FINANCIAL ALIGNMENT INITIATIVE

Colorado Accountable Care Collaborative: Medicare-Medicaid Program (ACC:MMP) Evaluation Report

Summer 2021

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FINANCIAL ALIGNMENT INITIATIVE
COLORADO ACCOUNTABLE CARE COLLABORATIVE: MEDICARE-MEDICAID PROGRAM (ACC:MMP)
EVALUATION REPORT

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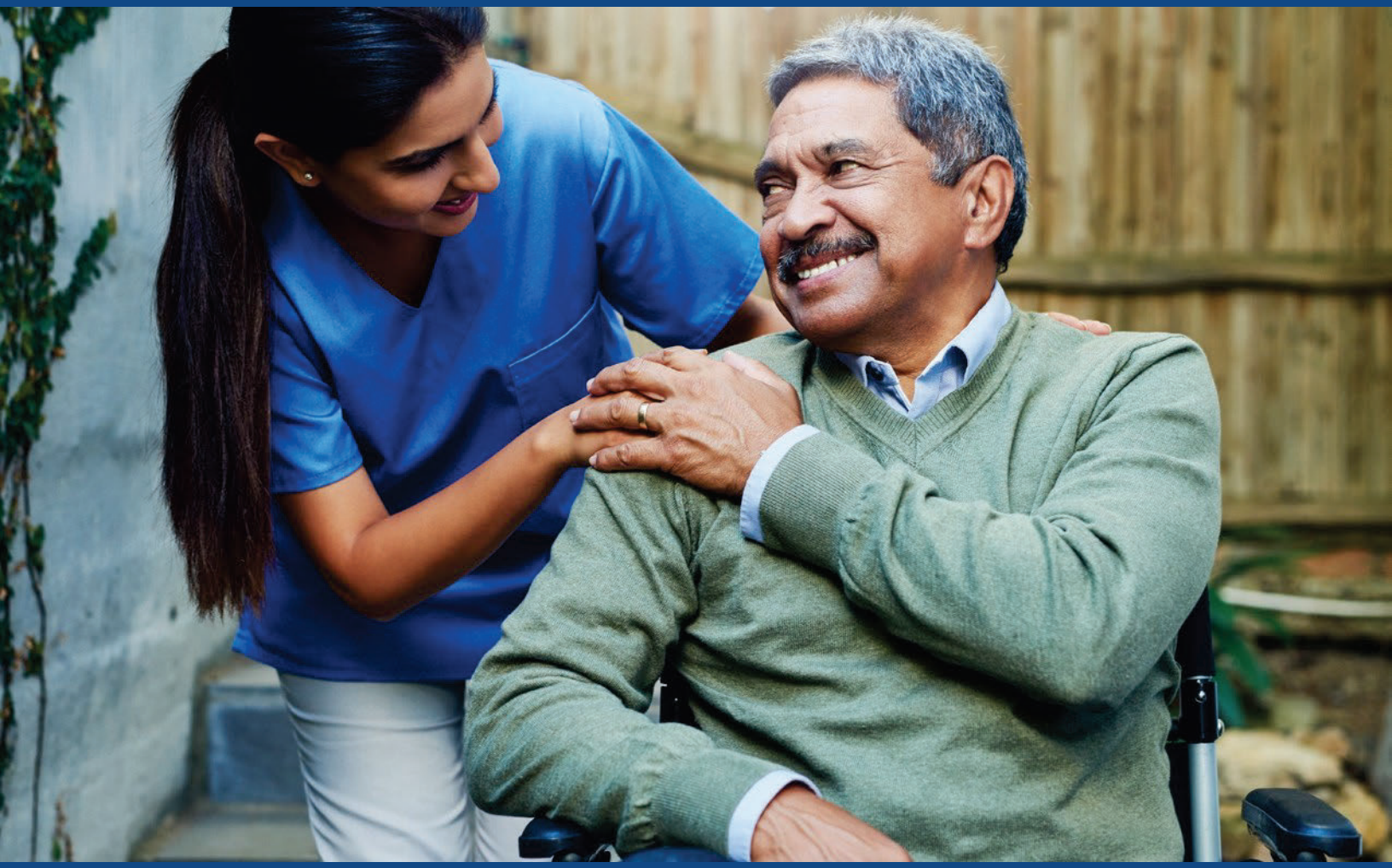
Glossary of Acronyms

ACC	Accountable Care Collaborative
ACC:MMP	Accountable Care Collaborative: Medicare-Medicaid Plan
ACSC	Ambulatory care sensitive condition
ADL	Activities of daily living
ADT	Admission, discharge, and transfer
BHOs	Behavioral health organizations
BUS	Colorado's Benefits Utilization System
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CCB	Community Centered Board
CCT	Colorado Choice Transitions Program
CMHCs	Community mental health centers
CMS	Centers for Medicare & Medicaid Services
CMT	Contract Management Team
CORHIO	Colorado Regional Health Information Organization
CPCi	Comprehensive Primary Care Initiative
CPC+	Comprehensive Primary Care Plus
DAP	Data Analytics Portal
DinD	Difference-in-differences
DME	Durable medical equipment
E&M	Evaluation and management
ED	Emergency Department
EQRO	External Quality Review Organization
FAI	Financial Alignment Initiative
FFS	Fee-for-service

FQHCs	Federally qualified health centers
GAO	United States Government Accountability Office
HCBS	Home and community-based services
HCC	Hierarchical Condition Category
HCPF	The Department of Health Care Policy and Financing
HIE	Health information exchange
HIT	Health information technology
HRA	Health risk assessment
HSAG	Health Services Advisory Group
ICF	Intermediate care facility
ICP	Individual care plan
ICT	Interdisciplinary Care Team
IDD	Intellectual or developmental disabilities
IT	Information technology
ITT	Intent-to-treat
KPIs	Key Performance Indicators
LTC	Long term care
LTSS	Long-term services and supports
MA	Medicare Advantage
MAXIMUS	the enrollment broker for the Colorado demonstration
MDS	Minimum Data Set
MFFS	Managed fee-for-service
MFP	Money Follows the Person
MMCO	Medicare-Medicaid Coordination Office
MMP	Medicare-Medicaid Plan

MOU	Memorandum of Understanding
NF	Nursing facility
PACE	Program of All-Inclusive Care for the Elderly
PCP	Primary care physician or provider
PCMP	Primary care medical provider
PMPM	per member per-month
PS	Propensity Score
RAE	Regional Accountable Entities
RCCOs	Regional Care Collaborative Organizations
SCP	Service coordination plans
SDAC	Statewide Data and Analytics Contractor
SDRS	State Data Reporting System
SHIP	State Health Insurance Assistance Program
SIM	State Innovations Model
SNF	Skilled nursing facility
SPA	State Plan Amendment
SPMI	Serious and persistent mental illness

Executive Summary



The Medicare-Medicaid Coordination Office and the Innovation Center at the Centers for Medicare & Medicaid Services (CMS) have created the Medicare-Medicaid Financial Alignment Initiative (FAI) to test, in partnerships with States, integrated care models for Medicare-Medicaid enrollees. There are two models under the FAI, a capitated model implemented through managed care organizations, and a managed fee-for-service model (MFFS). Colorado implemented a MFFS model demonstration.

The Colorado Accountable Care Collaborative: Medicare-Medicaid Program (ACC:MMP) was a statewide MFFS model demonstration that began in September 2014 and ended in December 2017. In MFFS model demonstrations, States contract with organizations to provide care coordination, and each State has the opportunity to share in any resultant savings to the Medicare program. The Colorado demonstration operated as a special initiative focused on Medicare-Medicaid beneficiaries within the larger statewide Accountable Care Collaborative (ACC), a Primary Care Case Management (PCCM)[1] medical home model program providing case management for Medicaid beneficiaries. In the ACC:MMP, seven Regional Care Coordination Organizations (RCCOs), which were either insurance companies or consortia of local providers, were responsible for coordinating enrollees' care across medical, long-term services and supports (LTSS), and behavioral health delivery systems. RCCOs often subcontracted with provider groups, through a variety of delegated arrangements, for care coordination services.

Individuals eligible for the ACC:MMP demonstration were Medicare-Medicaid beneficiaries enrolled in Medicare Parts A and B and eligible for Part D, received full Medicaid benefits under fee-for-service (FFS) arrangements, and had no other private or public health insurance. Medicare-Medicaid beneficiaries who were not eligible for the demonstration included those enrolled in a Medicare Advantage plan, the Program of All-Inclusive Care for the Elderly (PACE), the Denver Health Medicaid Choice Plan, or the Rocky Mountain Health Plan; and individuals who were residents of an intermediate care facility for individuals with intellectual or developmental disabilities (ICF/IDD). All eligible beneficiaries were aligned with the demonstration for the purpose of calculating any savings and performance payments, regardless of whether they accepted enrollment in a RCCO and received care coordination services. We refer to this latter group as demonstration enrollees throughout this report.

CMS contracted with RTI International to monitor the implementation of the demonstrations and to evaluate their impact on beneficiary experience, quality, utilization, and cost. In this Evaluation Report for the Colorado ACC:MMP, we describe implementation activities throughout the course of the demonstration. The report includes qualitative evaluation findings through December 2017, the end of the demonstration. It incorporates data collected in May 2018 focused on the demonstration's end and describes what components of the demonstration carried forward to ACC Phase II. ACC Phase II, the second phase of the State's

[1] Medicaid views PCCM as a managed care benefit because it is generally paid by a per-member-per-month (PMPM) amount and requires enrollment. According to CMS, the ACC program is generally classified as a PCCM program. In Colorado, individuals who receive Medicaid services are passively enrolled into the ACC program. In this Medicaid managed care environment, Medicare-Medicaid beneficiaries could receive PCCM through the RCCOs. Although all of Colorado's Medicaid recipients (including individuals who are dually eligible) could opt out of the ACC program, Medicare-Medicaid beneficiaries could not opt out of alignment to the MFFS model demonstration.

broader ACC program, began in July 2018. This report includes quantitative results for September 2014 through December 2017.

Highlights

Eligibility and Enrollment	Of the more than 34,000 Medicare-Medicaid beneficiaries who were eligible for the demonstration (and aligned with it for the purpose of calculating a potential performance payment from CMS to the state), over 28,000 (82.2 percent) were receiving PCCM through the RCCOs (as of the end of the demonstration in December 2017).[2]
Care Coordination	Seven RCCOs were responsible for coordinating enrollees' care across medical, LTSS, and behavioral health delivery systems. RCCOs often subcontracted with provider groups, through a variety of delegated arrangements, for care coordination services.
	The Colorado Department of Health Care Policy and Financing (HCPF) drafted protocols for RCCOs to collaborate with State entities responsible for coordinating LTSS and behavioral health services. However, the protocols lacked enforcement mechanisms, and RCCOs had difficulty achieving the intended level of collaboration.
	Because the per member per month payment from the state for care coordination was low, most RCCOs cross-subsidized care coordination by integrating ACC:MMP funding and staff with the ACC program and/or sharing workflows with State entities that managed LTSS for Medicaid enrollees.
	RCCOs had limited prior experience with formal care coordination for individuals with complex needs. For various reasons outside of and within their control, they faced challenges managing large numbers of new enrollees each month, including challenges meeting demonstration requirements to complete service coordination plans (SCPs) for all enrollees.

[2] In Colorado, individuals who receive Medicaid services are passively enrolled into the ACC program. In this Medicaid managed care environment, Medicare-Medicaid beneficiaries could receive PCCM through the RCCOs. Though all of Colorado's Medicaid recipients (including individuals who are dually eligible) could opt out of the ACC program, Medicare-Medicaid beneficiaries could not opt out of alignment to the MFFS model demonstration.

Beneficiary Experience	Perhaps because ACC:MMP enrollees were passively enrolled in the demonstration, most participants in 2016 and 2017 focus groups were unaware of any demonstration-related changes in their health care delivery or care coordination. Beneficiary advocates suggested that one explanation for this may have been that a large portion of the enrollee population never heard from ACC:MMP care coordinators.
	In 2015-2017, 85-87% of ACC:MMP enrollees responding to the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey expressed satisfaction with their ability to obtain needed care.
Stakeholder Engagement	HCPF used a variety of stakeholder engagement strategies to build understanding and support for the demonstration. These efforts had mixed success. For example, the level of engagement among stakeholder committees or groups varied. The Beneficiary Rights and Protection Alliance remained actively engaged throughout the demonstration. Engagement of RCCO, beneficiary advocates, and provider members of the Advisory Committee declined after the demonstration's initial roll-out. RCCOs' Member Advisory Committees had varying levels of success with enrollee engagement.
	HCPF reported challenges in developing mutual trust and shared goals among stakeholders, sustaining stakeholder participation, and having sufficient staff capacity for engagement efforts.
Quality of Care	HCPF reported significant challenges in developing, implementing, and reporting on State-specific quality measures. Some of the measures had not been used previously and were difficult to operationalize. Additionally, RCCOs did not use consistent measurement standards and reporting was delayed.

Quality of Care (continued)	RCCOs reported that providers did not make operational changes in response to the demonstration's quality measures because many measures did not align with existing federally qualified health center, behavioral health organization, and commercial insurer requirements. In addition, ACC:MMP enrollees represented a small portion of individual providers' total patient population.
Service Utilization	***Table ES-1*** shows that, consistent with the goals of the demonstration, there was a decrease in the probability of any long-stay nursing facility (NF) use in the demonstration group, relative to the comparison group. However, preventable emergency department (ED) visits increased and the probability of 30-day follow-up visits after a mental health hospitalization declined, relative to the comparison group. There was no impact of the demonstration on other utilization or quality of care measures.
	Table ES-1 also illustrates that the demonstration effect for the LTSS population was different than the effect for the non-LTSS population. The demonstration effect for LTSS users resulted in increases in the probability of inpatient admissions, ambulatory care sensitive condition (ACSC) admissions (overall and chronic) and skilled nursing facility (SNF) admissions relative to the demonstration effect for the non-LTSS population. The demonstration effect on beneficiaries with a serious and persistent mental illness (SPMI) resulted in an increase in the number of preventable ED visits relative to the demonstration effect among those without an SPMI.
Cost Savings	***Table ES-2*** summarizes the regression-based cost savings analyses and indicates that the demonstration was not associated with statistically significant savings or additional costs to the Medicare program (see Table E-2 for details). Separate actuarial analyses conducted for performance payment purposes did not find any gross Medicare Parts A and B savings resulting from the demonstration; thus, CMS did not make any performance payments to the State.

Decision to End the Demonstration	The ACC:MMP ended in December 2017. It was not extended, but all Medicare-Medicaid beneficiaries remained enrolled in the ACC as of January 2018.
	Difficulties with the State's transitions to new information technology (IT) vendors, as well as the State's participation in several major delivery system reform initiatives, limited HCPF's ability to overcome persistent ACC:MMP implementation challenges.
	The ACC:MMP shared savings model assumed that care coordination would lead to quality improvements and reduced Medicare expenditures and that the State would receive a portion of any Medicare savings. However, no Medicare savings were achieved.
	Several important facets of the ACC:MMP demonstration carried over into ACC Phase II, the second phase of the State's broader ACC program, which began in July 2018. For example, a key demonstration success was that it made RCCO staff and providers more aware of Medicare-Medicaid beneficiaries' unique needs and challenges. Also, one RCCO continued its pilot where it developed and used appointment-style cards to explain a need for interpreter services to providers, and how to schedule them.

Table ES-1 summarizes the cumulative impact estimates for the Colorado demonstration during demonstration years 1–3 (demonstration start through 2017). The cumulative estimates are the total effects of the demonstration over demonstration years 1 through 3. The table lists these estimates for each outcome and population, including the eligible population, relative to the comparison group, and the difference in the demonstration effect for the LTSS special population and the SPMI special population, relative to the demonstration effect for the non-LTSS and non-SPMI special population, respectively.

Table ES-1
Summary of Colorado cumulative demonstration impact estimates for demonstration period (September 1, 2014–December 31, 2017)

Measure	All demonstration eligible beneficiaries	Difference in demonstration effect (LTSS versus non-LTSS)	Difference in demonstration effect (SPMI versus non-SPMI)
Probability of inpatient admission	NS	Increase R	NS
Probability of ambulatory care sensitive condition (ACSC) admission, overall	NS	Increase R	NS
Probability of ACSC admission, chronic	NS	Increase R	NS
Count of all-cause 30-day readmissions	NS	NS	NS
Probability of emergency department (ED) visits	NS	NS	NS
Number of preventable ED visits	Increase R	NS	Increase R
Probability of 30-day follow-up after mental health discharge	Decrease R	NS	N/A
Probability of skilled nursing facility admission	NS	Increase R	NS
Probability of any long-stay nursing facility use	Decrease G	N/A	N/A
Count of physician evaluation and management (E&M) visits	NS	NS	NS

LTSS = long-term services and supports; N/A = not applicable; NS = not statistically significant; SPMI = serious and persistent mental illness.

NOTES: Statistical significance is defined at the α = 0.05 level. Green and red color coded shading indicates where the direction of the difference-in-differences (DinD) estimate was favorable or unfavorable; green indicates favorable, red indicates unfavorable. To ensure accessibility for text readers and individuals with sight disabilities, cells shaded green or red receive, respectively, a superscript "G" or "R". Long-stay nursing facility use means stays lasting 101 days or more in a year. In the column for "All demonstration eligible beneficiaries," an *Increase* or *Decrease* refers to the *relative* change in an outcome for the demonstration group compared to the comparison group, based on the DinD regression estimate of the demonstration effect during the demonstration period. The results shown in the two columns for "Difference in demonstration effect (LTSS versus non-LTSS)" and "Difference in demonstration effect (SPMI versus non-SPMI)" compare two separate DinD estimates of the demonstration effect—one for the LTSS and SPMI special populations and another for the non-LTSS and non-SPMI special populations—and indicate whether the difference between the two effect estimates is statistically significant (regardless of whether there is an overall demonstration effect for the entire eligible population). In these two columns, an *Increase* or *Decrease* measures the *relative* change in an outcome for the LTSS/SPMI special population compared to the non-LTSS/SPMI special population. For a given outcome, the result shown for the entire eligible population and that separately for the LTSS or SPMI special population can be different from each other.

SOURCE: RTI analysis of Medicare fee-for-service claims and Minimum Data Set data.

Table ES-2 summarizes the demonstration effects on total Medicare expenditures.

Table ES-2
Demonstration effects on total Medicare expenditures among eligible beneficiaries—Difference-in-differences regression results

Measure	Measurement period	Effect
Medicare Part A & B cost	Demonstration period	NS
	Demonstration year 1	NS
	Demonstration year 2	NS
	Demonstration year 3	NS

NS = not statistically significant.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar067).

SECTION 1

Demonstration and Evaluation Overview

1.1 Demonstration Description and Goals

The Medicare-Medicaid Coordination Office (MMCO) and the Innovation Center at the Centers for Medicare & Medicaid Services (CMS) created the Medicare-Medicaid Financial Alignment Initiative (FAI) to test, in partnerships with States, integrated care models for Medicare-Medicaid enrollees. The goal of these demonstrations is to develop person-centered care delivery models integrating the full range of medical care, behavioral health services, and long-term services and supports (LTSS) for Medicare-Medicaid enrollees. The expectation is that integrated delivery models would address the current challenges associated with the lack of coordination of Medicare and Medicaid benefits, financing, and incentives. There are two models under the FAI, a capitated model implemented through managed care organizations, and a managed fee-for-service model (MFFS). [3] Colorado implemented an MFFS model demonstration.

The goal of the Colorado Accountable Care Collaborative: Medicare-Medicaid Program (ACC:MMP) demonstration was to coordinate services across Medicare and Medicaid and achieve Federal and State cost savings through improvements in the quality of care and reductions in unnecessary spending. Key objectives were to improve the beneficiary experience; promote person-centered planning and beneficiary independence; improve quality of care; reduce health disparities; and improve health and functional outcomes (MOU, p. 4).

The Colorado Accountable Care Collaborative (ACC) served as the platform for the ACC:MMP demonstration. The ACC is a statewide program using a medical home structure to provide care coordination for the Medicaid population, primarily composed of mothers and children. The ACC:MMP operated as a special population entity within the ACC, with some policies and procedures specific to Medicare-Medicaid beneficiaries. Although the ACC:MMP did not add to or change the range of Medicare or Medicaid benefits available to enrollees, it created several new requirements to adapt the ACC to meet the more complex care coordination needs of Medicare-Medicaid beneficiaries.

The Colorado HCPF is responsible for the ACC overall and was responsible for the ACC:MMP. The ACC:MMP was a statewide, managed fee-for-service (MFFS) model demonstration. In MFFS model demonstrations, States contract with organizations to provide care coordination, and the State has the opportunity to share in any resultant savings to the Medicare program. The goal of the MFFS model demonstration was to advance State investments in aligning Medicare and Medicaid financing and service delivery for beneficiaries enrolled in both programs. The model integrates primary and acute care, behavioral health services, and LTSS, and if States meet specified quality and savings criteria, they could receive retrospective performance payments, called shared savings, from CMS (CMS, 2013).

[3] Two MFFS model demonstrations were under the FAI, the Washington Health Home MFFS demonstration and the Colorado ACC:MMP demonstration. For more information on the Washington MFFS demonstration, see https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/Washington. Accessed on July 29, 2020.

Implementation of the demonstration began in September 2014 and ended in December 2017. The following are the key demonstration features. Additional details follow in the topic-specific report sections.

Eligible population. Individuals eligible for the ACC:MMP demonstration included Medicare-Medicaid beneficiaries who were enrolled in Medicare Parts A and B and eligible for Part D, received full Medicaid benefits under fee-for-service (FFS) arrangements,[4] and had no other private or public health insurance. Medicare-Medicaid beneficiaries who were not eligible for the demonstration included those enrolled in a Medicare Advantage plan, the Program of All-Inclusive Care for the Elderly (PACE), the Denver Health Medicaid Choice Plan, or the Rocky Mountain Health Plan (the latter two were Medicaid managed care organizations operating in some Colorado counties); and residents of an intermediate care facility for people with intellectual or developmental disabilities (ICF/IDD). All eligible individuals were aligned with the demonstration for the purpose of calculating a potential performance payment from CMS to the State. However, individuals could choose to opt out of receiving care coordination services under the demonstration.

RCCOs. Seven RCCOs functioned as the ACC:MMP's integrated service delivery system. RCCOs were either insurance companies or consortia of local providers serving as care coordination organizations. Under the broader ACC program, RCCOs were responsible for the following activities for Medicaid enrollees in their regions:

- Medical management and care coordination
- Development of primary care provider networks
- Support of primary care providers (PCPs) in providing high-quality efficient care
- Reporting to the State on their regions' progress in meeting goals of the State and the Department of Health Care Policy & Financing (HCPF, 2017a)

HCPF gave RCCOs the option to delegate, through subcontracts, to Primary Care Medical Provider (PCMP) practices for some or all care coordination responsibilities. Under the ACC:MMP demonstration, RCCOs were required to do the following:

- Develop a service coordination plan (SCP) for each enrollee
- Enter into collaborative agreements with entities that manage Medicaid LTSS and behavioral health services
- Facilitate successful care transitions for enrollees discharged from hospitals
- Assess providers' capabilities to deliver disability-competent care and offer technical assistance to providers to meet these goals

[4] Behavioral health services were financed through capitation payments to behavioral health organizations (BHOs).

Care coordination. Care coordination was a central feature of the demonstration. RCCOs were responsible for ensuring that Medicare-Medicaid beneficiaries had SCPs, received care coordination, and had support services when transitioning from hospitals or nursing facilities to community settings.

Benefits. With the exception of care coordination—a new benefit under the demonstration—enrollees received the same Medicare and Medicaid benefits they had received before the demonstration (see ***Table 1***).

Table 1
Summary of Medicare and Medicaid benefits under the ACC:MMP

- Care coordination
- Primary care medical provider and specialist services
- Inpatient and outpatient hospital services
- Prescription drug coverage
- Behavioral health care
- Emergency care
- Dental care
- Vision care
- Podiatry
- Long-term services and supports, including institution-based and home and community-based services
- Laboratory services
- Radiology
- Transportation
- Smoking cessation services

SOURCE: Centers for Medicare and Medicaid Services and the Colorado Department of Health Care Policy and Financing: Your Guide to the Accountable Care Collaborative (ACC): Medicare-Medicaid Program. 2014/2015. Rocky Mountain Health Plans. https://www.colorado.gov/pacific/sites/default/files/ACC%20Medicare-Medicaid%20Program%20Handbook%20Guide%207-2014.pdf. As obtained on August 8, 2017.

Ombudsman. Under the demonstration, a new ombudsman program, called the Medicare-Medicaid Advocate, was created to assist Medicare-Medicaid beneficiaries. In addition to this program, Medicare-Medicaid beneficiaries in Colorado also had access to the State's Medicaid Managed Care Ombudsman and the Long-Term Care Ombudsman. Unless otherwise indicated, discussion of the ombudsman program in this report refers to the ACC:MMP Advocate program.

Stakeholder engagement. HCPF officials used a variety of structures to engage stakeholders, including:

- the Medicare-Medicaid Advisory Subcommittee to the ACC's Program Improvement Advisory Committee;
- the Beneficiary Rights and Protection Alliance;
- the MMP Operations Group (or SCP Work Group, formed to develop the template for SCPs and help RCCOs share best practices for SCP completion);

- a website and listserv; and
- the Medicare-Medicaid Advocate.

The State also conducted webinars, regional conferences, and one telephone town hall meeting to inform and gather input from stakeholders. RCCOs operated Member Advisory Councils to engage with ACC and ACC:MMP enrollees on a regular basis.

1.2 Purpose of this Report

In this report, we analyze implementation of the ACC:MMP demonstration from its initiation on September 1, 2014, through its conclusion in December 2017. We include qualitative data through December 2017, with key updates focused on the demonstration's end and next steps for ACC:MPP enrollees from a May 2018 site visit. We also include quantitative data for 2014 through 2017 from Medicare claims and the nursing facility Minimum Data Set 3.0 through 2017.

In this report, we describe the Colorado ACC:MMP demonstration's key design features; examine the extent to which the demonstration was implemented as planned; identify any modifications to the design; and discuss challenges, successes, and unintended consequences encountered during the period covered by this report. We also include findings or data on the beneficiaries eligible and enrolled, geographic areas covered, care coordination, the beneficiary experience, stakeholder engagement activities. Finally, we include analyses of utilization and quality, and a summary of findings related to Medicare savings results in all of the demonstration years.

1.3 Data Sources

We used a wide variety of data sources to inform this Evaluation Report (see below). See ***Appendix A*** for additional details.


Data Sources
KEY INFORMANT INTERVIEWS
Site visit and key informant interviews
Quarterly monitoring calls with CMS and Department of Health Care Policy and Financing
DEMONSTRATION DATA AND MATERIALS
State Data Reporting System (SDRS) submissions
Demonstration policies, contracts, and other materials
BENEFICIARY SATISFACTION DATA
Medicare Advantage Prescription Drug Plan Consumer Assessment of Healthcare Providers and Systems (CAHPS)
Focus groups
QUALITY DATA
State-specific quality measures
SERVICE UTILIZATION DATA
CMS administrative files
CMS Medicare claims data
Nursing Home Minimum Data Set
Medicare enrollment files
Area Health and Resources Files
American Community Survey
COST DATA
Medicare Part A claims
Medicare Part B claims

SECTION 2

Demonstration Design and State Context

2.1 Changes in Demonstration Design

The overall demonstration design did not change after its implementation in September 2014. In 2017, HCPF modified RCCO contracts to establish a 90-day timeframe (State of Colorado Contract, 2017, p. 28) for completing SCPs for all enrollees rather than for only high-risk enrollees and to establish a 48-hour response time (State of Colorado Contract, 2017, p. 27) to all contacts from the ACC:MMP Advocate. We discuss these changes in more detail in later sections.

2.2 Overview of State Context

2.2.1 Primary Care

While implementing the demonstration, Colorado Medicaid participated in two CMS multipayer delivery system transformation initiatives, Comprehensive Primary Care Initiative (CPCi) and Comprehensive Primary Care Plus (CPC+). These initiatives aimed to improve primary care using a medical home model (CMS, 2017; CMS, n.d.). PCMPs participating in these initiatives as well as the demonstration were subject to additional sets of performance measures and incentives.

2.2.2 Long-term Services and Supports

Colorado has achieved more balance in its LTSS utilization and expenditures (from institutional care toward HCBS) than most States and has continued to focus on institution-to-community transitions. HCBS accounted for approximately 66 percent of the State's Medicaid LTSS expenditures for all populations in fiscal year 2016 (Eiken et al., 2018).

Most HCBS in Colorado are financed through 1915(c) waivers that older adults and individuals with disabilities access through a statewide network of 24 Single Entry Point (SEP) agencies (Colorado HCPF, 2017b). SEPs conduct assessments, authorize HCBS, and provide case management and care planning.

Individuals with IDD access HCBS through 20 Community Centered Boards (CCBs) that fill a role similar to the SEPs in determining eligibility, developing service plans, and coordinating services (HCPF, 2017c).

Colorado participated in the CMS Money Follows the Person Rebalancing demonstration through the Colorado Choice Transitions Program (CCT), funded through a grant awarded in 2011 (HCPF, n.d.-a).[5] The primary goal of CCT is to facilitate Medicaid enrollees' transitions from institutional LTSS settings to the community. CCT has provided access to demonstration services supporting community living and HCBS waiver services (HCPF, 2017d; HCPF, n.d.-b).

[5] HCPF staff reported that grant funds would remain available through 2018, and the State planned to transition financing to Medicaid State plan and HCBS waiver benefits in 2019.

2.2.3 Behavioral Health Services

In December 2014, Colorado received a CMS Center for Medicare and Medicaid Innovation State Innovations Model (SIM) Round Two Model Testing award to support implementation of "The Colorado Framework," an initiative to integrate primary care and behavioral health services in more than 400 primary care practices and community mental health centers. The initiative included value-based payments; expansion of health information technology (HIT), such as telehealth; and regional health connectors (CMS, 2018). The SIM initiative, which ended in July 2019, was implemented in 25 percent of the State's primary care practice sites and four community mental health centers during its 4-year timeframe (HCPF et al., 2018).

2.2.4 Information Technology Reprocurements

Concurrent with ACC:MMP, HCPF reprocured two major IT vendor contracts. In Fall 2016, the State transitioned operations of its Medicaid Management Information System (MMIS)—which conducts Medicaid claims processing and payment operations—from Xerox to Hewlett Packard Enterprises. In March 2017, Colorado HCPF transitioned operations of its business intelligence and data analytics activities from 3M to Truven Health Analytics (Truven Health Analytics, 2015). These transitions had significant implications for operations of the ACC:MMP, as we discuss in later sections.

2.2.5 Federal Financial Support

In 2011, Colorado was one of 15 States to receive a $1 million design contract to support the development of a FAI demonstration proposal for submission to CMS. Colorado primarily used these funds to develop an integrated database of Medicare and Medicaid claims, contract with a consulting firm for actuarial support, and support stakeholder engagement activities and salary costs of State staff.

In 2014, CMS made funding available to support demonstration implementation for States that had received demonstration design contracts and had finalized memoranda of understanding (MOUs) in place. Colorado's implementation support award of $14.1 million was used to help build the infrastructure for care coordination, stakeholder outreach, actuarial support, and additional work to integrate Medicare and Medicaid data and calculate shared savings quality metrics.

The ACC:MMP Advocate program, which provided ombudsman services to demonstration enrollees, applied for and received three 12-month awards from CMS: $210,760 in year 1; $231,885 in year 2; and $231,885 in year 3 (CMS, 2016). CMS awarded supplemental funds of $95,000 in 2017 to enable the ombudsman program to continue through and slightly beyond the end of the demonstration.

SECTION 3

Integration of Medicare and Medicaid

HCPF contracted with seven RCCOs to coordinate enrollees' medical care, behavioral health services, and LTSS.

RCCOs reported varied experiences and persistent challenges with the State Data Analytics Contractor (SDAC), a key demonstration component intended to create an integrated Medicare-Medicaid claims database.

LTSS and behavioral health coordination posed a challenge to RCCOs, due to their lack of experience in these areas and resistance to collaboration they encountered from some community organizations.

HCPF established protocols for RCCO collaboration with other organizations that were already coordinating LTSS and behavioral health services. However, the protocols lacked enforcement mechanisms, and RCCOs had difficulty achieving the intended level of coordination.

In this section, we provide an overview of the demonstration's management structure and describe the integrated delivery system, including the role and structure of RCCOs, their provider arrangements, and the relationships with entities that compose the LTSS and behavioral health delivery systems.

3.1 Joint Management of Demonstration

The ACC:MMP's operations were governed by the MOU and Final Demonstration Agreement between HCPF and CMS (MOU, 2014a; CMS and the State of Colorado, 2014b). HCPF met biweekly with CMS to discuss oversight and implementation issues.

HCPF contracted with the seven participating RCCOs to coordinate medical care, LTSS, and behavioral health services for the demonstration. HCPF's ACC contract managers also managed RCCO operations for the ACC:MMP (see ***Section 9.2, Quality Management Structures and Activities***).

Contract provisions governing RCCO responsibilities under the ACC:MMP were originally included as an amendment to the ACC contract. However, CMS requested separate contracts for the demonstration because implementation funds were supporting some RCCO functions under the ACC:MMP (see ***Section 2.2, Overview of State Context***), and CMS wanted to minimize the impact on the entire ACC program should the demonstration be terminated. State officials said that the additional RCCO contracts required significant staff time and investment, including the hiring of a temporary worker, although few contract requirements were unique to the demonstration.

3.2 Overview of Integrated Delivery System

Upon enrolling in the ACC program, eligible Medicare-Medicaid beneficiaries were also enrolled in the demonstration. Previously, these beneficiaries were ineligible for the ACC. The ACC program has three major components: RCCOs, PCMPs, and an entity originally called the SDAC and now known as the Data Analytics Portal.

RCCOs. In 2011, HCPF competitively selected seven RCCOs and gave them a broad mission in support of the ACC:

- Develop a network of PCPs
- Support providers with coaching and information
- Manage and coordinate member care; connect members with nonmedical services
- Report on costs, utilization, and outcomes for attributed members

RCCOs received monthly payments based on the proportion of Medicare-Medicaid beneficiaries in each RCCO region relative to the State's total enrollee population. The monthly per member per month (PMPM) amount paid to each RCCO was roughly equivalent to $20.

State officials and stakeholders reported that prior to the ACC:MMP demonstration, RCCOs' membership mainly comprised children and families who generally were in good health and did not need intensive care coordination. RCCOs had minimal experience with coordinating LTSS and therefore needed to establish relationships with the SEPs, CCBs, and LTSS providers already managing these services.

PCMPs. PCMPs functioned as medical homes, providing comprehensive primary care and coordinating medical care. Each PCMP contracted with the State and the RCCO in its geographic area. To participate in the ACC, PCMPs were required to increase patient access to care by adopting procedures such as extended hours, same-day appointments, or some form of 24-hour accessibility. They received a Medicaid PMPM payment of $3 for attributed enrollees.

Beneficiaries were attributed to the RCCO in their region and to a PCMP if sufficient claims information was available to establish an existing patient-provider relationship. To identify a PCMP for attribution, the SDAC reviewed each enrollee's Medicare and Medicaid claims history from the previous 12 months to determine which medical provider the enrollee had seen most frequently (MOU, p. 9). HCPF described challenges and delays in obtaining Medicare data in a format that could be used for attribution. Additionally, RCCOs said Medicaid enrollment churn and mobility of the Medicaid population limited RCCOs' ability to attribute and reach enrollees (see ***Section 4.6, Reaching and Engaging Enrollees***). At the end of the demonstration, in December 2017, 73 percent of ACC:MMP enrollees were attributed to PCMPs (RTI, SDRS, 2018).

SDAC. The third key element of the ACC is the SDAC, which provides secure online access to patient data and analytical reports for the State, RCCOs, and PCMPs. The SDAC provides information on Medicare and Medicaid paid claims, behavioral health organization (BHO) managed care encounter data, clinical risk group identifiers, and clinical risk scores

(HCPF, 2014c). SDAC was intended to create an integrated Medicare-Medicaid claims database to provide comprehensive information on enrollees' health conditions, service utilization, and costs and to identify opportunities for additional support and care coordination for enrollees (MOU, p. 61). HCPF had planned to use integrated data from the SDAC to generate reports for ongoing performance monitoring and quality improvement (see ***Section 9.2, Quality Management Structures and Activities***). However, RCCOs' challenges in using SDAC data and the vendor's limitations, precluded the SDAC from reaching its full potential as a tool for that purpose.

HCPF said they used integrated Medicare-Medicaid data to establish key performance indicators (KPIs) that would measure and incentivize provider performance in three areas: all-cause hospital readmissions, potentially preventable readmissions, and depression screening (see ***Section 8.1***, ***Payment Methodology***, and ***Section 9.2, Quality Management Structures and Activities***). According to a State official, RCCOs and PCMPs had access to a suite of performance measures via the SDAC, which enabled them to analyze the claims experience of enrollees. HCPF also provided RCCOs with Medicare data but acknowledged that RCCOs had varying capacity to integrate Medicare and Medicaid data.

RCCOs described mixed experiences using the SDAC. For example:

- One RCCO had used SDAC data in conjunction with other data (e.g., hospital claims) to prioritize members for SCP completion.
- Another RCCO used SDAC data to analyze, track, and identify trends to inform program decisions, identify gaps in services, and further understand the enrollee population. Other RCCOs indicated that SDAC data were not in a format that could be readily used for care coordination, that it was difficult to access Medicare data, and that SDAC data were not timely enough to be actionable.
- Some RCCOs had used data from sources other than the SDAC, such as data from claims or from their own care management platforms, to analyze population trends for quality improvement.

In 2015, HCPF officials reported that the SDAC vendor was not providing the level of analytic support needed. Therefore, the State transitioned to a new system operated by Truven Health Analytics in March 2017 (as discussed in ***Section 2.2, Overview of State Context***). The SDAC was renamed the Data Analytics Portal (DAP). In 2017, HCPF officials reported that ACC:MMP data had not yet been added to the DAP and thus were not available to RCCOs.

3.2.1 Provider Arrangements and Services

Relationship with the LTSS Delivery System

Protocols to help increase collaboration. HCPF staff reported that they worked with the Medicare-Medicaid Program Advisory Subcommittee (see ***Section 7, Stakeholder Engagement***) to draft protocols for RCCOs to collaborate with SEPs, CCBs, nursing facilities and home health care providers on LTSS coordination and with BHOs and behavioral health providers on behavioral health service coordination. However, according to HCPF and RCCOs, RCCOs had difficulty reaching the level of collaboration envisioned in the protocols. State officials and a beneficiary advocate noted that the collaboration protocols did not include financial incentives or enforcement mechanisms. The affected entities described varied experiences with collaboration. For example:

Collaboration Protocols

- Discuss the care coordination needs of enrollees served by both entities
- Determine which organization could fulfill most of those needs
- Identify a primary care coordination manager
- Have ongoing conversations
- Engage other resources as needed

- LTSS-provider collaboration efforts were mixed:
  - One RCCO said that LTSS-provider relationship building efforts were successful.
  - Another noted that nursing facilities and home care agencies were unwilling to collaborate.
  - Another RCCO commented that extensive outreach by its care management staff helped improve relationships with assisted living facilities. However, its LTSS outreach efforts were complicated by the large number of LTSS providers (e.g., home health) in its major metropolitan area, which made it impossible to effectively engage with many of them.
  - HCPF staff said they tried to facilitate coordination among RCCOs and LTSS providers, but had limited success. The State noted that home care agencies were concerned about intrusion on their "turf;" and nursing facilities were not amenable to collaboration because they believed their residents did not need additional care coordination services from RCCOs.
- According to SEPs, CCBs, and the State, SEPs and CCBs initially may have been reluctant to collaborate with RCCOs because of the following:
  - Some SEPs and CCBs believed that RCCOs might take over their case management responsibilities in light of CMS's conflict-free case management rules.[6]
  - CCBs are paid according to their caseloads and were concerned about losing clients.

[6] These rules (42CFR 431.301(c)(1)(vi)) require State agencies to separate case management from service delivery functions (CMS, 2016).

  - Early in the demonstration, there was confusion and duplication of services between SEPs and RCCOs.

- Some RCCO collaboration with SEPs and CCBs was successful:
  - In 2017, several RCCOs reported that they had collaborated on care coordination with CCBs and SEPs.
  - One RCCO reported that its care coordinators partnered with SEP and CCB care coordinators to conduct "shared collaborative visits" with enrollees. These visits helped enrollees understand the RCCO's role.
  - The RCCO also held meet-and-greet lunches to help build relationships between its care coordinators and SEP and CCB care coordinators. After the meetings, the RCCO received referrals from CCB and SEP staff.

Benefits Utilization System (BUS). In 2016, State and RCCO officials noted that the State's BUS, which tracked data on enrollees' LTSS service utilization, was accessible to SEPs and CCBs but not to RCCOs. To meet the demonstration's care coordination requirements (see ***Section 5.1, Care Coordination Model***), RCCOs had to request the data from SEPs and CCBs. However, according to HCPF and RCCOs, SEPs and CCBs often were reluctant to share the information. In Spring 2016, HCPF gave RCCOs direct access to the BUS and provided BUS training to staff.

In 2017, the State reported that providing BUS access helped improve RCCOs' relationships with some SEPs and CCBs, because RCCOs no longer had to continually request data from these entities. However, RCCOs reported varying experiences following this change. One RCCO's relationships with the SEP improved, and it was able to establish integrated staffing and workflow arrangements. Another RCCO's efforts to collaborate with the SEP remained challenging, and a third had not gained access to the BUS. An RCCO that did have direct access to the BUS facilitated the SCP completion process.

Cultural differences and ongoing challenges. The State and a CCB indicated that differences in the organizational cultures of RCCOs, SEPs, and CCBs complicated communication. One CCB representative compared the situation to speaking different languages: "My group [the CCB] speaks Mandarin Chinese, and the RCCO folks…are speaking Greek…we're talking across each other."

Early in the demonstration, HCPF held multiple meetings—including a 2-day Learning Symposium in October 2015—to foster coordination among SEPs, CCBs, and LTSS providers. HCPF staff reported that, following the symposium, the level of collaboration continued to vary among regions.

Interaction with the Behavioral Health Delivery System

During the demonstration, Medicaid community behavioral health services were financed through capitation contracts with managed care entities known as BHOs, which operated as Prepaid Inpatient Health Plans under a 1915(b) waiver. Medicaid beneficiaries were enrolled in one of the State's five BHOs according to geographic region (HCPF, 2017e). BHOs authorized a full range of behavioral health services, which typically were delivered by community mental

health centers (CMHCs). The State said that the CMHCs provided services and treatment planning and case management to link individuals to other supports such as public benefits and housing. The BHOs provided coordination with other delivery systems and arranged Medicaid behavioral health services.

The State believed that RCCO collaboration with the State's five BHOs was easier than RCCO coordination of LTSS with 24 SEPs and 20 CCBs. However, the State, RCCOs, and providers reported varied experiences:

- One RCCO said it had established referral arrangements wherein BHOs managed behavioral health services and the RCCO helped address enrollees' other needs.
- Another RCCO said it collaborated with a BHO occasionally but had more-frequent communication with CMHCs. CMHC personnel were embedded in the RCCO's office part-time, and individual behavioral health providers reached out to them for assistance.
- A provider indicated that RCCOs had not shared enrollees' medical information with behavioral health providers to facilitate care coordination across delivery systems.

Limitations of Care Coordination Efforts

HCPF reported improvement in collaboration across delivery systems during the demonstration but said the extent of collaboration depended on individual care coordinators' skills and initiative. In 2017, a beneficiary advocate reported that some RCCOs were more effective than others in coordinating with multiple entities and that, when enrollees had several care coordinators, the advocate helped informally set up care teams and designate a lead care coordinator as the enrollee's main point of contact.

In 2017, HCPF encouraged RCCOs to pursue what State officials viewed as more realistic goals. For example, the State encouraged RCCOs to work with LTSS providers serving large numbers of Medicare-Medicaid beneficiaries rather than expecting the RCCOs to engage with all LTSS providers.

After the demonstration ended, HCPF staff attributed the challenges in coordination among providers and across delivery systems to the ACC:MMP's FFS payment model:

> *Because Colorado's fee-for-service system persists, we have a very fragmented system. …[T]he RCCOs had very limited levers at their disposal to persuade other providers to participate or to use their systems or to enter into a coordination of care agreement… [W]hen the goal is to create a more simple…[and] better coordinated system, it seems to me that in this demonstration, the fee-for-service model really was an insurmountable structural barrier to better coordination.*
>
> — HCPF Staff

3.2.2 Training and Support for Providers

Disability-Competent Care

To promote disability-competent care delivery, the State developed a PCMP assessment tool that RCCOs could use to train PCMPs, with a goal of creating a cadre of providers who had the capacity to deliver disability-competent care. Based on guidance from its legal team[7] early in the demonstration, HCPF decided not to make the assessment and training process mandatory. RCCOs used the assessment tool on a voluntary basis.

The tool had three domains—communication access, physical access, and programmatic access—and it addressed issues such as person-centered care coordination and LTSS. The State said the tool included elements of similar assessments used by CMS and the State of California, as well as an Americans with Disabilities Act checklist.

Some RCCOs reported that small, independent PCMP practices were reluctant to engage in the assessment and training process due to the time required. One RCCO said that large provider practices were more receptive to the training, and another RCCO said its large practices had received education on disability-competent care from corporate parent companies and did not need additional support.

In 2017, HCPF staff reported that three RCCOs were using the assessment tool, and others were pursuing alternate strategies to promote disability-competent care (e.g., training and a work group to address issues for people with hearing loss). HCPF did not collect data on the percentage of PCMP practices assessed with the tool. A beneficiary stakeholder reported collaborating with one RCCO to train most PCMP practices in the region on disability-competent care.

In addition to the assessment tool, HCPF created seven PCMP training videos on disability competency and posted them on its website in 2017 that had more than 1,200 views. However, the State did not have data on how PCMPs or others were using the videos or how many practices had made changes to increase access to people with disabilities.

Additional Provider Training

HCPF provided additional training for PCMP practices on topics such as fall risk screening (in conjunction with the demonstration's quality measure on fall prevention); collaboration with home care providers; key aspects of the Medicare program; and behavioral health integration.

[7] HCPF staff cited legal guidance stating that if assessment and training were mandatory, HCPF would be obligated under the Americans with Disabilities Act to conduct full investigations and implement corrective action plans to address any identified deficiencies. According to a State official, HCPF lacked the resources to take on those additional responsibilities.

SECTION 4

Eligibility and Enrollment

Following the initial phase-in of passive enrollment, the ACC:MMP enrollment rate remained above 80 percent of eligible beneficiaries aligned with the demonstration for the duration of the demonstration. State officials attributed the high enrollment rate to the demonstration's MFFS model, which did not create noticeable changes in enrollees' health care delivery or affect their freedom of choice among providers.

Throughout the demonstration, the State and RCCOs had difficulty identifying demonstration eligible beneficiaries to align with the demonstration due to multiple challenges in obtaining and integrating Medicare data, limitations of the State's information technology (IT) systems, and the State's IT vendor transition.

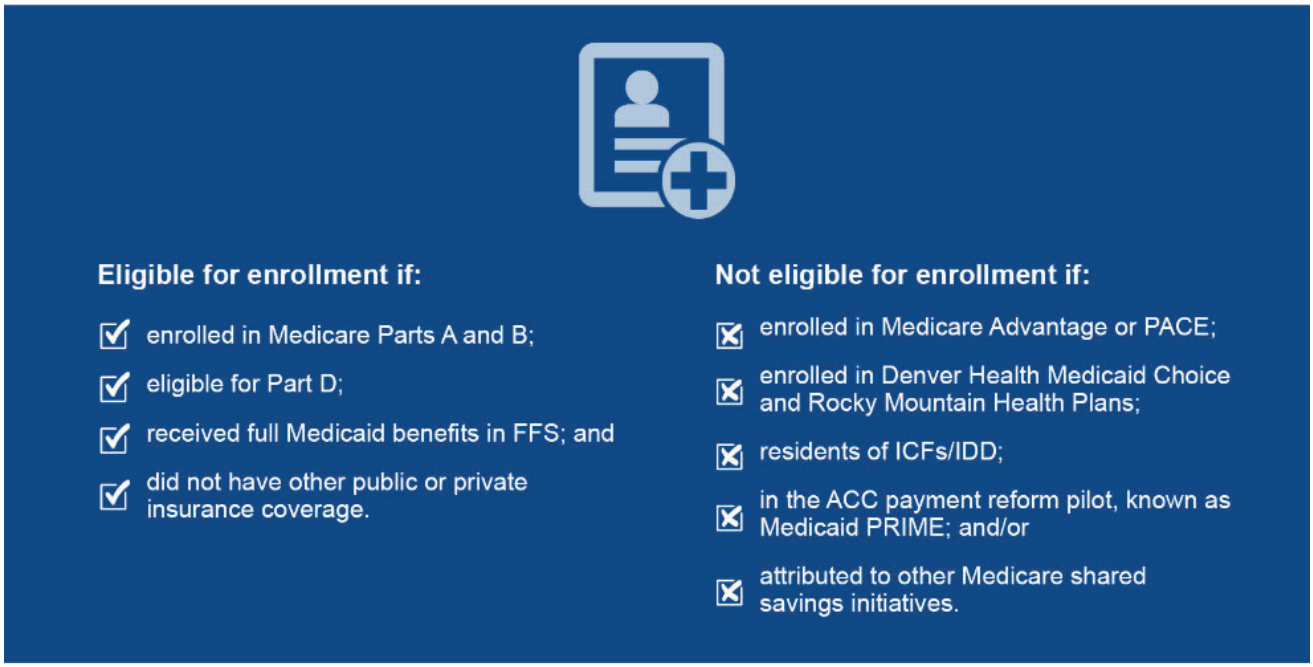
RCCOs found the passive enrollment and risk stratification processes challenging.

