | 23,709 | -4.2 | -25 (-51, 2) | 10,278 | 1.5 | 7 (-35, 48) |
| 2023 Cohort | 7,823 | 4.7 | 30 (-36, 95) | 7,823 | 4.7 | 30 (-36, 95) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

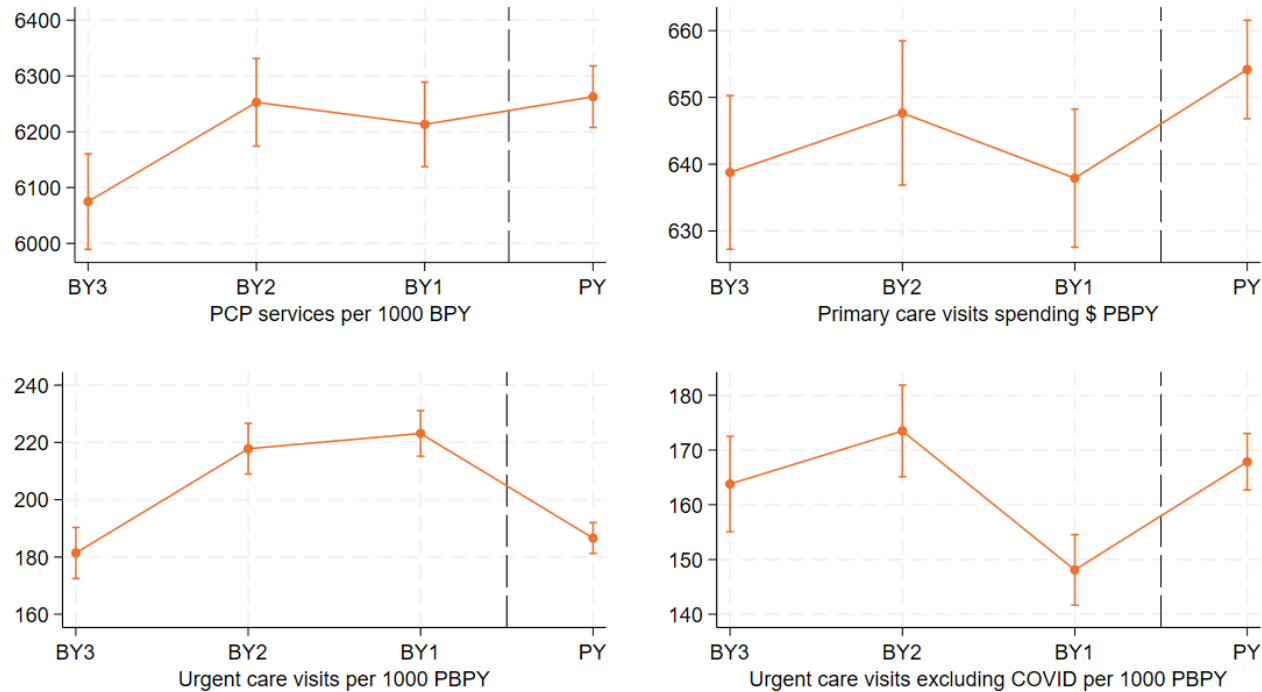
NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Spending estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in

performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

K.6.3 Descriptive Trends for Secondary Utilization Measures

Exhibit K.12 presents trends over time for New Entrant ACOs in PY 2023 for the following care measures not included in the impact analyses: primary care practitioner services (PCP services), Medicare spending for primary care visits, and urgent care visits (with and without COVID-19). See **Appendix I.3.2** for an explanation of why these measures were not included in the impact estimation. We show unadjusted trends for these measures for beneficiaries in the New Entrant ACO group from baseline to performance years in PY 2023. Compared to the baseline years, PCP services and primary care visit spending increased among New Entrant ACO beneficiaries in PY 2023. Urgent care visits increased over the baseline period but decreased in the performance year to the level seen in BY3. When excluding COVID-related visits, urgent care visits decreased slightly over the baseline period but increased in the performance year. The trends as of PY 2023 for these secondary measures were similar to the trends in PY 2023.

Exhibit K.12. Trends over Time in Secondary Utilization and Spending Outcomes from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: PBY=beneficiary per year; PY=performance year; BY=baseline year; PCP=primary care practitioner. BYs (with BY3 being the earliest and BY1 the most recent) represent calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

K.7 Quality of Care Impacts for New Entrant ACOs

K.7.1 Quality Impacts for New Entrant ACOs

Exhibit K.13 presents impact results for quality of care outcomes in PY 2023, cumulatively as of PY 2023, and cumulatively as of PY 2022 by cohort for New Entrant ACOs. New Entrant ACOs showed significant reductions in ACSC hospitalizations in PY 2023 and as of PY 2023, with reductions seen for the 2021 and 2022 cohorts. Recommended diabetes care significantly increased as of PY 2023 and as of PY 2022 (with increases seen for both the 2021 and 2022 cohorts in both time periods), and days at home significantly increased in PY 2023 and as of PY 2023 (with increases seen for the 2021 cohort in both time periods). As with Standard ACOs, low-value care increased, with significant increases seen as of PY 2022 and as of PY 2023 (primarily driven by the 2021 cohort); however, it is unclear what drove the increase in these services.

Exhibit K.13. Quality of Care Impact Estimates for New Entrant ACOs, Overall and by Cohort

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|---------------------------|---|----------|----------------------------|---|----------|-----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | |
| Overall | 41,351 | -11.7 | -2.57** (-4.31, -0.84) | 118,144 | -4.7 | -0.97* (-1.90, -0.03) | 76,793 | -0.5 | -0.10 (-1.20, 1.00) |
| 2021 Cohort | 20,097 | -15.7 | -3.72** (-6.57, -0.87) | 86,612 | -2.7 | -0.55 (-1.68, 0.57) | 66,515 | 2.1 | 0.40 (-0.78, 1.59) |
| 2022 Cohort | 13,431 | -10.0 | -2.25 (-4.69, 0.18) | 23,709 | -12.3 | -2.74** (-4.59, -0.88) | 10,278 | -15.5 | -3.37* (-6.23, -0.50) |
| 2023 Cohort | 7,823 | -1.0 | -0.17 (-3.78, 3.44) | 7,823 | -1.0 | -0.17 (-3.78, 3.44) | - | - | - |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | |
| Overall | 8,660 | -1.0 | -2.25 (-12.66, 8.16) | 26,903 | -2.2 | -4.98 (-11.32, 1.37) | 18,243 | -2.8 | -6.27 (-14.22, 1.67) |
| 2021 Cohort | 4,576 | -1.5 | -3.29 (-18.60, 12.02) | 19,885 | -4.0 | -8.76** (-15.80, -1.71) | 15,309 | -4.7 | -10.39** (-18.31, -2.47) |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|---------------------------------------|--|----------|--------------------------|---|----------|---------------------------|---|----------|---------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2022 Cohort | 2,764 | 4.1 | 9.56 (-6.77, 25.89) | 5,698 | 5.5 | 12.47 (-3.57, 28.51) | 2,934 | 7.0 | 15.20 (-11.88, 42.29) |
| 2023 Cohort | 1,320 | -9.8 | -23.39 (-49.46, 2.68) | 1,320 | -9.8 | -23.39 (-49.46, 2.68) | - | - | - |
| All-condition readmissions (↓) | | | | | | | | | |
| Overall | 4,772 | -1.9 | -2.65 (-14.17, 8.88) | 13,575 | -0.9 | -1.46 (-8.44, 5.53) | 8,803 | -0.5 | -0.81 (-9.58, 7.96) |
| 2021 Cohort | 2,386 | -5.7 | -8.20 (-26.26, 9.87) | 9,971 | -2.0 | -3.26 (-11.70, 5.18) | 7,585 | -1.0 | -1.71 (-11.24, 7.83) |
| 2022 Cohort | 1,651 | -1.6 | -2.26 (-19.07, 14.55) | 2,869 | 0.5 | 0.72 (-12.78, 14.22) | 1,218 | 3.0 | 4.77 (-17.41, 26.95) |
| 2023 Cohort | 735 | 10.3 | 14.50 (-12.64, 41.64) | 735 | 10.3 | 14.50 (-12.64, 41.64) | - | - | - |
| Low-value care (↓) | | | | | | | | | |
| Overall | 37,218 | 1.1 | 2.82 (-2.25, 7.89) | 110,400 | 2.0 | 5.01*** (2.05, 7.96) | 73,182 | 2.5 | 6.12*** (2.48, 9.75) |
| 2021 Cohort | 17,982 | 0.3 | 0.67 (-6.87, 8.21) | 81,864 | 2.2 | 5.29** (1.83, 8.75) | 63,882 | 2.7 | 6.59*** (2.70, 10.48) |
| 2022 Cohort | 12,248 | 3.0 | 9.60* (1.10, 18.10) | 21,548 | 2.2 | 6.70* (0.17, 13.23) | 9,300 | 1.1 | 2.88 (-7.29, 13.04) |
| 2023 Cohort | 6,988 | -1.3 | -3.51 (-14.97, 7.94) | 6,988 | -1.3 | -3.51 (-14.97, 7.94) | - | - | - |
| Recommended diabetes care (↑) | | | | | | | | | |
| Overall | 9,604 | 2.1 | 8.17 (-2.55, 18.88) | 31,158 | 3.2 | 11.73*** (5.84, 17.62) | 21,554 | 3.7 | 13.32*** (6.27, 20.37) |
| 2021 Cohort | 4,558 | 2.9 | 11.01 (-5.37, 27.40) | 23,808 | 3.1 | 11.54*** (4.72, 18.35) | 19,250 | 3.2 | 11.66** (4.18, 19.14) |
| 2022 Cohort | 3,232 | 3.6 | 13.32 (-3.69, 30.33) | 5,536 | 5.2 | 19.08** (5.86, 32.29) | 2,304 | 7.4 | 27.16** (6.21, 48.10) |
| 2023 Cohort | 1,814 | -1.9 | -8.17 (-32.76, 16.41) | 1,814 | -1.9 | -8.17 (-32.76, 16.41) | - | - | - |

| | In PY 2023 12 ACOs 5 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 5 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 39 ACO-Years 28 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 5 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 27 ACO-Years 23 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|-----------------------------------|--|----------|--------------------------|---|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Timely follow-up (↑) | | | | | | | | | |
| Overall | 1,529 | 2.1 | 16.92 (-3.72, 37.56) | 4,255 | 1.5 | 11.88 (-0.40, 24.15) | 2,726 | 1.1 | 9.05 (-6.22, 24.32) |
| 2021 Cohort | 758 | 3.2 | 26.20 (-5.59, 57.98) | 3,088 | 1.7 | 13.15 (-1.58, 27.87) | 2,330 | 1.1 | 8.90 (-7.65, 25.45) |
| 2022 Cohort | 520 | 0.6 | 5.03 (-26.49, 36.55) | 916 | 0.9 | 7.14 (-17.63, 31.92) | 396 | 1.2 | 9.91 (-29.73, 49.55) |
| 2023 Cohort | 251 | 1.7 | 13.54 (-34.72, 61.80) | 251 | 1.7 | 13.54 (-34.72, 61.80) | - | - | - |
| Days at home (per BPY) (↑) | | | | | | | | | |
| Overall | 8,199 | 0.6 | 0.55** (0.20, 0.90) | 23,779 | 0.2 | 0.22* (0.03, 0.40) | 15,580 | 0.1 | 0.04 (-0.17, 0.26) |
| 2021 Cohort | 4,876 | 0.8 | 0.76** (0.25, 1.26) | 17,131 | 0.4 | 0.34*** (0.12, 0.55) | 12,255 | 0.2 | 0.17 (-0.05, 0.39) |
| 2022 Cohort | 2,176 | 0.3 | 0.27 (-0.24, 0.79) | 5,501 | -0.1 | -0.15 (-0.56, 0.27) | 3,325 | -0.4 | -0.42 (-1.02, 0.17) |
| 2023 Cohort | 1,147 | 0.2 | 0.17 (-0.69, 1.04) | 1,147 | 0.2 | 0.17 (-0.69, 1.04) | - | - | - |