In this section we provide an overview of enrollment issues associated with the ACC:MMP and describe eligibility, phases of enrollment, and the passive enrollment experience. We include eligibility and enrollment data, and discuss RCCOs' experiences with reaching enrollees, as well as factors affecting enrollment decisions.

4.1 Eligibility

Figure 1 shows eligibility criteria for passive enrollment of Medicare-Medicaid beneficiaries in the ACC:MMP demonstration.

Figure 1
Eligibility criteria for passive enrollment in ACC:MMP



Source: MOU, pp. 8–9.

4.2 Enrollment Phases

Medicare-Medicaid beneficiaries who met the eligibility criteria were eligible for passive enrollment in the demonstration. The ACC:MMP began on September 1, 2014, with a phased-in passive enrollment process. The State assigned groups of beneficiaries to enrollment phases based on four actuarial categories and beneficiary PCPs' participation in the ACC (see ***Table 2***). Eligible enrollees were attributed to the RCCO in their region and to a PCMP if sufficient claims information was available to establish an existing patient-provider relationship.

Beneficiaries received introductory and enrollment letters at least 30 days in advance. Enrollment in the ACC:MMP was voluntary, referring to receipt of care coordination services. However, alignment with the demonstration for the purpose of calculating a potential performance payment from CMS to the State was maintained. Medicare-Medicaid beneficiaries were allowed to opt out or disenroll at any time, effective the first day of the following month. Beneficiaries also could opt into the ACC:MMP at any time, effective the first day of the next month. The State used an enrollment broker, MAXIMUS, to support enrollment functions. Phased-in passive enrollment was completed on June 1, 2015. Thereafter, the State continued to enroll newly eligible Medicare-Medicaid beneficiaries throughout the demonstration.

Table 2
ACC:MMP phased enrollment plan[8]

Element	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
First effective date	September 1, 2014	October 1, 2014	December 1, 2014	February 1, 2015	March 1, 2015
Target population	• Beneficiaries already enrolled in the ACC • Beneficiaries in the "community relatively well" category whose primary care providers were Primary Care Medical Providers (PCMPs)	• Beneficiaries in the "community relatively well" category whose primary care providers were not PCMPs • HCBS waiver participants with low utilization ("low waiver" category) whose PCPs were PCMPs • The remainder of those in the "community relatively well" category whose primary care providers were PCMPs	• Beneficiaries in the "low waiver" category whose primary care providers were PCMPs • In the second month of this phase, beneficiaries in the "low waiver" category whose primary care providers were not in the ACC Program • The remainder of those in the "community relatively well" category whose PCPs were not PCMPs	• Beneficiaries with high utilization of HCBS waiver services ("high waiver" category) • The remainder of beneficiaries in the low waiver category whose PCPs were not in the ACC Program	• Beneficiaries in skilled nursing facilities with Medicaid as the primary payer
Geographic area	Statewide	Statewide	Statewide	Statewide	Statewide
Enrollment method	Passive enrollment	Passive enrollment	Passive enrollment	Passive enrollment	Passive enrollment
Gradual roll-out	N/A	N/A	Phased in over 2 months	N/A	Phased in over 2 months (with no enrollment in April 2015)

HCBS = home and community-based services; N/A = not applicable; PCP = primary care provider.
SOURCES: Colorado Department of Health Care Policy & Financing, 2014, pp. 9–10; communications with Colorado HCPF.

[8] As discussed in the narrative, enrollment phases were implemented differently than planned.

Colorado initially planned to conduct five phases of enrollment over a 7-month period, beginning with beneficiaries categorized as "community relatively well" and ending with residents of skilled nursing facilities. However, State officials said that in the first month of the demonstration, they also enrolled about 4,000 Medicare-Medicaid beneficiaries who were already participating in the ACC. According to State officials, this group included nursing facility (NF) residents as well as HCBS waiver participants.

Enrollment did not occur in the third demonstration month, November 2014, because the State was not able to schedule time with the Medicaid enrollment system to process the demonstration enrollment file. Additionally, there was no enrollment in April 2015 because of an earlier IT security issue. As a result, the phase-in was extended to 9 months, with the last wave of passive enrollments completed on June 1, 2015.

Despite the extended phase-in period, in 2017 State officials and RCCOs said they would have preferred a longer transition. State officials said it was a "huge lift" for RCCOs to manage new enrollees, complete SCPs in the required time frames, and establish collaborative arrangements with SEPs, CCBs, and BHOs. RCCOs reported challenges in managing large numbers of new enrollees each month and often had to make operational adjustments when their initial risk stratifications did not correspond to enrollees' actual level of need.

…[W]e learned early [in the demonstration that the risk stratification level initially assigned to enrollees]…may not be indicative of what a member's needs are and what level of care coordination they need. They may have multiple chronic conditions, but they are very well managed [by other entities] and they are very well connected in the community [and therefore do not have extensive unmet needs]. Likewise, there might be somebody who is a non-utilizer that has a lot going on and… [a low risk level was inappropriately assigned] just because these needs haven't been identified through claims.

— RCCO Representative (2017)

4.3 Eligibility and Enrollment Data

As shown in ***Table 3***, the ACC:MMP enrollment rate remained above 80 percent from the time that the initial phase-in of passive enrollment was completed in June 2015 through the end of the demonstration. As of December 2017, 34,297 beneficiaries were eligible for the demonstration and aligned with the demonstration for the purpose of calculating performance payments,[9] and 28,175 were enrolled, an enrollment rate of 82.2 percent (RTI, SDRS, 2017).

[9] As discussed further in this section, initial enrollment projections were higher. After receiving data on Medicare Advantage enrollees who were ineligible for the demonstration, HCPF reduced its original ACC:MMP enrollment projection from approximately 50,000 to 32,000.

Table 3
ACC:MMP enrollment

Enrollment indicator	Number of beneficiaries		
	December 2015	December 2016	December 2017
Eligibility Beneficiaries aligned with and eligible to participate in the demonstration as of the end of the month	29,770	29,393	34,297
Enrollment Beneficiaries currently enrolled in the demonstration at the end of the month	26,485	25,146	28,175
Percentage enrolled Percentage of eligible beneficiaries enrolled in the demonstration at the end of the month	90.0%	86.0%	82.2%

SOURCE: RTI International: State Data Reporting System (SDRS), 2015, 2016, and 2017.

4.4 Passive Enrollment Experience

Beneficiary Outreach

ACC:MMP beneficiary communications included an introductory letter, followed by an enrollment letter and booklet. The letters provided information about the demonstration, notified enrollees that the RCCO would contact them, and listed telephone numbers for the RCCO and the enrollment broker. These introductory communications included language agreed upon by the Medicare-Medicaid Program Advisory Subcommittee (see ***Section 7, Stakeholder Engagement***).

Attribution to PCMPs

As part of the enrollment process, each eligible Medicare-Medicaid enrollee was attributed to the RCCO based on his or her county of residence, and attributed to a PCMP, if possible, based on the previous 12 months of Medicare and Medicaid claims history. HCPF described PCMP attribution as the critical first step needed for a beneficiary to gain value from enrollment in an RCCO. According to the State, RCCOs conducted outreach through letters, phone calls, and in-person visits with enrollees stratified as high-risk, to help connect unattributed enrollees with PCMPs.

HCPF reported in June 2017 that approximately 75 percent of ACC:MMP enrollees were attributed to PCMPs. At that time, the State believed that they had reached the "saturation point" in attribution because a certain segment of the population was consistently hard to reach due to transience or unwillingness to engage with RCCOs or the State (see additional discussion later in this section).

Enrollment Broker

The State's enrollment broker, MAXIMUS, managed the enrollment process; answered enrollee questions; handled opt-ins, opt-outs, and disenrollments; assisted beneficiaries with PCMP selection and changes; and sent outreach mailings to enrollees. According to HCPF, the

enrollment broker also helped the State address enrollment-related systems challenges (see additional discussion later in this section).

Eligibility Churn

State officials said that eligibility churn—due, for example, to changes in income or delayed submission of required recertification paperwork and resultant loss of Medicaid—had affected demonstration enrollment. HCPF reported in 2017 that the level of churn was mitigated to some extent by CMS's rapid re-enrollment guidance, which allowed enrollees who lost and regained eligibility within 60 days to re-enroll in the ACC:MMP without a second passive enrollment (CMS, 2016).

4.5 Integration of Medicare and Medicaid Enrollment Systems

Integration of Medicare Data

According to State officials, the process of obtaining and incorporating Medicare enrollment data was challenging, both at the onset and later when the State changed IT vendors. HCPF said their IT systems did not previously have built-in identifiers for Medicare-Medicaid beneficiaries; therefore, they had to add Medicare data manually. HCPF said that early in the demonstration, enrollees' Medicare enrollment status was not being transmitted and displayed correctly in the State's claims processing system, leading to confusion. HCPF dedicated a team of staff members to resolve the issue and said that subsequently, Medicare enrollment data were transmitted and included in State IT systems in a more timely and accurate manner.

However, State officials reported that they were not aware of the CMS data file identifying Medicare Advantage enrollees until approximately the second month of ACC:MMP implementation and therefore had to do "a lot of backtracking and…[manual] HIT fixes" to remove beneficiaries ineligible for the demonstration from the enrollment files. Upon receiving the data on Medicare Advantage enrollees, HCPF reduced its original ACC:MMP enrollment projection from approximately 50,000 to 32,000.

HCPF staff discovered in 2017 that because of an error in the manual process of identifying beneficiaries not eligible for the demonstration, their ACC:MMP enrollment data included a small number of beneficiaries (estimated at fewer than 100) living in intermediate care facilities who were ineligible. State officials reported that the error did not have a significant impact and said they were able to identify this population through claims analysis and remove them from ACC:MMP enrollment lists.

According to HCPF staff, the State's IT vendor transition in March 2017 led to recurrence of many earlier challenges with obtaining and incorporating Medicare enrollment data, and also introduced new challenges. RCCOs and beneficiary advocates reported that in some cases, Medicare Part D data did not transition correctly to the new IT system. Therefore, some enrollees were erroneously told at the point of service that they did not have this coverage. According to RCCO staff, the State worked with RCCOs and providers to transfer the needed data in a timely manner.

The State said because of systems changes associated with the IT vendor transition, they had to create a more specific set of codes to identify beneficiaries not eligible for the demonstration. This change did not seem to improve the process of identifying Medicare-Medicaid beneficiaries not eligible for the ACC:MMP. RCCOs in several regions said that following the vendor transition, they were not able to obtain accurate, reliable real-time enrollment data from the provider Web portal. In some cases, the portal erroneously showed beneficiaries as enrolled in the demonstration when, in fact, the RCCO's own data indicated that the beneficiaries had Medicare Advantage coverage.

One RCCO said that because real-time enrollment data were not reliable, it referred to the roster report, a list of demonstration enrollees that HCPF provided monthly to RCCOs. Other RCCOs raised questions about reliability of the roster data following the IT vendor transition. When in doubt, they "erred on the side of the member" and provided care coordination to anyone included in the roster report or provider portal.

Our guiding…philosophy is that we're going to serve the people that are coming in that need our services…[I]f we have somebody [listed as an enrollee] that's needing help with transportation or with housing or with specialty care, we're not going to necessarily clue into the part with what their insurance is. We're going to help them.

— RCCO Representative (2017)

4.6 Reaching and Engaging Enrollees

In 2015, RCCOs reported that the beneficiary contact information they received from the State was incorrect for about one-half of ACC:MMP enrollees, making it difficult to complete SCPs within the required time frames. These inaccuracies continued to complicate efforts to reach enrollees throughout the demonstration.

In 2016 and 2017, RCCO staff reported a variety of approaches to reach and engage enrollees, such as:

- conducting face-to-face outreach with homeless individuals on the street;
- having clinic-based care coordinators meet with enrollees during medical appointments;
- obtaining contact information from the BUS, the Colorado Regional Health Information Organization (CORHIO) (see ***Section 5.2, Information Exchange***), SEPs, and PCMP offices;
- conducting interactive voice response outreach calls;
- conducting outreach for both the ACC and the demonstration at a county social service center to obtain referrals for eligible individuals; and
- performing Google searches.

RCCOs reported that enrollees often declined to engage with care coordinators during the first outreach attempt. However, after care coordinators made repeated attempts and facilitated access to needed services, some enrollees learned to trust care coordinators and regularly engaged with them.

Throughout the demonstration, RCCOs faced challenges in engaging Hispanic populations and enrollees in rural areas (see ***Section 6.1, Impact of the Demonstration on Beneficiaries***). RCCOs reported a range of efforts to address these challenges by promoting staff diversity and cross-cultural understanding that could help increase enrollee engagement. For example, for Hispanic enrollees, strategies included:

- maintaining bilingual/Spanish-speaking staff and hiring from local communities;
- providing diversity competency training to all new PCMP practices; and
- planning a pilot project with the American Diabetes Association to train members of the Hispanic community to serve as health educators, or *promotoras*, to work in tandem with care coordination teams.

Early in the demonstration, one RCCO reported unmet needs for qualified interpreters for individuals who are deaf or hard-of-hearing residing in its region. The RCCO partnered with a community-based service provider for individuals with disabilities to recruit American Sign Language interpreters who could assist deaf and hard-of-hearing ACC enrollees (including but not limited to Medicare-Medicaid beneficiaries) during medical office visits. The RCCO also piloted development of appointment-style cards that these enrollees could use to explain to providers their need for interpreter services and how to schedule them. According to the RCCO, the pilot continued to operate throughout the demonstration and following its conclusion.

4.7 Factors Influencing Enrollment Decisions

HCPF and beneficiary advocates noted that the demonstration's MFFS model did not create noticeable changes in enrollees' health care delivery and allowed continued freedom of choice among providers. As discussed in ***Section 6.1, Impact of the Demonstration on Beneficiaries***, most focus group participants were unaware of the demonstration and any changes in their health care delivery associated with their ACC:MMP enrollment. The State believed that the continuity associated with the demonstration led to consistently high levels of enrollment.

There's very little change… [to]…the fee-for-service system [under the ACC:MMP]…[There's] still a lot of freedom, and the alternatives for individuals are managed care in the State, Medicare Advantage or PACE...So I think [the demonstration] is the default for a lot of people. They don't want to disenroll. They don't want to opt out.

— State Official (2017)

SECTION 5

Care Coordination

RCCOs were required to complete service coordination plans (SCPs), which served as both assessments and care plans, for all enrollees.

RCCOs had limited prior experience with care coordination and the ACC:MMP population. RCCOs faced particular challenges with high caseloads and SCP requirements.

RCCOs organized care coordination using various models; most adopted a blended delegation model with providers conducting assessments and developing SCPs for some enrollees.

The quality and extent of care coordination varied across and within RCCOs. The State provided limited care coordination oversight as it focused on demonstration operations and administrative requirements.

State officials concluded that the ACC:MMP care coordination model was not appropriate for Colorado, because it often used scarce resources.

In this section we provide an overview of the demonstration care coordination model, demonstration requirements related to the care coordination function, and the experiences of RCCOs and other entities with care coordination. We also discuss data exchange.

5.1 Care Coordination Model

Care coordination was a central feature of the ACC:MMP. RCCOs were required to:

- complete SCPs for all enrollees;
- facilitate access to needed acute care, LTTS, and behavioral health services;
- coordinate care across delivery systems; and
- arrange supports for care transitions.

5.1.1 Assessment and Care Planning

The demonstration required assessment and care planning for every enrollee, developing individualized SCPs. SCPs included:

- individuals' health goals, and demographic and contact information;
- cultural and linguistic considerations;
- prioritized domains of care; and
- timelines for stated objectives, updates, and revisions (CMS and the State of Colorado, 2014b).

RCCOs had limited prior experience with both the level and type of care coordination needed for the demonstration population. Care coordination in the ACC occurred more informally than in ACC:MMP, because the ACC population generally did not have complex needs. Early in the demonstration, RCCO representatives raised concerns about the level of detail captured in SCPs, the time required to administer them, and the deadlines for completion. RCCOs also questioned the need to develop SCPs for all enrollees.

RCCOs initially[10] were required to complete SCPs within 90 days for high-risk enrollees and 120 days for low-risk enrollees (CMS and the State of Colorado, 2014b). This requirement strained RCCO resources. The limited data available on SCP completion rates suggest that RCCOs did not meet this requirement for the majority of the ACC:MMP population. In 2016, the State estimated that, on average, RCCOs had completed SCPs for approximately one-third of the demonstration enrollees.

According to HCPF, monitoring compliance with SCP completion deadlines was challenging because the State did not know the total number of enrollees in each risk category. RCCOs had flexibility to create their own specifications for risk stratification, which they conducted during the SCP completion process.

RCCOs' stratification methods could vary, and stratification levels sometimes changed as RCCOs obtained additional enrollee information. For example, HCPF and RCCOs noted that they initially assumed that skilled nursing facility (SNF) residents or enrollees in HCBS waivers were high-risk, but often found that SNF staff or HCBS case managers were already meeting these enrollees' care coordination needs. Therefore, for the purposes of RCCO care coordination and planning, the enrollees were actually in the low-risk category.

HCPF and RCCOs reported that RCCOs faced additional challenges in complying with SCP requirements throughout the demonstration. In 2015, RCCOs estimated that contact information provided by the State was incorrect for about one-half of enrollees, and about 20 percent of those who were reached declined to participate in SCP completion.

Also in 2015, RCCOs reported that due to the limited resources they had for care coordination (see ***Section 8.2, Financial Impact***), they often relied heavily on information available from other sources, such as HCBS waiver care plans, to complete SCPs. As a result, some SCPs might not have identified needs beyond those already documented.

In 2015, HCPF contract managers found that several aspects of SCPs needed improvement (see ***Section 9.2, Quality Management Structures and Activities***). The State subsequently provided guidance to RCCOs on SCP completion, and HCPF's SCP Work Group (see ***Section 7, Stakeholder Engagement***) provided a forum for sharing best practices.

In 2016, HCPF reported that they had had "healthy" discussions with RCCOs about how to leverage resources to balance requirements for SCP completion with efforts to achieve maximum value from care coordination. In 2017, HCPF noted improvement in SCP

[10] After the United States Government Accountability Office released a report (GAO, 2015) recommending use of more consistent metrics for care coordination across all Financial Alignment Demonstrations, CMS directed HCPF to modify RCCO contracts in 2017 to require SCP completion for all enrollees within 90 days.

documentation of goal-setting and coaching. However, in both 2016 and 2017, RCCOs said that they believed that the State prioritized SCP completion over other aspects of care coordination.

> *[W]hen [the demonstration] was launched, the one quality measure that took precedence over everything was…SCP implementation. That was the message that all the RCCOs got from the State...This was very much launched as a SCP kind of program.*
>
> — RCCO (2016)

State officials said that because the SCP completion rate was a quality measure (see ***Section 9.1, Quality Measures***), RCCOs had continued to focus extensive resources on completing SCPs. In 2017, State officials remained concerned that RCCOs were prioritizing SCP completion over other care coordination activities.

HCPF acknowledged that completing SCPs had created resource challenges for RCCOs and that many enrollees' needs were being met outside of the demonstration. Based on these findings, HCPF ultimately decided that requiring SCPs for all enrollees was contrary to the goals of efficiency and person-centered care. Furthermore, State officials concluded that the demonstration's care coordination model, which required assessments and services based on individuals' status as Medicare-Medicaid beneficiaries, was not the right approach for Colorado. One official commented that providing an intervention based on insurance status led to "lack of clinical appropriateness in a lot of cases and wasted resources at [the] worst."

> *When we have very limited resources out in…rural Colorado and frontier areas…and you have care coordinators contractually required to have an in-person visit despite the fact the person doesn't want it or is agreeable to a phone visit, I don't think it led to a wise deployment of resources ultimately, both from a person-centered lens and an organizational efficiency lens.*
>
> — State Official (2017)

5.1.2 Care Coordination at the RCCO Level

Care Coordination Models and Structures

As noted earlier in this report, the demonstration did not prescribe specific models for care coordination or care team structures. In light of this flexibility, RCCOs organized care coordination using various models. Most RCCOs adopted a blended model. RCCOs' contract agreements with PCMPs specified the nature of their separate, shared, and delegated responsibilities for care coordination and related functions (MOU, p. 13).

Complete delegation. On one end of the care coordination spectrum, RCCOs contracted with provider groups or individual PCMPs to provide all care coordination. RCCOs passed on a

large portion of their monthly payment from the State to the delegated entity. The number of delegated entities varied among RCCOs.

In-house care coordination. On the other end of the spectrum, RCCOs employed care coordinators directly. One RCCO used a community care team model that included an RCCO-employed care coordinator, a registered nurse, and other provider types or community health workers.

Co-location. Some RCCOs staffed a clinic or physician's office with a care coordinator employed by the RCCO. These care coordinators were located in PCMP offices with varying schedules throughout the week or part-time, depending on need.

Blended model. Some RCCOs used different models according to provider capacities in their regions. For example, an RCCO could delegate care coordination activities to a large provider group with ample resources while also co-locating a care coordinator in a smaller, independent practice. Some RCCOs delegated care coordination responsibilities for a portion of their enrollees and conducted the rest in-house.

HCPF believed that RCCOs that delegated care coordination responsibilities for a significant portion of enrollees had higher SCP completion rates. However, a beneficiary advocate expressed concern about some aspects of delegated arrangements. For example:

- RCCOs sometimes were unaware of turnover among delegates' care coordinators, and
- some care coordinators did not seem to understand their job responsibilities

Caseload Ratios

To meet care coordination requirements, most RCCOs combined care coordination resources and staffing for the demonstration and the ACC, so that care coordinators served both populations. RCCOs' self-reported caseload ratios varied but remained high throughout the demonstration.[11] In 2016, one RCCO reported staffing ratios ranging from 1:100 under a specific delegated care coordination arrangement to approximately 1:700 under care coordination provided directly by RCCO staff. In 2017, self-reported estimates of caseload ratios from four RCCOs ranged from 1:150 to 1:667. Some RCCOs with higher caseloads characterized these caseloads as overwhelming and hard to manage effectively.

Engagement of Primary Care Medical Providers

HCPF and RCCO representatives reported varying levels of PCMP engagement in care coordination. A State official believed that PCMP practices with high volumes of Medicare-Medicaid beneficiaries and those who conducted care coordination under delegated arrangements with RCCOs were more engaged. RCCOs cited several factors affecting PCMP engagement, including office staffing levels, turnover, participation in the ACC, and responsibility for patients with IDD. For example:

[11] RCCOs were unable to report caseload ratios for delegated care coordination entities.

- PCMPs for patients with IDD were involved in care planning and communicated regularly with other providers, but providers for the general Medicare-Medicaid population were less engaged.
- Medicare providers who did not participate in the ACC had difficulty understanding RCCOs and thus were less engaged.

Quality and Intensity of Care Coordination

Throughout the demonstration, HCPF and beneficiary advocates reported that the quality and extent of care coordination varied among RCCOs. State officials said in some cases, care coordinators were able to form lasting relationships with enrollees and their families, promote collaboration among providers and across delivery systems, and improve enrollees' quality of life. In other cases, care coordinators did not achieve these outcomes.

One State official compared the variation in care coordination to a bell curve and said RCCOs' culture and workplace morale affected care coordinators' performance. A beneficiary advocate believed that RCCOs with smaller enrollment and lower caseload ratios provided the most effective care coordination, but typically, care coordinators provided enrollees with lists of resources rather than providing ongoing support. Another beneficiary advocate believed that because care coordination wages were low, the quality of work was not optimal.

Care coordination isn't exactly a well-paid profession, and that definitely has an impact on the quality of work that you can produce. In Colorado, it's a $12 an hour job…. It's poverty.

— Beneficiary Advocate (2017)

5.2 Information Exchange

5.2.1 Regional Care Collaborative Organizations' Care Management Information Systems

RCCOs and HCPF noted that RCCOs' capacity for electronic information-sharing varied throughout the demonstration. Several RCCOs reported that their centralized electronic care management systems incorporated SCPs and allowed communication across care teams. Other RCCOs reported that their systems were not integrated, with care coordination delegates maintaining separate care management systems and no centralized platform for communication, entry of SCP data, or information-sharing. HCPF commented that lack of centralization and interoperability among RCCOs' and delegates' care management systems contributed to challenges in monitoring care coordination (see ***Section 9.2, Quality Management Structures and Activities***).

5.2.2 Post-Hospital Transitions

Post-Acute Care Transitions

In 2016, RCCOs said they had difficulty using hospital admission, discharge, and transfer (ADT) data from the State's health information exchange (HIE), CORHIO, for care transitions. CORHIO reports listed several hundred patients each day but did not indicate the type of services provided, often contained inaccuracies, and did not have consistent data elements for all participating hospitals.

In 2017, RCCOs described continuing challenges associated with ADT data. Because CORHIO did not have hospital contracts in many rural and frontier areas, one RCCO relied on the State's data analytics contractor for ADT data following the IT vendor transition. But the new vendor was often unable to provide the data in a timely manner. One RCCO that had several care coordination delegates found it difficult to analyze ADT data and promptly transmit those data to its delegates, which delayed post-hospital follow-up.

However, a State official in 2017 reported that RCCOs had made progress in using CORHIO data to improve post-hospital transitions. Some RCCOs said that CORHIO's ADT data had improved significantly, enabling them to facilitate timely post-hospital follow-up. Two RCCOs indicated that CORHIO data had been helpful in the process of reaching enrollees in addition to facilitating care transitions.

Behavioral Health System Transitions

HCPF staff reported in 2017 that some inpatient behavioral health facilities in the ACC were reluctant to share information with BHOs for care coordination and post-hospital transitions, due to Federal rules governing privacy of information about patients with substance use disorders.[12] HCPF noted that this information-sharing was permissible under the rules, and said the State was educating hospital staff about consent requirements and encouraging them to incorporate the consent process into discharge planning.

To promote communication across the behavioral health delivery system and improve post-discharge transitions, the 2017 ACC contract (State of Colorado, 2017) provided performance-based financial incentives for BHOs to engage with enrollees and hospitals within specified time frames following behavioral health hospitalization.

[12] 42 CFR Part 2.

SECTION 6

Beneficiary Experience

The percentage of ACC:MMP enrollees who expressed satisfaction with their ability to obtain needed care remained high and steadily rose throughout the demonstration.

Most focus group participants were unaware of any demonstration-related changes in care coordination or health care services.

Focus group participants reported having care coordinators from a variety of organizations, and some said they did not have one coordinator to manage all of their services. Beneficiary advocates said many enrollees were unaware that they had access to RCCOs' care coordination services and had never heard from RCCO care coordinators.

Access to primary care for people with disabilities improved during the demonstration.

One of the main goals of the demonstrations under the FAI is to improve the experience of beneficiaries who access Medicare- and Medicaid-covered services. Many aspects of the ACC:MMP were designed expressly with this goal in mind, including emphases on working closely with beneficiaries to develop person-centered care plans, delivering all Medicare and Medicaid services through a single entity, and aligning Medicare and Medicaid processes.

In this section, we draw on findings from the CAHPS survey, RTI focus groups and stakeholder interviews, and research by HCPF.[13] (See ***Appendix A, Data Sources*** for details about each data source.) We highlight findings on:

- beneficiary satisfaction with the ACC:MMP;
- beneficiary experience with access to care, person-centered care and patient engagement;
- personal health outcomes and quality of life;
- the experience of special populations (where information is available); and
- beneficiary protections.

6.1 Impact of the Demonstration on Beneficiaries

In this section we summarize findings from focus groups, beneficiary surveys, and stakeholder interviews reflecting beneficiary experiences with service delivery and quality of life under the ACC:MMP. Although most focus groups were composed of beneficiaries or their

[13] The RTI evaluation team was unable to recruit enrollees with intellectual or developmental disabilities to participate in focus groups. Instead the team conducted focus groups with staff from the group homes in which a sample of enrollees lived. However, it was not always clear that the staff comments reflected the experience of the selected enrollees; therefore, the report includes limited data from the focus groups conducted with these staff.

informal caregivers, we also conducted focus groups of group home staff to learn about the experience of individuals with IDD in the demonstration.

6.1.1 Overall Satisfaction with and Awareness of the ACC:MMP

A State survey of 1,000 ACC:MMP enrollees conducted in August–September 2015 found that only about 40 percent recognized the demonstration's name, and about 32 percent remembered receiving enrollment materials (Gallagher, 2015).

Most participants in focus groups conducted in 2016 and 2017—including the English- and Spanish-speaking groups[14] and the IDD provider group—were unaware of the demonstration, the role of RCCOs, and any demonstration-related changes in health care delivery or care coordination. For example, one Spanish-speaking participant in a 2016 focus group said that she received information in the mail from an RCCO, but did not understand how or why she received it.

I didn't know…that I had applied to, or that I had…[RCCO name]…How did I get into [the RCCO]? I don't understand.

— Focus Group Participant (2016)

6.1.2 Beneficiary Experience with New or Expanded Benefits

The ACC:MMP did not create any new or expanded benefits, except for care coordination from the RCCO.

6.1.3 Beneficiary Experience with Medical and Specialty Services

In 2016 and 2017, the vast majority of participants in all enrollee focus groups said they were seeing PCMPs regularly, and many had the same PCMP for more than 2 years. Most were satisfied with the care they were receiving from their PCPs.

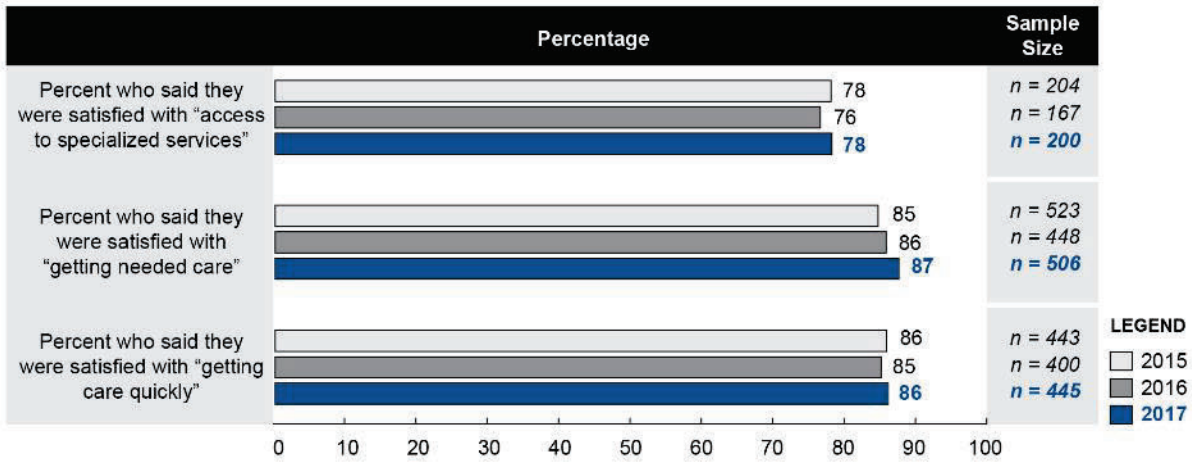
Participants in the IDD provider group estimated that about 20 percent of their clients chose new PCPs upon enrolling in the demonstration, although changing PCPs was not required by the demonstration's MFFS model and participants' reasons for changing PCPs were unclear. These participants also noted that many of their residents had lost Medicaid eligibility and regained it after submitting required paperwork; and that many had cognitive impairments and had difficulty understanding any type of change.

As shown in ***Figure 2***, in each demonstration year, more than three-quarters of CAHPS respondents reported being satisfied with each of three measures of access to services, with no major changes during the demonstration. Respondents reported lower levels of satisfaction with access to specialized services (a composite measure that included satisfaction with access to

[14] Spanish speakers are, in general, the most common linguistic minority in Colorado. See ***Appendix A, Data Sources***, for additional information on the focus group populations.

medical equipment, therapy, and counseling) than with the ability to obtain needed care overall and with the ability to receive care quickly. Focus group participants' discussions of specialty care also focused on challenges with access, as discussed later in this section.

Figure 2
Beneficiary experience with access to service, 2015–2017



"Access to Specialized Services" is a composite of three items: (1) "In the last 6 months, how often was it easy to get the medical equipment you needed?"; (2) "In the last 6 months, how often was it easy to get the special therapy you needed?"; and (3) "In the last 6 months, how often was it easy to get the treatment or counseling you needed?" The composite response of "satisfied" comprises "Usually/Always" responses.
"Getting Needed Care" is a composite of two items: (1) "In the last 6 months, how often was it easy to get the care, tests, or treatment you needed?"; and (2) "In the last 6 months, how often did you get an appointment to see a specialist as soon as you needed?' The composite response of "satisfied" comprises "Usually/Always" responses.
"Getting Care Quickly" is a composite of two items: (1) "In the last 6 months, when you needed care right away, how often did you get care as soon as you needed?"; and (2) "In the last 6 months, how often did you get an appointment for a check-up or routine care at a doctor's office or clinic as soon as you needed?" The composite response of "satisfied" comprises "Usually/Always" responses.
CAHPS = Consumer Assessment of Healthcare Providers and Systems; FAI = Financial Alignment Initiative.
SOURCE: NORC at the University of Chicago. Financial Alignment Initiative CAHPS Quality of Care Survey Aggregate Report. April 2018.

6.1.4 Beneficiary Experience with Care Coordination Services

Focus group participants reported having care coordinators from a variety of organizations, including an entity that served both as an RCCO and an SEP; a provider office; and a CCB. Some said that several coordinators were involved in their care, and they did not have one coordinator to manage all of their services.

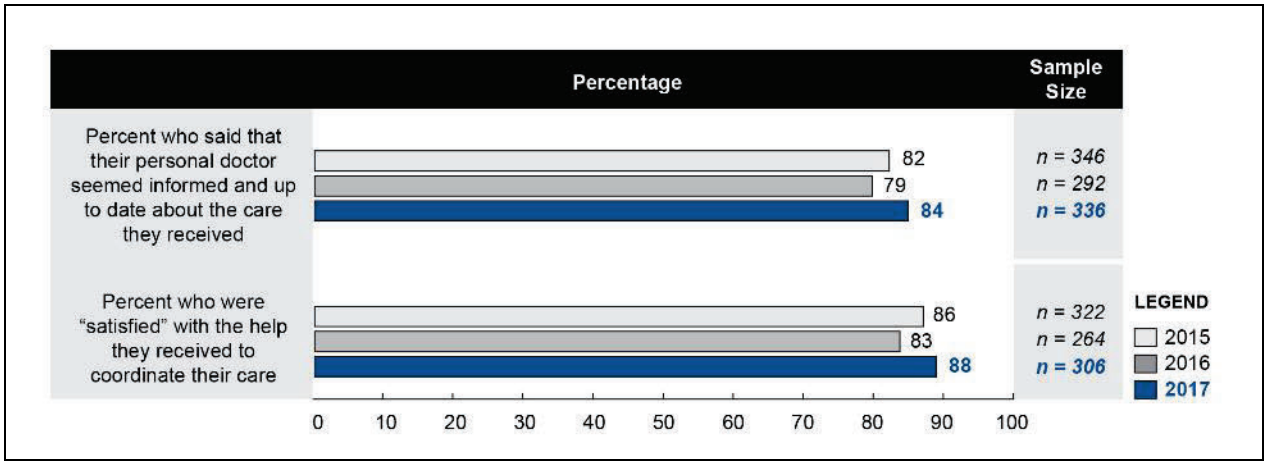
Spanish-speaking participants appeared to be unaware of the demonstration's care coordination services. Spanish-speaking participants in the 2016 focus groups reported working on health goals with their doctors, but said no one else had ever approached them to discuss their health needs or goals. In 2017, some Spanish-speaking participants reported contacts from social workers, clinic staff, or case managers to assess needs and/or monitor health status. However,

they did not know whether these individuals were care coordinators and they had not had any contact with the RCCO in their region. One participant reported that there was no coordination of services beyond the doctor, and another reported lack of communication among health care providers. Note that providers may or may not have been delegated these responsibilities.

A few of the IDD providers in the 2017 focus group who were aware of the demonstration commented that its assessments and care coordination services duplicated those already conducted in the LTSS delivery system. They believed that the demonstration did not provide services beyond what was available under existing waivers. One participant who knew that 12 of his clients were enrolled in the demonstration estimated that three or four had been visited by RCCO care coordinators. During the 2017 site visit, a provider representative said that enrollees with behavioral health needs generally viewed federally qualified health centers and CMHCs as their care coordinators.

CAHPS survey respondents generally reported high levels of satisfaction with care coordination services in each year of the demonstration (see ***Figure 3***). In 2017, 84 percent of enrollees said that their personal doctor seemed informed and current on the care they had received, a slight increase from 82 percent in 2015. Also in 2017, almost 90 percent of beneficiaries reported that they were "satisfied" with the help they received to coordinate their care. It should be noted that the survey did not specifically reference RCCO care coordinators or those associated with the medical, behavioral health, or LTSS delivery systems.

Figure 3
Beneficiary experience with care coordination, 2015–2017



CAHPS = Consumer Assessment of Healthcare Providers and Systems; FAI = Financial Alignment Initiative.
SOURCE: NORC at the University of Chicago. Financial Alignment Initiative CAHPS Quality of Care Survey Aggregate Report. April 2018.

As discussed earlier in this report, HCPF reported that enrollees' experiences with RCCO care coordinators varied. RCCOs noted that sometimes enrollees were hesitant to engage, but once care coordinators demonstrated their ability to help, enrollees increasingly trusted them and initiated communication as needs arose.

Beneficiary advocates consistently suggested that a large portion of the enrollee population, including many with serious health conditions, never heard from ACC:MMP care coordinators. One advocate noted that many enrollees were unaware of RCCO care coordinators and attributed this lack of awareness to "lack of advertising" and inaccurate mailing lists for some of HCPF's outreach materials. Due to this lack of awareness, the advocate said, many enrollees did not receive care coordination services from the RCCO.

Some RCCOs said they partnered with community-based organizations to conduct enrollee outreach. One RCCO indicated in June 2017 that it had received beneficiary referrals from local police and corrections officials helping with post-incarceration transitions, and its care coordinators had recently begun conducting outreach at a county resource center and parole office. Additionally, the Medicare-Medicaid Advocate (the demonstration's Ombudsman) sent outreach mailings to improve enrollees' awareness of the demonstration.

6.1.5 Beneficiary Access to Care and Quality of Services

Overall Access

State officials and beneficiary advocates said that because the ACC:MMP used an MFFS payment and delivery model, it did not affect enrollees' access to medical care. Beneficiary advocates viewed the model positively, stating that the demonstration did not cause harm to beneficiaries and that "there [was] really not a downside for anybody in terms of participating." One advocate was pleased that the demonstration was "not…forcing [enrollees] into managed care and telling [them they] can't see [their] doctors."

Focus group participants in 2016 and 2017, including participants in the IDD provider group, described challenges in access to specialists, though they did not attribute these challenges to the demonstration. Participants reported difficulty finding specialty providers who accepted Medicaid, long travel times, and long appointment wait times for specialist visits. HCPF noted that access to specialists was a particular challenge in rural areas. Spanish-speaking groups did not identify demonstration-related challenges with access.

Dental and Vision Benefits

Focus group participants in 2016 and 2017 described a variety of challenges in access to dental and vision care. Most cited cost sharing and benefit limits as hindering their access to care. However, because the ACC:MMP did not make any changes to Medicare or Medicaid benefits, these challenges were not specific to the demonstration.

Transportation

State officials, beneficiary advocates, and RCCO staff reported many transportation challenges, including a lack of bus and taxi options, a shortage of Medicaid vendors (especially in rural areas), unreliable service, and a lack of same-day appointments for transportation. Although these challenges were not specific to the demonstration, they affected the experiences of ACC:MMP enrollees, whose transportation benefits were the same as those provided under Medicaid. HCPF and beneficiary stakeholders commented that low payment rates have discouraged vendors from participating in Medicaid. They also noted that participation is particularly limited in rural areas, where costs are high due to long travel times.

In 2017, State officials and RCCOs mentioned several strategies to increase access, including:

- Negotiating with the Denver public transit system to obtain discounted or free bus passes to improve enrollees' access to transportation.
- Exploring alternatives such as a special bus route to provider offices and arrangements for cab rides to urgent appointments.
- Working with local public health officials to increase the number of nonemergency medical transport providers credentialed and licensed to transport residents to other areas of the State.

Durable Medical Equipment (DME)

Focus group participants and HCPF reported access to DME as a continuing challenge throughout the demonstration. One focus group participant, who was a group home provider for enrollees with IDD, reported that it was faster and easier to purchase wheelchairs privately from second-hand stores than to access them through DME providers.

HCPF reported challenges in access to DME, not specific to the demonstration, but due to a shortage of suppliers, and providers' confusion about DME billing. According to the State, DME providers believed erroneously that they were required to bill Medicare and receive a denial before billing Medicaid, and some providers did not seek Medicaid coverage after receiving Medicare denials. HCPF noted that it had provided information to DME suppliers about correct billing procedures. CMS said that DME supply issues improved over time, with education.

Behavioral Health Services

State, RCCO, and stakeholder representatives noted challenges in access to behavioral health services, not related to the demonstration, but rather, due to a dearth of providers who accepted Medicaid. A State official reported that co-location of behavioral health and primary care services had helped improve access to behavioral health services for demonstration enrollees. However, enrollees sometimes faced long wait times for CMHC appointments and were unaware that BHOs could arrange for appointments with other providers. The State sought to collaborate with BHOs and CMHCs to convey this message and to expand Medicaid participation among private behavioral health providers.

Access for People with Disabilities

A beneficiary advocate believed that access to primary care for people with disabilities improved during the demonstration, though she was not certain that improvements could be attributed to RCCOs' provider training on disability-competent care (see ***Section 1.1, Demonstration Description and Goals***). The advocate noted that prior to the demonstration, she often heard that PCMP practices were unwilling to treat patients with disabilities, but in 2017 she reported that she no longer heard these complaints. Another beneficiary advocate believed that the ACC:MMP helped achieve "real progress" in advancing disability-competent care but viewed the progress as "time-limited" in light of the demonstration's end.

In 2016, focus group participants reported that provider offices were accessible for persons with disabilities, and some said accessibility had improved in the past 2 years. In 2017, focus group participants did not report any improvements or challenges with the physical accessibility of provider offices.

> *…[T]he physician offices…have more mobile exam tables so…it's easier…to get me onto the exam table and off. Accommodations [for people with disabilities] have improved.*
>
> — Focus Group Participant (2016)

Quality of Services

In the 2016 and 2017 focus groups, participants expressed mixed perspectives on the quality of medical care. Many felt that their doctors were thorough, attentive, spent time with them, and provided needed services and referrals. A few others reported that providers rushed through visits, did not listen, were not helpful, did not provide enough information, or were too quick to refer to specialists.

6.1.6 Beneficiary Engagement

Some focus group participants reported challenges reading and understanding information they received about health coverage and care. Most Spanish-speaking participants in the 2017 focus groups indicated that Spanish translations of the English materials they received in the mail were poor.

A beneficiary advocate commented that most beneficiaries discarded the ACC welcome packet without reading it, because it was too long. Beneficiary and provider representatives said enrollees often were reluctant to talk to care coordinators or open mail that appeared to be from the government, because they feared being told that their benefits would be eliminated.

According to a beneficiary advocate, a key success of the demonstration was that it made RCCO staff and providers more aware of Medicare-Medicaid beneficiaries' unique needs and challenges. In both the 2016 and 2017 focus groups, English-speaking participants shared evidence of engagement with providers, with many participants mentioning good dialogue and generally believing that they were part of a team with their doctors. Some participants said they used online systems for communication with providers.

Several said they needed to advocate on their own behalf to obtain services. A few participants in the 2016 groups mentioned the importance of doing research and being engaged in their care.

> *…[S]ometimes you'll get physical therapists and occupational therapists that will push [wheel]chairs on you that you don't want. So you always have to…do your homework.*
>
> — Focus Group Participant (2016)

Spanish-speaking participants in the 2016 groups said they found it helpful that their primary care doctors communicated with them in Spanish. However, in 2017 two Spanish-speaking participants reported lack of coordination and communication among providers.

6.1.7 Personal Health Outcomes and Quality of Life

In 2016, some English-speaking focus group participants said nothing had changed in the past year or two, and a few appeared puzzled when asked about changes in the past year. Some said their health status had improved under their doctor's care or as a result of obtaining specific services. Most participants in the 2017 English-speaking focus group said their quality of life had improved due to increased levels of independence, though they did not associate improvements with the demonstration. Rather, improvements in quality of life appeared to be associated with good relationships with their PCPs.

Spanish-speaking focus group participants in both years generally did not appear to be aware of changes in their health care delivery. In 2017, one participant reported receiving more services and achieving reductions in blood sugar levels; however, the reason for these changes was not clear.

6.1.8 Experience of Special Populations

Hispanic Populations

In both 2016 and 2017, participants in the Spanish language focus groups reported no contact from RCCOs, and it was unclear from their comments whether they understood or had participated in care coordination. HCPF, RCCOs, and beneficiary advocates reported that Hispanic populations often did not want to engage with care coordinators or others outside of their communities.

Rural Populations

State officials and a beneficiary advocate reported that many enrollees in rural areas did not want to engage with RCCO care coordinators, whom they viewed as outsiders unable to understand their needs.

> *…I get a fair amount of calls from rural regions where people just don't want care coordinators because they don't want people knowing their business. They're very private out in the rural areas.…They don't want to engage...the last thing they want is somebody from their small town knowing all of their intimate details. Because in the rural areas, towns of 2,000, you know everybody.*
>
> — Beneficiary Advocate (2017)

One RCCO said that enrollees in rural areas were willing to engage only with RCCO care coordinators in their communities whom they knew personally.

6.2 Beneficiary Protections

The processes for grievances (also known as complaints) and appeal remained the same under the demonstration as under FFS Medicare and Medicaid. ACC:MMP enrollees had several avenues for addressing problems and complaints, including:

- the MMP Ombudsman program (Medicare-Medicaid Advocate),
- the State's Long-Term Care Ombudsman, and
- the Medicaid Managed Care Ombudsman.

However, most focus group participants did not know about the ombudsman programs or their rights to opt out or disenroll from the demonstration at any time. Some participants said if they were unable to obtain needed health care products or services, they would seek help from health care providers, supervisors, or case managers. A few were not aware they had recourse in these situations.

According to HCPF, most enrollee outreach materials after initial enrollment focused on how to contact the MMP Ombudsman. Two of these mailings contained magnets with the ombudsman program's contact information. State officials reported that following the mailings, the volume of calls to the ombudsman's office increased.

None of the Spanish-speaking participants in the 2016 or 2017 groups were aware of the ombudsman program. In 2016 a Spanish-speaking focus group participant reported resolving a billing error by contacting hospital staff. In 2017, Spanish-speaking focus group participants reported calling a social worker, support groups, unspecified human service resources, or "Medicare/Medicaid" for assistance.

Complaint, Grievance, and Appeal Processes

Complaint procedures under the demonstration were the same as for the ACC. The process began with the enrollee addressing the complaint to the RCCO or PCMP. As indicated above, enrollees also could contact the State's Medicaid Managed Care Ombudsman, the ACC:MMP Advocate program (see below), or the State's Long-Term Care Ombudsman. If the issue involved a service denial, enrollees also could file an appeal for a Fair Hearing. Grievance

and appeal processes and timeframes remained the same under the demonstration as under FFS Medicare and Medicaid.

The State and beneficiary advocates said the vast majority of complaints were resolved without formal grievances or appeals, and cited appeal numbers only in the single digits.

I think on the Medicare side, we've only had maybe two grievances and appeals total. On the Medicaid side, we're able to resolve it and get the services provided before it…rises to the level of a formal grievance or appeal. If we're able to negotiate with the provider or…educate the provider…we're able to resolve it before they get a denial.

— State Official (2017)

According to one advocate, however, enrollees sometimes did not file grievances against providers, due to fear of being excluded from provider practices.

The Medicare-Medicaid Advocate

Disability Law Colorado, a nonprofit beneficiary advocacy organization, staffed and administered the ACC: Medicare-Medicaid Advocate (ombudsman) program under contract with the State Unit on Aging. The Beneficiary Rights and Protection Alliance, a stakeholder group formed by HCPF prior to the demonstration, served as an advisor to the ombudsman (see ***Section 7, Stakeholder Engagement***).

In 2017, HCPF reported approximately 500 beneficiary calls to the ombudsman (including complaints and requests for assistance) throughout the demonstration. The vast majority were from Medicare-Medicaid beneficiaries, though the ombudsman provided assistance as needed to anyone who contacted them, including referrals to other sources of assistance.

HCPF staff estimated that 25 percent of calls to the ombudsman were about delays in access to DME, and 25 percent related to dissatisfaction with providers. A beneficiary advocate estimated that 8 to 9 percent of ombudsman cases were related to balance billing. As discussed in a prior section, HCPF and a beneficiary advocate said they had distributed materials to inform providers of the prohibition on billing Medicare-Medicaid beneficiaries.

A beneficiary stakeholder commented that prior to the demonstration, nothing similar to the Medicare-Medicaid Advocate had existed in Colorado. The stakeholder believed that the advocate had played an important role in helping enrollees navigate Medicare and Medicaid and the amount of time involved in resolving cases for Medicare-Medicaid beneficiaries demonstrated the complexity of the task. Additionally, the stakeholder reported that the advocate had sometimes helped RCCO staff understand and navigate Medicare.

Another beneficiary advocate noted that the ombudsman had also helped educate enrollees about RCCOs' care coordination services and played an important role in facilitating enrollee access to critical resources, such as wheelchair repair and oxygen. Additionally, the

advocate said, the ombudsman sometimes had educated RCCO care coordinators about their own roles and responsibilities.

The State continued funding the Medicare-Medicaid Advocate until February 2018, to provide support as needed to demonstration enrollees through the transition to the ACC.

SECTION 7

Stakeholder Engagement

HCPF used a variety of strategies for stakeholder engagement, including committees, work groups, conferences, meetings with individual beneficiary advocates, and more.

The ombudsman office conducted enrollee and provider outreach through posters, mailings, and refrigerator magnets to increase awareness of its services.

RCCOs' Member Advisory Committees provided a forum for ongoing enrollee engagement. These committees had varying levels of success with enrollee engagement.

The Advisory Subcommittee, which included representation from RCCOs, beneficiary advocates, and providers, was actively involved in developing quality measures, drafting collaboration protocols, developing enrollee communications, and establishing the ombudsman program.

The Beneficiary Rights and Protection Alliance, which informed HCPF about important enrollee issues, remained actively engaged throughout the demonstration.

The State engaged stakeholders in the ACC:MMP through a variety of venues, including committees and work groups, a website and listserv, regional conferences, a telephone town hall meeting, and webinars.

A beneficiary advocate indicated satisfaction with the extensive stakeholder engagement that occurred during design and roll-out of the demonstration and was pleased to be involved in ongoing communication with HCPF, including monthly meetings with the Medicaid Director. According to the advocate, beneficiary stakeholders were surprised by the decision to end the demonstration and wished they had been included in the decision-making process (see ***Section 12, Demonstration End: Decision and Transition***).

On the other hand, a State official described challenges with several aspects of stakeholder engagement, including difficulties with efforts to develop mutual trust and shared goals; limited HCPF staff capacity; and issues with the sustainability of enrollee representatives' participation in light of enrollees' health and functional status limitations.

In this section we describe the approach taken by ACC:MMP for engaging stakeholders, the mechanisms for soliciting stakeholder feedback, and the impact of those efforts on the demonstration.

7.1 State Role and Approach

7.1.1 The Medicare-Medicaid Program Advisory Subcommittee

In 2012, HCPF established the Medicare-Medicaid Program Advisory Subcommittee ("the Advisory Subcommittee") to the existing ACC Program Improvement Advisory Committee. The subcommittee—which included about 20 stakeholders representing RCCOs, beneficiary advocates, and provider representatives—provided guidance on ACC:MMP design and implementation. According to HCPF and beneficiary advocates, the subcommittee was actively involved in:

- developing State-specific quality measures (see ***Section 9.1, Quality Measures***);
- drafting protocols for collaboration among RCCOs, SEPS, CCBs, and BHOs;
- developing enrollee communications and outreach plans;
- advocating for training on disability-competent care; and
- helping to establish the ombudsman program.

A beneficiary advocate believed that beneficiary involvement in developing "user-friendly, easily understood notices" for enrollees was a benefit of the demonstration.

According to HCPF and beneficiary advocates, engagement in the Advisory Subcommittee declined after the demonstration's initial roll-out. State officials said they struggled to find a role for stakeholders, and some highly-engaged enrollees were unable to continue participating due to illness. The Advisory Subcommittee initially met monthly, then bimonthly, and then switched to an *ad hoc* schedule. During the last year of the demonstration the group provided input on the request for proposal for ACC Phase II.

HCPF followed the subcommittee's recommendation not to notify ACC:MMP enrollees that the demonstration would end in 2017. The State agreed with the subcommittee members' view that such notices would unnecessarily confuse beneficiaries by causing them to think that their Medicare and/or Medicaid benefits were being discontinued.

HCPF staff reported that the Advisory Committee was disbanded at the end of December 2017, and committee members were added to subcommittees of the ACC. (See ***Section 12, Demonstration End: Decision and Transition***, for discussion of additional transition activities in this area).

7.1.2 The Beneficiary Rights and Protection Alliance

Prior to the demonstration's roll-out, HCPF formed the Beneficiary Rights and Protection Alliance ("the Alliance") to serve as an advisor to the ombudsman. The Alliance included beneficiary advocates and representatives from the State Department of Health Services and the SHIP. The Alliance informed HCPF about important enrollee issues, such as challenges with balance billing, access to DME , and lack of consistent RCCO response and follow-up to contacts from the ombudsman. The State modified RCCO contracts in 2017 to improve RCCOs'

responsiveness. According to a State official, the Alliance was the most engaged of all stakeholder groups and continued to meet monthly throughout the demonstration.

7.1.3 The Service Coordination Plan Work Group/Medicare Medicaid Plan Operations Group

HCPF formed the SCP Work Group during the demonstration to develop the template for SCPs and help RCCOs share best practices for SCP completion. The group, which included staff of RCCOs and care coordination delegates, later was renamed the MMP Operations Group.

RCCO representatives said the group provided a helpful forum to confer with colleagues on successes and challenges in SCP completion and engage in dialogue with State officials. HCPF noted that participants also discussed risk stratification issues, shared information about strategies to increase enrollee engagement in care coordination, and emphasized the importance of care coordination quality versus quantity of SCPs completed.

7.1.4 Website and Listserv

The ACC:MMP website[15] included fact sheets, questions and answers, a provider toolkit with information about the ombudsman, information on benefits and enrollment, and links to beneficiary advocacy group websites. The site also included a secure online forum where people could submit comments, complaints, and questions.[16]

HCPF maintained a listserv for ACC:MMP stakeholders who wanted to keep updated on the demonstration. A State official reported that the number of participants increased over time and reached approximately 750 in 2017.

7.1.5 Outreach by the Medicare-Medicaid Advocate

Over the course of the demonstration, the ACC:MMP ombudsman program—the Medicare-Medicaid Advocate—distributed a variety of enrollee outreach materials, including:

- posters for provider offices and long-term care facilities,
- direct mail letters, and
- refrigerator magnets with the ombudsman's contact information.

HCPF and beneficiary advocates reported that the magnets were the most effective tool for promoting use of ombudsman services.

[15] The demonstration website was https://www.colorado.gov/pacific/hcpf/accountable-care-collaborative-acc-medicare-medicaid-program. However, at the time of this report's publication (following the demonstration's conclusion), it no longer existed.

[16] The link to this form was https://www.colorado.gov/pacific/hcpf/acc-mmp-feedback. However, at the time of this report's publication, it no longer existed.

7.1.6 Other Stakeholder Engagement Efforts

HCPF staff conducted outreach at conferences of the Colorado Gerontological Society, Area Agencies on Aging, and the SHIP. In Summer 2014, the State collaborated with RCCOs to conduct 13 regional conferences designed to increase awareness of the demonstration and promote collaboration among RCCOs and providers.

Additional outreach efforts included a telephone town hall meeting to provide information and answer questions; provider webinars on preventing falls; and Learning Collaborative webinars aimed at improving collaboration between RCCOs and LTSS providers.

A State official commented that HCPF staff turnover limited its ability to conduct outreach in 2015 and 2016.

7.2 Member Advisory Committees

The ACC program required RCCOs to maintain Member Advisory Committees (State of Colorado Contract, 2017, p. 34). Although there was no requirement to include Medicare-Medicaid beneficiaries, a State official believed that most of the committees had some Medicare-Medicaid enrollee representation. According to HCPF, most Member Advisory Committees provided a forum for keeping enrollees updated on RCCO activities, reviewing draft member materials, and addressing enrollee challenges.

A beneficiary advocate reported that enrollee engagement in the committees varied, and most RCCOs faced challenges in obtaining sufficient participation. One RCCO reported that it had established an online member survey as an alternative means of obtaining enrollee input.

Another RCCO had two active Member Advisory Committees: one focusing on needs of multiple populations with disabilities, and the other addressing concerns specific to the deaf community. A beneficiary stakeholder group reported that it had partnered with the RCCO to provide enrollee training on effective participation in these Advisory Committees. A beneficiary advocate indicated that the cross-disability advisory group had provided input on the RCCO's member materials and program ideas, offered suggestions regarding participation in ACC Phase II (see ***Section 12, Demonstration End: Decision and Transition***), and conducted enrollee outreach.

Based on the Advisory Committee's recommendation for greater integration of medical and behavioral health services, the RCCO provided financial support for one of its PCMP practices to hire behavioral health professionals. RCCO staff reported that input from the committee on deaf community issues led to an RCCO meeting with physicians and physician office staff to discuss communication challenges, as well as a pilot program to promote use of interpreter services (see ***Section 6.1, Impact of the Demonstration on Beneficiaries***) during office visits.

SECTION 8

Financing and Payment

Most RCCOs reported that the PMPM payments for care coordination were insufficient to provide care coordination services to meet Medicare-Medicaid beneficiaries' needs. HCPF, however, believed that the funding level was sufficient.

To address capacity challenges, most RCCOs cross-subsidized care coordination by integrating ACC:MMP funding and staff with the ACC program and/or sharing workflows with SEPs and CCBs.

Separate actuarial savings analyses conducted for performance payment purposes for demonstration years 1, 2, and 3 indicated that the ACC:MMP did not achieve gross Medicare Parts A and B cost savings.

HCPF reported that the demonstration's shared savings payment methodology did not have its intended effect, and that release of the preliminary savings analysis was too late for quality or cost incentives to affect providers' behavior.

RCCOs indicated that the demonstration's KPIs did not lead to practice changes among PCMPs, because the incentives were associated with a small portion of the patient population.

In this section, we describe the demonstration's MFFS payment methodology and the financial impact and provider experience associated with those payments.

8.1 Payment Methodology

Under the MFFS model of the FAI, providers continued to receive Medicare and Medicaid payments under existing FFS arrangements. The State used Federal implementation support funds from September 2014 through December 2015 to provide RCCOs with approximately $20 per member per month in monthly provider payments to help build ACC:MMP operational infrastructure. Beginning in January 2016, after CMS implementation funds were fully expended, HCPF continued the approximately $20 PMPM payments to RCCOs for care coordination, using State Medicaid funding with the Federal match rate of 50 percent for administrative activities. RCCOs also received Medicaid PMPM payments of $10 per month to coordinate care for ACC enrollees, whose needs generally were much less complex than those of the ACC:MMP population.

The State set aside $2 million from its initial implementation grant to support infrastructure development for RCCOs that performed well on three KPIs: all-cause hospital readmissions, potentially preventable readmissions, and depression screening (see ***Section 9.2, Quality Management Structures and Activities***). HCPF staff said they had distributed $540 million in KPI funds in late 2016 and early 2017.

PCMPs received $3 PMPM payments for each ACC and demonstration enrollee. These payments were intended as incentives to collaborate with RCCOs on care coordination and to increase enrollee access through strategies such as extended office hours and same-day appointments (MOU, p. 13).

8.2 Financial Impact

8.2.1 Adequacy of Payment

Most RCCOs believed that their PMPM payments for care coordination under the demonstration, set and made by the State, were insufficient to provide care coordination services to meet Medicare-Medicaid beneficiaries' needs.

- One RCCO estimated that the payment was approximately one-third the amount it typically would receive for care management of enrollees in Dual Eligible Special Needs Plans (D-SNPs).
- Another commented that $20 PMPM "doesn't even begin to cover" support for high-need high-cost members—support that could include help with arranging transportation, preparing for specialty visits, and collaborating with care coordinators in other organizations.
- One RCCO said the funding was far too low to cover costs of SCP completion within required time frames. The RCCO also believed it would have been preferable to have different funding methodologies to account for different travel times in rural and urban regions.

RCCOs reported that, in order to meet the demonstration's requirements with the funding level provided, they cross-subsidized care coordination using strategies (discussed earlier in this report) such as:

- allocating some of their ACC PMPM payments to the demonstration;
- creating an integrated care coordination workforce to serve both ACC and demonstration enrollees; and
- sharing care coordination workflows with SEPs and CCBs.

A State official commented that HCPF had given RCCOs great flexibility regarding the use of care coordination funds and that most RCCOs had been "creative" in their use of funds. The official believed that RCCOs' financial status was sound and was not negatively affected by the $20 PMPM payments.

8.2.2 Timeliness of Payment

HCPF and beneficiary advocates reported that the State's transition to a new IT vendor for claims processing and payment led to significant payment delays to providers and errors in RCCO payments. A beneficiary advocate indicated that small providers were most affected by the delay.

According to HCPF, PCMP payment delays occurred because many providers had challenges in using the electronic payment system and therefore did not re-enroll in the system in a timely manner. State officials said they provided technical assistance to providers, in person in some cases, and made emergency payments as needed to help maintain providers' financial stability. As of June 2017, the State continued to provide assistance to resolve some remaining challenges, and HCPF had planned to make retroactive payments to RCCOs to cover a funding gap that occurred when RCCOs did not receive their full $20 PMPM payments for several months in 2017.

8.2.3 Performance Incentives

Shared Savings

The State had the opportunity to earn shared savings through retrospective performance payments. These shared savings/retrospective performance payments would have been based on reductions in Medicare spending among Medicare-Medicaid beneficiaries and contingent on the State also meeting specified quality thresholds (CMS, 2013). The actuarial savings analysis compared spending for ACC:MMP enrollees with spending that would have been expected in the absence of the demonstration.

Actuarial analyses conducted for performance payment purposes did not find any gross Medicare Parts A and B savings resulting from the demonstration; thus there were no shared savings provided to the State or distributed to RCCOs or providers. In this section we describe aspects of the shared savings approach, the intended performance indicators and the results of shared savings calculations. We present more detailed findings in ***Section 11, Cost Savings***.

Performance Payments

CMS calculated potential retrospective performance payments on an annual basis, and each annual calculation was independent of previous year's findings. The timing of payments depended on the availability of Medicare and Medicaid data (MOU, pp. 38–9, 44).

In the first demonstration year, had there been any savings, the State would have been eligible for the full retrospective performance payment based on complete and accurate reporting of specified performance measures (see ***Section 9.1, Quality Measures***). In subsequent demonstration years, the State would have been eligible to receive 60 percent of the retrospective performance payment by meeting the minimum quality threshold, and could receive the remaining 40 percent of the retrospective performance payment scaled on performance above these thresholds (MOU, pp. 53–4). The maximum retrospective performance payment available to the State under this model was 50 percent of any calculated savings, with an annual cap of 6 percent of total Medicare Parts A and B expenditures (MOU, p. 55). Because there were no Medicare savings, the State did not receive any shared savings payments even though the State met specific performance measures.

HCPF staff said that because of the IT system transition and challenges in developing and reporting quality measures (see ***Section 9.1, Quality Measures***), reporting of quality measures from demonstration year 1 was delayed until December 2016. Similarly, in demonstration year 3, HCPF continued to collect quality measures for demonstration year 2.

Actuarial Savings

The regression based evaluation results presented in this report are consistent with the findings in separate actuarial analyses conducted for performance payment purposes using a different methodology.[17] The preliminary actuarial savings report for demonstration period 3 (which incorporates data from demonstration period 1 and 2) indicates that the ACC:MMP did not achieve cost savings. In demonstration period 1 (September 2014 through December 2015) the total additional Medicare cost was $10,553,714, or $37.36 PMPM. In demonstration period 2 (January 1, 2016 through December 31, 2016) the total additional Medicare cost was $8,958,821, or $33.99 PMPM. In demonstration period 3 (January 1, 2017 through December 31, 2017) the total additional Medicare cost was $8,030,589, or $32.88 PMPM. Thus the total additional gross Medicare cost for the three demonstration periods was $27,543,124, a PMPM of $34.85 or 4.02 percent.[18]

The results presented in the report are final for Medicare for demonstration periods 1 and 2, but preliminary for demonstration period 3. Calculations in the report included Medicare Parts A and B expenditures only, because the data needed to perform the calculations for Medicaid expenditures were not yet available at the time of publication. Final savings calculations will include the available Medicare data. Medicare Part D spending did not inform the amount of any performance-based payments to the State and was not included in the report.

HCPF staff commented that the State had no plan to distribute a portion of any achieved shared savings to RCCOs or providers, and thus it had missed a critical opportunity to create effective performance incentives.

> *...[I]f there's not a strong governance system or agreement about how the awarded funds will be distributed…then [the shared savings incentive] loses its intended impact. They [RCCOs and providers] don't [respond to] incentive[s] to do anything if they don't really know how this is going to work.*
>
> — State Official (2017)

State officials and a beneficiary advocate believed that the shared savings analysis was released too late to affect providers' behavior.

[17] For details in methodology used for actuarial analyses, please see actuarial savings reports available at https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/Colorado.

[18] Actuarial savings reports are available at https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/Colorado.

> *… [Y]ou can't tell a provider 6 months after they tried an intervention, "Hey, it worked. Good job. Now you get an extra $55,000"… [P]ay for performance has to be generally…much closer to the point of intervention.*
>
> — State Official (2017)

HCPF also questioned the shared savings methodology and said they did not have the opportunity to comment on the results before the report's release. A State official commented that HCPF did not have experience with Medicare data and therefore "felt very ill-equipped to negotiate through" the analysis. HCPF cited a privately funded analysis (Lindrooth et al., 2016) of the ACC that found reductions in Medicaid costs for Medicare-Medicaid beneficiaries. The study did not analyze Medicare claims, and the study period (July 2009–June 2015) only included one year of ACC:MMP implementation.

Without shared savings payments, the State lacked funding that could have helped address persistent ACC:MMP implementation and staff capacity challenges, as discussed in several sections of this report.

Key Performance Indicators

RCCOs did not believe that the demonstration's KPI payments (see ***Section 8.1, Payment Methodology***, and ***Section 9.1, Quality Measures***) incentivized PCMPs to make practice changes to meet KPI targets such as reducing admissions and readmissions or increasing depression screening. RCCOs believed that PCMPs generally were focused on provisions of the ACC—the program which accounted for a much larger portion of their patient panels—than on the demonstration's requirements. ACC:MMP enrollees represented a small portion of providers' total patient population (and less than 3 percent of the total ACC population) (HCPF, 2017e). One RCCO commented that PCMPs generally followed patient-centered medical home criteria to support all patients and did not tend to develop strategies specific to special populations. Another RCCO reported that providers did not make operational changes in response to the demonstration's quality measures because these measures did not align with existing requirements for federally qualified health centers (FQHCs), BHOs, and commercial insurers' payment systems. In addition, RCCOs believed that providers were more likely to be motivated by incentives established by commercial insurers.

Two RCCOs reported sharing their KPI awards with providers, and one of them said it had shared funds with all providers participating in the initiative, regardless of their performance. One RCCO said that in response to low reported rates of depression screening, the RCCO started a new project aimed at increasing providers' documentation of screening.

8.2.4 Cost Experience

Several RCCOs said they did not have sufficient data to determine the demonstration's impact on overall costs. One RCCO believed that the demonstration had not reduced costs and had in fact "cost the RCCO lots of money." Another RCCO shared data showing significant

increases in average PMPM costs for Medicare-Medicaid beneficiaries from 2014–2017. The RCCO had expected this increase, at least in the short term, as enrollees who previously had unmet needs were connected with needed services and support.

HCPF reported in 2017 that the State had conducted preliminary and descriptive analysis of PMPM costs for service categories based on Medicare and Medicaid claims from 2014–2016, but said HCPF was unable to perform more conclusive analysis with case-matching or rigorous control groups. The official noted that a cohort-matched analysis using Medicaid claims was not possible, because Colorado was unable to obtain claims from comparison States.

HCPF also noted that the State had not conducted extensive financial monitoring of RCCOs under the ACC program or the demonstration.

…. [T]he financial monitoring left something to be desired … we really didn't know where every dollar was being spent. Part of that, I think, was just a function of the payment arrangements. We were paying [RCCOs] a PMPM, [and] were not having them submit encounters or claims or anything like that.

— State Official (2017)

SECTION 9

Quality of Care

HCPF reported significant challenges and delays in the process of developing and implementing State-specific quality measures.

Colorado's External Quality Review Organization (EQRO) reported that most demonstration enrollees had their needs met through LTSS and behavioral health agencies or family support and did not require RCCOs' care coordination services. The EQRO recommended reducing SCP requirements for enrollees receiving care coordination outside of RCCOs and/or for those with minimal needs.

In this section we provide information on the quality measures for the demonstration, and the quality management structure and activities for the demonstration.

9.1 Quality Measures

The RTI evaluation of all demonstrations under the Financial Alignment Initiative assesses the demonstrations' impact on a range of outcomes such as ambulatory care-sensitive condition hospital admissions, emergency department visits, 30-day all-cause hospital readmission rates, and follow-up after mental health hospitalizations. We discuss those results in ***Section 10, Service Utilization***. CMS has also established a set of separate but related measures that are used to assess whether MFFS demonstrations have met quality measures tied to State performance payments. These include core measures that apply to all MFFS demonstrations, and State-specific process and demonstration measures reflecting key elements of a particular demonstration design. The MOU includes a list of the MFFS core measures (MOU, p. 58).

9.1.1 Shared Savings Measures

As discussed in ***Section 8.2, Financial Impact***, the demonstration's shared savings methodology provided for retrospective payments based on performance in meeting quality and cost goals. To determine performance on quality goals, the ACC:MMP required RCCOs to report standardized quality measures in two categories:

1. State-specific *process* measures selected by HCPF staff in consultation with CMS after considering stakeholder feedback. These included:
   - percent of enrollees with care plans within 60 days of connecting with RCCOs;
   - percent of providers who participated in training on disability, cultural competency, or health assessment; and
   - percent of enrollees who received a first follow-up visit within 30 days of hospital discharge (MOU, p. 59).
2. State-specific *demonstration* measures (MOU, p. 50) developed through consultation among State officials, stakeholders and CMS representatives. These included:
   - enrollee and caregivers' experiences of care,
   - specified services for older adults,

- blood pressure control,
- use of community-based LTSS, and
- use of skilled nursing facilities or other non-HCBS settings among high-risk beneficiaries.

The State was eligible to earn credit on quality measures by meeting specified benchmarks established by CMS or by closing the gap (by specified percentage) between its performance in the 12 months prior to the performance period and the established benchmark. The State received a pass or fail rating for each measure based on whether it met the benchmark. For measures based solely on reporting, a pass rating was based on full and accurate reporting (MOU, pp. 54–5).

State officials described significant challenges in developing and implementing State-specific quality measures. According to State officials, some of the State-specific measures recommended by the ACC:MMP Advisory Subcommittee (see ***Section 7, Stakeholder Engagement***) had never previously been used or validated and were difficult to operationalize.

HCPF said that because the State did not create sufficiently narrow definitions, RCCOs did not use consistent measurement standards and the State had to provide definitions retrospectively.

We weren't careful in defining PCMP [for the purpose of calculating quality measures at the practice level] …. The contract defined a PCMP as an organization, a unit, a pod, a practice, or an individual. If you're trying to count something for a metric … you cannot count all of that as PCMPs. We had to go back and basically tell [RCCOs] this is what we wanted…and then we've had challenges collecting at that level and they've had challenges collecting the information from the practices.

— State Official (2017)

HCPF staff noted that the State did not distribute a technical assistance manual for the quality measures at the outset of the demonstration. HCPF provided training to RCCO staff and then retrained new RCCO staff following turnover.

State officials reported that they had modified some of the State-specific measures (e.g., Care for Older Adults) that would have required resource-intensive chart reviews to implement fully.

HCPF reported delays in the quality measurement process that were significantly beyond the 90-day lag period typically associated with the close-out of claims used in quality analysis. They attributed these delays to the data analytics vendor transition and challenges in calculating RCCOs' SCP completion rates. State officials noted that each RCCO had different means of reporting SCP completion data for quality measurement—some used a spreadsheet and others

exported data from online systems—and the State did not have sufficient staff capacity to manage the analysis.

As noted in ***Section 8.2, Financial Impact***, HCPF's submission of quality data for demonstration year 1 was delayed by nearly a year. The State was continuing to collect quality data from demonstration year 2 in June 2017, the ACC:MMP's third year. Following the end of the demonstration, a State official said that no clear trends had emerged from analysis of the limited quality data available.

9.1.2 Key Performance Indicators

As described in ***Section 8.1, Payment Methodology***, the State sought to promote quality by creating three additional performance measures, the KPIs. The State selected KPIs for the ACC:MMP that are based on three of the core FAI demonstration metrics for MFFS States: all-cause hospital readmissions, hospital admissions due to ambulatory care-sensitive conditions, and depression screening. According to the State, the KPIs did not align precisely with the demonstration metrics, but they did align closely enough to warrant paying incentives to providers for meeting performance thresholds. The State set aside $2 million from its initial implementation grant to support infrastructure development for RCCOs with providers who performed well on these three KPIs.

HCPF said it was relatively easy to put the MFFS demonstration core measures into use because they were clearly defined at the national level, and the State's data analytics contractor had the skills and experience needed to implement them. However, they said that systems challenges caused delays in processing of KPI data. HCPF reported that the most recent KPI data available in June 2017 reflected performance through October 2016.

A State official commented that the KPI incentives were of limited value, in part due to the variance and quality of data. For example, HCPF and RCCOs said that providers often did not fully document depression screening activity; therefore, reported depression screening rates often were much lower than actual screening levels.

9.2 Quality Management Structures and Activities

The demonstration's quality management strategies built on those established for the ACC and included quality measurement, ongoing contract management by State staff, external quality review, and review of CAHPS data.

The SDAC was intended to provide integrated Medicare and Medicaid claims data to HCPF and RCCOs on an ongoing basis and thus serve as a continuous feedback loop to foster accountability and ongoing improvement (MOU, pp. 14, 29). As discussed earlier in this report, HCPF used integrated data from the SDAC to create KPIs. RCCOs reported mixed experiences with the SDAC prior to the change in data analytics vendor. In June 2017, State officials reported ACC:MMP data had not been available through the SDAC (which was renamed the Data Analytics Portal [DAP]) since the vendor transition.

9.2.1 State Oversight

Under the demonstration's MFFS model, there was no formal structure for joint CMS/State management of operations like that which exists in the capitated model demonstrations. The State and CMS conferred throughout the demonstration, however, and HCPF described a collaborative working relationship. ACC contract management staff within HCPF were responsible for day-to-day ACC:MMP contract management and oversight.

In 2016, HCPF reported that in the previous year, contract managers found a lack of consistency, both within and among RCCOs, in the quality of SCPs. HCPF provided additional guidance to RCCOs on SCP completion based on this finding, and subsequently documentation improved.

HCPF contract managers found that some RCCOs faced challenges monitoring the quality of care coordination by delegates with electronic care management systems that were not interoperable with RCCO systems. Based on this 2016 finding, RCCOs provided technical assistance to delegates to improve reporting of care coordination information. However, as noted earlier in this report, in 2017, HCPF continued to express concerns about RCCOs' care coordination activities and said the State did not have the capacity to provide more direct oversight.

According to HCPF, guidance from the State Attorney General indicated that RCCO contracts were not written in a manner that would allow for compliance actions. The guidance indicated that contracts did not clearly indicate what circumstances would trigger compliance actions or what appeals procedures were available for RCCOs.

State officials did not view their lack of enforcement authority as problematic and reported having a collaborative relationship with RCCOs. According to HCPF, RCCO representatives were "very flexible and agreeable" in responding to State directives and feedback. A State official also noted that because RCCOs submitted bids to participate in ACC Phase II, they had an added incentive for voluntary compliance (see ***Section 12, Demonstration End: Decision and Transition***). According to HCPF, a collaborative, non-punitive oversight approach was consistent with Colorado's regulatory culture.

9.2.2 Regional Care Collaborative Organizations' Quality Management Activities

RCCOs were not required to conduct performance improvement projects (PIPs) for the demonstration, but were required to conduct them for the ACC. In 2016 and 2017, most PIPs were related to adolescent behavioral health care and care transitions following incarceration.[19]

RCCOs reported quality improvement efforts focused mainly on improving SCPs and SCP completion.

[19] https://www.colorado.gov/pacific/hcpf/performance-improvement-projects-pips

9.2.3 Independent Quality Management Structures and Activities

External Quality Review

As part of the ACC program, Colorado's EQRO, the Health Services Advisory Group (HSAG), conducts annual RCCO site visits to assess progress on implementing the ACC goals, identify successes and barriers, and make recommendations for improvement (HSAG, 2013, p. 1-1).

In 2016, HSAG reviewed care coordination records for ACC:MMP enrollees and found that most enrollees did not have complex needs requiring assistance from RCCO care coordinators. HSAG reported that many of enrollees' needs were being met through family support or care coordination by other agencies such as SEPs, CCBs, behavioral health care providers, or nursing facilities.[20] The report therefore noted potential duplication of care coordination efforts, leading to "inefficient use of scarce and expensive staff resources for completion of the SCP" (HSAG, 2016, p. 4-2). HSAG suggested reducing SCP requirements for enrollees already served by case managers outside of RCCOs and those identified during initial assessments as having minimal unmet needs. HSAG's findings in other years were not specific to the demonstration.

Office of the Medicare-Medicaid Advocate

As discussed in ***Section 6.1.9, Beneficiary Protections***, the Medicare-Medicaid Advocate provided independent quality oversight by addressing enrollee complaints, answering questions, and following up with entities such as RCCOs or billing agencies, to ensure that they took action to address enrollees' needs.

[20] HSAG acknowledged that this finding may have been partially attributable to its sampling methodology, which targeted review of MMP members who also were receiving SEP, CCB, behavioral health, or nursing facility services.

SECTION 10

Service Utilization

10.1 Methods Overview

The FAI demonstrations are intended to shift utilization from inpatient to ambulatory care, from NF care to home and community-based services (HCBS), and to improve quality of care through care coordination activities and the demonstrations' financial incentives. The analyses in this section evaluate the effects of the Colorado demonstration in demonstration years 1–3 (September 1, 2014–December 31, 2017) on service utilization outcomes among demonstration eligible beneficiaries.

Methods Snapshot

Study design: Difference-in-differences (DinD) quasi-experimental design using beneficiary months of demonstration eligibility.

Population: Medicare-Medicaid beneficiaries eligible for the demonstration in Colorado in demonstration years 1-3, approximately 88 percent of whom were enrolled during the latest demonstration year. Comparison group beneficiaries were from areas with characteristics similar to the demonstration area.

Data: Medicare FFS claims, Medicare enrollment files, Area Health and Resources Files, and the American Community Survey.

Statistical analysis: Logistic regression and negative binomial regressions with inverse propensity score weighting.

See ***Appendix C*** for more detail.

To alleviate concerns of selection bias, we used an intent-to-treat (ITT) approach that included all beneficiaries eligible for the demonstration, i.e., aligned with the demonstration. We begin by analyzing the cumulative impact of the demonstration on service utilization over demonstration years 1–3 and then report the annual effects for each outcome and demonstration year using forest plots.

The impact estimates are represented by the difference-in-differences (DinD) statistic. To help interpret the DinD, we present tables to identify trends in the outcome over time in both the comparison and the demonstration groups. Thus, a negative value on the DinD estimate corresponds to either a greater decrease or a smaller increase in an outcome in the intervention group relative to the comparison group. A positive value corresponds to a greater increase or a smaller decrease in an outcome in the intervention group relative to the comparison group.

The focus of these results is on the DinD estimate. We present this estimate two ways. First, we show the changes in the predicted probability or frequency of the outcome, relative to the comparison group. Second, we show DinD estimates as a relative percentage change compared to the predicted outcome average in the comparison group during the demonstration period. The forest plots present a point estimate of the demonstration effect by demonstration year for each outcome, along with 95 percent confidence intervals of each point estimate. To interpret the forest plot, each point estimate indicates a statistically significant demonstration effect if neither the upper nor lower bound of the confidence interval crosses zero.

We also discuss the effects of the demonstration on the LTSS and SPMI special populations. We present the demonstration effect for each special population relative to their counterparts in the comparison group, and also discuss any interaction effect of the demonstration on the special population relative to the effect among those not in the special population. For a complete list of DinD estimates with 95 and 90 percent confidence intervals, please see ***Appendix D***.

10.2 Demonstration Impact on Service Utilization Among Eligible Beneficiaries

Consistent with the goals of the demonstration, there was a decline in the probability of any long-stay nursing facility (NF) use in the demonstration group, relative to the comparison group. This decline corresponded to a 7.2 percent relative decrease over the entire demonstration period in the probability of long-stay NF use compared to the comparison group. There were no demonstration effects on the probability of inpatient admissions, emergency department (ED) visits, or SNF admissions, or the count of physician evaluation and management (E&M) visits.

10.2.1 Cumulative Impacts over Demonstration Years 1–3

There was a decline in the probability of any long-stay NF use, relative to the comparison group. There were no demonstration effects on the probability of inpatient admissions, emergency department (ED) visits, or SNF admissions, or the count of physician evaluation and management (E&M) visits. ***Table 4*** shows the cumulative impacts of the demonstration on service utilization.

- There was a decline in the annual long-stay NF use among Colorado demonstration eligible beneficiaries, resulting in a 1.3 percentage point decrease in the annual probability of any long-stay NF use, relative to the comparison group. Although the average probability of any long-stay NF use declined in both the demonstration and comparison groups from the predemonstration to the demonstration period, the greater decline in the demonstration group corresponded to a 7.2 percent decrease relative to the comparison group.
- ACC:MMPs were responsible for integrating LTSS through care coordination and data system integration in an effort to delay transitions to institutional LTSS. However, given the demonstration implementation and care coordinator challenges identified in ***Section 5, Care Coordination*** and ***Section 9, Quality of Care,*** it is difficult to determine what aspects of the demonstration may have contributed to a decline in long-stay NF use. Potentially, efforts to transition beneficiaries from NFs to community settings were more successful than efforts designed to coordinate other services, but we do not have evidence to substantiate this effect.
- Another possibility is that a competing initiative may have lowered long-stay NF use.. As described above, Colorado has achieved more balance in its LTSS utilization and expenditures than most States over time. Although our DinD model accounts for trends during the predemonstration period, it is possible that efforts toward rebalancing LTSS utilization may have become more effective over time.
- The Colorado demonstration was not associated with any cumulative improvements in inpatient admissions, ED visits, SNF admissions, or physician visits. As discussed in ***Section 5***, ***Care Coordination,*** stakeholders reported that the quality and extent of care coordination varied across RCCOs. Moreover, care coordination was hindered

by high caseload ratios. RCCOs also indicated that the demonstration did not create sufficient incentives through its KPIs to affect practice changes among PCMPs.

Table 4
Adjusted means and impact estimate for eligible beneficiaries in the demonstration and comparison groups in Colorado, September 1, 2014–December 31, 2017

Measure	Group	Adjusted mean for predemonstration period	Adjusted mean for demonstration period	Relative difference (%)	Regression-adjusted DinD estimate (95% confidence interval)	*p*-value
Probability of inpatient admission	Demonstration	0.0274	0.0284	NS	0.0004 (−0.0010, 0.0019)	0.5742
	Comparison	0.0310	0.0317			
Probability of ED visit	Demonstration	0.0711	0.0757	NS	0.0028 (−0.0000, 0.0056)	0.0516
	Comparison	0.0627	0.0642			
Count of physician E&M visits	Demonstration	0.9776	0.9675	NS	−0.0120 (−0.0357, 0.0117)	0.3224
	Comparison	0.9291	0.9324			
Probability of SNF admission	Demonstration	0.0090	0.0089	NS	−0.0001 (−0.0010, 0.0008)	0.8448
	Comparison	0.0110	0.0111			
Probability of any long-stay NF use	Demonstration	0.1579	0.1406	−7.2	−0.0130 (−0.0193, −0.0066)	<0.0001
	Comparison	0.1824	0.1792			

DinD = difference-in-differences; ED = emergency department; E&M = evaluation and management; NF = nursing facility; NS = not statistically significant; SNF = skilled nursing facility.
NOTES: This table shows the regression-adjusted predicted probability or number of monthly events for the predemonstration and demonstration periods for the comparison and demonstration groups. The ***relative difference*** is calculated by dividing the DinD estimate (column heading *Regression-adjusted DinD estimate*) by the predicted average for the comparison group in the demonstration period (column heading *Adjusted mean for demonstration period*).
SOURCE: RTI International analysis of Medicare fee-for-service claims and Minimum Data Set data.

10.2.2 Demonstration Impacts in Each Demonstration Year

Annual impact estimates indicate that the Colorado demonstration increased the probability of any monthly ED visits in demonstration year 2 and decreased the count of physician E&M visits in demonstration year 1. Because enrollment was phased in over 9 months, and it took time for care coordinators to develop SCPs with their assigned clients, little impact would be expected in the first year.

The demonstration decreased the probability of any long-stay NF use in all 3 demonstration years. ***Figures 4–6*** show annual effects of the demonstration on all-cause inpatient admissions, ED visits, SNF admissions, physician visits, and long-stay NF use.

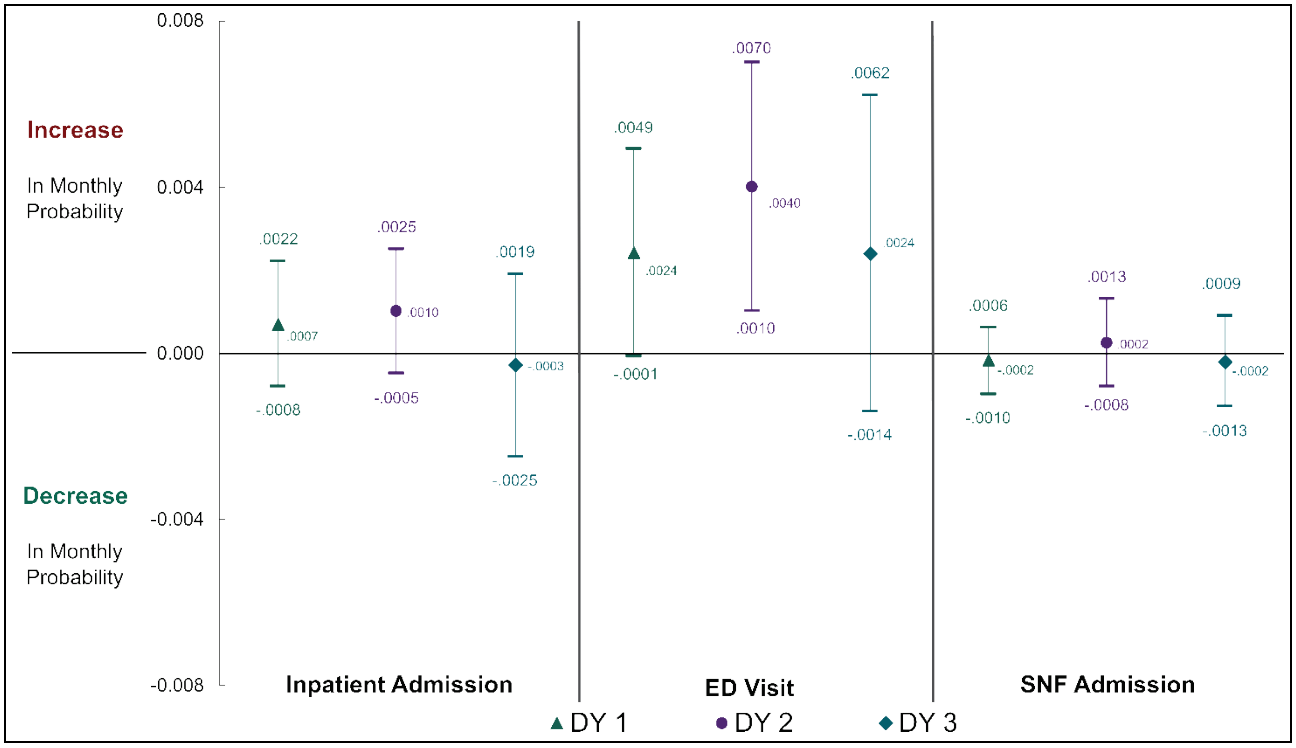
- The Colorado demonstration increased the probability of any ED visits in demonstration year 2 by 0.4 percentage points per month, relative to the comparison group. The count of physician E&M visits declined in demonstration year 1, relative to the comparison group, but there was no impact in subsequent years.
  - The expectation was that the implementation of ACC:MMP would reduce ED visit through increased access to primary care. For instance, to participate in the

ACC, PCMPs were required to increase patient access to care by adopting procedures such as extended hours, same-day appointments, or some form of 24-hour accessibility. These factors were expected to contribute to an increased access to primary care, resulting in lower ED use and increased physician E&M visits; however, this was not the case.

  - The ACC:MMP faced many implementation challenges including care coordinator turnover and a lack of financial incentives for participating medical practices to change their practice patterns for these enrollees who represented a small proportion of their patients. As described in ***Section 5, Care Coordination***, typically, care coordinators provided enrollees with lists of resources rather than providing ongoing support, and the State provided little oversight to the quality of their work.
  - Although there may have been some unintended demonstration effects in demonstration years 1 and 2, such as a decline in physician visits (year 1) and an increase in ED visits (year 2), the cumulative results indicated that the demonstration had no impact, on average, on the number of physician visits or ED visits.

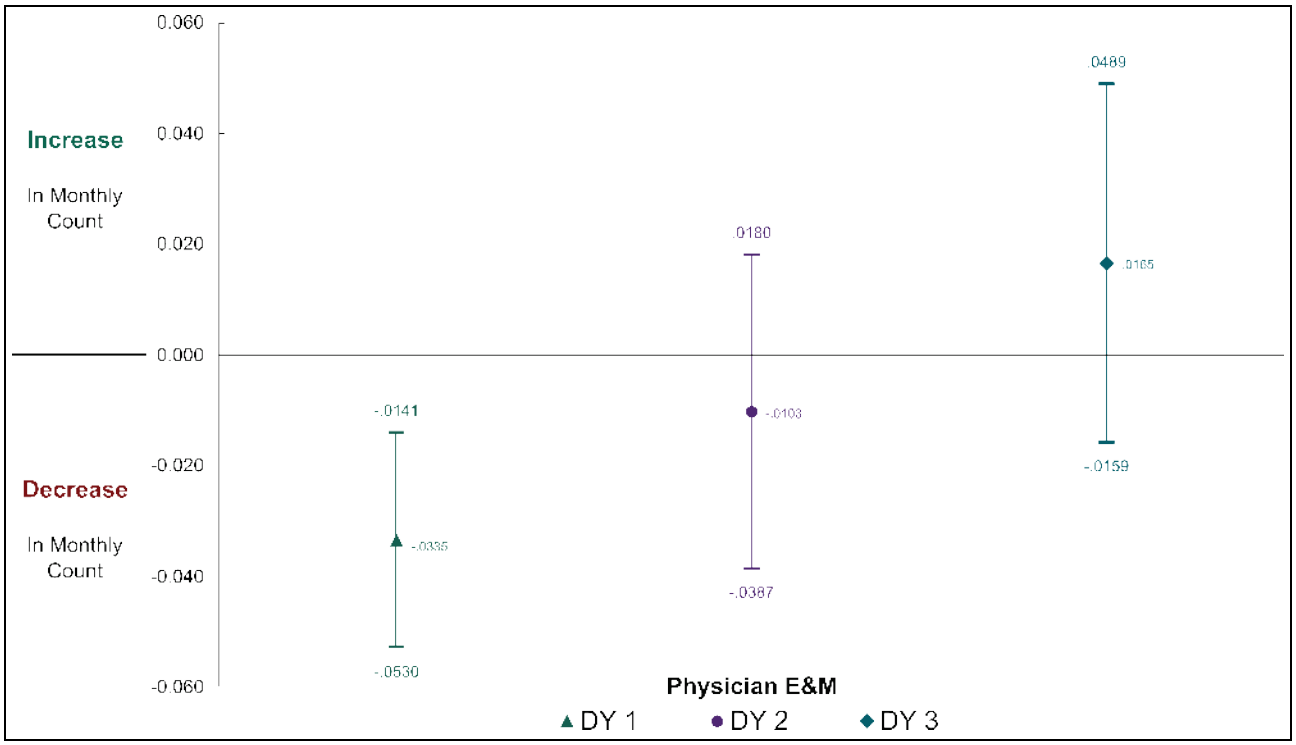
- The Colorado demonstration had no impact on the probability of inpatient admissions or SNF admissions in any demonstration year. This is consistent with the cumulative findings, which may be attributable to the care coordination turnover and implementation challenges described in ***Sections 5, Care Coordination*** and ***Section 9, Quality of Care***.
- The demonstration decreased the annual probability of any long-stay NF use in all 3 demonstration years by 1 percentage point each year, relative to the comparison group.
  - As described above, annual declines in long-stay NF use may be indicative of efforts to transition beneficiaries from nursing facilities to community settings, but could also be the result of other policy initiatives in Colorado.

Figure 4
Annual demonstration effects on inpatient admissions, ED visits, and SNF admissions, September 1, 2014–December 31, 2017



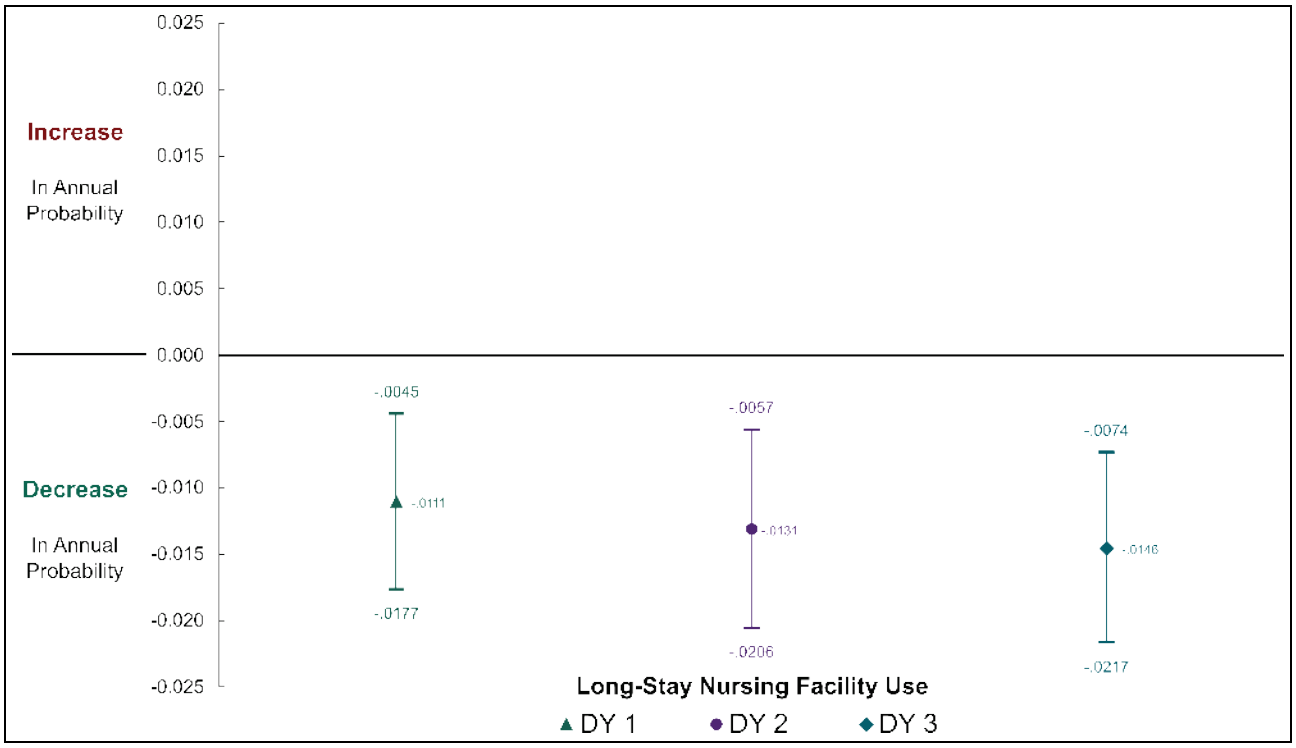
DY = demonstration year; ED = emergency department; SNF= skilled nursing facility.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure 5
Annual demonstration effects on physician visits, September 1, 2014–December 31, 2017



DY = demonstration year; E&M = evaluation and management.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure 6
Annual demonstration effects on long-stay NF use, September 1, 2014–December 31, 2017



DY = demonstration year; NF= nursing facility.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Minimum Data Set data.