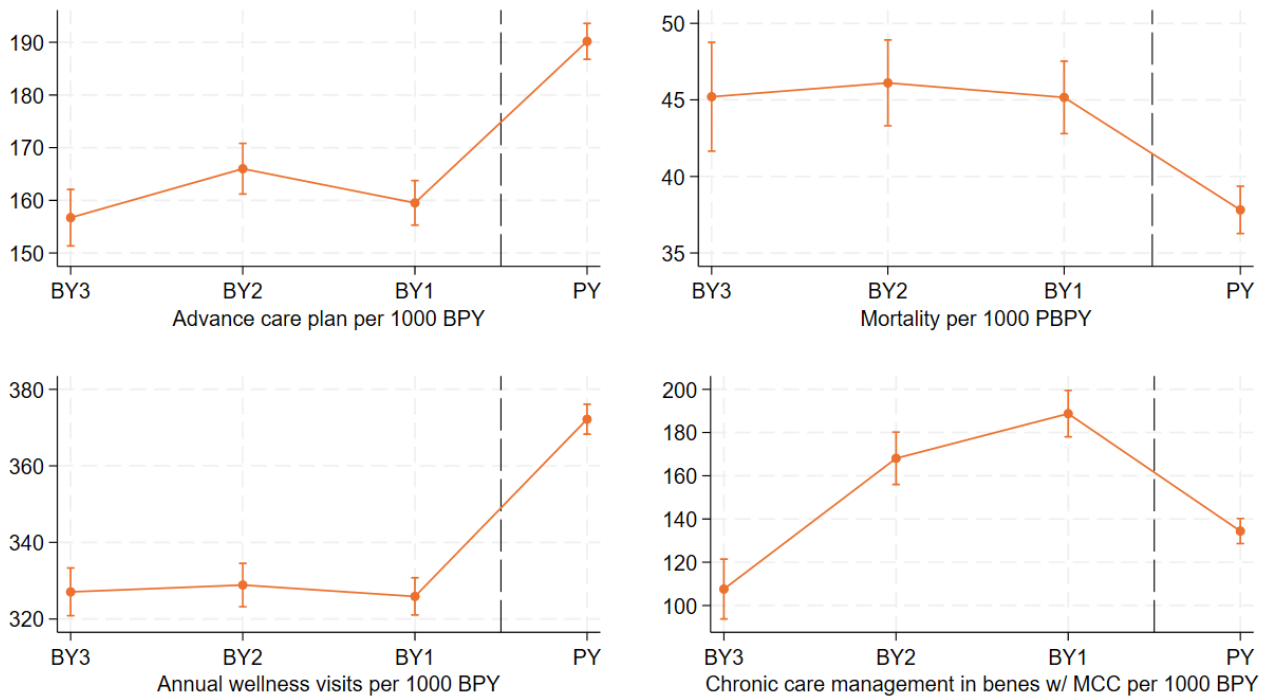
SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimates (except for “percent healthy days at home” and “percent of beneficiaries with one or more low-value care services”) and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. The Recommended Care for Diabetes measure is calculated for beneficiaries with diabetes. The unplanned hospitalization among beneficiaries with MCC measure is calculated for beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). The all-condition readmissions measure is calculated for beneficiaries with at least one acute care hospitalization. The timely follow-up measure is calculated for beneficiaries with one or more acute events related to one of six chronic conditions: hypertension, asthma, heart failure, coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), and diabetes. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.

K.7.2 Descriptive Trends for Secondary Quality Measures

Exhibit K.14 presents trends over time for New Entrant ACOs in PY 2023 for the following measures that were not included in the impact analysis: annual wellness visits, advanced care planning, chronic care management in beneficiaries with MCC, and mortality. See [Appendix I.3.2](#) for an explanation for why these measures were not included in the impact estimation. We show unadjusted trends for beneficiaries in the New Entrant ACO group from baseline to performance years in PY 2023. Compared to the baseline years, advanced care planning and annual wellness visits increased among New Entrant ACO beneficiaries in PY 2023, while mortality decreased in PY 2023. Chronic care management of New Entrant ACO beneficiaries with MCC increased throughout the baseline years but then decreased in PY 2023. The trends as of PY 2023 for these secondary measures were similar to the trends in PY 2023.

Exhibit K.14. Trends over Time in Secondary Quality of Care Outcomes among New Entrant ACO Beneficiaries from BYs to PY 2023



SOURCE: NORC analysis of Medicare claims and enrollment data.

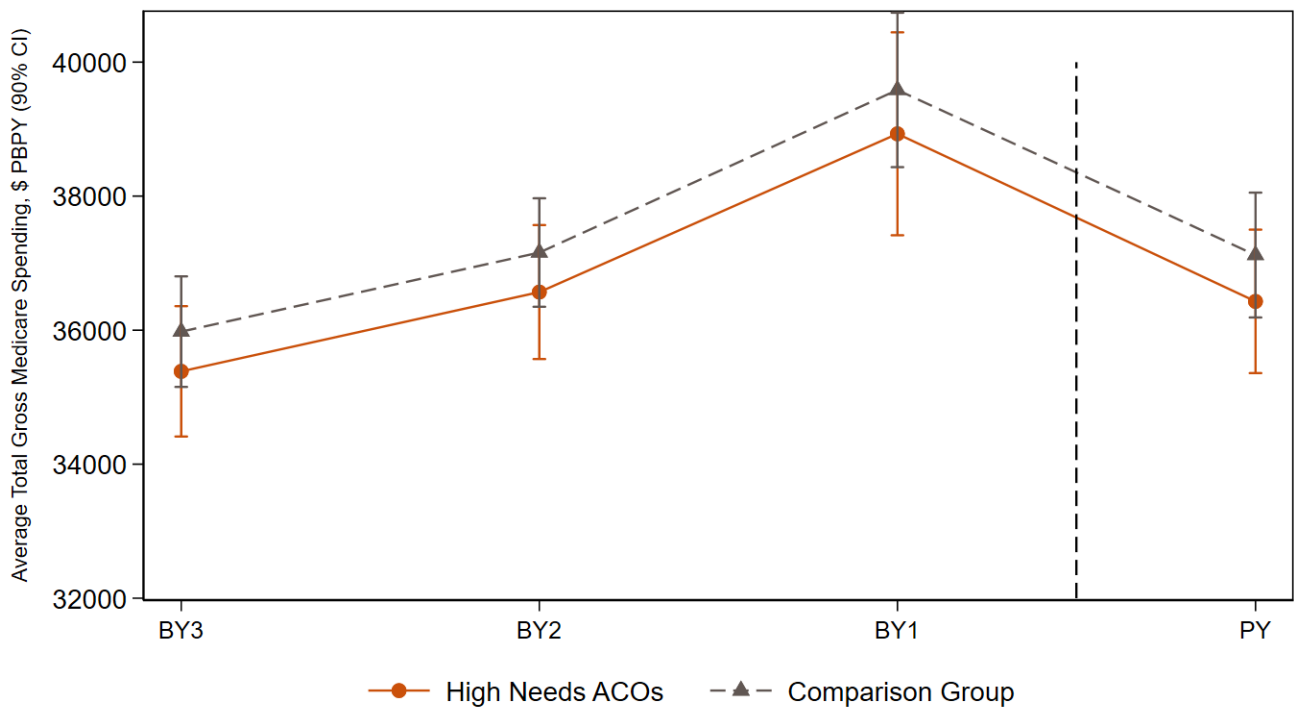
NOTE: BPY=beneficiary per year; PY=performance year; BY=baseline year. BYs (with BY3 being the earliest and BY1 the most recent) represent calendar years 2018–2020 for the 2021 Cohort ACOs, 2019–2022 for the 2022 Cohort ACOs, and 2020–2022 for the 2023 Cohort ACOs.