10.3 Demonstration Impact on Quality of Care Measures Among the Eligible Beneficiaries

The number of preventable ED visits increased by 0.003 visits over the entire demonstration period, relative to the comparison group. Additionally, the Colorado demonstration decreased the probability of 30-day follow-up visits after a mental health discharge by nearly 5 percentage points, relative to the comparison group. There were no demonstration effects on the probability of ACSC admissions (overall and chronic) or the count of all-cause 30-day readmissions.

10.3.1 Cumulative Impacts over Demonstration Period

We analyzed the impact of the demonstration on a set of quality of care measures using Medicare claims data. The Colorado demonstration increased preventable ED visits and decreased the probability of 30-day follow-up visits after a mental health discharge, relative to the comparison group. There were no cumulative effects on the probability of ACSC admissions (overall and chronic) or the count of all-cause 30-day readmissions. ***Table 5*** illustrates the cumulative impact and adjusted means for these measures.

- Relative to the comparison group, preventable ED visits under the Colorado demonstration during the demonstration period increased by 0.003 visits. This increase represents a relative difference of 7.8 percent for preventable ED visits.
- The cumulative increase in preventable ED visits is counter to the goals of the demonstration, but it may in part be explained by the challenges highlighted in ***Section 5, Care Coordination***. Specifically, high turnover, high caseloads, and an inadequate delivery of services may have had the unintended consequence of increasing the use of emergency acute care for conditions that could have been better managed in an ambulatory care setting.
- The demonstration resulted in a decline of nearly 5 percentage points in the probability of a 30-day follow-up visit after a mental health discharge for the demonstration group in the demonstration period, relative to the comparison group, representing a relative difference of 12.7 percent.
  - There were a number of challenges related to integrating behavioral health care among those enrolled in the demonstration. Specifically, efforts to coordinate post-hospital transitions for those with mental health related admissions were hindered by provider concerns about sharing personal health information of those with substance abuse disorders.
- Caution should be used when interpreting these results. Behavioral health services were authorized and delivered by BHOs, which received capitated Medicaid payments under the demonstration. Thus, it is likely that this analysis does not capture the full scope of behavioral health services, including whether the beneficiary received behavioral health services as follow-up care after an inpatient mental health discharge.

Table 5
Adjusted means and impact estimate for eligible beneficiaries in the demonstration and comparison groups in Colorado, September 1, 2014–December 31, 2017

Measure	Group	Adjusted mean for predemonstration period	Adjusted mean for demonstration period	Relative difference (%)	Regression-adjusted DinD estimate (95% confidence interval)	*p*-value
Number of preventable ED visits	Demonstration	0.0444	0.0498	7.8	0.0030 (0.0009, 0.0052)	0.0063
	Comparison	0.0374	0.0390			
Probability of ACSC admission, overall	Demonstration	0.0055	0.0057	NS	0.0001 (−0.0003, 0.0005)	0.5604
	Comparison	0.0058	0.0060			
Probability of ACSC admission, chronic	Demonstration	0.0032	0.0032	NS	0.0001 (−0.0002, 0.0003)	0.5682
	Comparison	0.0038	0.0036			
Probability of 30-day follow-up after mental health discharge	Demonstration	0.3594	0.3215	−12.7	−0.0495 (−0.0878, −0.0112)	0.0113
	Comparison	0.3799	0.3902			
Count of all-cause 30-day readmissions	Demonstration	0.2426	0.3103	NS	−0.0071 (−0.0283, 0.0141)	0.5118
	Comparison	0.2402	0.3148			

ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; ED = emergency department.
NOTES: This table shows the regression-adjusted predicted probability or number of monthly events for the predemonstration and demonstration periods for the comparison and demonstration groups. The ***relative difference*** is calculated by dividing the DinD estimate (column heading *Regression-adjusted DinD estimate*) by the predicted average for the comparison group in the demonstration period (column heading *Adjusted mean for demonstration period*).
SOURCE: RTI International analysis of Medicare fee-for-service claims.

10.3.2 Demonstration Impacts in Each Demonstration Year

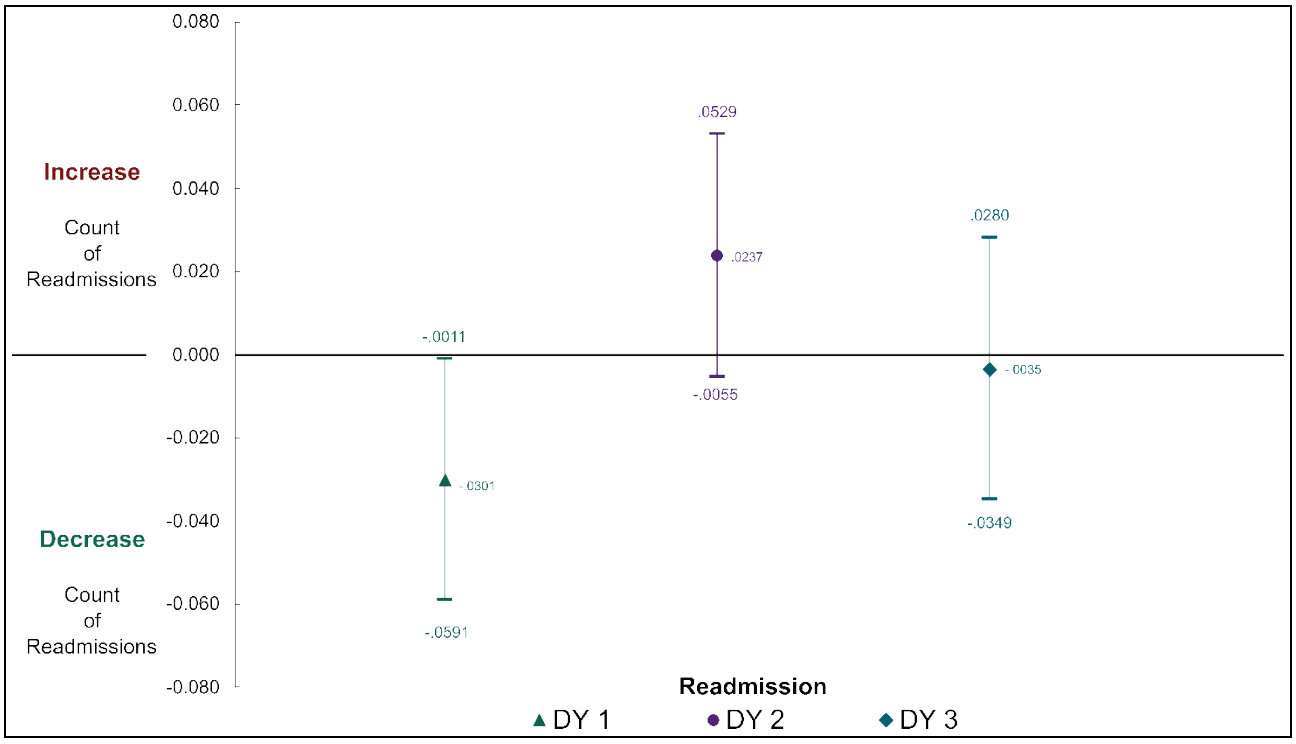
Annual impact estimates indicate that the Colorado demonstration increased the number of preventable ED visits in each of the 3 demonstration years, relative to the comparison group. The Colorado demonstration also decreased the probability of having a 30-day follow-up after mental health discharge in demonstration year 2. Additionally, the demonstration decreased the count of all-cause 30-day readmissions in demonstration year 1. ***Figures 7–10*** show the demonstration's annual effects on all-cause 30-day readmissions, ACSC admissions (overall and chronic), preventable ED visits, and 30-day follow-up post mental health discharge.

- The probability of all-cause 30-day readmissions declined in demonstration year 1 by 3 percentage points, relative to the comparison group.
  - It appears the demonstration has had some success in improving quality of care among eligible beneficiaries with respect to readmission, relative to the comparison group. However, as with the cumulative results, these results must be interpreted with caution.
  - Evidence from site visits highlighted implementation challenges, particularly difficulty using the ADT tool provided by CORHIO in coordinating post-

discharge follow-up as described in ***Section 5.2.2, Post-Hospital Transitions***. Despite these challenges, the demonstration impact was a decline in readmission in the first demonstration year. Even so, ongoing implementation challenges may help explain why there were no demonstration effects in years 2 and 3.

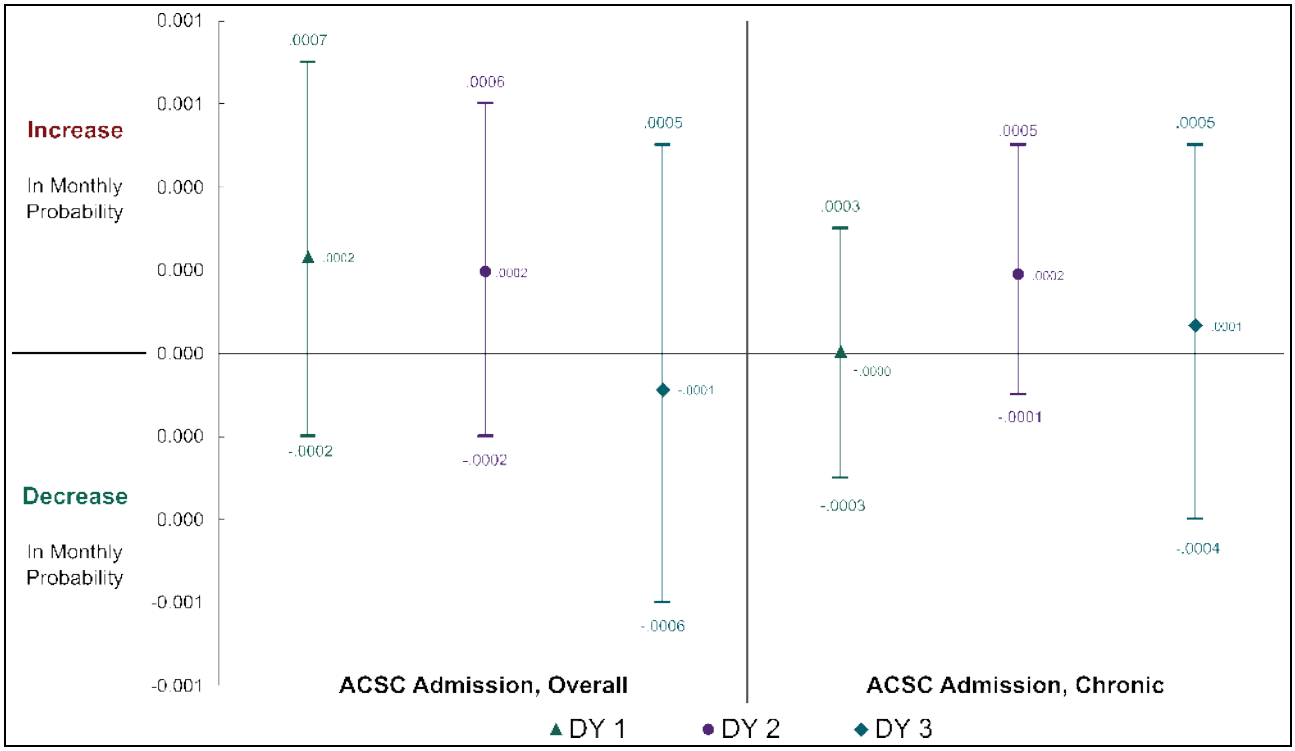
- The demonstration increased the monthly average number of preventable ED visits in demonstration years 1 through 3 by 0.0028, 0.0038, and 0.0029 visits, respectively, relative to the comparison group. These absolute increases in the number of monthly preventable ED visits corresponds to 7 percent, 10 percent, and 7 percent relative increase in demonstration year 1 through 3, respectively.
- The probability of a 30-day follow-up after mental health discharge declined in demonstration year 2 by 5.8 percentage points, relative to the comparison group.
- The annual demonstration impacts on preventable ED visits and 30-day follow-up after mental health hospitalization are consistent with the cumulative impacts on these utilization measures.

Figure 7
Annual demonstration effects on the annual count of 30-day readmissions, September 1, 2014–December 31, 2017



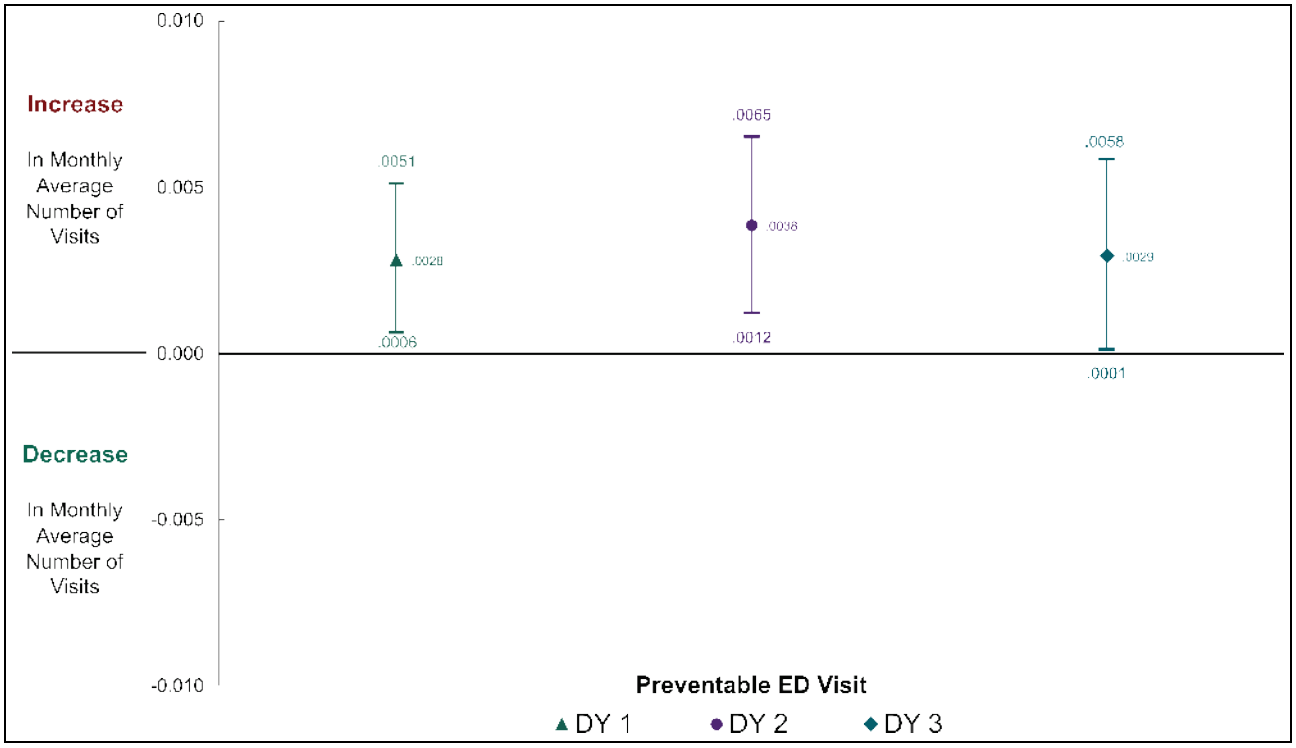
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure 8
Annual demonstration effects on the monthly probability of ACSC admissions (overall and chronic), September 1, 2014–December 31, 2017



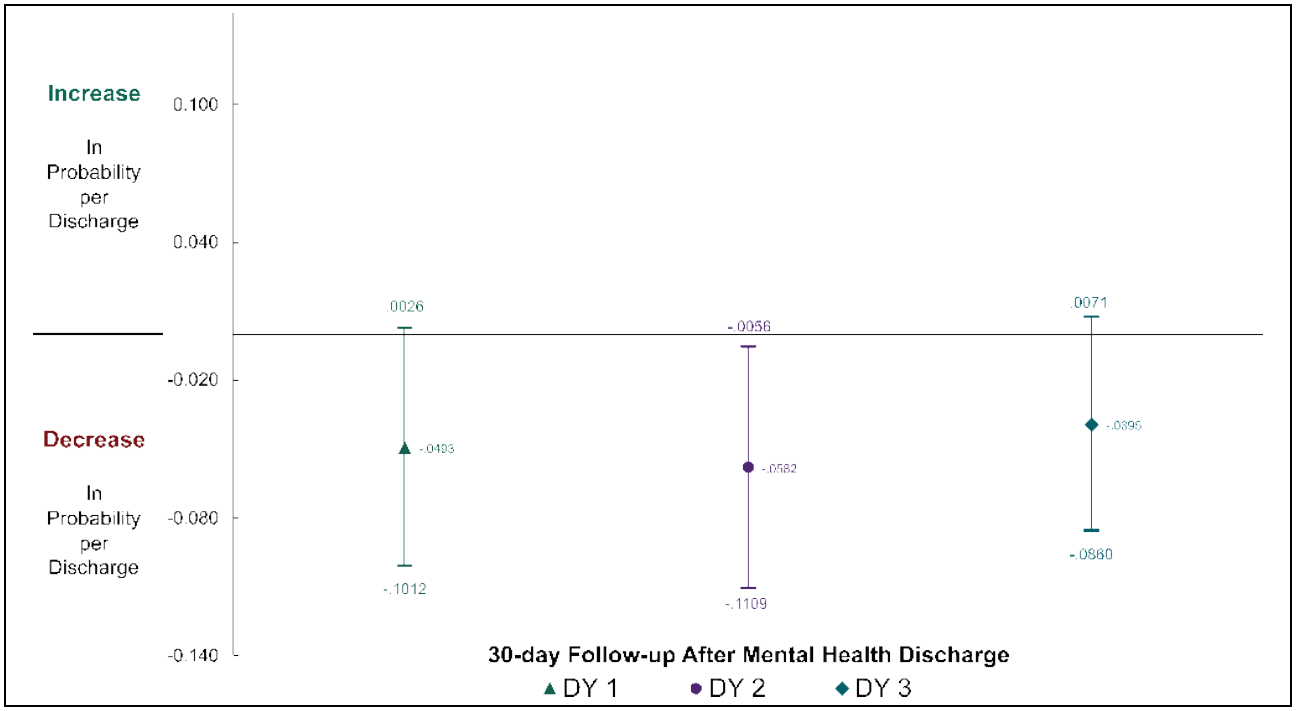
ACSC = ambulatory care sensitive condition; DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure 9
Annual demonstration effects on the number of preventable ED visits
September 1, 2014–December 31, 2017



DY = demonstration year; ED = emergency department.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure 10
Annual demonstration effects on the probability of 30-day follow-up post mental health discharge, September 1, 2014–December 31, 2017



DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

See ***Appendix D, Tables D-4*** through ***D-8*** for unadjusted descriptive statistics for all service use and quality of care measures for the demonstration eligible population and for beneficiaries who enrolled in the demonstration.

10.4 Demonstration Impact on Select Beneficiaries

The demonstration effect for the LTSS population was different than the effect for the non-LTSS population. The demonstration effect for LTSS users resulted in increases in the probability of inpatient admissions, ACSC admissions (overall and chronic) and SNF admissions relative to the demonstration effect for the non-LTSS population. The demonstration effect on those with an SPMI resulted in an increase in preventable ED visits relative to the demonstration effect among beneficiaries without an SPMI.

Improving quality of care for those with LTSS use and those with SPMI was a key focus of the demonstration. ACC:MMPs were responsible for integrating behavioral health and LTSS through care coordination and data system integration. Therefore, it was expected that the demonstration would particularly impact service utilization and quality of care among eligible beneficiaries with LTSS needs or who have an SPMI (see group definitions in ***Appendix C***), compared to those not in these special populations.

See ***Tables D-7*** and ***D-8*** in ***Appendix D*** for unadjusted descriptive statistics for demonstration enrollees and non-enrollees.

We also conducted further analyses to examine service utilization results by racial and ethnic groups among the eligible population for select utilization measures: inpatient admissions, ED visits (without admission), hospice admissions, primary care E&M visits, behavioral health visits, and outpatient therapy (physical therapy, occupational therapy, and speech therapy) visits (see ***Figures D-1, D-2,*** and ***D-3*** in ***Appendix D***).

10.4.1 Beneficiaries Receiving Long-Term Services and Supports

As indicated in ***Table C-1*** in ***Appendix C***, about 29 percent of the demonstration eligible population in demonstration year 3 had any LTSS use. For some measures, the demonstration impacted those with LTSS use differently than those with no LTSS use (see ***Table D-9*** in ***Appendix D***). For example, the cumulative demonstration effect on the probability of monthly inpatient admissions among LTSS users was 0.38 percentage points greater than the demonstration effect among non-LTSS users. In other words, the impact of the demonstration among those with LTSS use resulted in a greater increase in inpatient use than the demonstration effect among those without LTSS use. Similarly, the demonstration resulted in a greater increase in SNF admissions among those with LTSS use compared to the demonstration impact among those without LTSS use (see ***Table D-11*** in ***Appendix D***).

Additionally, for some measures of quality of care, the demonstration effect for those with LTSS use resulted in an increase in the probability of ACSC admissions (overall and chronic) relative to the demonstration effect for those without LTSS use (see ***Table D-10*** in ***Appendix D***).

We also present cumulative and annual estimates of the demonstration effect for those with LTSS use only, relative to the comparison group, in ***Table D-2***, and in ***Figures D-4*** through ***D-9*** in ***Appendix D.***

10.4.2 Beneficiaries with Serious and Persistent Mental Illness

As indicated in ***Table C-1*** in ***Appendix C***, about 45.7 percent of the demonstration eligible population in demonstration year 3 had an SPMI. There were no statistically significant differences in the cumulative demonstration effect among those with SPMI on utilization measures relative to those without an SPMI (see ***Table D-11*** in ***Appendix D*)**. However, the cumulative Colorado demonstration impact for those with SPMI on monthly preventable ED visits resulted in an increase of 0.0058 monthly visits relative to the demonstration effect on those without an SPMI. There were no other statistically significant differences in the quality of care measures where the demonstration impacted those with an SPMI differently than those without an SPMI (see ***Table D-12*** in ***Appendix D***).

We also present cumulative and annual estimates of the demonstration effect for those with SPMI only, relative to the comparison group, in ***Table D-3***, and in ***Figures D-10*** through ***D-14*** in ***Appendix D.***

SECTION 11

Cost Savings

11.1 Methods Overview

RTI conducted estimates of Medicare Parts A and B savings using a DinD analysis examining beneficiaries eligible for the demonstration in the Colorado demonstration and comparison areas. Our results show neither statistically significant savings nor additional costs as a result of the demonstration.

Although neither statistically significant savings nor losses were found over the entire demonstration period, in some of the demonstration years, we observed significant additional costs for outpatient and physician services.

Over the 3-year demonstration period, the Colorado demonstration did not demonstrate aggregate savings or additional costs in Medicare Parts A and B expenditures that would have resulted through improvements in the quality of care and reductions in unnecessary spending. As the demonstration had little favorable impact on service utilization and quality of care measures, this result is not surprising.

This chapter presents the Medicare Parts A and B cost savings analysis for demonstration years 1 to 3 (calendar years 2014 to 2017). We used an ITT analytic framework that includes beneficiaries eligible for the demonstration rather than only those who enrolled. The ITT analytic framework alleviates concerns of selection bias.

Separate from the regression-based analyses in this report, an actuarial analysis has also been conducted to estimate shared savings payments between CMS and the State of Colorado.[21] The actuarial analysis results showed 4.02 percent total additional gross Medicare costs across the 3-year demonstration period. The results from the actuarial analysis are used to estimate Medicare savings for shared savings payments if applicable. The actuarial analysis differs from the regression-based approach in the beneficiaries included in the analysis, the data used for them, and the methodology.

The following sections discuss the analytic approach and results of the regression-based analyses.

To evaluate the cost implications of the demonstration, RTI performed a DinD analysis of Medicare Parts A and B expenditures that compares enrollees who meet eligibility criteria and live in an area where a participating health plan operates—the demonstration group—to those who meet the same eligibility criteria but live outside those operating areas—the comparison group.

To identify the demonstration group, RTI utilized quarterly files submitted by the State of Colorado. Comparison group beneficiaries were identified through a two-step process. First, we

[21] Actuarial reports are available at https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/Colorado.

identified comparison areas based on market characteristics. Second, we applied the same eligibility criteria to beneficiaries in the identified areas. This process is further described in ***Appendix B***. Once the two groups were finalized, we applied propensity score weighting.

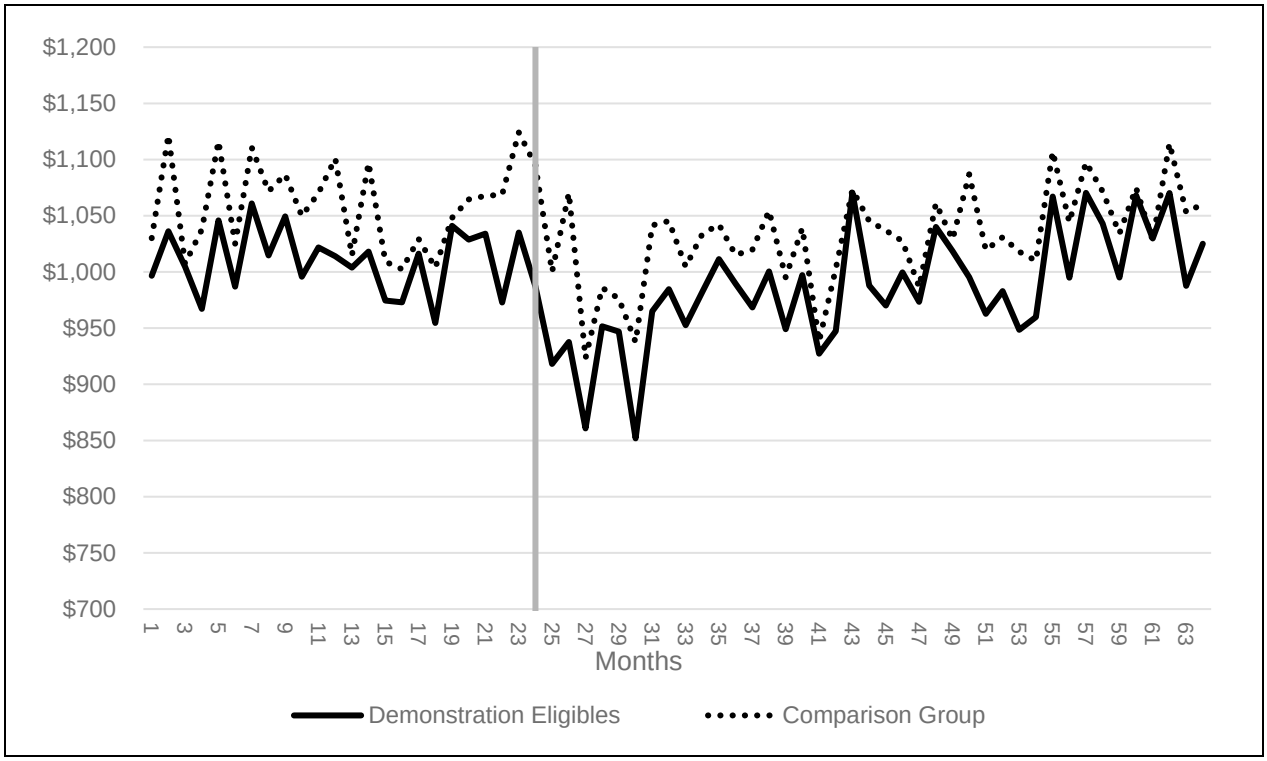
RTI gathered predemonstration and demonstration monthly Medicare expenditure data for both the demonstration and comparison groups from Medicare FFS claims data. FFS claims included all Medicare Parts A and B services. We adjusted monthly Medicare expenditures to reflect geographic payment adjustments and other payment policies (see ***Appendix E***).

To calculate the impact of the demonstration on Medicare expenditures, we ran a generalized linear model with gamma distribution and log link. This is a commonly used approach in analysis of skewed data. The model included control variables for individual demographic and area-level characteristics (see ***Appendix E***), employed propensity score weighting, and adjusted for clustering of observations at the county level. The key policy variable of interest in the model is an interaction term representing the combined effect of being part of the demonstration eligible group during the demonstration period.

11.2 Demonstration Impact on Medicare Parts A and B Costs

Once we finalized the adjustments, we tested a key assumption of a DinD model: parallel trends. We plotted the mean monthly Medicare expenditures for both the comparison group and demonstration group, with the propensity score weights applied. ***Figure 11*** shows the resulting plot and suggests that overall there were parallel trends in the predemonstration period.

Figure 11
Mean monthly Medicare expenditures (weighted), predemonstration and demonstration period, demonstration and comparison group, September 2012–December 2017



SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar057 part iii1b).

Table 6 shows the magnitude of the DinD estimate relative to the adjusted mean outcome value in the predemonstration and demonstration periods. The adjusted mean for monthly expenditures decreased between the predemonstration and demonstration period for the demonstration and comparison groups. The cumulative DinD estimate of $6.46 has a relative percent difference of 0.51 percent but is not statistically significant (p = 0.7695). This suggests that there were no additional costs nor gains to Medicare as a result of the demonstration using the ITT analysis framework.

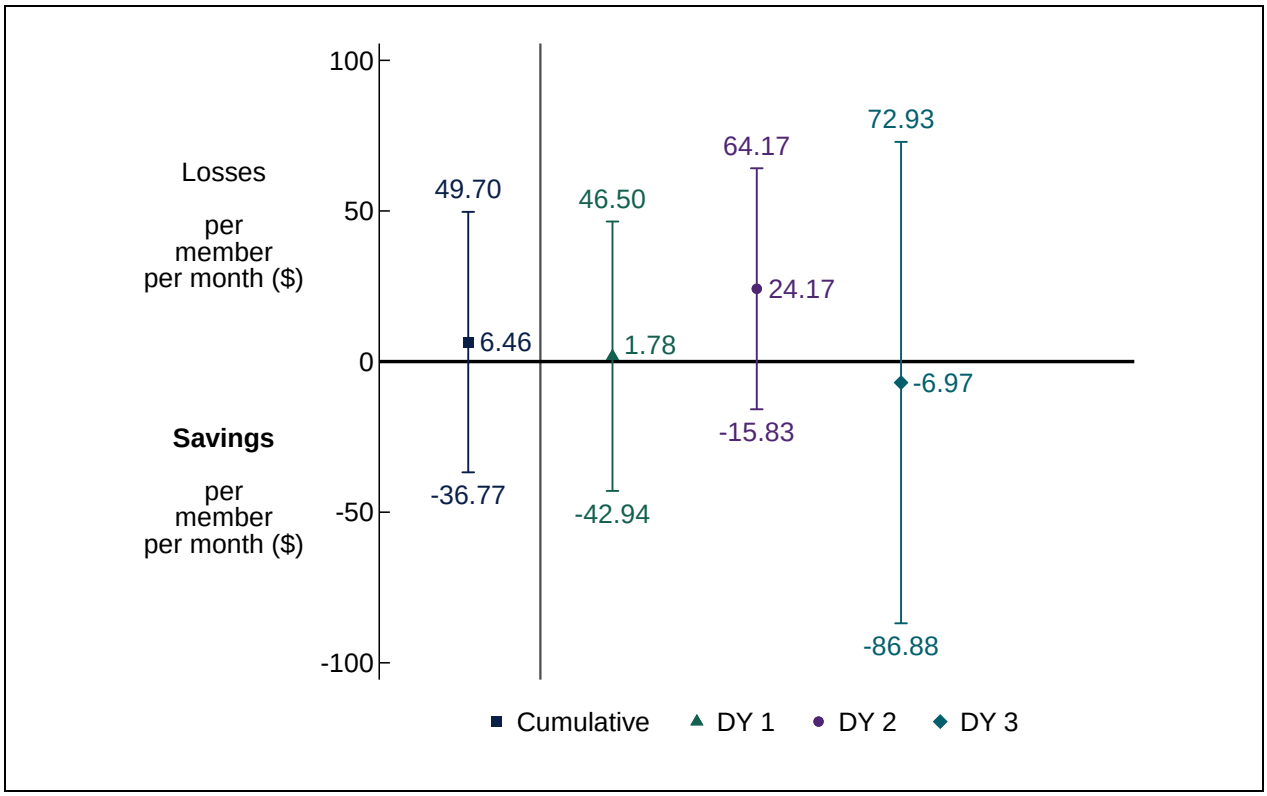
Table 6
Adjusted means and overall impact estimate for Medicare Parts A & B Costs, Colorado eligible beneficiaries in the demonstration and comparison groups

Group	Adjusted mean for predemonstration period	Adjusted mean for demonstration period	Relative difference (%)	Adjusted coefficient DinD	*p*-value
Demonstration	$1,237.17	$1,182.91	0.51	$6.46	0.7695
Comparison	$1,343.18	$1,277.71			

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar075).

We ran the regression model to calculate the effect of the demonstration in the individual demonstration years. The demonstration had no statistically significant effect in any of the individual demonstration years, as shown by the confidence intervals crossing $0 in every year (***Figure 12***). Note that these estimates rely on the ITT analytic framework, and only account for Medicare Parts A and B costs.

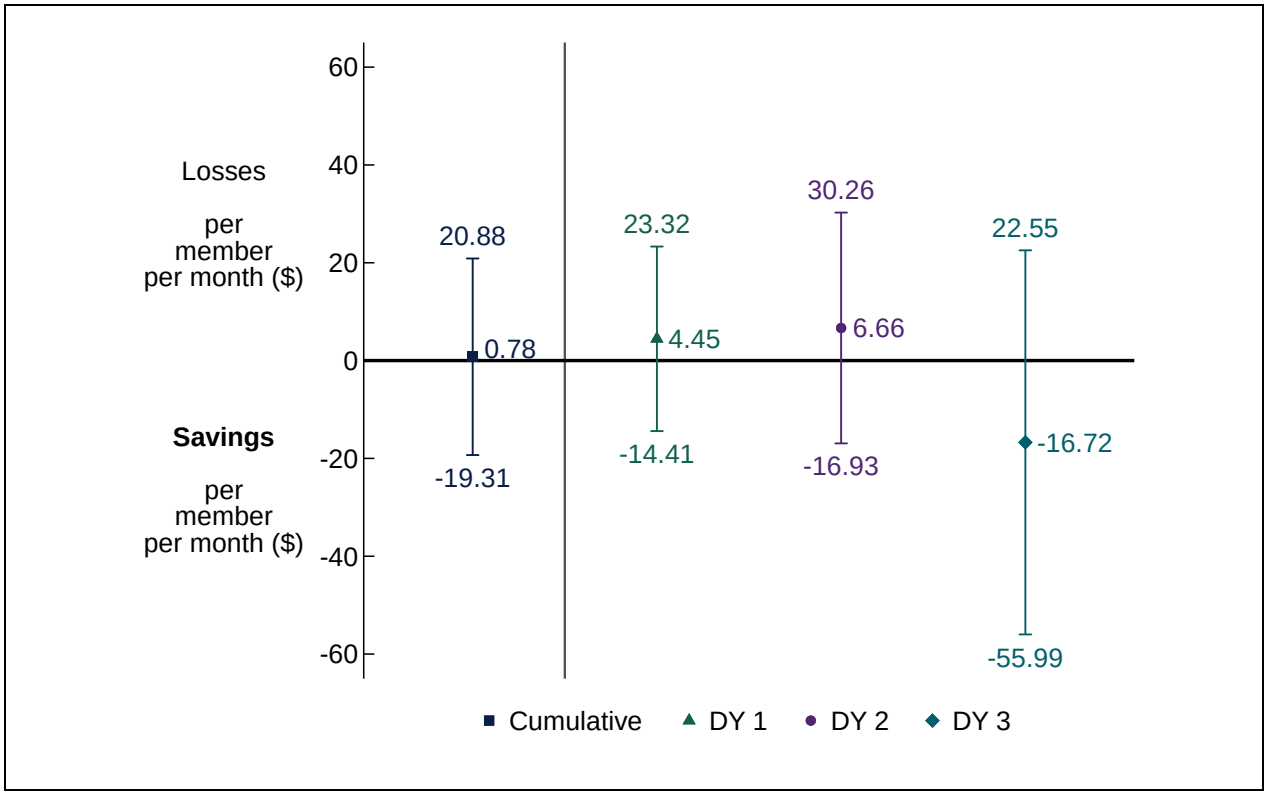
Figure 12
Cumulative and annual monthly demonstration effect on Medicare Parts A and B costs, September 1, 2014—December 31, 2017



DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar067).

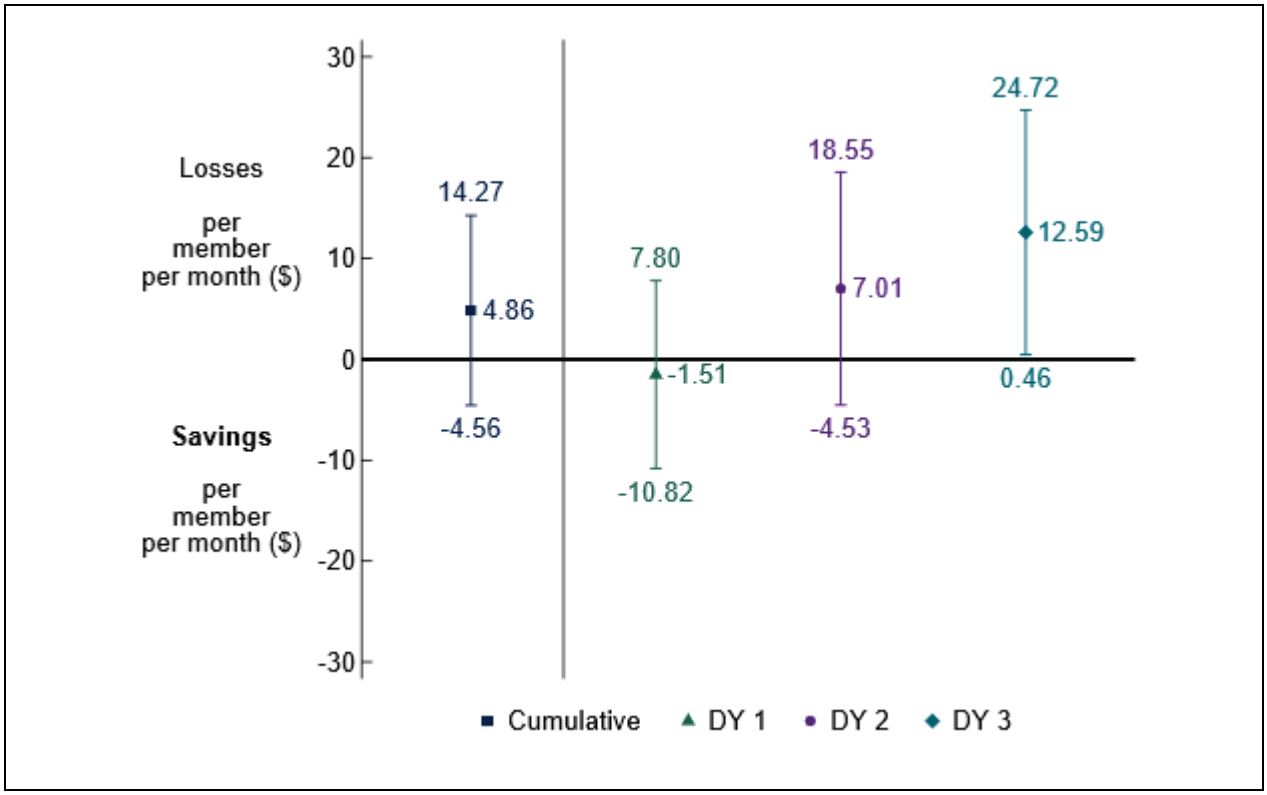
In addition to the overall DinD estimates, we generated DinD estimates by type of Medicare service to learn more about the specific service types driving the results. ***Figures 13–19*** show the cumulative and annual DinD estimates for inpatient services, outpatient services, physician services, home health agency services, durable medical equipment, hospice services, and skilled nursing facility services, respectively. The findings for inpatient services are consistent with our overall findings and do not show significant savings or additional costs in any of the demonstration years. For the other service types—outpatient and physician services—we observe some statistically significant additional costs in some demonstration years, but do not believe these to be main drivers of our results.

Figure 13
Cumulative and annual monthly demonstration effect for inpatient services, September 1, 2014—December 31, 2017



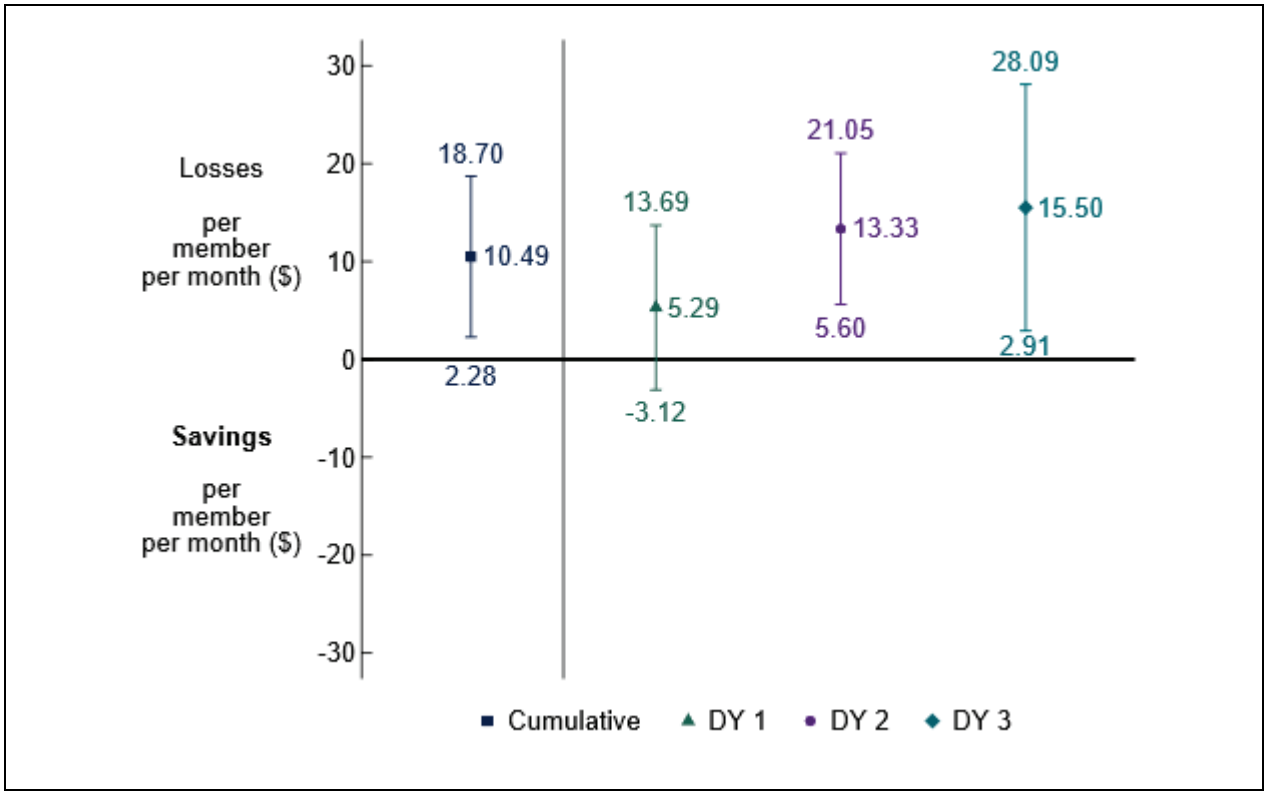
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar071).

Figure 14
Cumulative and annual monthly demonstration effect for outpatient services, September 1, 2014—December 31, 2017



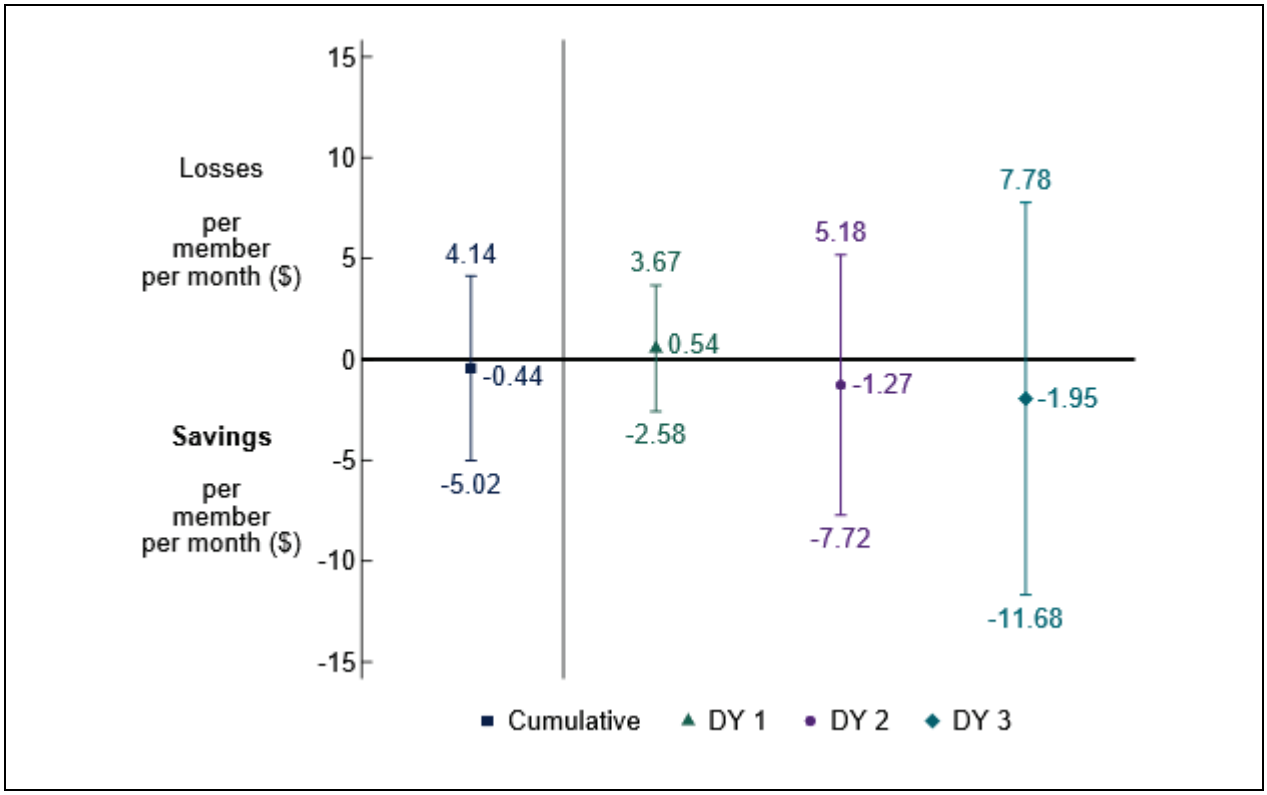
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar072).

Figure 15
Cumulative and annual monthly demonstration effect for physician services, September 1, 2014—December 31, 2017



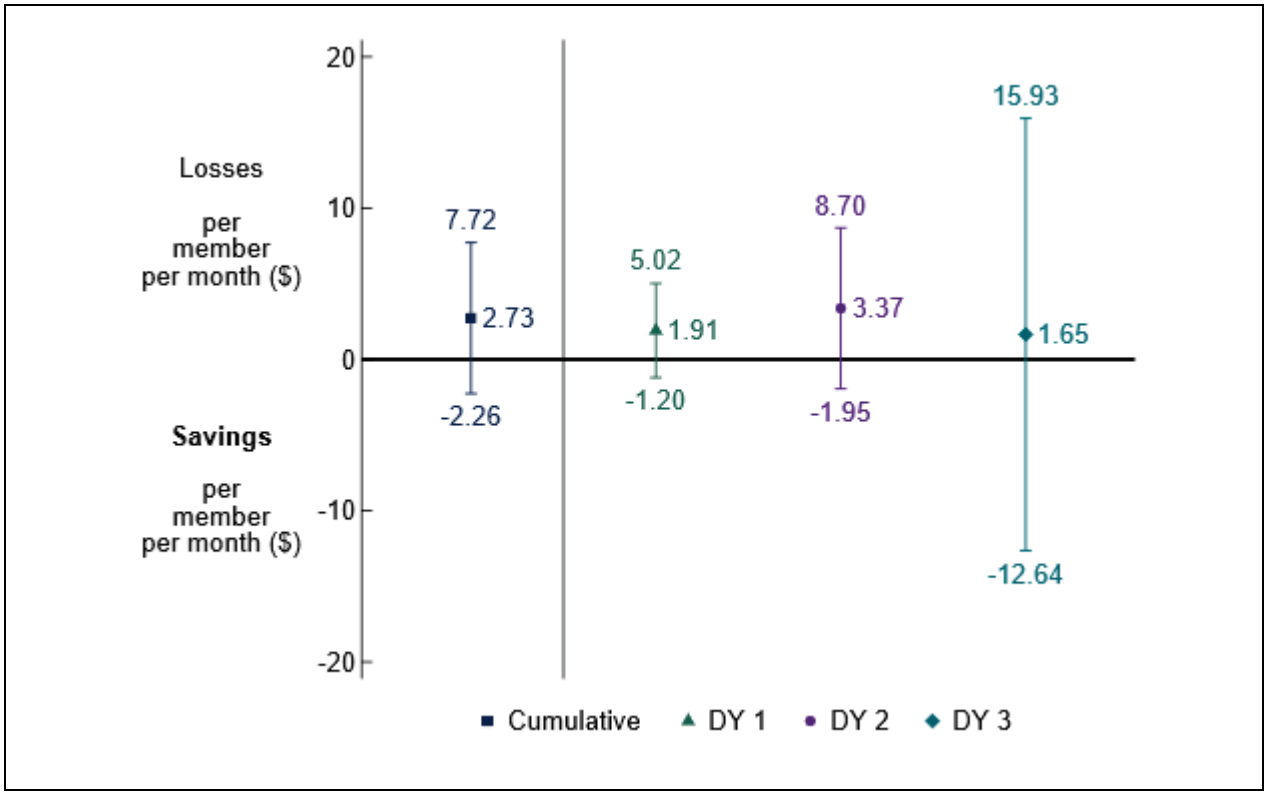
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar073).

Figure 16
Cumulative and annual monthly demonstration effect for home health agency services, September 1, 2014—December 31, 2017



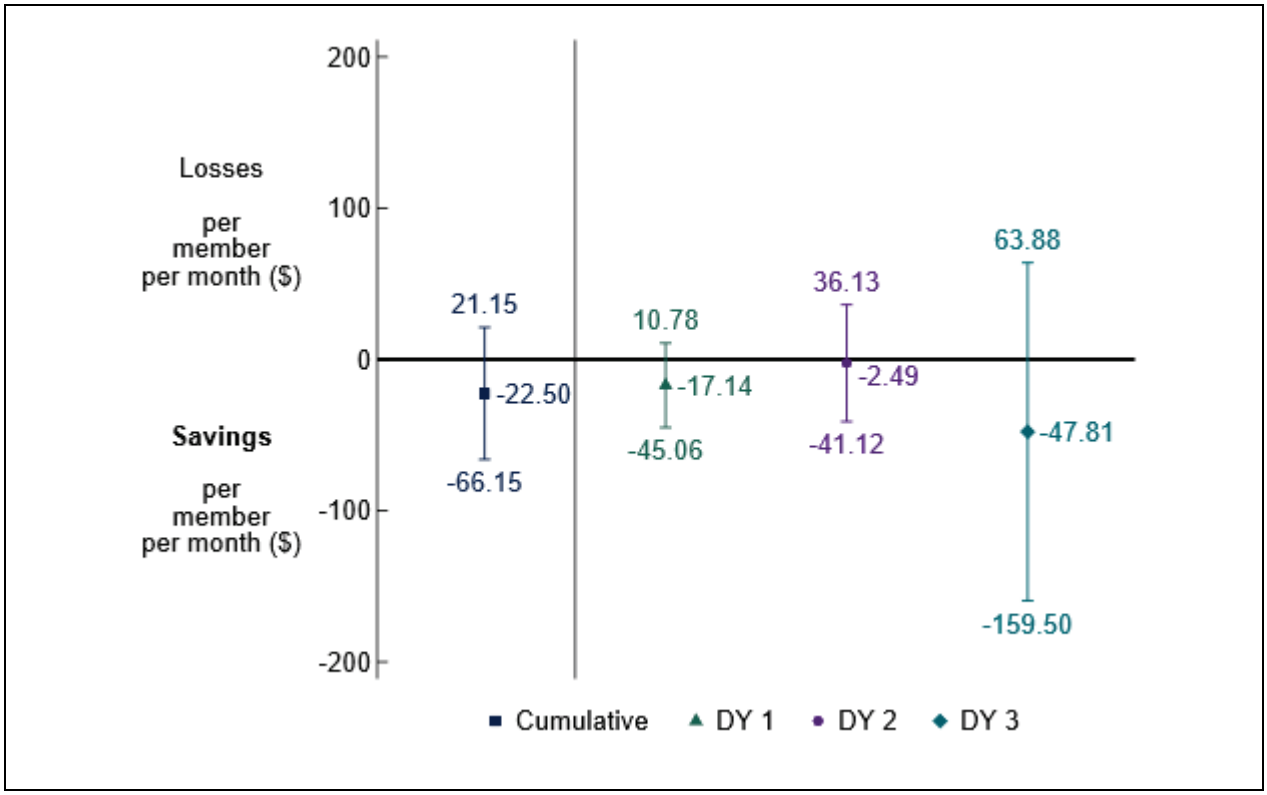
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar069).

Figure 17
Cumulative and annual monthly demonstration effect for durable medical equipment, September 1, 2014—December 31, 2017



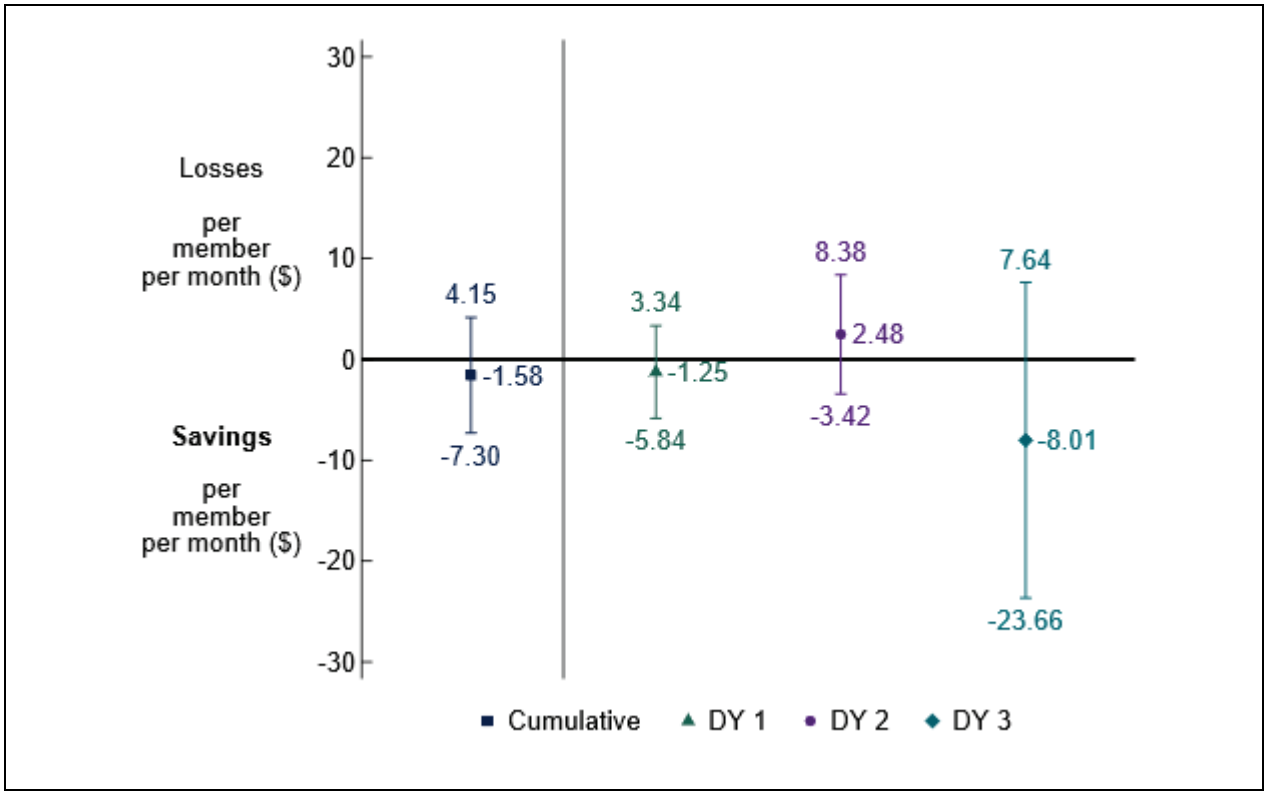
DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar068).

Figure 18
Cumulative and annual monthly demonstration effect for hospice services, September 1, 2014—December 31, 2017



DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar070).

Figure 19
Cumulative and annual monthly demonstration effect for skilled nursing facility services, September 1, 2014—December 31, 2017



DY = demonstration year.
NOTE: 95% confidence intervals are shown.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar074).

SECTION 12

Demonstration End: Decision and Transition

The State decided to end the demonstration and transfer ACC:MMP enrollees to Phase II of the broader ACC. The State identified three main factors that contributed to the decision to end the demonstration: lack of capacity and funding; IT systems transitions to new vendors, which created challenges for many aspects of the demonstration; and the State's concurrent participation in multiple delivery system reform initiatives.

Extensive planning for Phase II of the ACC began in 2015. This planning competed with HCPF staff time and resources for ACC:MMP demonstration implementation, and thus limited the State's ability to address persistent implementation challenges.

RCCOs and providers expected minimal impact from the demonstration end in December 2017. Beneficiary advocates, who saw added value from the demonstration, were surprised by the State's decision to end the demonstration.

State officials planned to carry forward lessons learned from the demonstration into ACC Phase II. In particular, they planned to make the ACC Phase II care coordination model more flexible; and require new Regional Accountable Entities (RAEs) to learn more about Medicare-Medicaid beneficiaries, include enrollees in Member Advisory Committees, and collaborate with the ombudsman.

The ACC:MMP ended in December 2017. All Medicare-Medicaid beneficiaries were enrolled in the ACC as of January 2018. As detailed in this report, HCPF, the State agency responsible for implementing the ACC:MMP, experienced many implementation challenges. This section describes the decision to end the demonstration and highlights some transition activities.

12.1 The Department of Health Care Policy and Financing's Announcement

In Spring 2017, HCPF said they were in discussions with CMS about the State's request to extend the ACC:MMP through December 2019 (DCPF, 2015c), as well as a proposed change to the demonstration's care coordination model.[22] However, in June 2017, HCPF announced its decision to end the ACC:MMP as originally scheduled, on December 31, 2017, and enroll all Medicare-Medicaid beneficiaries in the ACC as of January 1, 2018 (HCPF, 2017f). Coinciding with the announcement, the State posted a draft transition and phase-out plan for public comment outlining procedures for member notification, continued enrollee assistance and support services, beneficiary enrollment and continuity of care, a communications strategy, and continued stakeholder engagement (HCPF, 2017g).

[22] According to a HCPF official, the proposed change would have replaced the requirement to conduct comprehensive SCPs for all ACC:MMP enrollees with an assessment and care planning process tailored to individual needs. Text of the proposed change and information about the status of the proposal were not available to the RTI evaluation team.

12.2 Factors Contributing to the Decision

In June 2017, State officials discussed a number of contributing factors in reaching the decision to end the demonstration. The three main factors were lack of capacity and funding, IT systems transitions, and the State's concurrent participation in multiple delivery system reform initiatives at the time of the FAI demonstration.

Lack of capacity and funding. State officials described the demonstration as administratively burdensome and noted that HCPF did not have funding for additional staff dedicated to the demonstration. Because the State did not earn shared savings from the demonstration, HCPF lacked additional funding that could have helped address the implementation and capacity challenges.

CMS likewise expressed concern about limited State staffing devoted to the demonstration. Without additional staffing, the State said they had to focus the vast majority of their time on "grant administration and reporting." Therefore, they did not have the capacity to sufficiently address major challenges with RCCO collaboration across the LTSS and behavioral health delivery systems, care coordination, and quality measurement that persisted throughout the demonstration.

IT system transitions. HCPF's ability to address persistent challenges was further constrained by the State's transition to new IT vendors. In 2017, State officials, RCCO staff, and beneficiary advocates described significant issues associated with HCPF's reprocurement of its IT vendor contracts. These transitions created challenges in many aspects of the demonstration, as discussed in earlier sections of this report, including eligibility and enrollment data, claims payment, oversight of RCCOs' SCP completion rates, and quality measurement.

HCPF representatives described its IT system transitions as "a huge lift" that involved "an immense amount of people behind the scenes" and "a mass amount of resources." One HCPF official described the IT vendor transitions as the single greatest challenge of 2017. Another HCPF staff member suggested that because the IT changes affected all Medicaid beneficiaries and providers, the Department prioritized IT transition-related activities over the ACC:MMP.

… [HCPF] had to get…two [IT] vendors up to speed…. [The] ability to pay claims correctly, to enroll [beneficiaries] and identify providers [in the larger Medicaid program], all that is a much higher priority, impacts a lot more people, more Medicaid, than some of our smaller demonstrations that we participate in.

— State Official (2017)

Multiple delivery system innovations. The State's participation in several major delivery system reform initiatives led to limiting focus on the demonstration. According to State officials, Colorado's participation in larger Federal-State innovation initiatives, including the

State Innovation Model and the Comprehensive Primary Care Initiative/Comprehensive Primary Care Initiative Plus, concurrent with ACC:MMP implementation, limited providers' ability and willingness to focus on the demonstration. HCPF noted that each of the initiatives had a different set of performance incentives associated with different types of practice changes.

The…providers are just maddened by all of [the ongoing delivery system innovation efforts and varying performance incentives]…. We're looking at…six core indicators for quality on the MMP [demonstration]. SIM is looking at five similar but not exactly the same [quality measures].

— State Official (2017)

Thus, the decision to end the demonstration was, in part, an effort to streamline State programs to reduce complexity and frustration for providers, and increase HCPF's ability to focus on high-priority delivery system innovations.

12.3 Planning for ACC Phase II

In 2015, HCPF began discussions with CMS and stakeholders about Phase II of the ACC, which would begin in July 2018. In 2016 and 2017, State officials reported extensive planning and engagement with RCCOs and other stakeholders to lay the groundwork for ACC Phase II, including development of the request for proposal for participating entities (discussed later in this section) and discussion of potential requirements for the ombudsman program. This planning process competed with HCPF staff time and resources for demonstration implementation, and thus limited the State's ability to address persistent implementation challenges.

12.4 Stakeholders' Perspectives on the Decision to End the Demonstration

RCCOs and provider representatives. RCCOs suggested that the impact of ending the demonstration in December 2017 would be minimal. One RCCO noted that because the organization had already integrated ACC:MMP care management structures and activities with SEPs and CCBs and had combined funding and care management resources with the ACC program, the end of the demonstration would not require operational changes. Another RCCO said that because enrollment in the ACC:MMP represented a small portion of the more than one million enrolled in the ACC (HCPF, 2017a), ending the demonstration would not significantly affect its operations. Two RCCOs commented that ending the requirement to conduct SCPs for all enrollees would allow for a more effective allocation of care coordination resources to target those most in need under ACC Phase II.

In 2017, a provider representative anticipated that the State's decision to terminate the ACC:MMP at the end of that year would not affect the provider organization or its patients, because patients had been receiving care coordination services at the provider level rather than from RCCOs.

Beneficiary representatives. According to a beneficiary stakeholder, members of the beneficiary advocacy community were surprised by the decision to end the demonstration in 2017. In contrast to the State's view, the stakeholder believed that providing a care coordination intervention based on beneficiaries' status as Medicare-Medicaid beneficiaries was warranted because the population had unique needs, including a need for help with navigating the two programs.

[The demonstration has been]an important opportunity to try to harmonize, for the first time, the delivery of services under [Medicare and Medicaid].

— Beneficiary Advocate (2017)

Additionally, the demonstration had helped increase RCCOs' understanding of the Medicare-Medicaid population, and SCPs and disability competency activities conducted under the demonstration had begun to build an infrastructure to support Medicare-Medicaid beneficiaries' needs.

12.5 ACC Phase II

Under ACC Phase II, effective July 1, 2018, new Regional Accountable Entities (RAEs) are responsible for functions previously performed by RCCOs and BHOs (HCPF, 2015b). According to HCPF staff, RAEs provide a framework for coordination among PCPs and CMHCs to integrate physical and behavioral health services for ACC enrollees. State officials identified several lessons learned from the demonstration that they planned to carry forward into ACC Phase II.

More flexibility with the care coordination model. As noted, RCCOs struggled to complete SCPs for all enrollees, many of whom had developed treatment plans with LTSS and behavioral health care coordinators, and said they did not want or need to engage with ACC:MMP care coordinators. Because of this, HCPF decided that implementing the demonstration's comprehensive care coordination model for all Medicare-Medicaid beneficiaries was not an efficient use of resources.

In designing ACC Phase II, HCPF sought to:

- avoid duplicating care coordination services across delivery systems,
- establish assessment and care planning processes to promote optimal efficiency, and
- provide flexibility to design interventions to align with individual risk levels.

Thus, HCPF anticipated that under ACC Phase II, RAEs would not be required to conduct comprehensive risk assessments for all beneficiaries. Rather, the State envisioned a process in which a brief assessment would be conducted for all Medicaid enrollees, and additional modules could be added to identify unmet health and functional needs. An RCCO

commented that RAEs would be able to use predictive modeling to stratify enrollees by risk level, and target care planning and interventions to enrollees with extensive unmet health and social service needs. The State and RCCOs believed that this targeted approach to assessment and care planning would make ACC Phase II more effective than the ACC:MMP in driving quality improvement and cost savings.

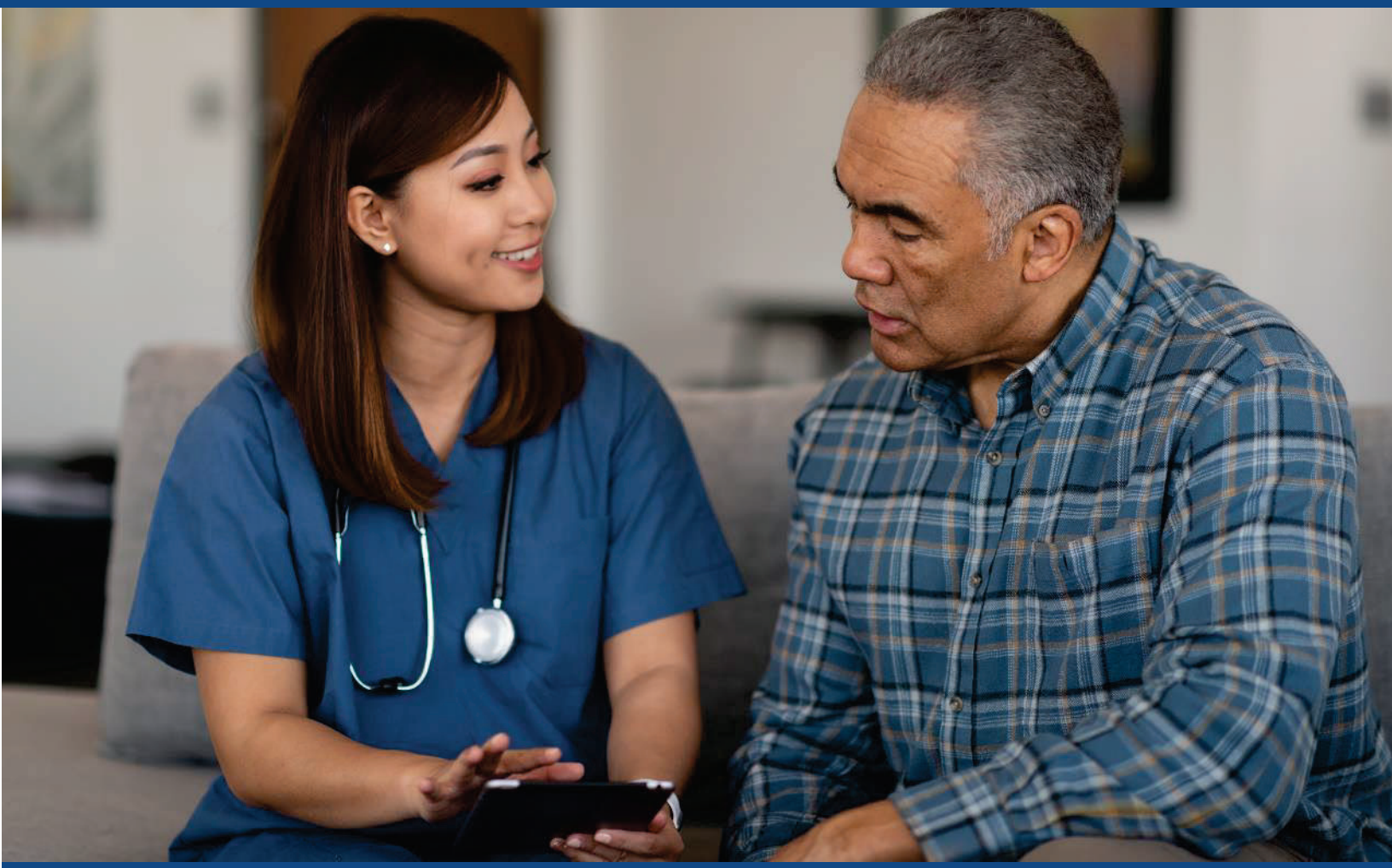
Attend to Medicare-Medicaid enrollee and advocate concerns. The State sought to address Medicare-Medicaid enrollee concerns from ACC:MMP in ACC Phase II. In 2018, HCPF staff reported that approximately a dozen recommendations from the demonstration's Advisory Subcommittee had been incorporated in the request for proposal for ACC Phase II. Among these were requirements for RAEs to include Medicare-Medicaid beneficiaries in their Member Advisory Committees, participate in learning collaboratives related to the Medicare-Medicaid population, and implement care coordination models that include methods to identify and engage with high-risk members. The State also changed subcommittee bylaws to ensure that these requirements would be met.

Beneficiary advocates were hopeful that the ombudsman would continue to be involved in ACC Phase II. Before the demonstration ended, the Beneficiary Rights and Protection Alliance had advocated for continued funding of the ombudsman's office in ACC Phase II. The Alliance recommended requirements for the RAEs operating under ACC Phase II to collaborate with the ombudsman.

In May 2018, beneficiary advocates reported that individuals who had served on the Alliance were continuing to meet and were exploring the possibility of providing some type of ombudsman services for Medicare-Medicaid beneficiaries and potentially for other populations. They emphasized that the effort was in the early stages, and it was not clear whether and to what extent the State would be involved.

SECTION 13

Conclusions



13.1 Successes, Challenges, and Lessons Learned

The ACC:MMP achieved notable success in bringing together State officials, RCCOs, and stakeholders to address Medicare-Medicaid beneficiaries' complex needs. State officials engaged extensively with stakeholders in the planning and early implementation process, and stakeholders' input was reflected in the demonstration's design, communication, and outreach. In some cases, the demonstration helped facilitate increased collaboration and workforce integration among RCCOs and care coordinators within the LTSS delivery system. Through the demonstration, RCCO staff and providers became more aware of Medicare-Medicaid beneficiaries' unique needs and challenges. One RCCO's pilot of appointment-style cards that enrollees used to explain to providers enrollees' need for interpreter services was successful and continued after the demonstration ended.

However, the ACC:MMP faced implementation and capacity challenges in key areas such as cross-delivery system collaboration, care coordination, and quality measurement. These challenges persisted throughout the demonstration and ultimately led the State to terminate rather than extend the demonstration, as initially planned. Difficulties with the IT vendor transitions and State participation in larger delivery system reform initiatives constrained HCPF's ability to address these issues.

The State suggested that the lack of a plan to distribute a portion of shared savings to the RCCOs represented a critical missed opportunity to create effective performance incentives. Ultimately, the State did not earn any shared savings from the demonstration that could have provided additional resources to help overcome the demonstration's implementation and capacity challenges or could have been used to incentivize improved performance. The demonstration would also have benefitted from a targeted approach to allocating care coordination services.

Based on lessons learned in the ACC:MMP, the State decided to create a flexible, needs-based approach to risk assessment and care planning in ACC Phase II. By adopting this approach and requiring RAEs to pursue specified engagement strategies focused on Medicare-Medicaid beneficiaries, ACC Phase II offers new opportunities for success in improving care and lowering costs for high-risk, high-cost beneficiaries.

13.2 Demonstration Impact on Service Utilization and Costs

Given the lack of incentives to providers to change their practice patterns, the various implementation challenges, and a care coordination model that appears to have been underfunded, it is not surprising that the Colorado demonstration had a limited and potentially negative impact on service utilization and quality of care measures and no statistically significant impact on costs.

The demonstration had one positive and sustained impact: a decline in nursing facility visits. However, given the demonstration implementation and care coordination challenges, it is difficult to determine what aspects of the demonstration may have contributed to a decline in long-stay NF use. There was some improvement in 30-day readmissions—such as a decline in these readmissions in demonstration year 1—but the overall impact on readmission was tempered by smaller, non-significant effects in demonstration years 2 and 3.

For all other impact measures, the demonstration either had no statistically significant impact or led to unfavorable results. The number of monthly preventable ED visits increased and the likelihood of any 30-day follow-up after a mental health hospitalization declined, relative to the comparison group. There was no overall impact on inpatient admissions, ambulatory care sensitive conditions (overall and or chronic) admissions, 30-day readmissions, SNF admissions, ED visits, or physician visits.

Those with LTSS needs and with SPMI may be among the most vulnerable and the most likely to benefit from care coordination, yet the service utilization impacts for these groups was less favorable than for the eligible population as a whole. Establishing effective working relationships with the LTSS system was challenging, given initial and sometimes ongoing resistance from those organizations and problems encountered with data sharing. In the course of the demonstration, we observed a greater increase in inpatient admissions, ACSC admissions (overall and chronic), and SNF admissions for LTSS users relative to the non-LTSS population. The demonstration impact among those with an SPMI resulted in an increase in preventable ED visits relative to the effect among non-SPMI beneficiaries.

Based on the actuarial analyses conducted for performance payment purposes, the Colorado demonstration did not achieve Medicare savings, and so the State was not eligible to receive any performance payments dependent on Medicare savings that might have been used to enhance the program or have been passed on to providers as incentive payments. Our regression-based analysis found that the ACC:MMP demonstration did not have any significant impact on the Medicare Parts A and B cost for an average eligible beneficiary. The absence of discernible effect on costs from the regression-based analysis is consistent with the finding that the demonstration had limited impact on service utilization and quality of care measures.

13.3 Next Steps

As noted previously, the demonstration ended on December 31, 2017. This is the sole evaluation report for the ACC:MMP demonstration.

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Appendix A

Data Sources

We used the following data sources to prepare this report.

Key informant interviews. The RTI evaluation team conducted three in-person site visits in Colorado during the demonstration (February 2015; March 2016, and June 2017), and a final set of interviews by telephone (May 2018) after the demonstration ended. The team interviewed the following types of individuals: representatives of the Colorado Department of HCPF, CMS staff, ombudsman program representatives, RCCO staff, provider representatives, beneficiary advocates, and staff of single entry point agencies (SEPs) and CCBs. To monitor demonstration progress, the RTI evaluation team also engaged in periodic phone conversations with HCPF and CMS. Issues discussed included updates on program operations, RCCO oversight, stakeholder engagement, quality measures, and performance payments.

Focus groups. The RTI evaluation team conducted a total of 14 focus groups in Colorado. In June 2016, the team conducted seven focus groups with a total of 40 participants. Four of these focus groups were conducted in Pueblo, and three were conducted in Denver. One of the Denver groups was composed of Spanish-speaking enrollees and was conducted entirely in Spanish.[23]

In June 2017, the RTI evaluation team conducted seven focus groups with 34 enrollees, eight proxies, and six service providers for enrollees with intellectual and/or developmental disabilities (I/DD). Three of the focus groups were conducted in Colorado Springs and four were conducted in Denver. One of the Colorado Springs groups and one of the Denver groups was each composed of group home providers for enrollees with I/DD. Group home providers shared perspectives based on their experiences working with residents. One of the focus groups held in Denver was composed entirely of Spanish-speaking enrollees and was conducted in Spanish.

In both 2016 and 2017, participants were assigned to focus groups based on their LTSS and behavioral health services use, race, ethnicity, and primary language.

Beneficiary satisfaction surveys. CMS conducts annual assessments of the experiences of beneficiaries using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey instrument. The 2015, 2016, and 2017 surveys for the ACC:MMP were conducted in the first halves of 2015, 2016, and 2017, respectively. The instrument used was a modified version of the CAHPS 5.0 Adult Medicaid Health Plan Survey. A random sample of 2,025 beneficiaries was selected for surveying the Colorado demonstration's eligible population. The sample size did not vary from year to year. In 2015, the Colorado ACC: MMP had 833 total completed surveys and a final response rate of 43.64 percent. In 2016, the Colorado ACC: MMP had 741 total completed surveys and a final response rate of 38.08 percent. In 2017, the Colorado ACC: MMP had 811 total completed surveys and a final response rate of 41.98 percent.

Survey results for a subset of 2015, 2016, and 2017 survey questions are incorporated into this report. The RTI evaluation team also reviewed reports based on a HCPF-sponsored survey conducted in Fall 2015 (Gallagher, 2015), interviews with ACC care coordinators and

[23] Although we attempted to conduct two groups of Spanish-speaking beneficiaries, we were unable to recruit enough Medicare-Medicaid beneficiaries to fill the second group.

enrollees (TriWest Health & Human Service Evaluation & Consulting, 2016), and a privately funded analysis of the ACC cited by State officials (Lindrooth et al., 2016).

Demonstration data. The RTI evaluation team reviewed data provided quarterly by Colorado through the SDRS. These data included eligibility, enrollment, and information reported by Colorado on its stakeholder engagement process, accomplishments on the integration of services and systems, any changes made in policies and procedures, and a summary of successes and challenges.

Demonstration policies, contracts, and other materials. This report uses several data sources, including the Memorandum of Understanding (MOU) between the State and CMS (CMS and State of Colorado, 2014, hereafter, MOU, 2014); the Final Demonstration Agreement (CMS and State of Colorado, 2014b); data reported through the SDRS (RTI, SDRS), information available on the HCPF website (https://www.colorado.gov/hcpf); and follow-up information obtained from HCPF, RCCOs, and stakeholders after site visits.

Grievances and appeals data. An HCPF official described the number of grievances and appeals as negligible (i.e., in the single digits) and said that any issues that arose were resolved at the RCCO or ombudsman level, and therefore the State did not systematically collect grievances and appeals data. Consequently, this report does not include data on grievances and appeals filed by demonstration enrollees. However, we do report focus group participants' experiences with the grievance and appeals process.

Service utilization data. Evaluation Report analyses used data from many sources. First, the State provided quarterly finder files containing identifying information on all demonstration eligible beneficiaries in the demonstration period. Second, RTI obtained administrative data on beneficiary demographic, enrollment, and service use characteristics from CMS data systems for demonstration members in Colorado. Third, these administrative data were merged with Medicare claims, as well as the Nursing Home Minimum Data Set.

Cost savings data. Our cost savings analyses used Medicare Parts A and B FFS claims data. We used these claims to calculate expenditures for all demonstration eligible beneficiaries and comparison group beneficiaries.

Appendix B

Comparison Group Methodology for the Colorado Demonstration Years 1–3

CMS contracted with RTI International to monitor the implementation of demonstrations under the FAI and to evaluate their impact on beneficiary experience, quality, utilization, and cost. This document presents the comparison group selection and assessment results for the FAI demonstration in the State of Colorado.

This document lists the geographic comparison areas for Colorado, provides propensity model estimates, and shows the similarities between the comparison and demonstration groups in terms of their propensity score distributions. Separate analyses were conducted for five time periods for the Colorado demonstration: Predemonstration year 1 (September 1, 2012–August 31, 2013), predemonstration year 2 (September 1, 2013–August 31, 2014), demonstration year 1 (September 1, 2014–December 31, 2015), demonstration year 2 (January 1, 2016–December 31, 2016), and demonstration year 3 (January 1, 2017–December 31, 2017). Analyses were conducted for each year because eligible beneficiaries are identified separately for each year.

B.1 Comparison Areas

The Colorado demonstration was implemented across the entire State, which is divided into seven metropolitan statistical areas (Boulder, Colorado Springs, Denver-Aurora-Lakewood, Fort Collins, Grand Junction, Greely, and Pueblo) and 36 non-metropolitan counties. Using the distance score methodology, the comparison group is drawn from 15 MSAs in four States, and the set of non-metropolitan counties (Rest of State) in Georgia. The pool of States was limited to those with timely submission of Medicaid data to CMS. All comparison areas are listed in ***Table B-1***.

Table B-1
Metropolitan statistical areas in four comparison States

Comparison State	Metropolitan statistical areas
Georgia	Valdosta, Brunswick, Augusta-Richmond County, Athens-Clark County, Columbus, Albany, Dalton, Rest of State
Wisconsin	Janesville-Beloit, Oshkosh-Neenah, Green Bay
Virginia	Washington-Arlington-Alexandria
Pennsylvania	East Stroudsburg, New York-Newark-Jersey City, Pittsburgh, Erie

The Colorado demonstration was restricted to dual eligible beneficiaries who had not been attributed to another Federal Medicare shared savings initiative. Attribution to other savings initiatives was ascertained using the beneficiary-level version of the CMS' Master Data Management (MDM) file. Beneficiaries in the demonstration group during the 3 demonstration years were identified from quarterly finder files of participants in Colorado's demonstration. During the 3 demonstration years, beneficiaries qualified for the demonstration group if they were eligible for at least 1 month during the demonstration year. During the 2 predemonstration years, all beneficiaries meeting the age restriction and MSA residency requirements were selected for the demonstration and comparison groups. Beneficiaries were omitted from further analyses if they had missing geography data; passed away before the beginning of the analysis period; had zero months of eligibility as a dual eligible; moved from the demonstration area to a

comparison area during the analysis period; were in a shared savings program; or were missing Hierarchical Condition Code (HCC) risk scores during a year.

Table B-2 below shows the distribution of beneficiaries by comparison State in the first predemonstration year. Our guidelines for creating comparison groups are that (1) comparisons should include at least three States (so that outcomes are not unduly influenced by a single State), and (2) that no comparison State should contribute more than 50 percent of the total number of comparison beneficiaries. In Colorado, these guidelines proved to be a challenge because most of the best matching areas were from Georgia. Due to data issues, we had to exclude comparison beneficiaries from Arkansas which raised the portion of Georgia beneficiaries from less than 50 percent to 52 percent. The total number of comparison beneficiaries was comparatively stable, ranging from 102,637 to 113,702 per year.

Table B-2
Distribution of comparison group beneficiaries for the Colorado demonstration, first predemonstration year, by comparison State

Comparison State	Percent of comparison beneficiaries
Georgia	52.21
Pennsylvania	35.64
Virginia	0.70
Wisconsin	11.65
Total percent	100
Total beneficiaries	113,702

B.2 Propensity Score Estimates

RTI's methodology uses propensity scores to examine initial differences between the demonstration and comparison groups and then to weight the data to improve the balance between them. The comparability of the two groups is examined with respect to both individual beneficiary characteristics as well as the overall distributions of propensity scores. This section describes the results of the model that generates propensity scores and future sections show how weighting eliminates initial differences between the groups.

A propensity score (PS) is the predicted probability that a beneficiary is a member of the demonstration group conditional on a set of observed variables. Our PS models include a combination of beneficiary-level and area-level characteristics measured at the ZIP code (ZIP Code Tabulation Area) level. Area-level covariates were drawn from a factor analysis of ZIP code-based variables for the adult population. These covariates capture features of the age, employment, marital, and family status of households in each geographic area. Measures of the nearest distances to hospitals and nursing homes were also included.

The logistic regression coefficients, standard errors, and z-values for the covariates included in the propensity model for Colorado are shown in ***Table B-3***. These coefficients and the underlying data are used to generate PSs for each beneficiary in the model. In general,

individual covariates had similar effects across each year, indicating that the data were generally similar across each year.

The coefficients for several variables reflected differences between the demonstration and comparison groups. Relative to the comparison group, demonstration beneficiaries are less likely to be African American, more likely to be Hispanic, and less likely to participate in other Medicare demonstrations. On area-level differences, the demonstration group is more likely to be college-educated, live in households with members under age 18, live in MSAs, live in married households, and less likely to live in households with members greater than age 60. Furthermore, demonstration group beneficiaries live further from hospitals and from nursing homes, on average. The magnitude of the group differences for all variables prior to PS weighting may also be seen in ***Section B.4, Tables B-4a*** to ***B-4e***.

Table B-3
Logistic regression estimates for Colorado propensity score models

Characteristic	Predemonstration year 1			Predemonstration year 2			Demonstration year 1			Demonstration year 2			Demonstration year 3		
	Coef.	Standard error	z-score	Coef.	Standard error	z-score	Coef.	Standard error	z-score	Coef.	Standard error	z-score	Coef.	Standard error	z-score
Age (years)	0.0017	0.0005	3.1637	0.0018	0.0005	3.5963	−0.0046	0.0006	−8.0064	−0.0039	0.0006	−6.5099	−0.0056	0.0006	−9.6618
Died during year	−0.1204	0.0261	−4.6085	−0.2635	0.0259	−10.1842	−0.3933	0.0268	−14.6835	−0.4663	0.0317	−14.7197	−0.3385	0.0308	−10.9977
Female (0/1)	−0.1267	0.0136	−9.2892	−0.1757	0.0130	−13.5322	−0.1811	0.0141	−12.8072	−0.1960	0.0150	−13.0713	−0.1947	0.0145	−13.4603
African American (0/1)	−1.6573	0.0227	−73.1363	−1.6310	0.0212	−76.8281	−1.6034	0.0240	−66.8733	−1.6017	0.0254	−63.0406	−1.5721	0.0245	−64.2043
Hispanic (0/1)	2.0774	0.0342	60.8216	2.0382	0.0333	61.1372	2.0257	0.0341	59.4530	1.9609	0.0361	54.3818	1.8682	0.0347	53.8613
Disability as original reason for entitlement (0/1)	−0.0089	0.0189	−0.4713	0.0829	0.0181	4.5726	−0.0023	0.0201	−0.1146	−0.0213	0.0213	−1.0022	−0.0385	0.0205	−1.8807
ESRD (0/1)	0.0463	0.0411	1.1261	0.0304	0.0396	0.7681	0.0614	0.0425	1.4443	0.0311	0.0451	0.6910	0.0272	0.0433	0.6275
Share of months eligible during the year (prop.)	0.0066	0.0220	0.2973	−0.3568	0.0201	−17.7629	−0.4228	0.0209	−20.2168	−0.4868	0.0234	−20.7828	−0.0741	0.0227	−3.2674
HCC risk score	−0.0066	0.0068	−0.9746	−0.0273	0.0064	−4.3014	−0.0550	0.0073	−7.5480	−0.0420	0.0064	−6.5495	0.0015	0.0055	0.2823
Other MDM	0.2198	0.0197	11.1632	−0.0587	0.0167	−3.5133	−0.7968	0.0192	−41.5422	−1.6476	0.0302	−54.5182	−0.7694	0.0213	−36.0583
MSA (0/1)	0.3215	0.0197	16.3398	0.2661	0.0192	13.8428	0.1690	0.0210	8.0647	0.1051	0.0222	4.7262	0.1162	0.0212	5.4706
% of pop. living in married household	−0.0027	0.0007	−3.6889	−0.0088	0.0007	−12.4087	−0.0066	0.0008	−8.2013	−0.0030	0.0009	−3.4426	−0.0005	0.0008	−0.5754
% of households w/ member 60 yrs. or older	−0.0905	0.0011	−85.0850	−0.0851	0.0010	−82.0813	−0.0830	0.0011	−73.0674	−0.0798	0.0012	−66.0903	−0.0848	0.0011	−73.8750
% of households w/ member < 18 yrs.	0.0085	0.0010	8.4865	0.0238	0.0010	23.8841	0.0259	0.0011	23.9372	0.0284	0.0011	24.7676	0.0259	0.0011	22.7797
% of adults with college education	0.0658	0.0007	89.6720	0.0689	0.0007	96.8485	0.0664	0.0008	86.0213	0.0608	0.0008	75.4295	0.0606	0.0008	78.7770
Distance to nearest hospital (mi.)	0.0575	0.0012	46.0836	0.0544	0.0012	44.9558	0.0558	0.0013	42.1771	0.0508	0.0014	36.8020	0.0523	0.0013	39.1446
Distance to nearest nursing facility (mi.)	0.0350	0.0016	22.0002	0.0391	0.0016	25.1344	0.0436	0.0017	25.3916	0.0467	0.0018	25.6356	0.0430	0.0017	24.8659
Intercept	−0.1577	0.0801	−1.9695	0.0889	0.0780	1.1396	0.2781	0.0850	3.2728	0.1034	0.0910	1.1359	−0.0506	0.0880	−0.5743

B.3 Propensity Score Overlap

PS weighting is used to mitigate the potential for selection bias by increasing the balance between the demonstration and comparison groups. Any beneficiaries who have estimated PSs below the smallest estimated value in the demonstration group are removed from the comparison group. This resulted in the removal of 59 comparison beneficiaries in predemonstration year 1, 22 in predemonstration year 2, 16 beneficiaries in demonstration year 1, 18 beneficiaries in demonstration year 2, and 11 beneficiaries in demonstration year 3.

The distributions of PSs by group are shown for each year in ***Figures B-1a*** to ***B-1e*** before and after PS weighting. Estimated scores covered nearly the entire probability range in both groups. In each year, the unweighted comparison group (dashed line) is characterized by a spike in predicted probabilities in the range from 0 to 0.20. Inverse probability of treatment weighting pulls the distribution of weighted comparison group PSs (dotted line) much closer to that of the demonstration group (solid line). Weighting shifted the comparison group distribution to the right; reducing the area between the comparison and demonstration groups line improves the comparability of the demonstration and comparison groups.

Figure B-1a
Distribution of beneficiary-level propensity scores in the Colorado demonstration and comparison groups, weighted and unweighted, predemonstration year 1

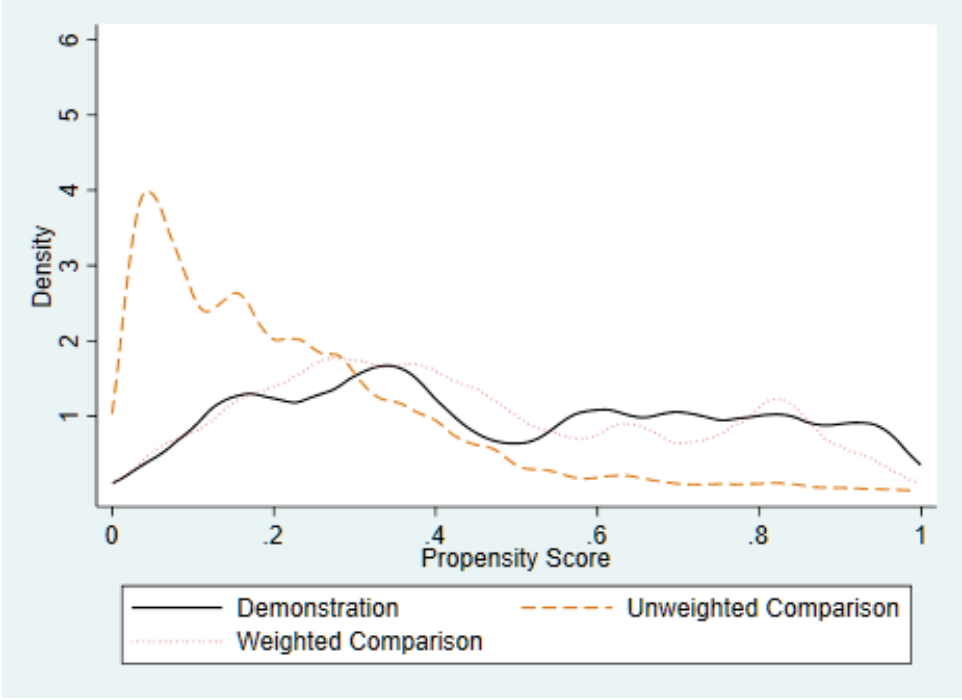


Figure B-1b
Distribution of beneficiary-level propensity scores in the Colorado demonstration and comparison groups, weighted and unweighted, predemonstration year 2

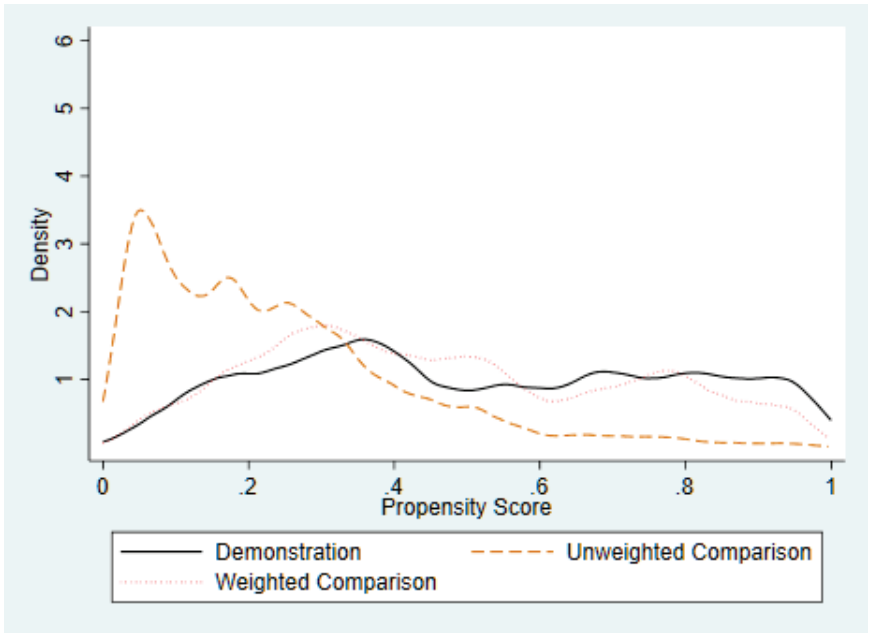


Figure B-1c
Distribution of beneficiary-level propensity scores in the Colorado demonstration and comparison groups, weighted and unweighted, demonstration year 1

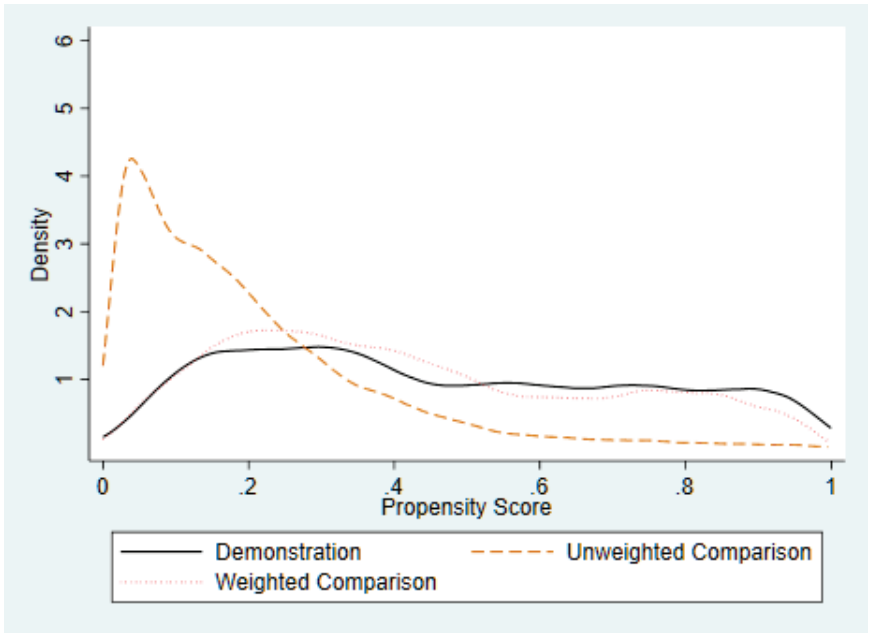


Figure B-1d
Distribution of beneficiary-level propensity scores in the Colorado demonstration and comparison groups, weighted and unweighted, demonstration year 2

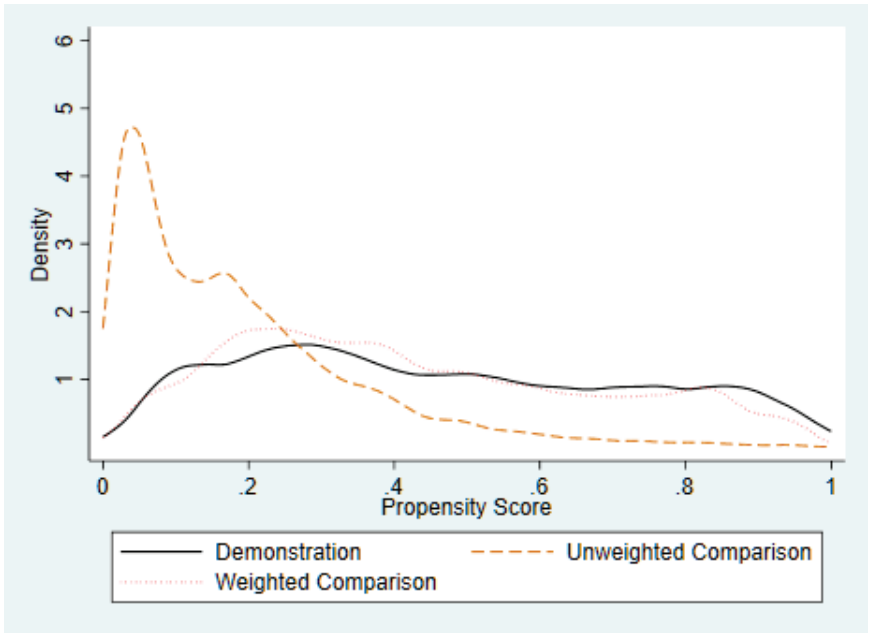
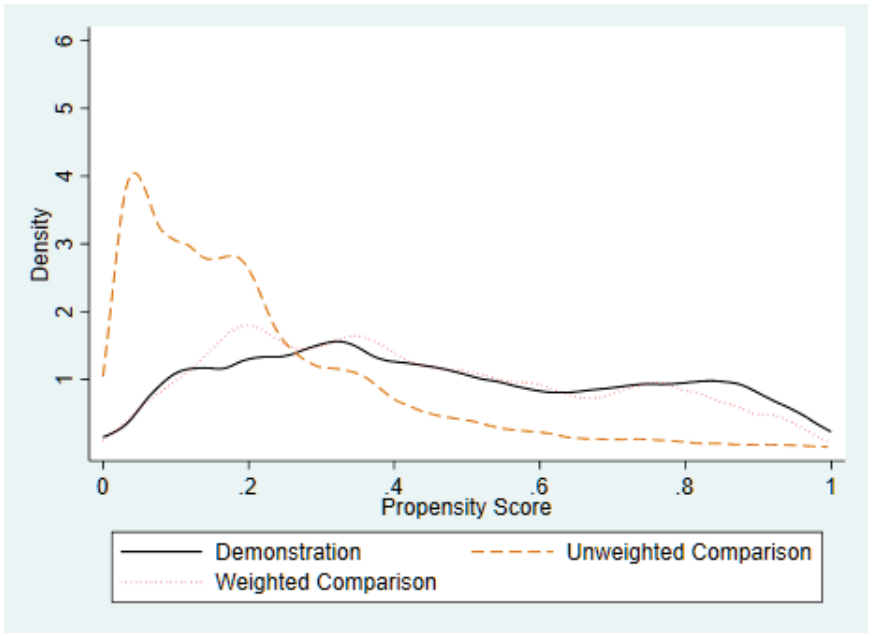


Figure B-1e
Distribution of beneficiary-level propensity scores in the Colorado demonstration and comparison groups, weighted and unweighted, demonstration year 3



B.4 Group Comparability

Covariate balance refers to the extent to which the characteristics used in the PS are similar (or "balanced") for the demonstration and comparison groups. Group differences are measured by a standardized difference (the difference in group means divided by the pooled standard deviation of the covariate). An informal standard has been developed that groups are comparable if the standardized covariate difference is less than the 0.10 threshold.