Appendix L: Exhibits to Support Chapter 8 (High Needs ACOs)

L.1 Average Trends in Gross Medicare Spending for High Needs ACOs

Exhibit L.1 shows the average trends in gross Medicare spending from baseline years to PY 2023 for High Needs ACOs and their comparison group. Compared to the first baseline year (BY1), both High Needs ACOs and their comparison group decreased gross spending in PY 2023.

Exhibit L.1. Adjusted Gross Medicare Spending Trend for High Needs ACOs



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Point estimates are the adjusted gross Medicare Parts A and B spending for ACO REACH or comparison beneficiaries in each year. Confidence intervals at the 90% level are displayed as bars around the point estimates. PBPY=per beneficiary per year. Performance year (PY) 2023 includes calendar year 2023 for 2022 and 2023 cohorts. Baseline years (BY) 1–3 span calendar years 2019–2021 for the 2022 cohort, and 2020–2022 for the 2023 cohort.

L.2 Gross Medicare Spending Impacts by Cohort for High Needs ACOs

Exhibit L.2 shows gross Medicare spending impacts in PY 2023, cumulatively as of PY 2023, and in PY 2022 by cohort for High Needs ACOs. In PY 2023, High Needs ACOs did not significantly change gross spending relative to the comparison groups. High Needs ACOs significantly decreased spending in PY 2022 (driven by a large significant decrease in the 2021 cohort) and there was a significant decrease in gross spending overall as of PY 2023 (driven by statistically significant decreases in the 2021 cohort). Cumulative estimates as of PY 2023 were driven by the higher number of aligned beneficiaries in PY 2023 and the non-significant changes in spending in PY 2023.

Revisions were made to the comparison groups for High Needs ACOs to address compositional changes in the providers and beneficiaries participating in the model in PY 2023. Relative to estimates that were previously publicly released, it should be noted that the changes made to the comparison groups for High Needs ACO led to updated impact estimates for both PY 2022 and PY 2023.¹²⁶

Exhibit L.2. Gross Medicare Spending Impact Estimates for High Needs ACOs, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 20 ACO-Years 8 ACO-Years in 2021 Cohort 5 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 7 ACO-Years 4 ACO-Years in 2021 Cohort 3 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|--------------------------|--|----------|-----------------------------|---|----------|-------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 16,110 | -0.2 | -87 (-1,157, 982) | 21,681 | -2.3 | -903* (-1,728, -77) | 5,571 | -7.3 | -3,262*** (-4,919, -1,604) |
| 2021 Cohort | 5,550 | -0.9 | -331 (-2,438, 1,777) | 9,017 | -4.9 | -1,935*** (-2,894, -977) | 3,467 | -10.0 | -4,504*** (-6,867, -2,141) |
| 2022 Cohort | 2,000 | 4.4 | 1,515 (-1,849, 4,880) | 4,104 | 0.3 | 116 (-2,866, 3,098) | 2,104 | -2.7 | -1,214 (-3,237, 809) |
| 2023 Cohort | 8,560 | -0.8 | -304 (-1,555, 948) | 8,560 | -0.8 | -304 (-1,555, 948) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: One ACO from the 2023 cohort was dropped from PY 2023, and one ACO from the 2022 cohort was dropped from PY 2022 due to non-convergence in EB. Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated gross impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI).

¹²⁶ [Evaluation Report 2: Evaluation of the GPDC Model](#) reported a statistically significant gross spending reduction in PY 2022 for High Needs ACOs of \$1,397.76 PBPY (-3.5% or \$8.1 million in aggregate). The [Preview of Findings from the Evaluation of ACO REACH Model for Performance Year 2023](#) refined the comparison group used for assessing PY 2022 and PY 2023 impact estimates relative to methods used in Evaluation Report 2. The Preview listed statistically significant spending reductions of \$1,810 PBPY (4.5%) in PY 2022 and non-statistically significant spending increases of \$509 PBPY (1.4%) for PY 2023. Cumulatively across PY 2022 and PY 2023, there was a non-significant reduction in total spending by \$103 PBPY (0.3%). Following the publication of the Preview, additional refinements were made to the comparison groups to further improve their comparability to the treatment group. Findings in this report reflect updated impact estimates after incorporating all refinements to the comparison groups.

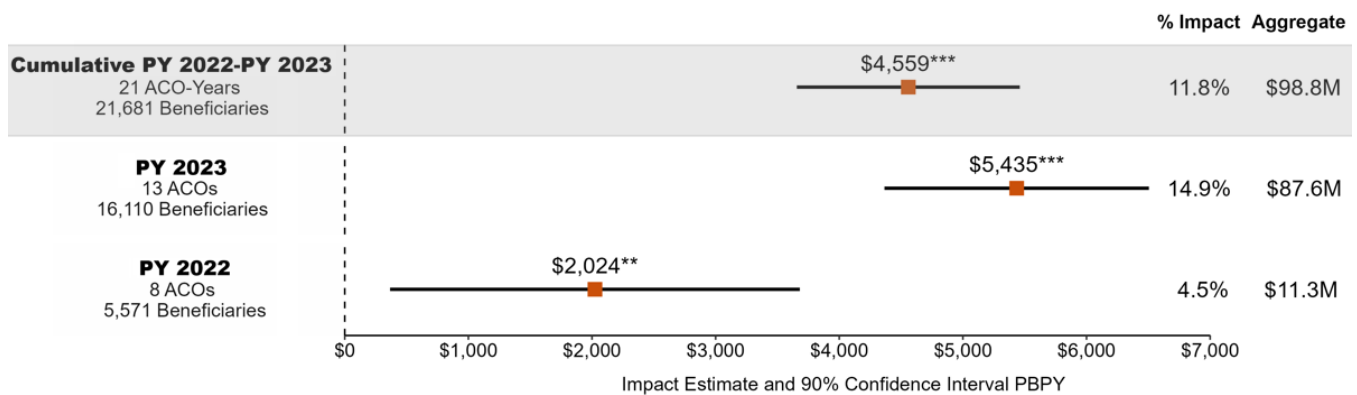
Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. *p<0.10; **p<0.05; ***p<0.01.