The group means and standardized differences for all beneficiary characteristics are shown for each year in ***Tables B-4a*** to ***B-4e***. The column of unweighted standardized differences indicates that several of these variables were not balanced before running the propensity model. Four variables (percent African American, percent of population living in a married household, percent of population living in a household with a member greater than age 60, and percent of adults with a college degree) all had unweighted standardized differences exceeding 0.40 in magnitude in all analysis years.

The results of PS weighting for Colorado are illustrated in the far-right column (weighted standardized differences) in ***Tables B-4a*** to ***B-4e***. With very few exceptions, in each year PS weighting pulled comparison group means closer to the demonstration group means, thereby reducing the standardized differences and improving the balance between the two groups. Covariates for which the magnitude of the group differences exceeded the desired threshold of 0.10 after weighting include distances to the nearest hospital and the nearest NF. Still, these differences were well below 0.20, and thus likely do not pose a threat to group comparability. The two distance variables are also controlled for in the outcome regressions.

Table B-4a
Colorado dual eligible beneficiary covariate means by group before and after weighting by propensity score—predemonstration year 1: September 1, 2012–December 31, 2013

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age	63.004	62.494	63.047	0.027	−0.002
Died	0.078	0.081	0.080	−0.011	−0.004
Female	0.598	0.614	0.592	−0.034	0.012
African American	0.066	0.294	0.074	−0.622	−0.033
Hispanic	0.102	0.012	0.096	0.396	0.020
Disability as original reason for entitlement	0.521	0.537	0.515	−0.034	0.011
ESRD	0.025	0.035	0.025	−0.060	−0.003
Share of months eligible during the year	0.789	0.784	0.788	0.017	0.002
HCC score	1.258	1.257	1.265	0.001	−0.007
Other MDM	0.140	0.102	0.141	0.114	−0.005
MSA	0.766	0.658	0.805	0.240	−0.095
% of pop. living in married household	72.519	67.448	72.323	0.445	0.018
% of households with a member 60 or older	32.625	37.406	33.195	−0.591	−0.070
% of households with a member younger than 18	31.647	30.929	31.782	0.087	−0.015
% of adults with a college education	27.359	18.326	26.522	0.714	0.056
Distance to nearest hospital	10.324	9.452	8.939	0.094	0.151
Distance to nearest nursing facility	7.824	7.176	6.583	0.087	0.170

Table B-4b
Colorado dual eligible beneficiary covariate means by group before and after weighting by propensity score—predemonstration year 2: September 1, 2013–December 31, 2014

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age	61.714	62.109	61.753	−0.021	−0.002
Died	0.069	0.077	0.070	−0.030	−0.005
Female	0.581	0.607	0.577	−0.053	0.008
African American	0.068	0.282	0.072	−0.587	−0.016
Hispanic	0.104	0.012	0.092	0.400	0.038
Disability as original reason for entitlement	0.561	0.554	0.557	0.015	0.009
ESRD	0.025	0.035	0.025	−0.056	0.001
Share of months eligible during the year	0.751	0.782	0.753	−0.097	−0.007
HCC score	1.268	1.309	1.278	−0.039	−0.009
Other MDM	0.167	0.167	0.162	0.001	0.015
MSA	0.773	0.682	0.804	0.204	−0.077
% of pop. living in married household	71.959	67.440	71.744	0.399	0.019
% of households with a member 60 or older	33.500	38.217	34.226	−0.581	−0.089
% of households with a member younger than 18	31.657	30.253	31.839	0.173	−0.020
% of adults with a college education	27.646	18.970	26.671	0.678	0.064
Distance to nearest hospital	10.162	9.211	8.835	0.104	0.145
Distance to nearest nursing facility	7.743	7.014	6.548	0.099	0.164

Table B-4c
Colorado dual eligible beneficiary covariate means by group before and after weighting by propensity score—demonstration year 1: September 1, 2014–December 31, 2015

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age	60.093	62.335	60.092	−0.123	0.000
Died	0.076	0.104	0.078	−0.097	−0.008
Female	0.561	0.601	0.558	−0.081	0.006
African American	0.067	0.272	0.069	−0.570	−0.010
Hispanic	0.112	0.013	0.104	0.421	0.026
Disability as original reason for entitlement	0.587	0.559	0.585	0.055	0.004
ESRD	0.027	0.035	0.026	−0.047	0.007
Share of months eligible during the year	0.706	0.751	0.704	−0.136	0.006
HCC score	1.182	1.285	1.188	−0.101	−0.006
Other MDM	0.127	0.230	0.127	−0.274	−0.002
MSA	0.758	0.693	0.794	0.146	−0.088
% of pop. living in married household	71.941	67.448	71.908	0.405	0.003
% of households with a member 60 or older	34.708	38.979	35.135	−0.525	−0.052
% of households with a member younger than 18	31.536	29.996	31.953	0.192	−0.046
% of adults with a college education	27.306	19.483	26.858	0.613	0.029
Distance to nearest hospital	10.487	9.160	9.060	0.143	0.154
Distance to nearest nursing facility	7.953	6.962	6.700	0.133	0.169

Table B-4d
Colorado dual eligible beneficiary covariate means by group before and after weighting by propensity score—demonstration year 2: January 1, 2016–December 31, 2016

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age	60.358	62.016	60.329	−0.092	0.002
Died	0.059	0.080	0.058	−0.085	0.003
Female	0.556	0.595	0.554	−0.079	0.005
African American	0.067	0.270	0.069	−0.563	−0.007
Hispanic	0.108	0.013	0.098	0.407	0.032
Disability as original reason for entitlement	0.582	0.568	0.580	0.029	0.004
ESRD	0.027	0.036	0.027	−0.051	0.002
Share of months eligible during the year	0.753	0.798	0.755	−0.142	−0.005
HCC score	1.323	1.442	1.335	−0.097	−0.010
Other MDM	0.043	0.185	0.044	−0.458	−0.005
MSA	0.753	0.697	0.787	0.127	−0.080
% of pop. living in married household	72.014	67.432	71.805	0.414	0.019
% of households with a member 60 or older	35.670	39.798	35.968	−0.498	−0.035
% of households with a member younger than 18	31.184	29.583	31.475	0.199	−0.032
% of adults with a college education	27.831	20.144	27.503	0.586	0.021
Distance to nearest hospital	10.554	9.144	9.186	0.152	0.146
Distance to nearest nursing facility	8.021	6.955	6.752	0.143	0.171

Table B-4e
Colorado dual eligible beneficiary covariate means by group before and after weighting by propensity score—demonstration year 3: January 1, 2017–December 31, 2017

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age	60.425	62.082	60.387	−0.093	0.002
Died	0.057	0.078	0.058	−0.086	−0.008
Female	0.558	0.592	0.554	−0.069	0.008
African American	0.067	0.271	0.070	−0.564	−0.010
Hispanic	0.105	0.014	0.093	0.393	0.040
Disability as original reason for entitlement	0.584	0.568	0.583	0.031	0.001
ESRD	0.027	0.037	0.026	−0.055	0.006
Share of months eligible during the year	0.774	0.775	0.771	−0.004	0.009
HCC score	1.411	1.469	1.416	−0.043	−0.003
Other MDM	0.102	0.191	0.101	−0.254	0.003
MSA	0.752	0.685	0.790	0.149	−0.090
% of pop. living in married household	72.688	67.753	72.541	0.446	0.014
% of households with a member 60 or older	36.102	40.514	36.411	−0.530	−0.036
% of households with a member younger than 18	30.938	29.574	30.991	0.171	−0.006
% of adults with a college education	28.871	20.543	28.778	0.627	0.006
Distance to nearest hospital	10.611	9.267	9.102	0.144	0.162
Distance to nearest nursing facility	8.126	7.056	6.743	0.142	0.185

B.4 Enrollee Results

In addition to our estimates for all eligible beneficiaries presented above, we estimated PS weighted balance tables for enrollees. Individuals were classified as enrollees if they had at least three months of enrollment at any point in the demonstration period and were eligible for at least three months in the predemonstration period.

Our all-eligible and enrollee results were comparable in terms of initial (i.e., unweighted) differences between demonstration and comparison groups during the demonstration years but differed slightly during the predemonstration years. In the all-eligibles analysis, the demonstration and comparison groups differed on a consistent set of individual and area-level

variables in the predemonstration years, including the share of African American beneficiaries; share of Hispanic beneficiaries; share of beneficiaries in other Medicare demonstrations; percent of beneficiaries living in MSAs; percent of beneficiaries living in married households; percent of beneficiaries living in households with a member over age 60; percent of beneficiaries living in households with a member under age 18; and percent of adults with a college degree.

By contrast, our enrollee results showed several additional unweighted differences between demonstration and comparison groups not evident in the all-eligible analysis during the predemonstration period, such as age, HCC score, distance to the nearest hospital, and distance to the nearest NF. Moreover, the enrollee analysis did not show any unweighted differences in the share of beneficiaries in other Medicare demonstrations.

Nonetheless, the all-eligible and enrollee analyses yielded similar results in the demonstration periods: both analyses showed unweighted differences in all area-level covariates, and among individual-level covariates, the two analyses were nearly identical, with the share of African American and share of Hispanic beneficiaries as the main differences across the demonstration years. The enrollee analysis differed only slightly from the all-eligible analysis with two other individual-level variable differences—age and death during the year—in the demonstration years.

Ultimately, the all-eligible and enrollee analyses produced similar results after weighting. Across both analyses—and in all 5 years—there were two variables with weighted standardized differences greater than 0.1: distance to the nearest hospital and distance to the nearest nursing home. In demonstration year 3 in the enrollee analysis, the percent of beneficiaries living in MSAs had a weighted standardized difference greater than 0.1, but all other aforementioned covariates with unweighted standardized differences greater than 0.1 were brought into balance by PS weighting in all years. Consequently, both analyses had 15 out of the 17 variables in balance after weighting in all analysis years except demonstration year 3 in the enrollee analysis, which had 14 of 17 variables in balance.

B.5 Summary

Our analyses revealed differences between the Colorado demonstration and comparison groups before covariate balancing regarding several individual- and area-level characteristics. However, the propensity score-based weighting process reduced almost all disparities to standardized differences less than an absolute value of 0.10 over the 5 years. The only variables for which weighting did not reduce the absolute standardized differences to below 0.10 were the measures of distances to the nearest hospital or NF.

The propensity weights account for observed differences between the demonstration and comparison groups when computing descriptive statistics for each Annual Report. In addition, these covariates are also incorporated in the multiple regression models used to estimate demonstration effects for the Evaluation Report to further reduce the potential for biased estimates. This may be especially important for variables (like distance to health care facilities) that are not as well balanced as others in the weighted comparison group.

Appendix C

Service Utilization Methodology

C.1 Methodology

This appendix briefly describes the overall quantitative evaluation design, the data used, and the populations and measures analyzed.

C.1.1 Evaluation Design

RTI International used an ITT approach for the impact analyses conducted for the evaluation, comparing the eligible population under each State demonstration with a similar population that is not affected by the demonstration (i.e., a comparison group).

ITT refers to an evaluation design in which all Medicare-Medicaid enrollees eligible for the demonstration constitute the evaluation sample, regardless of whether they actively participated in demonstration models. Thus, under the ITT framework, analyses include all beneficiaries eligible for the demonstration, including those who are eligible but are not contacted by the State or participating providers to enroll in the demonstration or care model; those who enroll but do not engage with the care model; and a group of similar eligible individuals in the comparison group.

Results for special populations within each of the demonstration and comparison groups are also presented in this section (e.g., those with any LTSS use in the demonstration and comparison groups; those with any behavioral health claims in the demonstration and comparison groups). In addition, one group for which results are also reported in this section are *not* compared to the comparison group because this group does not exist within the comparison group: Colorado demonstration enrollees. For this group, we compare them to in-State non-enrollees.

C.1.2 Comparison Group Identification

The comparison group serves to provide an estimate of what would have happened to the demonstration group in the absence of the demonstration. Thus, the comparison group members should be similar to the demonstration group members in terms of their characteristics and health care and LTSS needs, and they should reside in areas that are similar to the demonstration State in terms of the health care system and the larger environment. For this evaluation, identifying the comparison group members entailed two steps: (1) selecting the geographic area from which the comparison group would be drawn, and (2) identifying the individuals who would be included in the comparison group.

To construct Colorado's comparison group, we used out-of-State areas. We compared demonstration and potential comparison areas on a range of measures, including spending per Medicare-Medicaid enrollee by each program, the shares of LTSS delivered in facility-based and community settings, and the extent of Medicare and Medicaid managed care penetration. Using statistical analysis, we selected the individual comparison MSAs that most closely match the values found in the demonstration area on the selected measures. We also considered other factors when selecting comparison States, such as timeliness of Medicaid data submission to CMS.

We identified a comparison group from MSAs in Georgia, Pennsylvania, Virginia, and Wisconsin, that is at least as large as the eligible population in Colorado. For details of the comparison group identification strategy, see ***Appendix B***.

C.1.3 Data

Evaluation report analyses used data from several sources. First, the State provided quarterly finder files containing identifying information on all demonstration eligible beneficiaries in the demonstration period. Second, RTI obtained administrative data on beneficiary demographic, enrollment, and service use characteristics from CMS data systems for both demonstration and comparison group members. Third, these administrative data were merged with Medicare claims data on utilization and costs of Medicare services as well as the Minimum Data Set MDS.

Although Medicaid service data on use of LTSS, behavioral health, and other Medicaid-reimbursed services were not available for the demonstration period and therefore are not included in this report, CMS administrative data identifying eligible beneficiaries who used *any* Medicaid-reimbursed LTSS or *any* Medicare behavioral health services were available, so that their Medicare service use could be presented in this report.

C.1.4 Populations and Services Analyzed

The populations analyzed in the report include all demonstration eligible beneficiaries, as well as the following special populations: those receiving any LTSS; those with any behavioral health service use in the last 2 years for an SPMI; demonstration enrollees; and three demographic groups (age, gender, and race).

For each group and service type analyzed, we provide estimates of five access to care and utilization measures: the percent of demonstration eligible beneficiaries with any use of a service; counts of service use for both all eligible beneficiaries and users of the respective service; and costs per eligible beneficiary and users of the respective service.

The 16 service settings analyzed include both institutional (inpatient, inpatient psychiatric, inpatient substance abuse, ED visits not leading to admission, ED psychiatric visits, observation stays, SNF, and hospice) and community settings (primary care, specialist care, behavioral health visits, outpatient as well as independent physical, speech, and occupational therapy, home health, DME, and other hospital outpatient services).

In addition, six quality measures representing specific utilization types of interest are presented: 30-day all-cause risk-standardized readmission rate; preventable ED visits; rate of 30-day follow-up after hospitalization for mental illness; ACSC overall composite rate (Agency for Healthcare Research and Quality [AHRQ] Prevention Quality Indicator [PQI] #90); ACSC chronic composite rate (AHRQ PQI #92); and depression screening rate.

Five NF-related measures are presented from the MDS: two measures of annual NF utilization (admission rate and percentage of long-stay NF users) and three characteristics of new long-stay NF residents at admission (functional status, percent with severe cognitive impairment, percent with a low level of care need).

The analyses were conducted for each year in the 2-year predemonstration period (September 1, 2012, to August 31, 2014) and for the 3 demonstration years (September 1, 2014, to December 31, 2017) for both the demonstration and comparison group in each of the 5 analytic years.

Table C-1 presents descriptive statistics on the independent variables used in multivariate DinD regressions for impact analyses. Independent variables include demographic and health characteristics and market- and area-level characteristics. Results are presented for six groups: all demonstration eligible beneficiaries in the FAI State, its comparison group, demonstration eligible enrollees, demonstration eligible non-enrollees, demonstration eligible beneficiaries with any LTSS use, and demonstration eligible beneficiaries with an SPMI.

Under age 65 was the most prevalent age group, ranging from 48.7 percent in the demonstration eligible non-enrollee group to 61.9 percent in the group with SPMI. In the comparison group, 23.2 percent were 75 years and older, whereas 19.9 percent were 75 years and older in the demonstration group. Across all groups, most eligible beneficiaries were female (54.5 to 60.5 percent) and did not have end-stage renal disease; the most-represented racial and ethnicity group across all groups was White (74.5 to 82.5 percent).

The HCC score is a measure of the predicted relative annual cost of a Medicare beneficiary based on the diagnosis codes present in recent Medicare claims. HCC scores did not vary much by group, ranging from 1.4 to 1.7. Beneficiaries with a score of 1 are predicted to have average cost in terms of annual Medicare expenditures. Beneficiaries with HCC scores less than 1 are predicted to have below average costs, whereas beneficiaries with scores of 2 are predicted to have twice the average annual cost. Additionally, the majority eligible beneficiaries in all groups had disability as the original reason for Medicare entitlement, and also resided in metropolitan areas. Around 9 to 17 percent of beneficiaries were enrolled in another shared savings program.

Table C-1
Characteristics of demonstration eligible beneficiaries in demonstration year 3 by group

Characteristics	Demonstration group	Comparison group	Demonstration group enrollees	Demonstration group eligible, non-enrollees	Demonstration group, LTSS users	Demonstration group, SPMI diagnosis
Weighted number of eligible beneficiaries	38,386	103,222	33,888	4,498	11,151	17,554
Demographic characteristics						
Age						
0 to 64	54.5	54.8	55.2	48.7	57.0	61.9
65 to 74	25.6	22.0	25.4	27.4	18.8	21.1
75 and older	19.9	23.2	19.4	23.8	24.2	17.0
Female						
No	44.2	44.6	44.2	43.9	45.5	39.5
Yes	55.8	55.4	55.8	56.1	54.5	60.5
Race/ethnicity						
White	74.5	78.4	74.5	74.5	82.5	79.9
African American	6.7	7.0	6.4	8.8	5.7	6.4
Hispanic	10.5	9.3	10.6	9.2	7.1	8.0
Asian	2.3	1.9	2.4	1.8	1.4	1.1
Disability as reason for original Medicare entitlement						
No (0)	42.1	42.1	41.3	48.0	35.8	34.0
Yes (1)	57.9	57.9	58.7	52.0	64.2	66.0
ESRD status						
No (0)	97.4	97.5	97.4	97.2	97.5	97.4
Yes (1)	2.6	2.5	2.6	2.8	2.5	2.6
MSA						
No (0)	24.8	21.0	25.5	19.6	27.6	22.2
Yes (1)	75.2	79.0	74.5	80.4	72.4	77.8
Participating in Shared Savings Program	10.2	10.1	9.1	17.7	10.8	11.6
HCC score	1.4	1.4	1.4	1.5	1.7	1.7

(continued)

Table C-1 (continued)
Characteristics of demonstration eligible beneficiaries in demonstration year 3 by group

Characteristics	Demonstration group	Comparison group	Demonstration group enrollees	Demonstration group eligible, non-enrollees	Demonstration group, LTSS users	Demonstration group, SPMI diagnosis
Market characteristics						
Medicare spending per dual, ages 19+ ($)	8,543	9,325	8,535	8,602	8,536	8,548
MA penetration rate	0.3	0.4	0.3	0.4	0.3	0.3
Medicaid-to-Medicare fee index (FFS)	0.7	0.7	0.7	0.7	0.7	0.7
Medicaid spending per dual, ages 19+ ($)	21,845	17,365	21,777	22,358	21,774	21,894
Fraction of dual elig. beneficiaries using NF, ages 65+	0.2	0.3	0.3	0.2	0.3	0.2
Fraction of dual elig. beneficiaries using HCBS, ages 65+	0.3	0.2	0.3	0.3	0.3	0.3
Fraction of dual elig beneficiaries using personal care, ages 65+	0.0	0.0	0.0	0.0	0.0	0.0
Fraction of dual elig. beneficiaries with Medicaid managed care, ages 19+	1.0	0.9	1.0	1.0	1.0	1.0
Population per square mile, all ages	184.6	255.5	181.7	206.8	182.4	187.3
Patient care physicians per 1,000 population	0.8	0.7	0.8	0.8	0.8	0.8
Area characteristics						
% of pop. living in married households	72.7	72.5	72.7	72.7	73.3	72.6
% of adults with college education	28.9	28.8	28.6	30.7	29.9	29.7
% of adults with self-care limitations	2.8	3.1	2.8	2.6	2.8	2.8
% of adults unemployed	6.3	6.5	6.4	5.9	6.2	6.4
% of household with individuals younger than 18	30.9	31.0	30.9	31.0	30.2	30.6
% of household with individuals older than 60	36.1	36.4	36.3	34.8	36.8	35.9
Distance to nearest hospital	10.6	9.1	10.8	9.1	11.3	10.2
Distance to nearest nursing facility	8.1	6.7	8.2	7.2	8.6	7.6

ESRD = end-stage renal disease; HCC = Hierarchical Condition Category; LTSS = long-term services and supports; NF = nursing facility; MA = Medicare Advantage; MSA = metropolitan statistical area; SPMI = serious and persistent mental illness.

There were limited differences in area- and market-level characteristics. Those who were in the comparison group resided in counties with a similar fraction of dual eligible beneficiaries using home and community-based service use, relative to those in the demonstration group (0.2 and 0.3, respectively). Additionally, those in the comparison group resided in counties with slightly higher Medicare spending per dual eligible beneficiary ($9,325 versus $8,543), but lower Medicaid spending per dual eligible beneficiary ($17,365 versus $21,845), relative to counties in the demonstration group. Those in the demonstration enrollee group resided in counties with a smaller population per square mile, relative to those in the demonstration eligible, non-enrollee group (181.7 versus 206.8).

C.1.5 Detailed Population Definitions

Demonstration eligible beneficiaries. Beneficiaries are identified in a given month if they were a Medicare-Medicaid enrollee and met any other specific demonstration eligibility criteria. Beneficiaries in the demonstration period are identified from quarterly State finder files, whereas beneficiaries in the 2-year predemonstration period preceding the demonstration implementation date are identified by applying the eligibility criteria in each separate predemonstration quarter.

Additional special populations were identified for the analyses as follows:

- *Enrollees*. A beneficiary was defined as being enrolled if they were ever enrolled in the demonstration during the demonstration period.
- *Age*. Age was defined as a categorical variable where beneficiaries were identified as *under 65*, *65 to 74*, and *75 years and older* during the observation year (e.g., predemonstration year 1, predemonstration year 2, and demonstration years 1, 2, and 3).
- *Gende*r. Gender was defined as binary variable where beneficiaries were either male or female.
- *Race*. Race was defined as a categorical variable where beneficiaries were categorized as *White*, *African American*, *Hispanic*, or *Asian*.
- *LTSS*. A beneficiary was defined as using LTSS if there was any use of institutional or HCBS during the observation year.
- *SPMI.* A beneficiary was defined as having an SPMI if there were any inpatient or outpatient mental health visits for schizophrenia or episodic mood disorder during the observation year.

C.1.6 Detailed Utilization and Expenditure Measure Definitions

For any health care service type, the methodology for estimating average monthly utilization, the percentage of users, and spending during the year considers differences in the number of eligibility months across beneficiaries. Because full-benefit dual eligibility status for the demonstration can vary by month over time for any individual, the methodology used determines dual eligibility status for the demonstration for each person monthly during a predemonstration or demonstration period. That is, an individual can meet the demonstration's eligibility criteria for 1, 2, 3, or up to 12 months during the observation year. The methodology

adds the total months of full-benefit dual eligibility for the demonstration across the population of interest and uses it in the denominator in the measures in ***Section 1.3***, creating average monthly utilization and expenditure information for each service type. The methodology effectively produces average monthly use and expenditure statistics for each year that account for variation in the number of dual eligible beneficiaries in each month of the observation year..

The utilization and cost measures, below, were calculated as the aggregate sum of the unit of measurement (counts, payments, etc.) divided by the aggregated number of eligible member months (and user months) within each group (*g*) where group is defined as (1) Colorado predemonstration year 1; (2) comparison predemonstration year 1; (3) Colorado predemonstration year 2; (4) comparison predemonstration year 2; (5) Colorado demonstration year 1; (6) comparison demonstration year 1; (7) Colorado demonstration year 2; (8) comparison demonstration year 2; (9) Colorado demonstration year 3; and (10) comparison demonstration year 3.

We calculated the average number of services per 1,000 eligible months and per 1,000 user months by beneficiary group (*g*). We defined *user month* as an eligible month where the number of units of utilization used (for a given service) was greater than zero. We weighted each observation using yearly propensity weights. The average yearly utilization outcomes are measured as:

$$Y_g = \frac{\Sigma_{ig} Z_{ig}}{\left(\frac{1}{1{,}000}\right) * \Sigma_{ig} n_{ig}}$$

Where

Y_g = average count of the number services used [for a given service] per eligible or user month within group g.

Z_{ig} = the total units of utilization [for a given service] for individual i in group g.

n_{ig} = the total number of $\frac{1}{1{,}000}$ eligible/user months for individual i in group g.

The denominator above is scaled such that the result is interpreted in terms of average monthly utilization per 1,000 eligible beneficiaries. This presentation is preferable, compared with per eligible month, because some of the services are used less frequently and would result in small estimates.

The average percentage of users [of a given service] per eligible month during the predemonstration or demonstration year is measured as follows:

$$U_{ig} = \frac{\sum_{ig} X_{ig}}{\sum_{ig} n_{ig}} * 100$$

Where

U_{ig} = average percentage of users [for a particular service] in a given month among beneficiaries in group g.

X_{ig} = the total number of eligible months of service use for an individual *i* in group *g*
n_{ig} = the total number of eligible or user months for an individual *i* in group *g*.

The average yearly expenditures for a given service per eligible month [and user month] was calculated as

$$S_{ig} = \frac{\sum_{ig} V_{ig}}{\sum_{ig} n_{ig}}$$

Where

S_{ig} = average Medicare expenditures per eligible [or user] month for a given service among beneficiaries in group *g*.
V_{ig} = the total amount of Medicare expenditures for in individual *i* in group *g*.
n_{ig} = the total number of eligible or user months for an individual *i* in group *g*.

C.1.7 Quality of Care and Care Coordination Measures

Similar to the utilization and expenditure measures, the quality of care and care coordination measures were calculated as the aggregated sum of the numerator divided by the aggregated sum of the denominator for each respective outcome within each beneficiary group.

1. Average 30-day all-cause risk-standardized readmission was calculated as follows:

$$30\ Day - Risk\ Standardized\ Readmission = \frac{\left(\frac{\sum_{ig} x_{ig}}{\sum_{ig} n_{ig}} * C\right)}{Prob_g} * 100$$

Where

C = the national average of 30-day readmission rate, .238.
x_{ig} = the total number of readmissions for individual *i* in group *g*.
n_{ig} = the total number of hospital admissions for individual *i* in group *g*.
$Prob_g$ = the annual average adjusted probability of readmission for individuals in group *g*. The average adjusted probability equals:

Average adjusted probability of readmission by group	
Group	**Average adjusted probability of readmission**
Predemonstration year 1	
Colorado	0.202107720
Comparison	0.201820612
Predemonstration year 2	
Colorado	0.204629968
Comparison	0.205836250
Demonstration year 1	
Colorado	0.209258024
Comparison	0.208056488
Demonstration year 2	
Colorado	0.207038859
Comparison	0.205038143
Demonstration year 3	
Colorado	0.205345440
Comparison	0.199814442

2. Average 30-day follow-up in a physician or outpatient setting after hospitalization for mental illness was calculated as follows:

$$MHFU = \frac{\Sigma_{ig} x_{ig}}{\Sigma_{ig} n_{ig}}$$

Where

$MHFU$ = the average rate of 30-day follow-up care after hospitalization for a mental illness for individuals *in* group *g*.

x_{ig} = the total number of discharges from a hospital stay for mental health that had a follow-up for mental health within 30 days of discharge for individual *i* in group *g*.

n_{ig} = the total number of months where there was a discharge from a hospital stay for mental health for individual *i* in group *g*.

3. Average ACSC admissions per eligible month, overall and chronic composite (PQI #90 and PQI #92) was calculated as follows:

$$ACSC_{ig} = \frac{\Sigma_{ig} x_{ig}}{\Sigma_{ig} n_{ig}}$$

Where

ASC_g= the average number of ACSC admissions per eligible months for overall/chronic composites for individuals in group *g*.

x_{ig} = the total number of discharges that meet the criteria for AHRQ PQI #90 [or PQI #92] for individual *i* in group *g*.

n_{ig} = the total number of eligible months for individual *i* in group *g*.

4. Preventable ED visits per eligible month was calculated as follows:

$$ED_{ig} = \frac{\sum_{ig} X_{ig}}{\sum_{ig} n_{ig}}$$

Where

ED_g = the average number of preventable ED visits per eligible months for individuals in group *g*.

x_{ig} = the total number ED visits that are considered preventable based in the diagnosis for individual *i* in group *g*.

n_{ig} = the total number of eligible months for individual *i* in group *g*.

5. Average number of beneficiaries per eligible month who received depression screening during the observation year was calculated as follows:

$$D_g = \frac{\Sigma_{ig} x_{ig}}{\Sigma_{ig} \mathrm{n}_{ig}}$$

Where

D_g = the average number of beneficiaries per eligible month who received depression screening in group *g*.

x_{ig} = the total number eligible beneficiaries who ever received depression screening in group *g*.

n_{ig} = the total number of eligible months among beneficiaries in group *g*.

C.1.8 Minimum Data Set Measures

Two measures of annual NF-related utilization are derived from the MDS. The rate of new long-stay NF admissions per 1,000 eligible beneficiaries is calculated as the number of NF admissions for whom there is no record of NF use in the 100 days prior to the current admission and who subsequently stay in the NF for 101 days or more. Individuals are included in this measure only if their NF admission occurred after their first month of demonstration eligibility. The percentage of long-stay NF users is calculated as the number of individuals who have stayed in an NF for 101 days or more, who were long-stay in their last quarter of demonstration eligibility. The probability of any long-stay NF use includes both new admissions from the community and continuation of a stay in an NF.

Characteristics of new long-stay NF residents at admission are also included to monitor nursing facility case mix and acuity levels. Functional status and low level of care need are determined by the Resource Utilization Groups Version IV (RUG-IV). Residents with low care need are defined as those who did not require physical assistance in any of the four late-loss activities of daily living and who were in the three lowest RUG-IV categories. Severe cognitive impairment is assessed by the Brief Interview for Mental Status, poor short-term memory, or severely impaired decision-making skills.

C.1.9 Regression Outcome Measures

Five utilization measures are used as dependent variables in regression analysis to estimate the DinD effect for the entire demonstration period as well as the effect in each demonstration year. These measures are derived from Medicare inpatient, outpatient, carrier, and SNF claims and MDS long-stay NF use. All dependent variables are provided monthly except for the MDS long-stay NF measure, which is annual.

The outcome measures include the following:

- *Monthly inpatient admissions:* The monthly probability of having any inpatient admission in which a beneficiary has an admission date within the observed month. Inpatient admissions include acute, inpatient rehabilitation, and long-term care hospital admissions.
- *Monthly ED use:* The monthly probability of having any ED visit that occurred during the month that did not result in an inpatient admission.
- *Monthly physician visits*: The count of any E&M visit within the month where the visit occurred in the outpatient or office setting, NF, domiciliary, rest home, or custodial care setting, a federally qualified health center or a rural health center.
- *Monthly SNF admissions:* The monthly probability of having any SNF admission within the month.
- *Long-stay NF use*: The annual probability of residing in a facility for 101 days or more during the year.

In addition to the five measures above, this evaluation estimates the demonstration effects on quality of care. The following quality of care and care coordination measures use claims-level information and are adopted from standardized Health Effectiveness Information and Data Set and National Quality Forum (NQF) measures. The outcomes are reported monthly, except for the 30-day all-cause risk-standardized readmission rate, which is annual.

- *30-day all-cause risk-standardized readmissions (NQF #1768)*: This is calculated both as the rate of risk-standardized readmission, defined above, as well as the count of the number risk-standardized readmissions that occurs during the year.
- *Preventable ED visits*: This is estimated as a continuous variable of weighted ED visits that occur during the month. The lists of diagnoses that are considered as either preventable/avoidable, or treatable in a primary care setting were developed by

researchers at the New York University Center for Health and Public Service Research.[24]

- *30-day follow-up after hospitalization for mental illness (NQF #576)*: This is estimated as the monthly probability of any follow-up visits within 30-days post-hospitalization for a mental illness.
- *ACSC admissions—overall composite (AHRQ PQI #90)*: The monthly probability of any acute admissions that meet the AHRQ PQI #90 (Prevention Quality Overall Composite) criteria within the month.
- *ACSC admissions—chronic composite (AHRQ PQI #92)*: The monthly probability of any admissions that meet the AHRQ PQI #92 criteria within the month.

C.1.10 Regression Methodology for Determining Demonstration Impact

The regressions across the entire demonstration period compare all demonstration eligible beneficiaries in the FAI State to its comparison group. The regression methodology accounts for both those with and without use of the specific service (e.g., for inpatient services, both those with and without any inpatient use). A restricted DinD equation will be estimated as follows:

$$\text{Dependent variable}_i = F(\beta_0 + \beta_1 \text{PostYear} + \beta_2 \text{Demonstration} + \beta_3 \text{PostYear} * \text{Demonstration} + \beta_4 \text{Demographics} + \beta_{5\text{-}j}\, \text{Market} + \varepsilon)$$

where separate models will be estimated for each dependent variable. *PostYear* is an indicator of whether the observation is from the pre- or postdemonstration period, *Demonstration* is an indicator of whether the beneficiary was in the demonstration group, and *PostYear * Demonstration* is an interaction term. *Demographics* and *Market* represent vectors of beneficiary and market characteristics, respectively.

Under this specification, the coefficient β_0 reflects the comparison group predemonstration period mean adjusted for demographic and market effects, β_1 reflects the average difference between post period and predemonstration period in the comparison group, β_2 reflects the difference in the demonstration group and comparison group at predemonstration, and β_3 is the overall average demonstration effect during the demonstration period. This last term is the DinD estimator and the primary policy variable of interest, but in all regression models, because of nonlinearities in the underlying distributions, postregression predictions of demonstration impact are performed to obtain the marginal effects of demonstration impact.

In addition to estimating the model described in the prior equation, a less restrictive model was estimated to produce year-by-year effects of the demonstration. The specification of the unrestricted model is as follows:

$$\text{Dependent variable} = F\,(\beta_0 + \beta_{1\text{-}k}\text{PostYear}_{1\text{-}n} + \beta_2 \text{Demonstration} + \beta_{3\text{-}k}\text{PostYear}_{1\text{-}n} * \text{Demonstration} + \beta_4\, \text{Demographics} + \beta_{5\text{-}j}\, \text{Market} + \varepsilon)$$

[24] http://wagner.nyu.edu/faculty/billings/nyued-background

This equation differs from the previous one in that separate DinD coefficients are estimated for each year. Under this specification, the coefficients $\beta_{3\text{-}k}$ would reflect the impact of the demonstration in each respective year, whereas the previous equation reflects the impact of the entire demonstration period. This specification measures whether changes in dependent variables occur in the first year of the demonstration only, continuously over time, or in some other pattern. Depending on the outcome of interest, we estimated the equations using logistic regression, Generalized Linear Models with a log link and gamma distribution, or count models such as negative binomial or Poisson regressions (e.g., for the number of monthly physician visits). We used regression results to calculate the marginal effects of demonstration impact.

Impact estimates across the entire demonstration period are determined using the DinD methodology and presented in figures for all demonstration eligible beneficiaries, and then for two special populations of interest—demonstration eligible beneficiaries with any LTSS use, and demonstration eligible beneficiaries with SPMI. A triple interaction term is used to estimate the interaction effect of each special population (i.e., Demonstration * Post * LTSS). We present a table displaying the cumulative estimate along with the adjusted means for each group and period for the eligible population. We also display figures showing the annual effects of the demonstration among the overall eligible population and separately for LTSS users and those diagnosed with an SPMI. In each figure, the point estimate is displayed for each measure, as well as the 95 percent confidence interval. If the confidence interval includes the value of zero, it is not statistically significant at that confidence level.

The adjusted means tables presented for the full demonstration eligible population in the report provide both DinD results as well as accompanying adjusted mean values that allow direct comparisons regarding service utilization and costs across the predemonstration and demonstration periods, separately for the demonstration and comparison groups. To make meaningful comparisons for the adjusted mean value results, we needed to consider any differences in population characteristics across the four groups. To do this, we replaced the data values for all demographic, health, and area-related characteristics in each group to be those of the comparison group in the demonstration period, which we selected as the reference group.

The steps involved in this process for each type of outcome measure are:

1. *Run* the regression estimating the probability or level of service use or costs.

2. *Predict* DinD (last two columns in each adjusted means table).

3. *Replace* the data values for three of the four groups to be those of the comparison group in the demonstration period so all four groups have the same population characteristics.

4. *Predict* the weighted mean for each of the four groups using the regression results stored in computer memory.

The DinD estimate is also provided for reference, along with the *p*-value and the relative percent change of the DinD estimate compared to an average mean value for the comparison group in the entire demonstration period. The relative percent annual change for the DinD

estimate for each outcome measure is calculated as [Overall DinD effect] / [Adjusted mean outcome value of comparison group in the demonstration period].

Table C-2 provides an illustrative example of the regression output for each independent variable in the logistic regression on monthly inpatient admissions across the entire demonstration period.

Table C-2
Logistic regression results on monthly inpatient admissions
(n = 7,464,521 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
Demonstration period	0.0233	0.0187	1.24	0.214
Demonstration group	−0.1332	0.0615	−2.16	0.030
Interaction of demonstration period x demonstration group	0.0158	0.0284	0.56	0.578
Trend	−0.0048	0.0006	−7.78	0.000
Age (continuous)	0.0090	0.0007	12.8	0.000
Female	0.0261	0.0142	1.84	0.065
African American	−0.0415	0.0266	−1.56	0.118
Hispanic	−0.2468	0.0401	−6.16	0.000
Asian	−0.4701	0.0802	−5.86	0.000
Other race/ethnicity	−0.2526	0.0791	−3.19	0.001
Disability as reason for Medicare entitlement	0.0405	0.0114	3.55	0.000
End-stage renal disease	1.7291	0.0272	63.57	0.000
Participation in other Shared Savings Program	0.1275	0.0299	4.26	0.000
Hierarchical Condition Category score	0.3776	0.0085	44.41	0.000
Metropolitan statistical area residence	−0.0190	0.0299	−0.63	0.526
Medicare spending per dual, ages 19+	0.0000	0.0000	−0.76	0.445
Medicare Advantage penetration rate	0.4949	0.1083	4.57	0.000
Medicaid-Medicare fee index	1.0043	0.3489	2.88	0.004
Medicaid spending per dual, ages 19+	0.0000	0.0000	−0.77	0.441
Fraction of dual elig. beneficiaries using nursing facility, ages 65+	0.0186	0.3423	0.05	0.957
Fraction of dual elig. beneficiaries using HCBS, ages 65+	0.4136	0.2028	2.04	0.041
Fraction of dual elig. beneficiaries using personal care, ages 65+	−35.8620	3.5513	−10.1	0.000

(continued)

Table C-2 (continued)
Logistic regression results on monthly inpatient admissions
(n = 7,464,521 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
Fraction of dual elig. beneficiaries with Medicaid managed care, ages 19+	−0.3786	0.0469	−8.07	0.000
Patient care physicians per 1,000 population	−0.1524	0.1117	−1.36	0.172
Percent of population married	−0.0017	0.0010	−1.63	0.103
Percent of adults with college education	−0.0012	0.0006	−2.15	0.031
Percent of adults who are unemployed	−0.0006	0.0019	−0.32	0.749
Percent of adults with self-care limitation	0.0051	0.0024	2.09	0.037
Percent of household with individuals younger than 18	0.0000	0.0011	−0.04	0.965
Percent of household with individuals older than 60	−0.0008	0.0011	−0.79	0.431
Distance to nearest hospital (mi.)	−0.0028	0.0013	−2.12	0.034
Distance to nearest nursing facility (mi.)	0.0031	0.0014	2.15	0.031
Intercept	−4.5736	0.4473	−10.230	0.000

Appendix D

Descriptive and Special Population Supplemental Analysis

Tables D-1, ***D-2***, and ***D-3*** provide the regression-adjusted DinD estimates cumulatively and for each demonstration year, for all measures and populations, relative to the comparison group. We provide both the 95 and 90 percent confidence intervals for a clearer understanding of the estimate's precision.

Table D-1
Demonstration effects on service utilization among eligible beneficiaries—
Difference-in-differences regression results

Measure	Adjusted DinD estimate	*Relative difference (%)*	*p*-value	95% confidence interval	90% confidence interval
Probability of inpatient admission					
Cumulative	0.0004	1.3	0.5742	−0.0010, 0.0019	−0.0008, 0.0016
Demonstration year 1	0.0007	2.2	0.3545	−0.0008, 0.0022	−0.0005, 0.0019
Demonstration year 2	0.0010	3.2	0.1816	−0.0005, 0.0025	−0.0002, 0.0022
Demonstration year 3	−0.0003	−0.9	0.7990	−0.0025, 0.0019	−0.0021, 0.0015
Count of all-cause 30-day readmissions					
Cumulative	−0.0071	−2.3	0.5118	−0.0283, 0.0141	−0.0249, 0.0107
Demonstration year 1	−0.0301	−8.7	0.0421	−0.0591, −0.0011	−0.0544, −0.0057
Demonstration year 2	0.0237	8.5	0.1117	−0.0055, 0.0529	−0.0008, 0.0482
Demonstration year 3	−0.0035	−1.1	0.8293	−0.0349, 0.0280	−0.0299, 0.0230
Probability of ACSC admission, overall					
Cumulative	0.0001	1.8	0.5604	−0.0003, 0.0005	−0.0002, 0.0004
Demonstration year 1	0.0002	3.9	0.3097	−0.0002, 0.0007	−0.0001, 0.0006
Demonstration year 2	0.0002	3.3	0.3694	−0.0002, 0.0006	−0.0002, 0.0006
Demonstration year 3	−0.0001	−1.4	0.7523	−0.0006, 0.0005	−0.0005, 0.0004
Probability of ACSC admission, chronic					
Cumulative	0.0001	2.1	0.5682	−0.0002, 0.0003	−0.0001, 0.0003
Demonstration year 1	0.0000	0.1	0.9779	−0.0003, 0.0003	−0.0003, 0.0003
Demonstration year 2	0.0002	5.5	0.2084	−0.0001, 0.0005	−0.0001, 0.0004
Demonstration year 3	0.0001	1.7	0.7813	−0.0004, 0.0005	−0.0003, 0.0005
Probability of ED visit					
Cumulative	0.0028	4.3	0.0516	−0.0000, 0.0056	−0.0004, 0.0051
Demonstration year 1	0.0024	3.7	0.0551	−0.0001, 0.0049	0.0003, 0.0045
Demonstration year 2	0.0040	6.2	0.0089	0.0010, 0.0070	0.0015, 0.0065
Demonstration year 3	0.0024	3.8	0.2225	−0.0014, 0.0062	−0.0008, 0.0056
Preventable ED visits					
Cumulative	0.0030	7.8	0.0063	0.0009, 0.0052	0.0012, 0.0049
Demonstration year 1	0.0028	7.2	0.0141	0.0006, 0.0051	0.0009, 0.0047
Demonstration year 2	0.0038	10.0	0.0038	0.0012, 0.0065	0.0017, 0.0060
Demonstration year 3	0.0029	7.5	0.0428	0.0001, 0.0058	0.0006, 0.0053

(continued)

Table D-1 (continued)
Demonstration effects on service utilization among eligible beneficiaries—
Difference-in-differences regression results

Measure	Adjusted DinD estimate	*Relative difference (%)*	*p*-value	95% confidence interval	90% confidence interval
Probability of SNF admission					
Cumulative	−0.0001	−0.8	0.8448	−0.0010, 0.0008	−0.0008, 0.0007
Demonstration year 1	−0.0002	−1.5	0.6764	−0.0010, 0.0006	−0.0008, 0.0005
Demonstration year 2	0.0002	2.2	0.6592	−0.0008, 0.0013	−0.0007, 0.0011
Demonstration year 3	−0.0002	−2.1	0.6858	−0.0013, 0.0009	−0.0011, 0.0007
Probability of any long-stay NF use					
Cumulative	−0.0130	−7.2	<0.0001	−0.0193, −0.0066	−0.0183, −0.0076
Demonstration year 1	−0.0111	−6.2	0.0010	−0.0177, −0.0045	−0.0166, −0.0055
Demonstration year 2	−0.0131	−7.2	0.0005	−0.0206, −0.0057	−0.0194, −0.0069
Demonstration year 3	−0.0146	−8.2	<0.0001	−0.0217, −0.0074	−0.0206, −0.0086
Probability of 30-day follow-up after mental health discharge					
Cumulative	−0.0495	−12.7	0.0113	−0.0878, −0.0112	−0.0817, −0.0173
Demonstration year 1	−0.0493	−11.0	0.0627	−0.1012, 0.0026	−0.0929, −0.0057
Demonstration year 2	−0.0582	−16.1	0.0301	−0.1109, −0.0056	−0.1024, −0.0141
Demonstration year 3	−0.0395	−10.8	0.0964	−0.0860, 0.0071	−0.0785, −0.0004
Number of physician E&M visits					
Cumulative	−0.0120	−1.3	0.3224	−0.0357, 0.0117	−0.0319, 0.0079
Demonstration year 1	−0.0335	−3.7	0.0007	−0.0530, −0.0141	−0.0498, −0.0172
Demonstration year 2	−0.0103	−1.1	0.4738	−0.0387, 0.0180	−0.0341, 0.0134
Demonstration year 3	0.0165	1.7	0.3184	−0.0159, 0.0489	−0.0107, 0.0437

ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; E&M = evaluation and management; ED = emergency department; NF = nursing facility; SNF = skilled nursing facility.
SOURCE: RTI analysis of Medicare fee-for-service claims and Minimum Data Set data.

Table D-2
Demonstration effects on service utilization among LTSS beneficiaries—Difference-in-differences regression results

Measure	Adjusted DinD estimate	*p*-value	95% confidence interval	90% confidence interval
Probability of inpatient admission				
Cumulative	0.0033	<0.0001	0.0018, 0.0048	0.0021, 0.0046
Demonstration year 1	0.0043	<0.0001	0.0026, 0.0060	0.0028, 0.0057
Demonstration year 2	0.0041	0.0009	0.0017, 0.0066	0.0021, 0.0062
Demonstration year 3	0.0011	0.3744	−0.0013, 0.0035	−0.0009, 0.0031
Count of all-cause 30-day readmissions				
Cumulative	0.0067	0.6799	−0.0251, 0.0385	−0.0200, 0.0333
Demonstration year 1	−0.0184	0.3279	−0.0554, 0.0185	−0.0495, 0.0126
Demonstration year 2	0.0445	0.0382	0.0024, 0.0867	0.0092, 0.0799
Demonstration year 3	0.0195	0.4881	−0.0357, 0.0747	−0.0268, 0.0659
Probability of ACSC admission, overall				
Cumulative	0.0006	0.0108	0.0001, 0.0011	0.0002, 0.0010
Demonstration year 1	0.0010	0.0007	0.0004, 0.0015	0.0005, 0.0014
Demonstration year 2	0.0006	0.1490	−0.0002, 0.0015	−0.0001, 0.0014
Demonstration year 3	0.0001	0.7505	−0.0006, 0.0008	−0.0005, 0.0007
Probability of ACSC admission, chronic				
Cumulative	0.0005	0.0015	0.0002, 0.0008	0.0002, 0.0008
Demonstration year 1	0.0007	0.0003	0.0003, 0.0010	0.0004, 0.0010
Demonstration year 2	0.0006	0.1149	−0.0001, 0.0013	−0.0000, 0.0011
Demonstration year 3	0.0002	0.4884	−0.0004, 0.0008	−0.0003, 0.0007
Probability of ED visit				
Cumulative	0.0054	0.0056	0.0016, 0.0092	0.0022, 0.0086
Demonstration year 1	0.0044	0.0043	0.0014, 0.0074	0.0018, 0.0069
Demonstration year 2	0.0075	0.0070	0.0021, 0.0130	0.0029, 0.0121
Demonstration year 3	0.0054	0.0636	−0.0003, 0.0111	0.0006, 0.0102
Preventable ED visits				
Cumulative	0.0053	0.0001	0.0026, 0.0080	0.0030, 0.0075
Demonstration year 1	0.0043	0.0012	0.0017, 0.0069	0.0021, 0.0064
Demonstration year 2	0.0058	0.0058	0.0017, 0.0099	0.0023, 0.0093
Demonstration year 3	0.0075	0.0002	0.0036, 0.0115	0.0042, 0.0108

continued)

Table D−2 (continued)
Demonstration effects on service utilization among LTSS beneficiaries—
Difference-in-differences regression results

Measure	Adjusted DinD estimate	*p*-value	95% confidence interval	90% confidence interval
Probability of SNF admission				
Cumulative	0.0015	0.0006	0.0007, 0.0024	0.0008, 0.0023
Demonstration year 1	0.0018	0.0002	0.0009, 0.0028	0.0010, 0.0026
Demonstration year 2	0.0019	0.0004	0.0009, 0.0030	0.0010, 0.0028
Demonstration year 3	0.0007	0.3347	−0.0007, 0.0021	−0.0005, 0.0019
Probability of any long-stay NF use				
Cumulative	N/A	N/A	N/A	N/A
Demonstration year 1	N/A	N/A	N/A	N/A
Demonstration year 2	N/A	N/A	N/A	N/A
Demonstration year 3	N/A	N/A	N/A	N/A
Probability of 30-day follow-up after mental health discharge				
Cumulative	−0.0313	0.4377	−0.1105, 0.0478	−0.0978, 0.0351
Demonstration year 1	−0.0291	0.5154	−0.1166, 0.0585	−0.1026, 0.0444
Demonstration year 2	0.0025	0.9674	−0.1162, 0.1212	−0.0971, 0.1021
Demonstration year 3	−0.0744	0.1080	−0.1652, 0.0163	−0.1506, 0.0017
Number of physician E&M visits				
Cumulative	−0.0277	0.1656	−0.0667, 0.0114	−0.0605, 0.0052
Demonstration year 1	−0.0391	0.0346	−0.0753, −0.0028	−0.0695, −0.0087
Demonstration year 2	−0.0189	0.4286	−0.0657, 0.0279	−0.0582, 0.0204
Demonstration year 3	−0.0148	0.6029	−0.0703, 0.0408	−0.0614, 0.0319

ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; E&M = evaluation and management; ED = emergency department; LTSS = long-term services and supports; N/A = not applicable; NF = nursing facility; SNF = skilled nursing facility.
SOURCE: RTI analysis of Medicare fee-for-service claims and Minimum Data Set data.

Table D-3
Demonstration effects on service utilization among SPMI beneficiaries—DinD regression results

Measure	Adjusted DinD estimate	*p*-value	95% confidence interval	90% confidence interval
Probability of inpatient admission				
Cumulative	0.0020	0.1537	−0.0008, 0.0048	−0.0003, 0.0044
Demonstration year 1	0.0027	0.0517	−0.0000, 0.0055	0.0004, 0.0050
Demonstration year 2	0.0028	0.0889	−0.0004, 0.0059	0.0001, 0.0054
Demonstration year 3	0.0011	0.5934	−0.0029, 0.0050	−0.0022, 0.0044
Count of all-cause 30-day readmissions				
Cumulative	−0.0171	0.3038	−0.0496, 0.0155	−0.0444, 0.0102
Demonstration year 1	−0.0505	0.0175	−0.0922, −0.0088	−0.0855, −0.0155
Demonstration year 2	0.0173	0.3885	−0.0220, 0.0565	−0.0157, 0.0502
Demonstration year 3	−0.0110	0.6710	−0.0616, 0.0396	−0.0534, 0.0315
Probability of ACSC admission, overall				
Cumulative	0.0003	0.4006	−0.0004, 0.0010	−0.0003, 0.0009
Demonstration year 1	0.0005	0.2468	−0.0003, 0.0012	−0.0002, 0.0011
Demonstration year 2	0.0005	0.2358	−0.0004, 0.0014	−0.0002, 0.0013
Demonstration year 3	0.0000	0.9660	−0.0010, 0.0011	−0.0009, 0.0009
Probability of ACSC admission, chronic				
Cumulative	0.0002	0.4368	−0.0003, 0.0008	−0.0002, 0.0007
Demonstration year 1	0.0001	0.7088	−0.0005, 0.0007	−0.0004, 0.0006
Demonstration year 2	0.0004	0.2606	−0.0003, 0.0011	−0.0002, 0.0010
Demonstration year 3	0.0002	0.7078	−0.0007, 0.0010	−0.0006, 0.0009
Probability of ED visit				
Cumulative	0.0023	0.3840	−0.0029, 0.0075	−0.0021, 0.0067
Demonstration year 1	0.0039	0.0969	−0.0007, 0.0086	0.0000, 0.0078
Demonstration year 2	0.0022	0.4294	−0.0033, 0.0078	−0.0024, 0.0069
Demonstration year 3	0.0013	0.7048	−0.0056, 0.0083	−0.0045, 0.0072
Preventable ED visits				
Cumulative	0.0068	0.0025	0.0024, 0.0112	0.0031, 0.0105
Demonstration year 1	0.0069	0.0038	0.0022, 0.0116	0.0030, 0.0109
Demonstration year 2	0.0071	0.0040	0.0023, 0.0120	0.0031, 0.0112
Demonstration year 3	0.0069	0.0157	0.0013, 0.0124	0.0022, 0.0115

continued)

Table D-3 (continued)
Demonstration effects on service utilization among SPMI beneficiaries—DinD regression results

Measure	Adjusted DinD estimate	*p*-value	95% confidence interval	90% confidence interval
Probability of SNF admission				
Cumulative	0.0005	0.5239	−0.0010, 0.0021	−0.0008, 0.0018
Demonstration year 1	0.0007	0.3276	−0.0007, 0.0020	−0.0005, 0.0018
Demonstration year 2	0.0010	0.2996	−0.0009, 0.0029	−0.0006, 0.0026
Demonstration year 3	0.0001	0.9302	−0.0018, 0.0020	−0.0015, 0.0017
Probability of any long-stay NF use				
Cumulative	N/A	N/A	N/A	N/A
Demonstration year 1	N/A	N/A	N/A	N/A
Demonstration year 2	N/A	N/A	N/A	N/A
Demonstration year 3	N/A	N/A	N/A	N/A
Probability of 30-day follow-up after mental health discharge				
Cumulative	N/A	N/A	N/A	N/A
Demonstration year 1	N/A	N/A	N/A	N/A
Demonstration year 2	N/A	N/A	N/A	N/A
Demonstration year 3	N/A	N/A	N/A	N/A
Physician E&M visits				
Cumulative	−0.0105	0.6063	−0.0507, 0.0296	−0.0442, 0.0231
Demonstration year 1	−0.0507	0.0020	−0.0828, −0.0186	−0.0777, −0.0238
Demonstration year 2	−0.0083	0.7386	−0.0568, 0.0403	−0.0490, 0.0325
Demonstration year 3	0.0310	0.2176	−0.0183, 0.0802	−0.0104, 0.0723

ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; E&M = evaluation and management; ED = emergency department; N/A = not applicable; NF = nursing facility; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.
SOURCE: RTI analysis of Medicare fee-for-service claims and Minimum Data Set data.

Table D-4 presents results on the average percentage of demonstration eligible beneficiaries using selected Medicare service types during the months in which they met demonstration eligibility criteria in the predemonstration and demonstration periods. In addition, average counts of service use and payments are presented across all such eligible months, and for the subset of these months in which eligible beneficiaries were users of each respective service type.

Data are shown for the predemonstration and demonstration period for both Colorado eligible beneficiaries (i.e., the demonstration group) and the comparison group. We also provide tables for the RTI quality of care and care coordination measures (***Table D-5***) and NF-related measures derived from the MDS (***Table D-6***). We did not conduct testing between groups or years. The results reflect the underlying experience of the two groups; changes over time are not intended to be interpreted as caused by the demonstration.

The demonstration and comparison groups were similar across many of the service utilization measures in each of the predemonstration (baseline) years and the demonstration years (***Table D-4***). However, there were a few outcomes where some differences were apparent. For example, hospice use, primary care E&M visits, behavioral health visits, and outpatient therapy were slightly higher for the comparison group compared to the demonstration group. However, percent with use of independent therapy, DME, and other hospital outpatient services was slightly higher in the demonstration group, compared to the comparison group.

As with the service utilization measures, the Colorado demonstration eligible beneficiaries were similar to the comparison group in many, but not all, of the RTI quality of care and care coordination measures (***Table D-5***). There appeared to be a sharp decline in the unadjusted rate of 30-day follow-up visits a mental health discharge in the demonstration group from the predemonstration period to the demonstration period. In general, however, no clear pattern was evident for the 30-day all-cause readmissions, the number of preventable ED visits overall and chronic ACSC diagnoses, or screening for clinical depression.

Finally, across all years, the demonstration eligible group generally had a lower rate of new long-stay NF admissions and a lower percentage of long-stay NF users relative to the comparison group (***Table D-6***). There were differences in some characteristics of long-stay NF residents at admission: relative to the comparison group, demonstration eligible beneficiaries had better functional status, a higher percent with low level of care need, and a lower proportion of beneficiaries with severe cognitive impairment.

Table D-4
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Number of demonstration beneficiaries		46,981	53,595	40,016	35,342	38,386
Number of comparison beneficiaries		113,568	111,604	112,531	102,599	103,222
Institutional setting						
Inpatient admissions[1]	Demonstration group					
% with use		3.2	3.1	2.8	2.9	2.8
Utilization per 1,000 user months		1,114.1	1,117.7	1,115.3	1,117.8	1,123.1
Utilization per 1,000 eligible months		35.5	34.1	31.6	32.0	31.5
Payments per user month		13,401	14,110	14,151	14,412	15,559
Payments per eligible month		427	431	401	412	436
Inpatient admissions[1]	Comparison group					
% with use		3.7	3.4	3.2	3.1	3.2
Utilization per 1,000 user months		1,116.8	1,126.5	1,118.6	1,117.7	1,121.9
Utilization per 1,000 eligible months		40.9	38.5	35.3	35.2	36.1
Payments per user month		12,083	12,566	12,417	12,612	12,788
Payments per eligible month		443	430	391	397	411
Inpatient psychiatric	Demonstration group					
% with use		0.4	0.4	0.3	0.4	0.3
Utilization per 1,000 user months		1,091.4	1,121.0	1,090.0	1,108.9	1,104.2
Utilization per 1,000 eligible months		3.9	4.1	3.8	4.0	3.7
Payments per user month		9,510	9,131	8,981	8,708	9,181
Payments per eligible month		34	33	31	31	30
Inpatient psychiatric	Comparison group					
% with use		0.5	0.4	0.5	0.5	0.5
Utilization per 1,000 user months		1,118.8	1,083.5	1,105.7	1,111.3	1,116.1
Utilization per 1,000 eligible months		5.4	4.8	5.3	5.6	5.4
Payments per user month		7,441	7,558	7,974	8,502	8,539
Payments per eligible month		36	33	38	43	42

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Inpatient substance abuse	Demonstration group					
% with use		0.0	0.0	0.1	0.0	0.0
Utilization per 1,000 user months		1,029.3	1,045.5	1,026.5	1,023.3	1,055.9
Utilization per 1,000 eligible months		0.5	0.5	0.5	0.4	0.4
Payments per user month		6,687	6,335	6,587	6,592	6,895
Payments per eligible month		3	3	3	3	3
Inpatient substance abuse	Comparison group					
% with use		0.1	0.1	0.1	0.1	0.1
Utilization per 1,000 user months		1,112.3	1,064.4	1,084.2	1,056.3	1,115.5
Utilization per 1,000 eligible months		0.7	0.7	0.7	0.7	0.6
Payments per user month		5,048	5,555	6,487	5,785	5,845
Payments per eligible month		3	3	4	4	3
Emergency department use (non-admit)	Demonstration group					
% with use		6.9	7.0	7.2	7.3	7.0
Utilization per 1,000 user months		1,290.7	1,283.6	1,289.8	1,287.7	1,277.9
Utilization per 1,000 eligible months		88.7	90.4	93.1	93.4	89.1
Payments per user month		549	582	577	614	674
Payments per eligible month		38	41	42	45	47
Emergency department use (non-admit)	Comparison group					
% with use		6.6	6.5	6.5	6.4	6.3
Utilization per 1,000 user months		1,260.8	1,260.1	1,263.9	1,262.7	1,244.3
Utilization per 1,000 eligible months		83.1	82.3	82.5	80.8	78.5
Payments per user month		458	500	517	510	542
Payments per eligible month		30	33	34	33	34

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Emergency department use (psychiatric)	Demonstration group					
% with use		0.5	0.5	0.6	0.5	0.5
Utilization per 1,000 user months		1,235.3	1,257.8	1,235.4	1,196.5	1,184.0
Utilization per 1,000 eligible months		5.9	6.5	6.8	6.3	5.8
Payments per user month		448	478	458	494	536
Payments per eligible month		2	3	3	3	3
Emergency department use (psychiatric)	Comparison group					
% with use		0.3	0.3	0.3	0.3	0.3
Utilization per 1,000 user months		1,117.0	1,106.6	1,142.9	1,124.7	1,103.8
Utilization per 1,000 eligible months		3.1	3.1	3.5	3.9	3.5
Payments per user month		368	359	378	362	395
Payments per eligible month		1	1	1	1	1
Observation stays	Demonstration group					
% with use		0.7	0.8	0.7	0.8	0.9
Utilization per 1,000 user months		1,039.5	1,052.5	1,056.6	1,052.7	1,049.0
Utilization per 1,000 eligible months		7.6	8.4	7.8	8.5	8.9
Payments per user month		1,798	1,963	1,873	2,003	2,010
Payments per eligible month		13	16	14	16	17
Observation stays	Comparison group					
% with use		0.7	0.8	0.7	0.7	0.6
Utilization per 1,000 user months		1,046.5	1,049.2	1,038.1	1,035.8	1,040.1
Utilization per 1,000 eligible months		7.5	7.9	7.2	6.9	6.7
Payments per user month		1,471	1,672	1,724	1,785	1,844
Payments per eligible month		11	13	12	12	12

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Skilled nursing facility	Demonstration group					
% with use		1.1	1.0	0.8	0.8	0.8
Utilization per 1,000 user months		1,089.0	1,079.4	1,081.2	1,090.2	1,097.2
Utilization per 1,000 eligible months		11.4	10.5	8.4	8.7	8.3
Payments per user month		11,824	12,077	11,709	11,995	12,866
Payments per eligible month		124	117	91	96	97
Skilled nursing facility	Comparison group					
% with use		1.4	1.3	1.1	1.1	1.1
Utilization per 1,000 user months		1,086.1	1,089.4	1,092.1	1,079.9	1,079.9
Utilization per 1,000 eligible months		15.1	14.5	12.3	12.0	11.6
Payments per user month		9,629	9,636	10,019	9,702	9,805
Payments per eligible month		134	128	112	108	105
Hospice	Demonstration group					
% with use		1.9	1.5	1.1	1.1	1.1
Utilization per 1,000 user months		1,063.0	1,012.2	1,012.4	1,010.5	1,013.2
Utilization per 1,000 eligible months		19.7	15.5	10.7	11.4	10.8
Payments per user month		3,809	3,782	3,683	3,815	3,920
Payments per eligible month		71	58	39	43	42
Hospice	Comparison group					
% with use		2.3	2.1	1.7	1.9	2.0
Utilization per 1,000 user months		1,034.6	1,009.9	1,011.5	1,012.1	1,013.7
Utilization per 1,000 eligible months		24.0	21.4	17.6	19.7	20.6
Payments per user month		3,554	3,594	3,596	3,596	3,652
Payments per eligible month		82	76	63	70	74

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Non-institutional setting						
Specialist E&M visits	Demonstration group					
% with use		4.6	4.8	4.5	4.8	4.9
Utilization per 1,000 user months		1,119.4	1,128.9	1,116.5	1,110.5	1,103.7
Utilization per 1,000 eligible months		51.5	53.7	50.7	53.4	54.6
Payments per user month		93	92	96	93	93
Payments per eligible month		4	4	4	5	5
Specialist E&M visits	Comparison group					
% with use		4.6	4.6	4.6	4.6	4.5
Utilization per 1,000 user months		1,116.4	1,119.8	1,125.8	1,122.1	1,114.6
Utilization per 1,000 eligible months		50.8	51.6	51.4	51.8	50.3
Payments per user month		88	89	91	88	86
Payments per eligible month		4	4	4	4	4
Primary care E&M visits	Demonstration group					
% with use		49.0	48.5	46.6	47.2	48.1
Utilization per 1,000 user months		1,815.8	1,821.4	1,743.2	1,774.1	1,840.7
Utilization per 1,000 eligible months		889.2	884.2	812.7	837.1	885.7
Payments per user month		117	118	109	101	106
Payments per eligible month		57	57	51	47	51
Primary care E&M visits	Comparison group					
% with use		52.6	52.3	51.0	51.0	51.4
Utilization per 1,000 user months		1,779.4	1,791.9	1,785.4	1,795.7	1,821.7
Utilization per 1,000 eligible months		936.3	937.9	910.2	915.5	936.7
Payments per user month		97	100	102	99	100
Payments per eligible month		51	53	52	50	51

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Behavioral health visits	Demonstration group					
% with use		5.3	4.8	4.3	4.1	4.5
Utilization per 1,000 user months		2,665.6	2,983.0	2,593.2	2,509.4	2,305.5
Utilization per 1,000 eligible months		140.9	144.3	112.0	104.0	103.9
Payments per user month		131	190	181	162	139
Payments per eligible month		7	9	8	7	6
Behavioral health visits	Comparison group					
% with use		6.0	5.6	6.1	6.4	6.4
Utilization per 1,000 user months		1,855.9	2,022.3	1,963.9	1,926.5	1,933.9
Utilization per 1,000 eligible months		111.9	113.0	120.0	122.9	124.6
Payments per user month		79	105	110	105	107
Payments per eligible month		5	6	7	7	7
Outpatient therapy (PT, OT, ST)	Demonstration group					
% with use		5.5	5.5	4.5	4.9	5.1
Utilization per 1,000 user months		14,582.8	17,154.6	15,367.9	16,420.0	16,679.7
Utilization per 1,000 eligible months		806.2	935.0	693.1	799.1	856.2
Payments per user month		489	464	437	470	482
Payments per eligible month		27	25	20	23	25
Outpatient therapy (PT, OT, ST)	Comparison group					
% with use		6.0	5.9	5.9	6.2	6.7
Utilization per 1,000 user months		17,720.9	20,744.8	20,750.5	21,161.2	19,994.8
Utilization per 1,000 eligible months		1,059.2	1,228.3	1,216.9	1,317.1	1,335.1
Payments per user month		557	547	573	597	549
Payments per eligible month		33	32	34	37	37

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Independent therapy (PT, OT, ST)	Demonstration group					
% with use		1.4	1.5	1.6	1.8	1.9
Utilization per 1,000 user months		9,820.3	10,756.8	10,290.9	9,992.7	9,118.4
Utilization per 1,000 eligible months		138.5	162.0	164.8	176.4	176.6
Payments per user month		287	275	288	303	270
Payments per eligible month		4	4	5	5	5
Independent therapy (PT, OT, ST)	Comparison group					
% with use		0.8	0.7	0.7	0.7	0.8
Utilization per 1,000 user months		10,021.8	11,154.3	11,749.2	10,445.6	10,683.1
Utilization per 1,000 eligible months		77.8	82.2	83.9	75.6	83.5
Payments per user month		268	245	261	243	252
Payments per eligible month		2	2	2	2	2
Home health episodes	Demonstration group					
% with use		1.8	1.7	1.6	1.6	1.6
Utilization per 1,000 user months		1,008.2	1,014.0	1,021.0	1,019.3	1,035.7
Utilization per 1,000 eligible months		18.2	17.6	15.8	15.9	16.3
Payments per user month		2,557	2,609	2,593	2,661	2,714
Payments per eligible month		46	45	40	42	43
Home health episodes	Comparison group					
% with use		1.6	1.5	1.4	1.4	1.5
Utilization per 1,000 user months		1,008.2	1,008.1	1,005.6	1,005.4	1,003.9
Utilization per 1,000 eligible months		16.1	15.6	13.9	14.0	15.0
Payments per user month		2,320	2,294	2,337	2,431	2,433
Payments per eligible month		37	36	32	34	36

(continued)

Table D-4 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration eligible beneficiaries and comparison groups

Measures by Setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Durable medical equipment	Demonstration group					
% with use		22.6	21.0	20.5	19.9	21.8
Utilization per 1,000 user months		—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—
Payments per user month		234	218	239	215	201
Payments per eligible month		53	46	49	43	44
Durable medical equipment	Comparison group					
% with use		16.4	15.1	14.0	13.3	14.0
Utilization per 1,000 user months		—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—
Payments per user month		217	201	238	215	214
Payments per eligible month		36	31	33	29	30
Other hospital outpatient services	Demonstration group					
% with use		28.6	28.2	28.9	29.4	29.8
Utilization per 1,000 user months		—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—
Payments per user month		535	556	590	616	661
Payments per eligible month		153	157	170	181	197
Other hospital outpatient services	Comparison group					
% with use		26.9	26.2	26.3	25.7	25.5
Utilization per 1,000 user months		—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—
Payments per user month		475	501	537	583	621
Payments per eligible month		128	131	141	150	158

— = data not available. E&M = evaluation and management; OT = occupational therapy, PT = physical therapy, ST = speech therapy.
[1] Includes acute admissions, inpatient rehabilitation, and long-term care hospital admissions.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Table D-5
Quality of care and care coordination outcomes for the Colorado demonstration eligible beneficiaries and comparison groups

Quality and care coordination measures	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
30-day all-cause risk-standardized readmission rate (%)	Demonstration group	16.7	16.7	15.8	18.0	17.1
	Comparison group	18.3	18.4	18.3	17.2	18.7
Preventable emergency department visits per eligible month	Demonstration group	0.0403	0.0414	0.0434	0.0422	0.0397
	Comparison group	0.0411	0.0398	0.0397	0.0376	0.0362
Rate of 30-day follow-up after hospitalization for mental illness (%)	Demonstration group	45.1	46.7	41.3	31.2	33.7
	Comparison group	42.4	45.5	44.9	36.2	36.5
Ambulatory care sensitive condition admissions per eligible month—overall composite (AHRQ PQI #90)	Demonstration group	0.0058	0.0054	0.0048	0.0048	0.0047
	Comparison group	0.0077	0.0071	0.0061	0.0061	0.0063
Ambulatory care sensitive condition admissions per eligible month—chronic composite (AHRQ PQI #92)	Demonstration group	0.0032	0.0031	0.0027	0.0029	0.0032
	Comparison group	0.0043	0.0041	0.0036	0.0036	0.0042
Screening for clinical depression per eligible month	Demonstration group	0.0006	0.0021	0.0062	0.0040	0.0019
	Comparison group	0.0007	0.0014	0.0031	0.0044	0.0065

SOURCE: RTI International analysis of Medicare fee-for-service claims.

Table D-6
MDS long-stay NF utilization and characteristics at admission for the Colorado demonstration and comparison groups

Measures by setting	Group	Predemonstration year 1	Predemonstration year 2	Demonstration year 1	Demonstration year 2	Demonstration year 3
Annual NF utilization						
Number of demonstration beneficiaries	Demonstration group	31,841	35,027	25,725	24,250	27,120
New long-stay NF admissions per 1,000 eligible beneficiaries		16.8	14.9	14.9	11.9	12.0
Number of comparison beneficiaries	Comparison group	71,367	68,042	66,396	63,807	65,742
New long-stay NF admissions per 1,000 eligible beneficiaries		16.8	15.1	21.8	17.6	16.8
Number of demonstration beneficiaries	Demonstration group	37,063	40,227	28,238	26,609	29,720
Long-stay NF users as % of eligible beneficiaries		15.3	14.0	10.0	9.8	9.5
Number of comparison beneficiaries	Comparison group	89,512	84,028	79,187	77,422	79,608
Long-stay NF users as % of eligible beneficiaries		21.3	20.0	18.0	18.9	18.6
Characteristics of new long-stay NF residents at admission						
Number of admitted demonstration beneficiaries	Demonstration group	535	521	382	290	325
Number of admitted comparison beneficiaries	Comparison group	1,196	1,030	1,447	1,126	1,106
Functional status (RUG-IV ADL scale)	Demonstration group	6.8	7.3	6.8	6.8	7.0
Functional status (RUG-IV ADL scale)	Comparison group	8.3	8.3	8.1	7.7	7.8
Percent with severe cognitive impairment	Demonstration group	37.6	37.3	31.2	28.2	29.1
Percent with severe cognitive impairment	Comparison group	44.6	39.9	40.6	33.9	37.3
Percent with low level of care need	Demonstration group	4.8	2.3	3.9	4.2	5.2
Percent with low level of care need	Comparison group	1.6	1.4	2.8	2.5	2.6

ADL = activities of daily living; MDS = Nursing Home Minimum Data Set; NF = nursing facility; RUG = Resource Utilization Group.
NOTE: A higher score on the RUG-IV ADL scale indicates greater impairment, or worse functional status.
SOURCE: RTI International analysis of Minimum Data Set data.

Tables D-7 and ***D-8*** present descriptive statistics for the demonstration eligible enrollees, compared to those demonstration eligible beneficiaries who were not enrollees, for each service by demonstration year, to help understand the utilization experience over time.

Non-enrollees generally had higher utilization than the demonstration enrollees across most service settings (***Table D-7***). For the quality of care and care coordination measures, non-enrollees had a higher probability of 30-day follow-up visits after mental health discharges (***Table D-8***).

Table D-7
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Number of demonstration enrollees		34,256	30,675	33,888
Number of demonstration non-enrollees		5,760	4,667	4,498
Institutional setting				
Inpatient admissions[1]	Enrollees			
% with use		2.7	2.8	2.7
Utilization per 1,000 user months		1,116.4	1,116.9	1,122.8
Utilization per 1,000 eligible months		30.2	30.9	30.3
Payments per user month		14,191	14,279	15,581
Payments per eligible month		384	395	421
Inpatient admissions[1]	Non-enrollees			
% with use		4.6	3.6	3.3
Utilization per 1,000 user months		1,113.3	1,132.8	1,109.2
Utilization per 1,000 eligible months		51.4	40.7	36.8
Payments per user month		14,678	15,599	15,242
Payments per eligible month		678	560	506
Inpatient psychiatric	Enrollees			
% with use		0.3	0.3	0.3
Utilization per 1,000 user months		1,079.5	1,104.9	1,097.6
Utilization per 1,000 eligible months		3.6	3.9	3.4
Payments per user month		8,727	8,705	8,919
Payments per eligible month		29	30	28
Inpatient psychiatric	Non-enrollees			
% with use		0.5	0.4	0.5
Utilization per 1,000 user months		1,140.5	1,132.5	1,151.3
Utilization per 1,000 eligible months		5.4	4.5	5.6
Payments per user month		10,484	9,838	10,199
Payments per eligible month		50	39	49

(continued)

Table D-7 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Inpatient substance abuse	Enrollees			
% with use		0.0	0.0	0.0
Utilization per 1,000 user months		1,030.1	1,028.0	1,060.9
Utilization per 1,000 eligible months		0.5	0.4	0.4
Payments per user month		6,670	6,823	6,645
Payments per eligible month		3	3	3
Inpatient substance abuse	Non-enrollees			
% with use		0.1	0.1	0.1
Utilization per 1,000 user months		1,000.0	1,000.0	1,052.6
Utilization per 1,000 eligible months		0.5	0.5	0.8
Payments per user month		8,293	5,977	8,346
Payments per eligible month		5	3	7
Emergency department use (non-admit)	Enrollees			
% with use		7.3	7.2	7.0
Utilization per 1,000 user months		1,295.2	1,288.0	1,281.8
Utilization per 1,000 eligible months		94.2	92.8	89.8
Payments per user month		576	611	672
Payments per eligible month		42	44	47
Emergency department use (non-admit)	Non-enrollees			
% with use		7.8	7.4	6.8
Utilization per 1,000 user months		1,290.3	1,261.5	1,290.9
Utilization per 1,000 eligible months		101.2	93.2	87.5
Payments per user month		619	629	716
Payments per eligible month		49	47	49
Emergency department use (psychiatric)	Enrollees			
% with use		0.5	0.5	0.5
Utilization per 1,000 user months		1,227.1	1,192.4	1,176.1
Utilization per 1,000 eligible months		6.7	6.1	5.7
Payments per user month		444	484	530
Payments per eligible month		2	3	3
Emergency department use (psychiatric)	Non-enrollees			
% with use		0.6	0.5	0.6
Utilization per 1,000 user months		1,220.9	1,179.2	1,228.2
Utilization per 1,000 eligible months		7.8	6.0	7.5
Payments per user month		526	502	597
Payments per eligible month		3	3	4

(continued)

Table D-7 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Observation stays	Enrollees			
% with use		0.7	0.8	0.8
Utilization per 1,000 user months		1,051.7	1,053.9	1,048.3
Utilization per 1,000 eligible months		7.7	8.3	8.8
Payments per user month		1,897	2,006	2,010
Payments per eligible month		14	16	17
Observation stays	Non-enrollees			
% with use		0.9	0.9	0.9
Utilization per 1,000 user months		1,075.6	1,058.5	1,103.0
Utilization per 1,000 eligible months		10.0	9.5	10.5
Payments per user month		1,802	2,034	2,244
Payments per eligible month		17	18	21
Skilled nursing facility	Enrollees			
% with use		0.7	0.7	0.7
Utilization per 1,000 user months		1,083.7	1,092.6	1,097.7
Utilization per 1,000 eligible months		7.6	8.0	7.5
Payments per user month		11,871	11,987	13,043
Payments per eligible month		84	88	89
Skilled nursing facility	Non-enrollees			
% with use		1.5	1.2	1.0
Utilization per 1,000 user months		1,050.9	1,096.5	1,095.4
Utilization per 1,000 eligible months		15.3	13.5	10.8
Payments per user month		9,620	12,055	11,459
Payments per eligible month		140	149	113
Hospice	Enrollees			
% with use		0.9	1.0	0.9
Utilization per 1,000 user months		1,014.0	1,010.7	1,013.9
Utilization per 1,000 eligible months		9.3	10.6	9.0
Payments per user month		3,696	3,820	3,917
Payments per eligible month		34	40	35
Hospice	Non-enrollees			
% with use		3.5	2.1	1.6
Utilization per 1,000 user months		1,010.1	1,009.1	1,020.9
Utilization per 1,000 eligible months		35.3	21.2	15.9
Payments per user month		3,228	3,665	3,679
Payments per eligible month		113	77	57

(continued)

Table D-7 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Non-institutional setting				
Specialist E&M visits	Enrollees			
% with use		4.4	4.6	4.9
Utilization per 1,000 user months		1,116.9	1,107.4	1,099.7
Utilization per 1,000 eligible months		49.3	51.4	53.9
Payments per user month		96	92	93
Payments per eligible month		4	4	5
Specialist E&M visits	Non-enrollees			
% with use		5.6	6.2	5.3
Utilization per 1,000 user months		1,109.6	1,128.9	1,130.3
Utilization per 1,000 eligible months		61.7	70.2	60.4
Payments per user month		100	97	95
Payments per eligible month		6	6	5
Primary care E&M visits	Enrollees			
% with use		45.9	46.5	47.1
Utilization per 1,000 user months		1,711.8	1,747.5	1,798.9
Utilization per 1,000 eligible months		786.0	813.1	847.3
Payments per user month		105	98	103
Payments per eligible month		48	46	48
Primary care E&M visits	Non-enrollees			
% with use		52.2	51.7	49.0
Utilization per 1,000 user months		1,955.1	1,960.7	1,970.5
Utilization per 1,000 eligible months		1,020.0	1,014.5	965.3
Payments per user month		126	118	116
Payments per eligible month		66	61	57
Behavioral health visits	Enrollees			
% with use		4.1	4.0	4.2
Utilization per 1,000 user months		2,518.5	2,493.2	2,226.7
Utilization per 1,000 eligible months		103.6	100.4	94.4
Payments per user month		176	161	133
Payments per eligible month		7	7	6
Behavioral health visits	Non-enrollees			
% with use		5.5	4.7	5.2
Utilization per 1,000 user months		2,727.4	2,649.0	2,403.3
Utilization per 1,000 eligible months		149.6	124.2	125.9
Payments per user month		191	179	146
Payments per eligible month		11	8	8

(continued)

Table D-7 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Outpatient therapy (PT, OT, ST)	Enrollees			
% with use		4.1	4.6	4.4
Utilization per 1,000 user months		14,842.4	15,948.0	15,308.6
Utilization per 1,000 eligible months		608.1	733.8	679.7
Payments per user month		424	453	437
Payments per eligible month		17	21	19
Outpatient therapy (PT, OT, ST)	Non-enrollees			
% with use		6.8	6.5	6.8
Utilization per 1,000 user months		16,862.5	17,391.0	17,873.0
Utilization per 1,000 eligible months		1,149.0	1,137.3	1,214.7
Payments per user month		482	502	525
Payments per eligible month		33	33	36
Independent therapy (PT, OT, ST)	Enrollees			
% with use		1.6	1.7	1.9
Utilization per 1,000 user months		10,222.4	9,841.5	9,169.0
Utilization per 1,000 eligible months		161.9	167.3	178.0
Payments per user month		294	298	272
Payments per eligible month		5	5	5
Independent therapy (PT, OT, ST)	Non-enrollees			
% with use		2.2	2.3	2.0
Utilization per 1,000 user months		10,486.6	10,489.8	8,375.0
Utilization per 1,000 eligible months		228.9	244.2	169.2
Payments per user month		287	307	231
Payments per eligible month		6	7	5
Home health episodes	Enrollees			
% with use		1.4	1.5	1.6
Utilization per 1,000 user months		1,025.1	1,021.4	1,039.9
Utilization per 1,000 eligible months		14.8	14.9	16.1
Payments per user month		2,550	2,608	2,666
Payments per eligible month		37	38	41
Home health episodes	Non-enrollees			
% with use		2.1	2.1	1.5
Utilization per 1,000 user months		1,003.7	1,002.3	1,005.5
Utilization per 1,000 eligible months		21.0	20.7	15.0
Payments per user month		2,781	2,916	2,889
Payments per eligible month		58	60	43

(continued)

Table D-7 (continued)
Proportion and utilization for institutional and non-institutional services for the Colorado demonstration enrollees and non-enrollees

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
Durable medical equipment	Enrollees			
% with use		20.2	19.8	22.2
Utilization per 1,000 user months		—	—	—
Utilization per 1,000 eligible months		—	—	—
Payments per user month		239	210	193
Payments per eligible month		48	41	43
Durable medical equipment	Non-enrollees			
% with use		21.0	21.1	19.2
Utilization per 1,000 user months		—	—	—
Utilization per 1,000 eligible months		—	—	—
Payments per user month		206	252	257
Payments per eligible month		43	53	49
Other hospital outpatient services	Enrollees			
% with use		28.7	29.2	29.5
Utilization per 1,000 user months		—	—	—
Utilization per 1,000 eligible months		—	—	—
Payments per user month		581	610	639
Payments per eligible month		167	179	188
Other hospital outpatient services	Non-enrollees			
% with use		29.9	29.9	29.9
Utilization per 1,000 user months		—	—	—
Utilization per 1,000 eligible months		—	—	—
Payments per user month		630	678	790
Payments per eligible month		188	203	236

— = data not available. E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.
[1] Includes acute admissions, inpatient rehabilitation, and long-term care hospital admissions.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Table D-8
Quality of care and care coordination outcomes for enrollees and non-enrollees for the Colorado demonstration

Quality and care coordination measures	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3
30-day all-cause risk-standardized readmission rate (%)	Enrollees	15.9	17.9	17.1
	Non-enrollees	17.6	17.1	17.8
Preventable ED visits per eligible month	Enrollees	0.0441	0.0418	0.0403
	Non-enrollees	0.0447	0.0435	0.0383
Rate of 30-day follow-up after hospitalization for mental illness (%)	Enrollees	41.0	30.3	33.9
	Non-enrollees	44.2	32.5	37.5
Ambulatory care sensitive condition admissions per eligible month—overall composite (AHRQ PQI #90)	Enrollees	0.0046	0.0047	0.0046
	Non-enrollees	0.0082	0.0052	0.0053
Ambulatory care sensitive condition admissions per eligible month—chronic composite (AHRQ PQI #92)	Enrollees	0.0026	0.0029	0.0032
	Non-enrollees	0.0041	0.0032	0.0036
Screening for clinical depression per eligible month	Enrollees	0.0060	0.0040	0.0019
	Non-enrollees	0.0089	0.0035	0.0017

ED = emergency department.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Tables D-9 and ***D-10*** show the differences in the cumulative demonstration effects on service utilization and quality of care measures for beneficiaries with LTSS use, relative to the demonstration effects for those without LTSS use.

Table D-9
Cumulative demonstration effects on service utilization measures by LTSS users versus non-LTSS users

Measure	Group	Demonstration effect relative to the comparison group	*p*-value	Difference in demonstration effect (LTSS users versus non-LTSS users)	*p*-value
Probability of inpatient admission	LTSS users	0.0033 (0.0018, 0.0048)	<0.001	0.0038 (0.0018, 0.0058)	<0.001
	Non-LTSS users	−0.0004 (−0.0021, 0.0012)	0.600		
Probability of ED visit	LTSS users	0.0054 (0.0016, 0.0092)	0.006	0.0037 (−0.0017, 0.0091)	0.177
	Non-LTSS users	0.0017 (−0.0023, 0.0056)	0.409		
Count of physician E&M visits	LTSS users	−0.0277 (−0.0667, 0.0114)	0.166	−0.0252 (−0.0673, 0.0169)	0.240
	Non-LTSS users	−0.0024 (−0.0193, 0.0144)	0.776		
Probability of SNF admission	LTSS users	0.0015 (0.0007, 0.0024)	0.001	0.0013 (0.0004, 0.0022)	0.006
	Non-LTSS users	0.0003 (−0.0000, 0.0005)	0.072		

E&M = evaluation and management; ED = emergency department; LTSS = long-term services and supports; SNF = skilled nursing facility.
NOTE: 95% confidence intervals in parenthesis.
SOURCE: RTI analysis of Medicare fee-for-service claims.

Table D-10
Cumulative demonstration effects on quality of care measures by LTSS users versus non-LTSS users

Measure	Group	Demonstration effect relative to the comparison group	*p*-value	Difference in demonstration effect (LTSS users versus non-LTSS users)	*p*-value
Preventable ED visits	LTSS users	0.0053 (0.0026, 0.0080)	<0.001	0.0028 (−0.0010, 0.0065)	0.152
	Non-LTSS users	0.0025 (−0.0005, 0.0056)	0.103		
Probability of ACSC admission, overall	LTSS users	0.0006 (0.0001, 0.0011)	0.011	0.0009 (0.0002, 0.0015)	0.014
	Non-LTSS users	−0.0002 (−0.0007, 0.0003)	0.369		
Probability of ACSC admission, chronic	LTSS users	0.0005 (0.0002, 0.0008)	0.002	0.0008 (0.0003, 0.0014)	0.004
	Non-LTSS users	−0.0003 (−0.0007, 0.0001)	0.140		
Probability of 30-day follow-up after mental health discharge	LTSS users	−0.0313 (−0.1105, 0.0478)	0.438	0.0067 (−0.0672, 0.0805)	0.859
	Non-LTSS users	−0.0380 (−0.0784, 0.0024)	0.065		
All-cause 30-day readmissions	LTSS users	0.0067 (−0.0251, 0.0385)	0.680	0.0278 (−0.0206, 0.0763)	0.260
	Non-LTSS Users	−0.0211 (−0.0560, 0.0137)	0.235		

ACSC = ambulatory care sensitive condition; ED = emergency department; LTSS = long-term services and supports.
NOTE: 95% confidence intervals in parenthesis.
SOURCE: RTI analysis of Medicare fee-for-service claims.

Tables D-11 and ***D-12*** show the differences in the cumulative demonstration effects on service utilization and quality of care measures for beneficiaries with SPMI, relative to the demonstration effects for those without SPMI.

Table D-11
Cumulative demonstration effect on service utilization measures for beneficiaries with SPMI versus beneficiaries without SPMI

Measure	Group	Demonstration effect relative to the comparison group	*p*-value	Difference in demonstration effect (SPMI versus non-SPMI)	*p*-value
Probability of inpatient admission	SPMI	0.0020 (−0.0008, 0.0048)	0.154	0.0020 (−0.0006, 0.0046)	0.133
	Non-SPMI	0.0001 (−0.0013, 0.0014)	0.940		
Probability of ED visit	SPMI	0.0023 (−0.0029, 0.0075)	0.384	0.0001 (−0.0049, 0.0051)	0.978
	Non-SPMI	0.0022 (0.0001, 0.0043)	0.036		
Physician E&M visits	SPMI	−0.0105 (−0.0507, 0.0296)	0.606	−0.0090 (−0.0541, 0.0361)	0.697
	Non-SPMI	−0.0016 (−0.0322, 0.0290)	0.919		
Probability of SNF admission	SPMI	0.0005 (−0.0010, 0.0021)	0.524	0.0007 (−0.0005, 0.0019)	0.252
	Non-SPMI	−0.0002 (−0.0008, 0.0004)	0.543		

E&M = evaluation and management; ED = emergency department; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.
NOTE: 95% confidence intervals in parenthesis.
SOURCE: RTI analysis of Medicare fee-for-service claims.

Table D-12
Cumulative demonstration effects on quality of care measures for beneficiaries with SPMI versus beneficiaries without SPMI

Measure	Group	Demonstration effect relative to the comparison group	*p*-value	Difference in demonstration effect (SPMI versus non-SPMI)	*p*-value
Preventable ED visits	SPMI	0.0068 (0.0024, 0.0112)	0.002	0.0058 (0.0015, 0.0100)	0.007
	Non-SPMI	0.0010 (−0.0006, 0.0027)	0.202		
Probability of ACSC admission, overall	SPMI	0.0003 (−0.0004, 0.0010)	0.401	0.0003 (−0.0005, 0.0011)	0.432
	Non-SPMI	0.0000 (−0.0004, 0.0004)	0.986		
Probability of ACSC admission, chronic	SPMI	0.0002 (-0.0003, 0.0008)	0.437	0.0002 (−0.0004, 0.0008)	0.504
	Non-SPMI	0.0000 (−0.0003, 0.0003)	0.965		
All-cause 30-day readmissions	SPMI	−0.0171 (−0.0496, 0.0155)	0.304	−0.0212 (−0.0603, 0.0179)	0.288
	Non-SPMI	0.0041 (−0.0178, 0.2604)	0.713		

ACSC = ambulatory care sensitive condition; ED = emergency department; SPMI = serious and persistent mental illness.
NOTE: 95% confidence intervals in parenthesis.
SOURCE: RTI analysis of Medicare fee-for-service claims.

D.1 Service Use by Demographic Characteristics of Eligible Beneficiaries

To examine any differences in racial and ethnic groups, ***Figures D-1, D-2***, and ***D-3*** provide month-level results for five settings of interest for Colorado eligible beneficiaries: inpatient admissions, ED visits (non-admit), hospice admissions, primary care E&M visits, and outpatient therapy (physical therapy, occupational therapy, and speech therapy visits). Results across these five settings are displayed using three measures: percentage with any use of the respective service, counts per 1,000 demonstration eligible beneficiaries with any use of the respective service, and counts per 1,000 demonstration eligible beneficiaries.

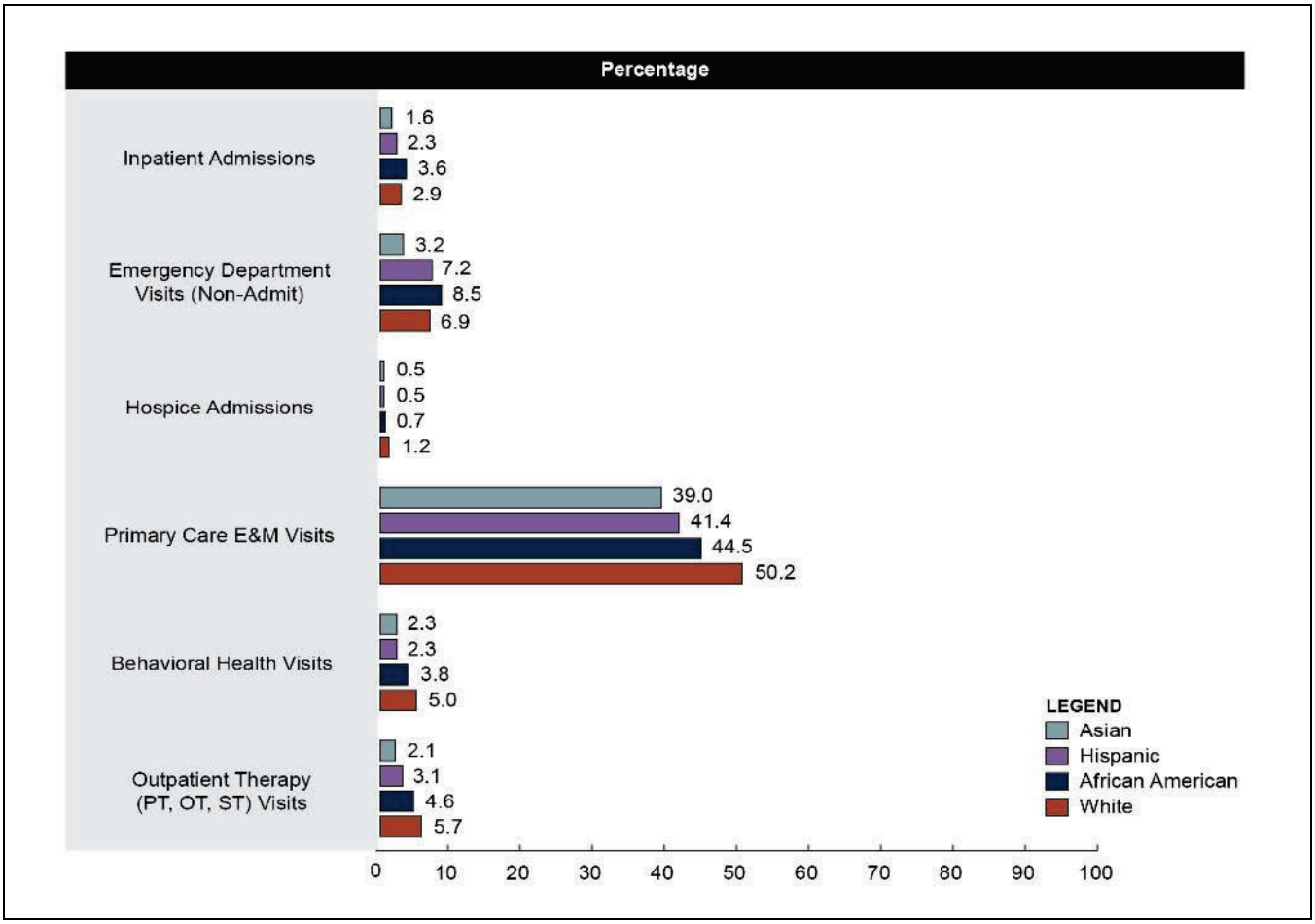
Figure D-1 presents the percentage of use of selected Medicare services. African American beneficiaries had slightly higher inpatient admissions and ED visits, relative to other racial categories. A higher percentage of White beneficiaries had monthly primary care visits, relative to other races. White beneficiaries also received more behavioral health visits, outpatient therapy visits and hospice admissions, compared to other races.