L.3 Net Medicare Spending Impacts Factoring in REACH Payouts, Overall and by Cohort for High Needs ACOs

Prior to PY 2023, the methods used in the evaluation of GPDC only accounted for financial incentives related to the model when calculating net spending. For PY 2023 analysis of ACO REACH, the methodology was updated to further account for financial incentives received by ACOs within the baseline period for both the intervention group and the comparison groups as well as for the comparison groups in the performance period. This report provides net spending results using both methods to ensure consistency with prior evaluation reports. First, we present net spending results using the methods followed in the GPDC evaluation prior to reviewing results using the updated methods in section L.4 of the technical appendix.

When considering shared savings payments only to REACH ACOs, High Needs ACOs increased net Medicare spending relative to the comparison groups by 11.8% (\$4,559 PBPY or \$98.8 million total) cumulatively (Exhibit L.3). In PY 2023, the increase was 14.9% (\$5,435 PBPY), reflecting significant increases across all three cohorts (Exhibit L.4), and was substantially larger than the corresponding increase in PY 2022 (4.5%).

Exhibit L.3. After Factoring in Payouts Only to REACH ACOs, Cumulatively as of PY 2023, Net Medicare Spending Increased Significantly for High Needs ACOs



SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: Model impact was estimated relative to the comparison groups and baseline years using a DID model. Only payouts to REACH ACOs were included. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in PY(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Impact estimate and 90% confidence interval are shown per beneficiary per year (PBPY). “Aggregate” was the total impact for all aligned beneficiaries. The number of beneficiaries represents the number aligned to the ACO REACH group in the performance year by the evaluation.

***p<0.01.

Exhibit L.4 shows net Medicare spending impacts after factoring in payouts to REACH ACOs in PY 2023, cumulatively as of PY 2023, and in PY 2022, by cohort for High Needs ACOs. High Needs ACOs significantly increased spending in all performance years. In PY 2023, the magnitude of increase was substantially lower for ACOs in the 2023 cohort than for ACOs in the 2021 and 2022 cohorts.

Exhibit L.4. Net Medicare Spending Impact Estimates for High Needs ACOs After Factoring in Payouts to REACH ACOs, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 20 ACO-Years 8 ACO-Years in 2021 Cohort 5 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 7 ACO-Years 4 ACO-Years in 2021 Cohort 3 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|------------------------------|--|----------|----------------------------|---|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 16,110 | 14.9 | 5,435*** (4,366, 6,505) | 21,681 | 11.8 | 4,559*** (3,657, 5,460) | 5,571 | 4.5 | 2,024*** (367, 3,681) |
| 2021 Cohort | 5,550 | 21.5 | 7,809*** (5,701, 9,916) | 9,017 | 12.9 | 5,104*** (3,520, 6,687) | 3,467 | 1.7 | 774 (-1,589, 3,137) |
| 2022 Cohort | 2,000 | 30.6 | 10,504*** (7,140, 13,868) | 4,104 | 18.2 | 7,212*** (5,273, 9,152) | 2,104 | 9.2 | 4,083*** (2,060, 6,106) |
| 2023 Cohort | 8,560 | 7.3 | 2,712*** (1,460, 3,964) | 8,560 | 7.3 | 2,712*** (1,460, 3,964) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: One ACO (2023 cohort) was dropped from PY 2023, and one ACO (2022 cohort) was dropped from PY 2022 due to non-convergence in EB. Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Only payouts to REACH ACOs were included. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

L.4 Net Medicare Spending Impacts Factoring in REACH and Comparison Group Payouts, Overall and by Cohort for High Needs ACOs

Exhibit L.5 shows net Medicare spending impacts after factoring in ACO payouts to the comparison group in addition to payouts to REACH ACOs in PY 2023, cumulatively as of PY 2023, and in PY 2022, by cohort for High Needs ACOs. Similar to the net spending estimates presented in **Exhibit L.4**, the 2023 cohort of ACOs increased net spending by a much smaller extent than the earlier cohort ACOs in PY 2023.

Exhibit L.5. Net Medicare Spending Impact Estimates for High Needs ACOs After Factoring in Payouts to REACH ACOs and to the Comparison Group, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 20 ACO-Years 8 ACO-Years in 2021 Cohort 5 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 3 ACO-Years in 2022 Cohort | | |
|--------------------|--|----------|------------------------------|--|----------|----------------------------|---|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Overall | 16,110 | 14.5 | 5,288*** (4,218, 6,357) | 21,681 | 11.4 | 4,426*** (3,524, 5,327) | 5,571 | 4.3 | 1,932* (275, 3,590) |
| 2021 Cohort | 5,550 | 21.1 | 7,662*** (5,555, 9,770) | 9,017 | 12.6 | 4,992*** (3,408, 6,576) | 3,467 | 1.6 | 717 (-1,646, 3,081) |
| 2022 Cohort | 2,000 | 29.9 | 10,261*** (6,897, 13,625) | 4,104 | 17.7 | 7,018*** (5,078, 8,958) | 2,104 | 8.8 | 3,934*** (1,911, 5,957) |
| 2023 Cohort | 8,560 | 7.0 | 2,586*** (1,335, 3,838) | 8,560 | 7.0 | 2,586*** (1,335, 3,838) | - | - | - |

SOURCE: NORC analysis of Medicare claims, enrollment, and ACO REACH Model data.

NOTE: One ACO (2023 cohort) was dropped from PY 2023, and one cohort 2022 ACO was dropped from PY 2022 due to non-convergence in EB. Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimated net impact is the difference-in-differences (DID) estimate, or the difference between the ACO REACH and comparison mean-adjusted gross spending in performance year(s) and the baseline years, accounted for by Shared Savings Program and NGACO shared savings/losses payments in the comparison group during the performance and baseline periods and in the treatment group during the baseline period. Estimates are presented as per beneficiary per year (PBPY) with 90% confidence interval (CI). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. "Impact (%)" was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries' outcomes continued along the same trajectory as that of the comparison group beneficiaries. Estimates are presented per beneficiary per year (PBPY). *p<0.10; **p<0.05; ***p<0.01.