Regarding counts of services used among users of each respective service, as presented in ***Figure D-2***, there were limited differences across racial groups for inpatient admissions, ED visits, and hospice use. However, African American and White beneficiaries had slightly more primary care E&M and behavioral health visits relative to other racial groups in months when

there was any use, whereas White beneficiaries had the highest number of outpatient therapy visits.

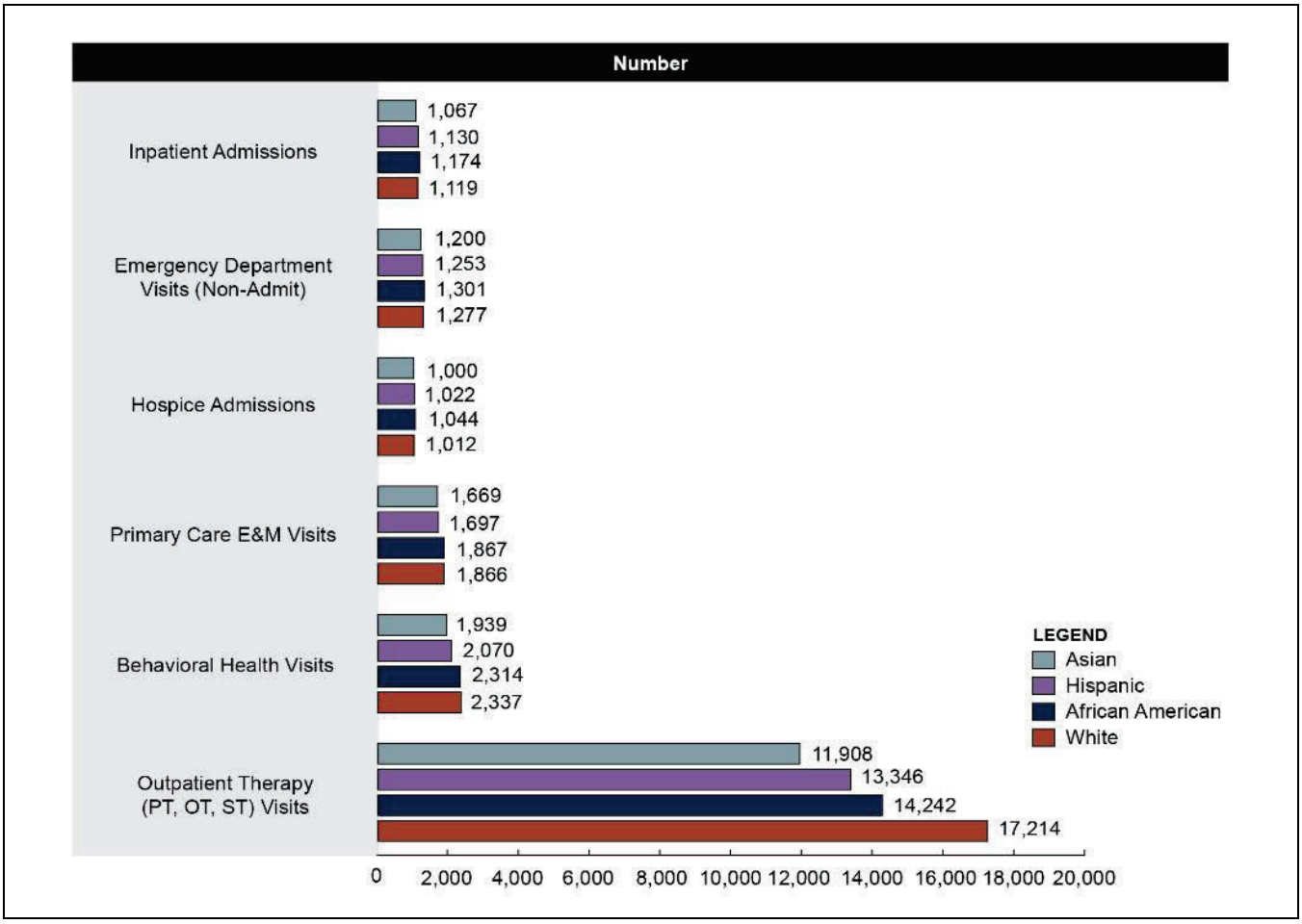
Figure D-3 presents counts of services across all Colorado demonstration eligible beneficiaries regardless of having any use of the respective services. When looking at use for all eligible beneficiaries in all eligible months, the results are different from those of users of services in ***Figure D-2***. African American beneficiaries had more inpatient admissions and ED visits relative to the other racial groups. White beneficiaries received more hospice admissions, primary care E&M visits, behavioral health visits, and outpatient therapy visits relative to the other racial groups.

Figure D-1
Percent with use of selected Medicare services



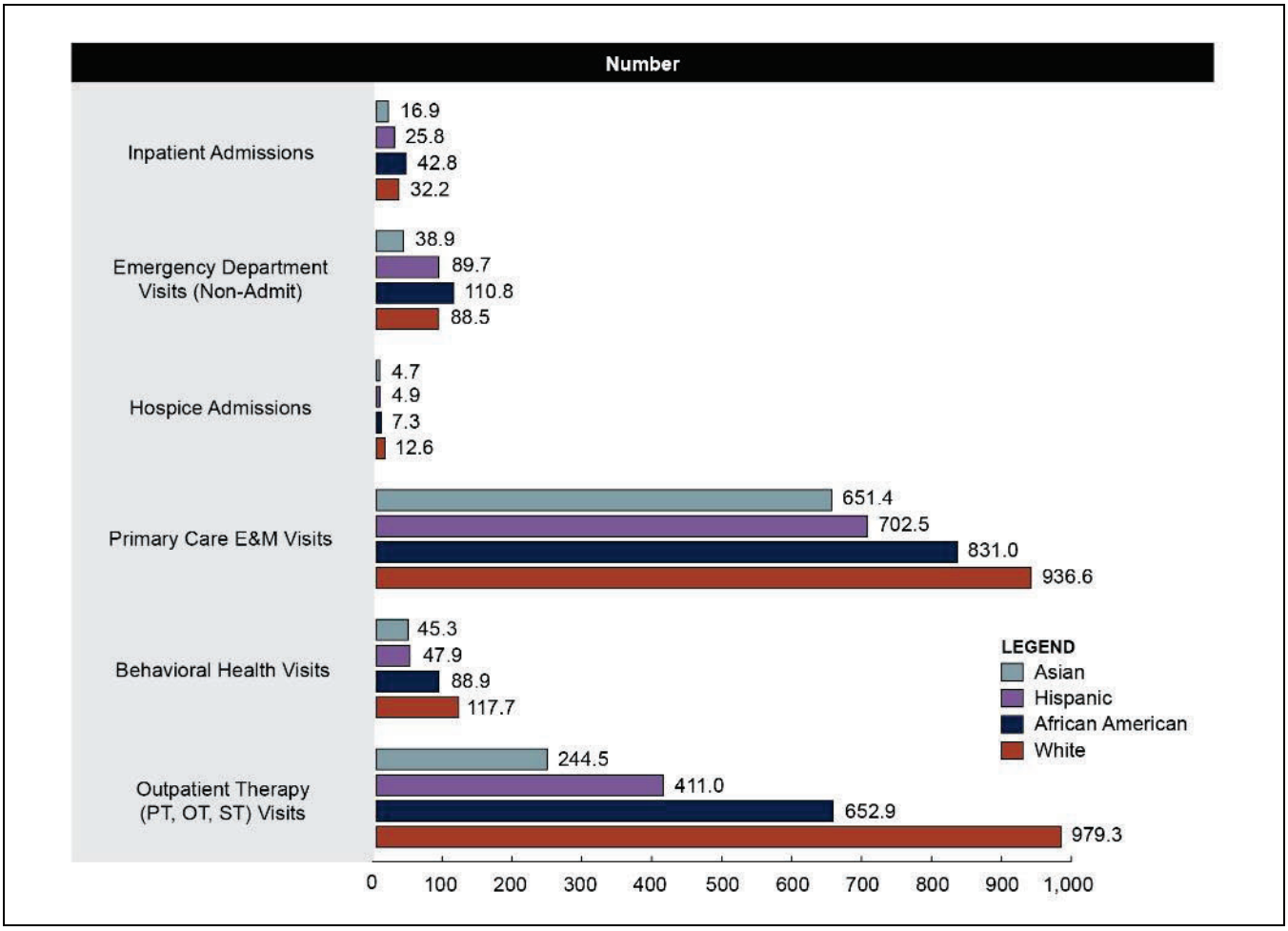
E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

Figure D-2
Service use among all demonstration eligible beneficiaries with use of service per 1,000 user months



E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

Figure D-3
Service use among all demonstration eligible beneficiaries per 1,000 eligible months

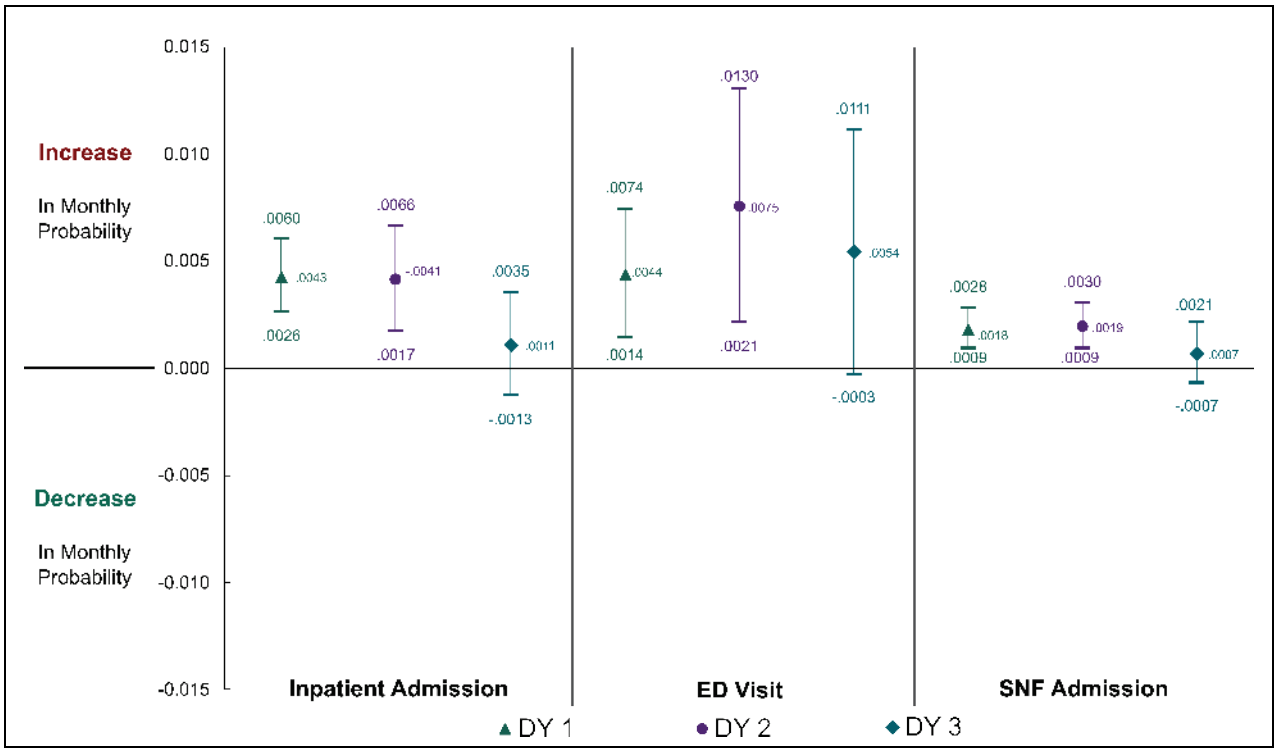


E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

Figures D-4 through ***D-9*** show the annual effect of the demonstration on the demonstration eligible population with LTSS use on all service utilization and quality of care outcomes, relative to the comparison group.

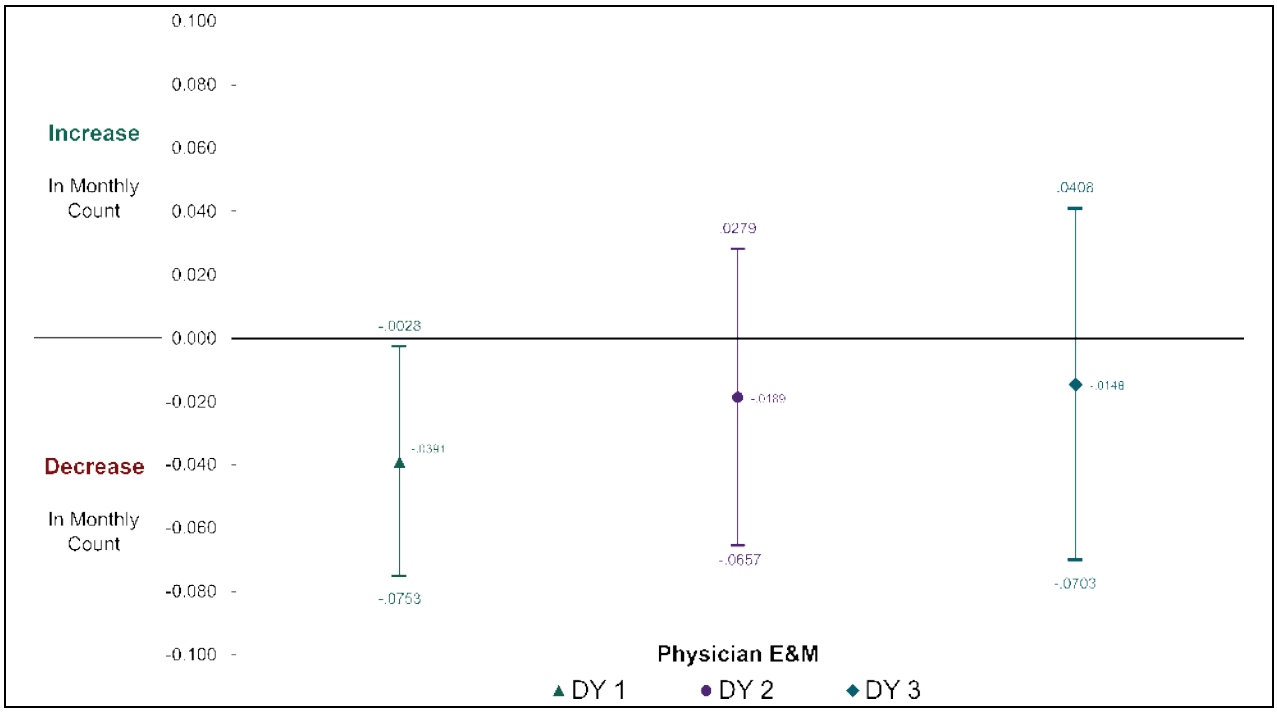
- Among LTSS users, the Colorado demonstration increased the probability of inpatient admissions, ED visits, and SNF admissions across demonstration years 1 and 2, and decreased the count of physician E&M visits in demonstration year 1, relative to LTSS users in the comparison group (***Figure D-4*** and ***Figure D-5***).

Figure D-4
Annual demonstration effects on inpatient admissions, ED visits, and SNF admissions for beneficiaries with LTSS use, September 1, 2014–December 31, 2017



DY = demonstration year; ED = emergency department; LTSS = long-term services and supports; SNF = skilled nursing facility.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

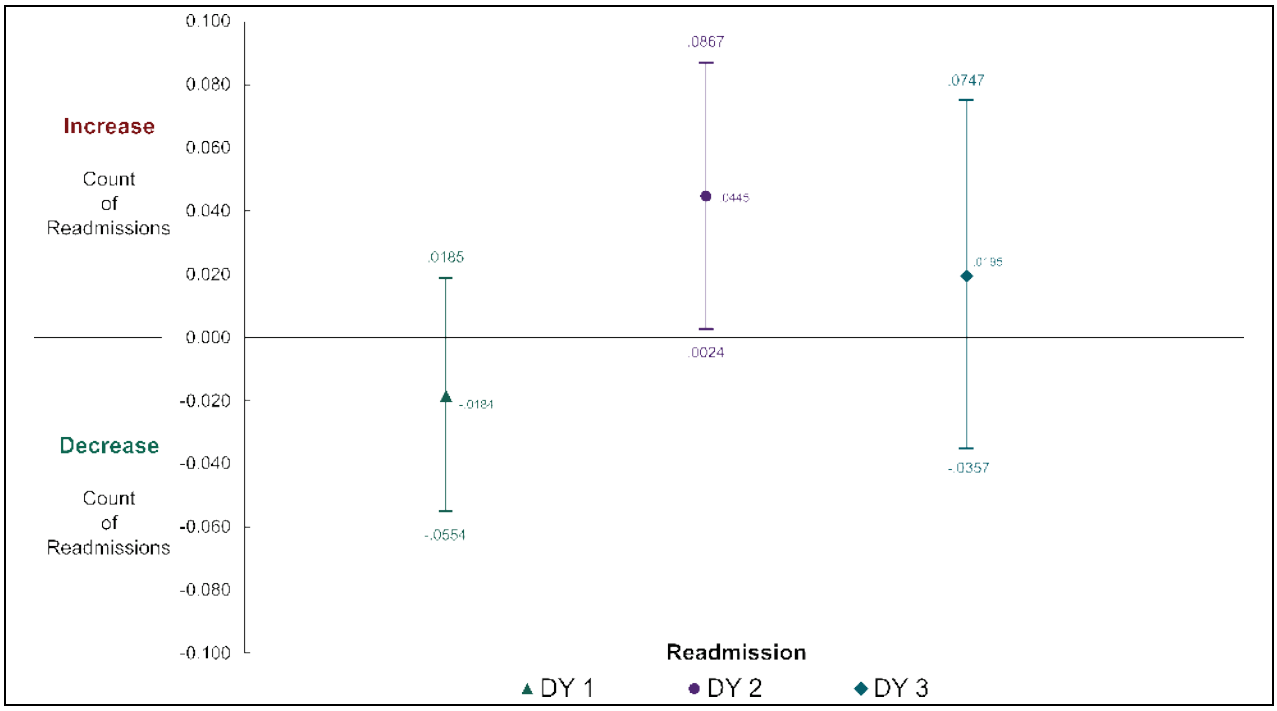
Figure D-5
Annual demonstration effects on physician visits for beneficiaries with LTSS use, September 1, 2014–December 31, 2017



DY = demonstration year; E&M = evaluation and management; LTSS = long-term services and supports.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

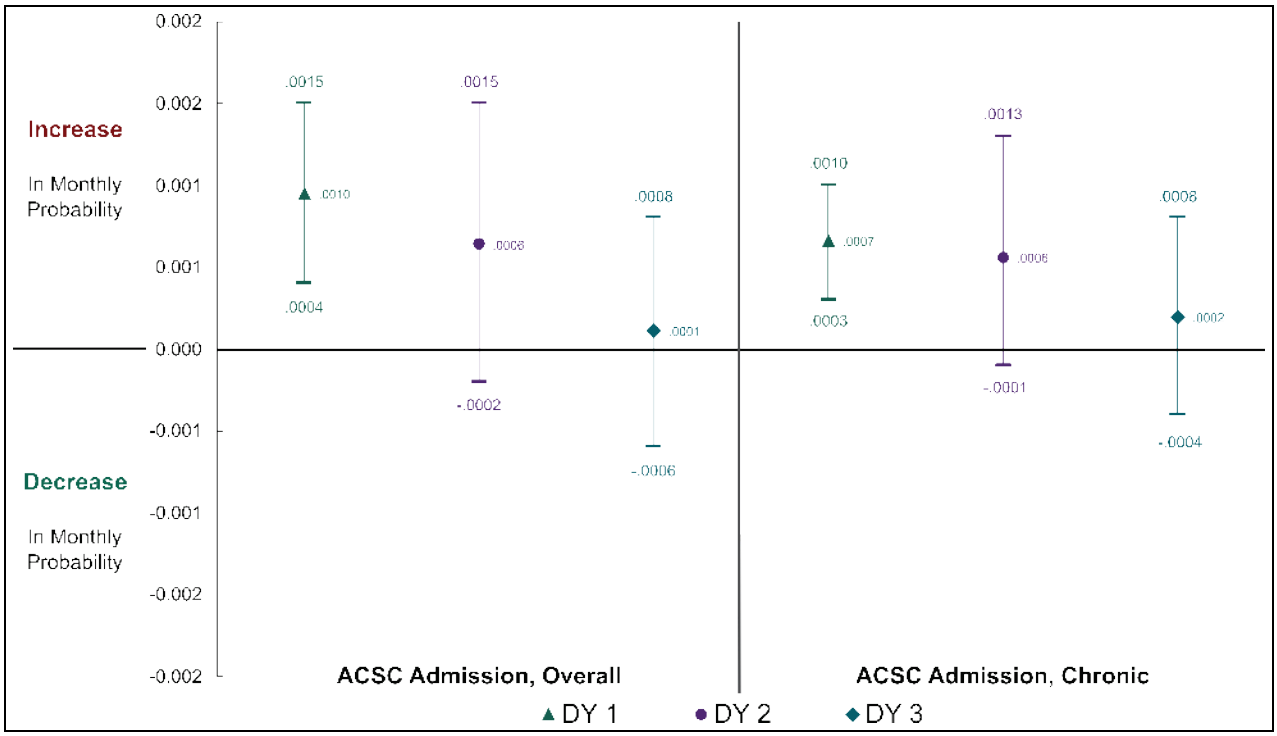
- Among LTSS users, the Colorado demonstration increased the count of all-cause 30-day readmissions in demonstration year 2, the probability of ACSC admissions (overall and chronic) in demonstration year 1, and the number of preventable ED visits in all 3 demonstration years, relative to LTSS users in the comparison group (***Figure D-6*** through ***Figure D-9***).

Figure D-6
Annual demonstration effects on the annual count of 30-day readmissions for beneficiaries with LTSS use, September 1, 2014–December 31, 2017



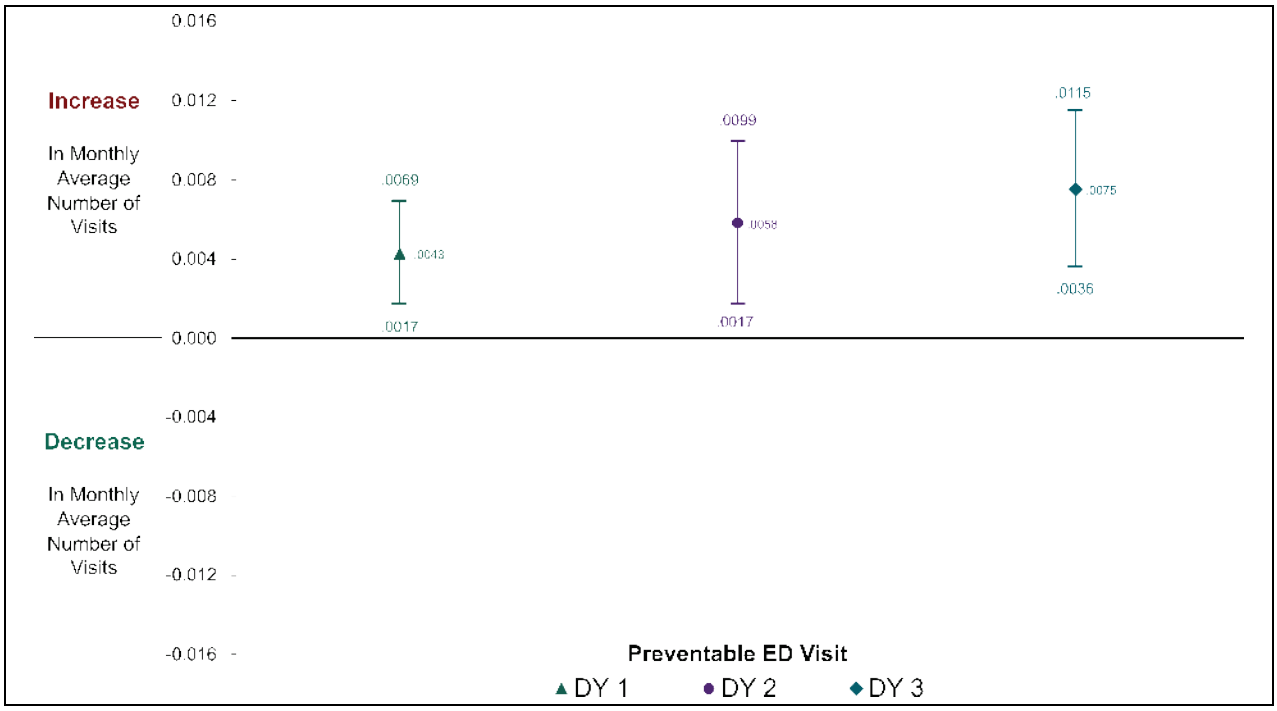
DY = demonstration year; LTSS = long-term services and supports.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-7
Annual demonstration effects on the monthly probability of ACSC admissions (overall and chronic) for beneficiaries with LTSS use, September 1, 2014–December 31, 2017



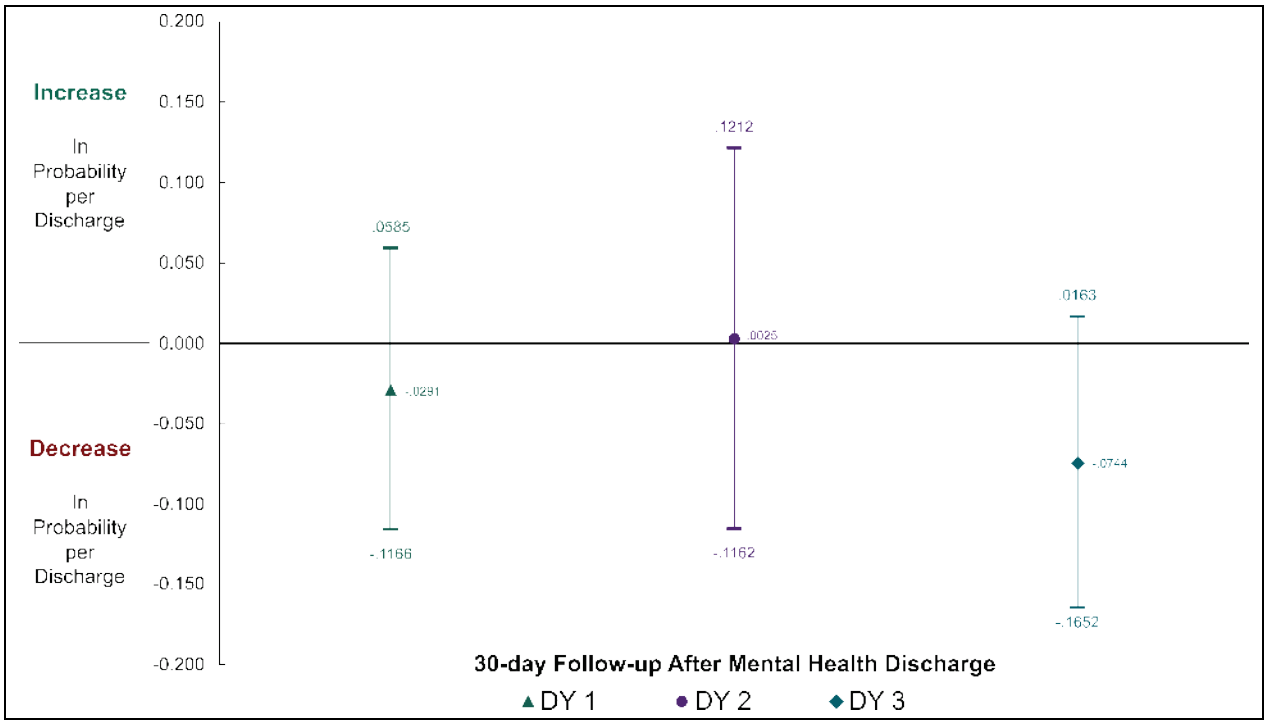
ACSC = ambulatory care sensitive condition; DY = demonstration year; LTSS = long-term services and supports.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-8
Annual demonstration effects on the number of preventable ED visits for beneficiaries with LTSS use, September 1, 2014–December 31, 2017



DY = demonstration year; ED = emergency department; LTSS = long-term services and supports.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-9
Annual demonstration effects on the probability of 30-day follow-up post mental health discharge for beneficiaries with LTSS use, September 1, 2014–December 31, 2017

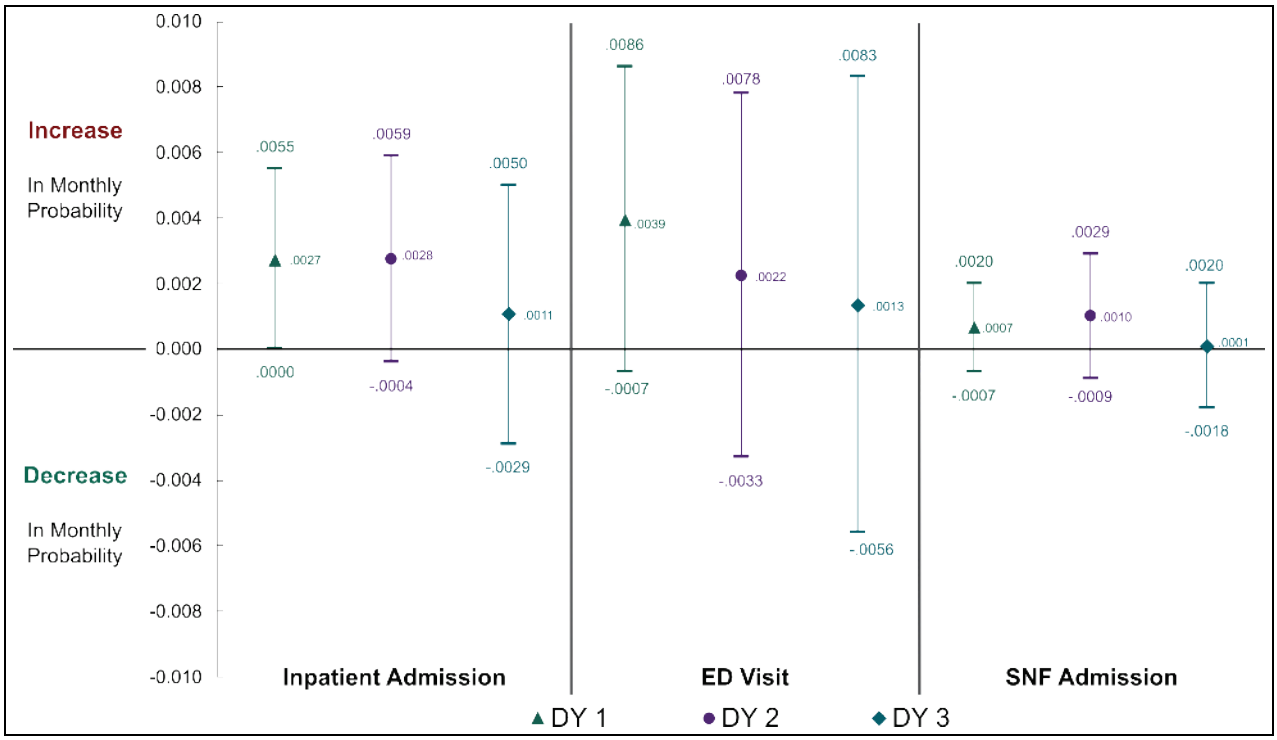


DY = demonstration year; LTSS = long-term services and supports.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figures D-10 through ***D-14*** show the annual effect of the demonstration on the demonstration eligible population with SPMI on all service utilization and quality of care outcomes, relative to the comparison group.

- Among those with an SPMI, the Colorado demonstration had no significant impact on the probabilities of inpatient admissions, ED visits, or SNF admissions in any of the demonstration years, relative to those with an SPMI in the comparison group (***Figure D-10***).

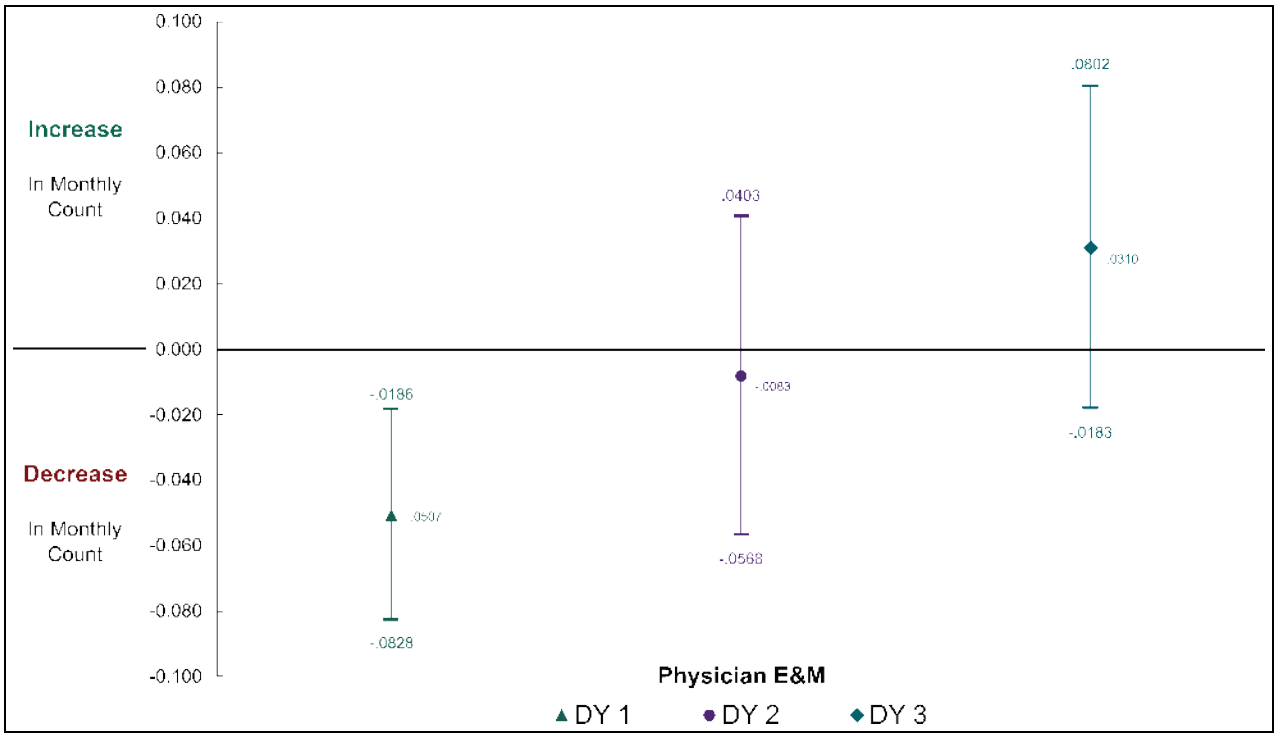
Figure D-10
Annual demonstration effects on inpatient admissions, ED visits, and SNF admissions for beneficiaries with SPMI, September 1, 2014–December 31, 2017



DY = demonstration year; ED = emergency department; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

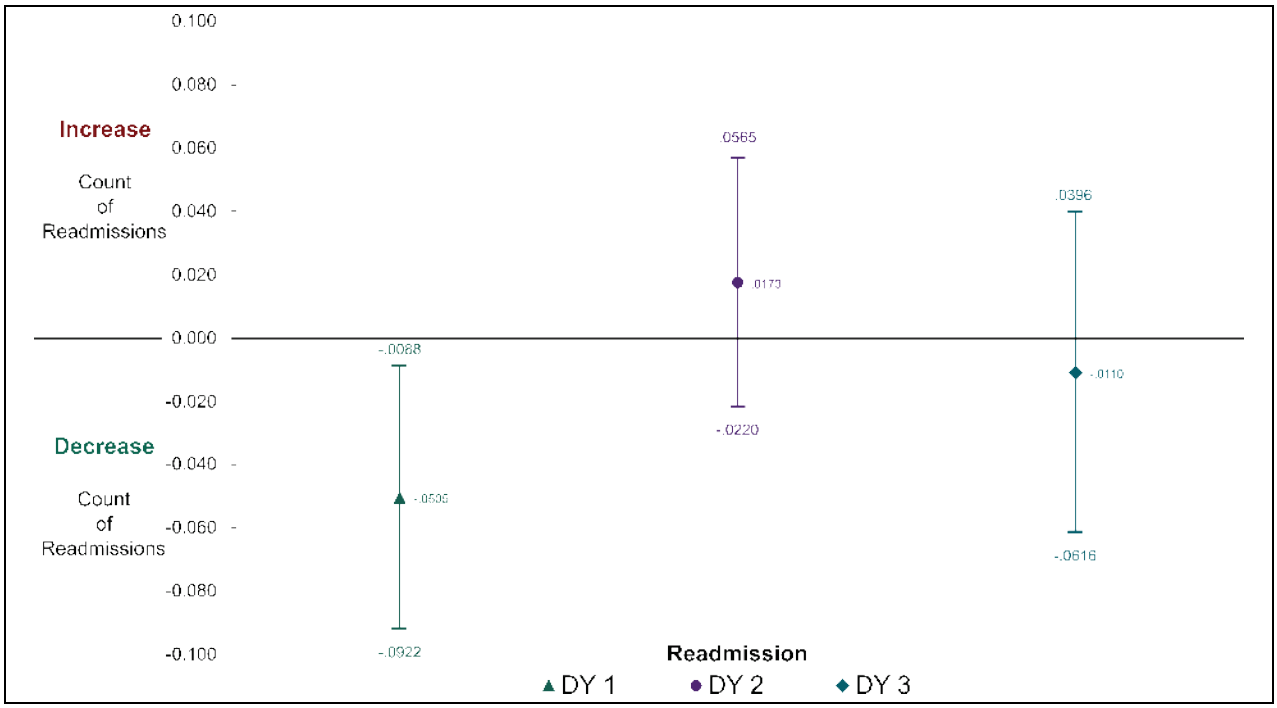
- Among those with an SPMI, the Colorado demonstration decreased the count of physician E&M visits in demonstration year 1, relative to those with an SPMI in the comparison group (***Figure D-11***).
- Among those with an SPMI, the Colorado demonstration decreased 30-day readmissions in demonstration year 1, and increased preventable ED visits in all 3 demonstration years, relative to those with an SPMI in the comparison group (***Figure D-12*** and ***Figure D-14***). There was no impact of the demonstration on ACSC admissions (overall or chronic) in any of the 3 demonstration years (***Figure D-13***).

Figure D-11
Annual demonstration effects on physician visits for beneficiaries with SPMI, September 1, 2014–December 31, 2017



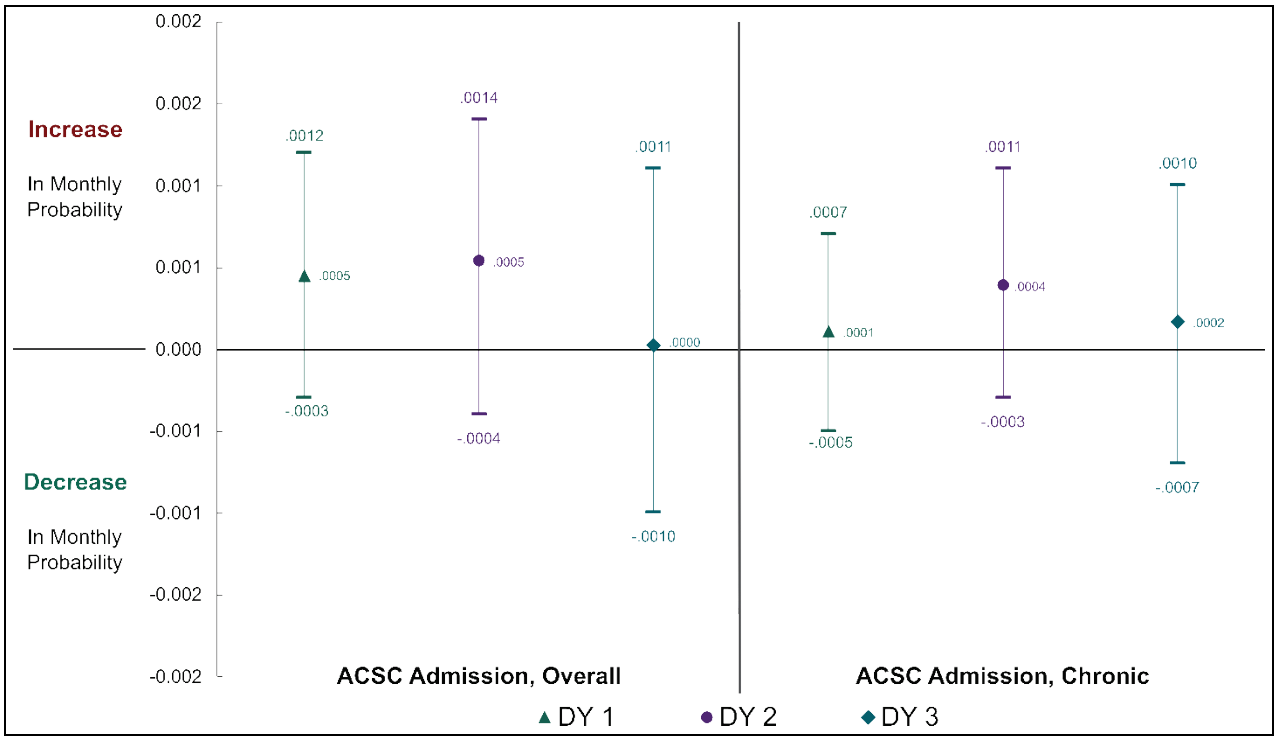
DY = demonstration year; E&M = evaluation and management; SPMI = serious and persistent mental illness.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-12
Annual demonstration effects on the annual count of 30-day readmissions for beneficiaries with SPMI, September 1, 2014–December 31, 2017



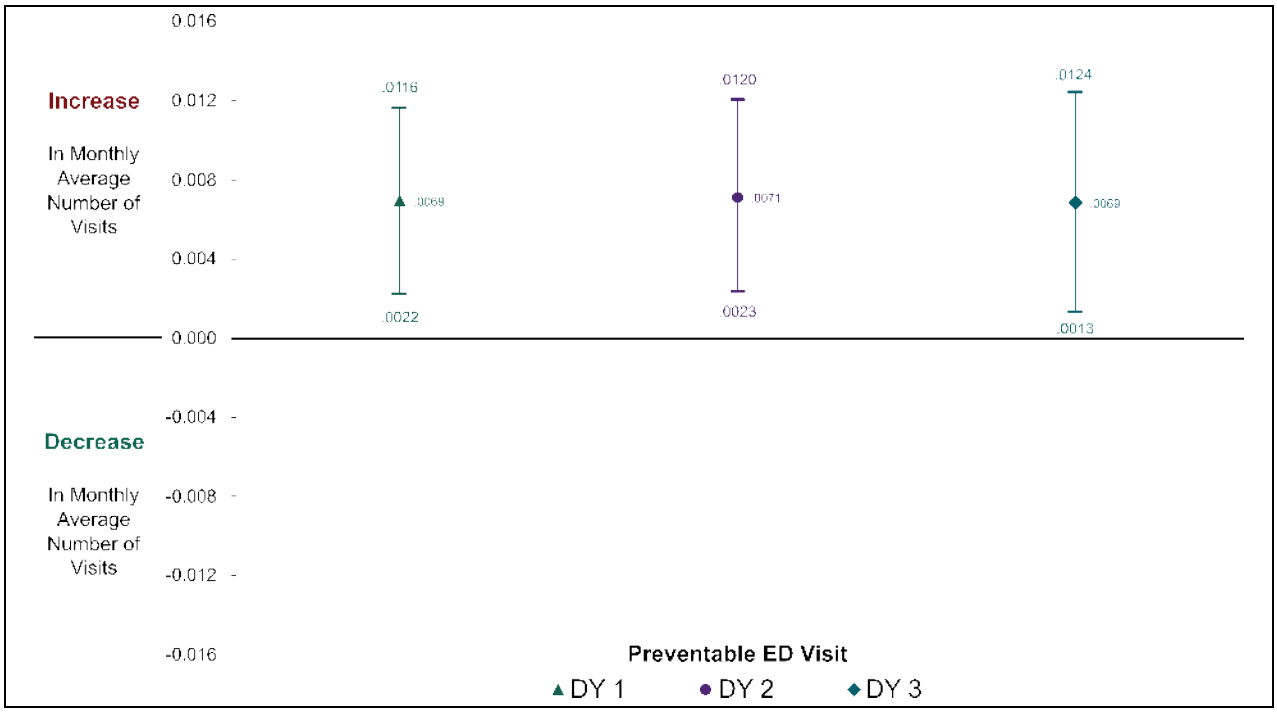
GDY = demonstration year; SPMI = serious and persistent mental illness.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-13
Annual demonstration effects on the monthly probability of ACSC admissions (overall and chronic) for beneficiaries with SPMI, September 1, 2014–December 31, 2017



ACSC = ambulatory care sensitive condition; DY = demonstration year; SPMI = serious and persistent mental illness.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Figure D-14
Annual demonstration effects on the number of preventable ED visits for beneficiaries with SPMI September 1, 2014–December 31, 2017



ED = emergency department; DY = demonstration year; SPMI = serious and persistent mental illness.
SOURCE: RTI International analysis of Medicare fee-for-service claims.

Appendix E

Cost Savings Methodology

Two adjustments were made to the monthly Medicare expenditures. The first was to account for Medicare sequestration reductions starting April 1, 2013. The second was the average geographic adjustment to ensure that observed expenditure variations were not caused by differences in Medicare payment policies in different areas of the country. ***Table E-1*** summarizes each adjustment in greater detail.

After applying all adjustments, beneficiary-level monthly expenditures were Winsorized (capped) at the 99th percentile across all comparison group and demonstration group observations to limit the effect of extreme outliers in the data. ***Table E-2*** provides the results of our analyses for each demonstration year.

Table E-1
Adjustments to Medicare expenditures variable

Adjustment description	Reason for adjustment	Adjustment detail
Medicare sequestration payment reductions	Under sequestration, Medicare payments were reduced by 2% starting April 1, 2013. Because the predemonstration period includes months prior to April 1, 2013, it is necessary to apply the adjustment to these months of data.	Reduced FFS claim payments incurred before April 2013 by 2%.
Average geographic adjustments (AGAs)	FFS claims also reflect geographic payment adjustments. To ensure that change over time is not related to differential change in geographic payment adjustments, payments were "unadjusted" using the appropriate county-specific AGA factor.	Medicare payments were divided by the appropriate county-specific full AGA factor for each year.

FFS = fee-for-service.

Table E-2
Demonstration effects on total Medicare expenditures among eligible beneficiaries—Difference-in-differences regression results

Period	Adjusted coefficient DinD	p-value	95% confidence interval	90% confidence interval
Cumulative, Demo Years1–3 (September 2014–December 2017)	6.46	0.7695	(−36.77, 49.7)	(−29.82, 42.75)
Demo Year 1 (September 2014–December 2015)	1.78	0.9378	(−42.94, 46.5)	(−35.75, 39.31)
Demo Year 2 (January 2016–December 2016)	24.17	0.2364	(−15.83, 64.17)	(−9.40, 57.74)
Demo Year 3 (January 2017–December 2017)	-6.97	0.8642	(-86.88, 72.93)	(-74.03, 60.09)

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare fee-for-service claims (program: corar067).

E.1 Model Covariates

Model covariates included the following variables, which were also included in the comparison group selection process. Variables were included in the model after variance inflation factor testing.

Demographic variables included in the savings model were:

- gender
- race
- disabled
- end-stage renal disease status
- HCC risk score

Area-level variables included in the savings model were:

- Medicare spending per Medicare-Medicaid enrollee aged 19 or older
- Medicaid-to-Medicare FFS index for all services
- Medicaid spending per Medicare-Medicaid enrollee aged 19 or older
- proportion of Medicare-Medicaid enrollees aged 65 or older using NFs
- distance to nearest hospital
- distance to nearest nursing home
- proportion of Medicare-Medicaid enrollees aged 65 or older using personal care
- proportion of Medicare-Medicaid enrollees aged 19 or older with Medicaid managed care
- physicians per 1,000 population

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