L.5 Setting-Specific Utilization Impacts for High Needs ACOs

L.5.1 Impacts for Ambulatory, Acute Care, and Post-Acute Care Utilization for High Needs ACOs

Exhibit L.6 presents impact results for ambulatory, acute care, and PAC utilization outcomes in PY 2023, cumulatively as of PY 2023, and in PY 2022 by cohort for High Needs ACOs. High Needs ACOs significantly reduced ED visits in PY 2023 and cumulatively as of PY 2023, primarily driven by decreases in the 2023 cohort. While IRF and LTCH days declined in PY 2023, there was no significant impact cumulatively as of PY 2023. Conversely, SNF days declined cumulatively as of PY 2023, driven by a substantial decline in the PY 2021 cohort in PY 2022. We note that all findings on utilization and quality measures should be considered preliminary because, as noted previously in **Appendix I.4.5**, parallel trends testing was not conducted for these outcomes for this ACO type.

Exhibit L.6. Ambulatory, Acute Care, and PAC Utilization Impact Estimates for High Needs ACOs, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|-------------------------------|--|----------|-------------------------------|---|----------|--------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Ambulatory | | | | | | | | | |
| ED visits including observational stays (↓) | | | | | | | | | |
| Overall | 16,110 | -5.1 | -37.59*** (-61.26, -13.92) | 21,681 | -5.7 | -43.52*** (-62.33, -24.70) | 5,571 | -7.2 | -60.65*** (-86.65, -34.64) |
| 2021 Cohort | 5,550 | -1.5 | -12.37 (-51.08, 26.35) | 9,017 | -4.1 | -35.14** (-61.46, -8.82) | 3,467 | -7.8 | -71.60*** (-100.65, -42.54) |
| 2022 Cohort | 2,000 | -9.6 | -54.66 (-153.88, 44.57) | 4,104 | -7.5 | -48.48 (-103.08, 6.13) | 2,104 | -5.9 | -42.60 (-92.10, 6.89) |
| 2023 Cohort | 8,560 | -6.9 | -49.96*** (-78.55, -21.37) | 8,560 | -6.9 | -49.96*** (-78.55, -21.37) | - | - | - |

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|--------------------------------|--|----------|--------------------------------|---|----------|----------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Acute Care | | | | | | | | | |
| Acute care LOS (↓) | | | | | | | | | |
| Overall | 16,110 | 1.2 | 56.43 (-186.81, 299.67) | 21,681 | -1.2 | -61.35 (-252.57, 129.87) | 5,571 | -7.3 | -401.94*** (-644.95, -158.93) |
| 2021 Cohort | 5,550 | 3.0 | 121.75 (-39.87, 283.38) | 9,017 | -3.4 | -146.59 (-293.56, 0.39) | 3,467 | -11.7 | -576.14*** (-857.52, -294.76) |
| 2022 Cohort | 2,000 | 6.8 | 288.14 (-840.44, 1,416.73) | 4,104 | 1.5 | 81.52 (-514.14, 677.18) | 2,104 | -1.8 | -114.89 (-561.03, 331.25) |
| 2023 Cohort | 8,560 | -0.8 | -40.06 (-399.29, 319.17) | 8,560 | -0.8 | -40.06 (-399.29, 319.17) | - | - | - |
| Acute care hospitalizations (↓) | | | | | | | | | |
| Overall | 16,110 | 0.7 | 4.58 (-19.46, 28.62) | 21,681 | -1.8 | -12.29 (-31.12, 6.54) | 5,571 | -8.2 | -61.09*** (-84.30, -37.89) |
| 2021 Cohort | 5,550 | -2.4 | -14.77* (-27.61, -1.94) | 9,017 | -6.4 | -42.01*** (-54.99, -29.03) | 3,467 | -11.9 | -85.61*** (-112.40, -58.82) |
| 2022 Cohort | 2,000 | 5.1 | 27.54 (-121.12, 176.19) | 4,104 | 0.4 | 2.81 (-72.88, 78.49) | 2,104 | -2.6 | -20.70 (-63.46, 22.05) |
| 2023 Cohort | 8,560 | 1.7 | 11.77 (-16.00, 39.54) | 8,560 | 1.7 | 11.77 (-16.00, 39.54) | - | - | - |
| Post-Acute Care | | | | | | | | | |
| IRF and LTCH days (↓) | | | | | | | | | |
| Overall | 16,110 | -13.4 | -181.76** (-305.48, -58.03) | 21,681 | -8.6 | -113.81 (-283.62, 56.00) | 5,571 | 6.7 | 82.67 (-472.96, 638.30) |
| 2021 Cohort | 5,550 | -11.7 | -164.21* (-305.22, -23.20) | 9,017 | -15.6 | -227.79** (-395.19, -60.39) | 3,467 | -21.5 | -329.57 (-701.84, 42.71) |
| 2022 Cohort | 2,000 | 64.1 | 318.49 (-121.20, 758.19) | 4,104 | 88.4 | 545.85 (-172.41, 1,264.11) | 2,104 | 104.1 | 761.97 (-575.24, 2,099.18) |

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|---------------------|--|----------|----------------------------------|--|----------|-------------------------------------|---|----------|-------------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2023 Cohort | 8,560 | -20.4 | -310.02*** (-497.92, -122.12) | 8,560 | -20.4 | -310.02*** (-497.92, -122.12) | - | - | - |
| SNF days (↓) | | | | | | | | | |
| Overall | 16,110 | -1.5 | -104.55 (-389.80, 180.69) | 21,681 | -6.5 | -574.28** (-1,010.21, -138.35) | 5,571 | -13.7 | -1,932.62** (-3,415.14, -450.10) |
| 2021 Cohort | 5,550 | -6.2 | -513.44 (-1,051.16, 24.29) | 9,017 | -12.2 | -1,414.90** (-2,333.82, -495.98) | 3,467 | -16.8 | -2,857.97** (-5,087.50, -628.44) |
| 2022 Cohort | 2,000 | 16.3 | 889.61 (-265.29, 2,044.51) | 4,104 | 3.0 | 224.46 (-680.68, 1,129.60) | 2,104 | -4.3 | -407.81 (-1,790.55, 974.92) |
| 2023 Cohort | 8,560 | -1.1 | -71.73 (-378.04, 234.58) | 8,560 | -1.1 | -71.73 (-378.04, 234.58) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: SNF=Skilled Nursing Facility. IRF=Inpatient Rehabilitation Facility. LTCH=Long Term Care Hospital. LOS=length of stay. Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10, **p<0.05, ***p<0.01.

L.5.2 Impacts for Hospice and Home Health Utilization for High Needs ACOs

Exhibit L.7 presents impact results for hospice and home health utilization outcomes in PY 2023, cumulatively as of PY 2023, and in PY 2022 by cohort for High Needs ACOs. There were no significant impacts on either total hospice days or continuous hospice days prior to death. The number of home health episodes declined significantly in PY 2023 by 7.2% and cumulatively as of PY 2023 by 6.3%.

Exhibit L.7. Hospice and Home Health Utilization and Spending Impact Estimates for High Needs ACOs, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|--------------------------|--|----------|--------------------------|---|----------|--------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Hospice | | | | | | | | | |
| Continuous hospice days prior to death (↑) or (↓) | | | | | | | | | |
| Overall | 3,292 | -3.2 | -1.29 (-3.87, 1.29) | 4,567 | 0.6 | 0.21 (-1.95, 2.37) | 1,275 | 12.9 | 4.09* (0.15, 8.03) |
| 2021 Cohort | 1,127 | -0.3 | -0.11 (-4.41, 4.20) | 1,933 | 5.8 | 2.13 (-1.34, 5.60) | 806 | 16.8 | 5.25 (-0.49, 11.00) |
| 2022 Cohort | 385 | -7.1 | -2.55 (-11.90, 6.80) | 854 | 0.00 | 0.00 (-4.79, 4.79) | 469 | 6.4 | 2.10 (-2.05, 6.24) |
| 2023 Cohort | 1,780 | -4.3 | -1.77 (-5.12, 1.58) | 1,780 | -4.3 | -1.77 (-5.12, 1.58) | - | - | - |
| Total hospice days (↑) or (↓) | | | | | | | | | |
| Overall | 16,110 | 0.7 | 0.13 (-0.95, 1.20) | 21,681 | 2.0 | 0.36 (-0.56, 1.28) | 5,571 | 6.9 | 1.04 (-0.73, 2.82) |
| 2021 Cohort | 5,550 | 6.9 | 1.24 (-0.44, 2.92) | 9,017 | 8.9 | 1.48* (0.05, 2.92) | 3,467 | 12.7 | 1.87 (-0.71, 4.46) |
| 2022 Cohort | 2,000 | -0.9 | -0.13 (-1.95, 1.70) | 4,104 | -1.5 | -0.23 (-1.58, 1.12) | 2,104 | -2.0 | -0.32 (-2.31, 1.66) |
| 2023 Cohort | 8,560 | -2.6 | -0.53 (-2.19, 1.12) | 8,560 | -2.6 | -0.53 (-2.19, 1.12) | - | - | - |

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | In PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|----------------------------------|--|----------|----------------------------------|---|----------|----------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| Home Health | | | | | | | | | |
| Home Health Episodes (▲) or (▼) | | | | | | | | | |
| Overall | 16,110 | -7.2 | -157.89*** (-221.16, -94.63) | 21,681 | -6.3 | -127.80*** (-176.78, -78.83) | 5,571 | -2.5 | -40.79 (-94.26, 12.68) |
| 2021 Cohort | 5,550 | -5.3 | -95.37 (-195.08, 4.34) | 9,017 | -7.4 | -129.04*** (-196.44, -61.65) | 3,467 | -11.0 | -182.94*** (-255.38, -110.50) |
| 2022 Cohort | 2,000 | -9.7 | -157.98** (-286.95, -29.00) | 4,104 | 1.4 | 22.19 (-51.79, 96.17) | 2,104 | 12.1 | 193.45*** (117.33, 269.58) |
| 2023 Cohort | 8,560 | -7.7 | -198.41*** (-293.74, -103.07) | 8,560 | -7.7 | -198.41*** (-293.74, -103.07) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Utilization estimates and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. Impact estimates that are statistically significant *and* align with the hypothesized direction are shown in orange font. *p<0.10, **p<0.05, ***p<0.01.

L.6 Quality of Care Impacts for High Needs ACOs

Exhibit L.8 presents impact results for quality-of-care outcomes in PY 2023, cumulatively as of PY 2023, and in PY 2022 by cohort for High Needs ACOs. Most quality-of-care measures for High Needs ACOs showed expected directional improvements in PY 2023; however, many of the estimates did not reach statistical significance. This is similar to what was observed in PY 2022. One exception was that timely follow-up after acute chronic exacerbation increased significantly in PY 2023 and over the cumulative two-year period spanning PY 2022 and PY 2023. Days at home also increased cumulatively as of PY 2023 (significantly although marginally). Low-value care increased, with significant increases seen in PY 2023, as of PY 2022, and as of PY 2023 (primarily driven by the 2022 cohort); however, it is unclear what is driving the increase. The limited improvement in quality seen for High Needs ACOs may reflect the substantial health needs of their aligned beneficiaries, which may make quality improvements harder to achieve for beneficiaries.

Exhibit L.8. Quality of Care Impact Estimates for High Needs ACOs, Overall and by Cohort

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|--|--|----------|---------------------------|--|----------|--------------------------|---|----------|---------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| ACSC hospitalizations (↓) | | | | | | | | | |
| Overall | 16,110 | -7.1 | -7.26* (-14.28, -0.24) | 21,681 | -5.1 | -5.20 (-10.73, 0.33) | 5,571 | 0.7 | 0.74 (-6.42, 7.90) |
| 2021 Cohort | 5,550 | -8.6 | -9.55 (-26.33, 7.23) | 9,017 | -5.6 | -6.27 (-16.84, 4.30) | 3,467 | -0.9 | -1.01 (-6.86, 4.83) |
| 2022 Cohort | 2,000 | -18.3 | -16.46 (-35.55, 2.63) | 4,104 | -7.0 | -6.16 (-18.67, 6.36) | 2,104 | 4.3 | 3.64 (-12.69, 19.96) |
| 2023 Cohort | 8,560 | -3.7 | -3.62 (-9.64, 2.39) | 8,560 | -3.7 | -3.62 (-9.64, 2.39) | - | - | - |
| Unplanned admission (pts w/MCC) (↓) | | | | | | | | | |
| Overall | 7,697 | -1.1 | -3.24 (-12.12, 5.64) | 10,304 | -2.6 | -8.07 (-19.19, 3.04) | 2,607 | -6.6 | -22.33 (-57.59, 12.92) |

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|---------------------------------------|--|----------|---------------------------|--|----------|------------------------------|---|----------|-------------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2021 Cohort | 2,734 | -2.5 | -7.01* (-13.27, -0.74) | 4,389 | -3.7 | -10.86 (-26.68, 4.96) | 1,655 | -5.5 | -17.23 (-57.89, 23.42) |
| 2022 Cohort | 1,065 | -7.8 | -26.63 (-60.44, 7.19) | 2,017 | -8.0 | -28.78 (-64.59, 7.03) | 952 | -8.1 | -31.20 (-96.97, 34.57) |
| 2023 Cohort | 3,898 | 1.8 | 5.79 (-8.45, 20.03) | 3,898 | 1.8 | 5.79 (-8.45, 20.03) | - | - | - |
| All-condition readmissions (↓) | | | | | | | | | |
| Overall | 4,118 | 1.0 | 2.00 (-12.73, 16.72) | 5,702 | -2.4 | -5.03 (-16.20, 6.15) | 1,584 | -9.6 | -23.29*** (-35.64, -10.93) |
| 2021 Cohort | 1,406 | -1.5 | -2.78 (-23.72, 18.15) | 2,367 | -9.9 | -21.19*** (-34.20, -8.18) | 961 | -19.0 | -48.12*** (-57.55, -38.70) |
| 2022 Cohort | 490 | -0.1 | -0.28 (-23.57, 23.01) | 1,113 | 3.9 | 8.29 (-10.37, 26.94) | 623 | 6.6 | 15.03 (-12.82, 42.87) |
| 2023 Cohort | 2,222 | 2.7 | 5.53 (-17.77, 28.82) | 2,222 | 2.7 | 5.53 (-17.77, 28.82) | - | - | - |
| Low-value care (↓) | | | | | | | | | |
| Overall | 9,521 | 11.7 | 14.91** (3.45, 26.37) | 12648 | 14.0 | 17.69*** (7.19, 28.19) | 3127 | 21.2 | 26.15* (1.92, 50.38) |
| 2021 Cohort | 3,218 | 6.8 | 7.94 (-1.02, 16.89) | 5167 | 3.0 | 3.39 (-3.84, 10.62) | 1949 | -3.8 | -4.12 (-16.31, 8.06) |
| 2022 Cohort | 1,191 | 43.4 | 61.80 (-5.54, 129.15) | 2369 | 47.9 | 68.98** (23.50, 114.47) | 1178 | 52.3 | 76.24** (15.16, 137.32) |
| 2023 Cohort | 5,112 | 6.4 | 8.38 (-4.94, 21.69) | 5,112 | 6.4 | 8.38 (-4.94, 21.69) | - | - | - |
| Timely follow-up (↑) | | | | | | | | | |
| Overall | 974 | 2.6 | 21.30** (5.35, 37.26) | 1,262 | 3.5 | 27.13* (2.54, 51.72) | 288 | 7.5 | 46.82 (-46.43, 140.08) |

| | In PY 2023 13 ACOs 4 ACOs in 2021 Cohort 2 ACOs in 2022 Cohort 7 ACOs in 2023 Cohort | | | Cumulatively as of PY 2023 (GPDC + ACO REACH) 21 ACO-Years 8 ACO-Years in 2021 Cohort 6 ACO-Years in 2022 Cohort 7 ACO-Years in 2023 Cohort | | | Cumulatively as of PY 2022 (GPDC) 8 ACO-Years 4 ACO-Years in 2021 Cohort 4 ACO-Years in 2022 Cohort | | |
|-----------------------------------|--|----------|-----------------------------|--|----------|---------------------------|---|----------|----------------------------|
| | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) | # Aligned Beneficiaries | % Impact | Impact Estimate (90% CI) |
| 2021 Cohort | 288 | 2.0 | 14.71 (-5.04, 34.45) | 445 | 3.2 | 21.94* (3.21, 40.66) | 157 | 6.2 | 35.21 (-3.60, 74.01) |
| 2022 Cohort | 135 | 10.9 | 92.19*** (46.69, 137.69) | 266 | 9.9 | 76.71 (-24.31, 177.72) | 131 | 8.6 | 60.75 (-138.93, 260.43) |
| 2023 Cohort | 551 | 0.9 | 7.39 (-16.39, 31.16) | 551 | 0.9 | 7.39 (-16.39, 31.16) | - | - | - |
| Days at home (per BPY) (↑) | | | | | | | | | |
| Overall | 11,492 | 0.1 | 0.08 (-0.12, 0.28) | 15,465 | 0.4 | 0.34*** (0.15, 0.52) | 3,973 | 1.2 | 1.08*** (0.64, 1.51) |
| 2021 Cohort | 3,954 | 0.1 | 0.09 (-0.22, 0.39) | 6,415 | 0.8 | 0.70*** (0.37, 1.03) | 2,461 | 1.9 | 1.69*** (1.00, 2.38) |
| 2022 Cohort | 1,525 | -0.3 | -0.29 (-1.11, 0.53) | 3,037 | -0.1 | -0.11 (-0.53, 0.31) | 1,512 | 0.1 | 0.07 (-0.13, 0.28) |
| 2023 Cohort | 6,013 | 0.2 | 0.17 (-0.08, 0.42) | 6,013 | 0.2 | 0.17 (-0.08, 0.42) | - | - | - |

SOURCE: NORC analysis of Medicare claims and enrollment data.

NOTE: Model-wide impact in PY 2023 includes impacts for all three cohorts of ACOs. Estimates (except for “percent healthy days at home” and “percent of beneficiaries with one or more low-value care services”) and CI are presented as rate of the outcome per 1,000 beneficiaries per year (BPY). Aggregate estimate is the impact estimate for all aligned beneficiaries in performance year. “Impact (%)” was relative to the expected outcome for ACO REACH beneficiaries in performance year(s) had the model not existed and had the beneficiaries’ outcomes continued along the same trajectory as that of the comparison group beneficiaries. Arrows in parentheses after the outcome represent the hypothesized direction of change. The unplanned hospitalization among beneficiaries with MCC measure is calculated for beneficiaries with at least two of eight chronic conditions: acute myocardial infarction, Alzheimer’s disease and related disorders or senile dementia, atrial fibrillation, chronic kidney disease, chronic obstructive pulmonary disease (COPD) or asthma, depression, heart failure, and stroke and transient ischemic attack (TIA). The all-condition readmissions measure is calculated for beneficiaries with at least one acute care hospitalization. The timely follow-up measure is calculated for beneficiaries with one or more acute events related to one of six chronic conditions: hypertension, asthma, heart failure, coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), and diabetes. Low-value care services refer to specific services that provide zero or at best minimal benefit to patients, that could even cause harm, and/or that entail unnecessary health care resources and spending. The low-value care measure is defined as the rate of beneficiaries per 1,000 BPY who received at least one of 31 low-value care services during the reference year among those aligned to the ACO or comparison group. The 31 low-value care services fall into six clinical categories: cancer screenings; diagnostic testing; preoperative testing; imaging; cardiovascular testing and procedures; and other invasive procedures. Impact estimates that are statistically significant and align with the hypothesized direction are shown in orange font. *p<0.10; **p<0.05; ***p<0.01.