FINANCIAL ALIGNMENT INITIATIVE

# South Carolina Healthy Connections Prime Second Evaluation Report

January 2022

FINANCIAL ALIGNMENT INITIATIVE
SOUTH CAROLINA HEALTHY CONNECTIONS PRIME
SECOND EVALUATION REPORT

**RTI International**

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# Acknowledgments

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# Glossary of Acronyms

| | |
|---|---|
| ACL | Administration for Community Living |
| ACSC | Ambulatory Care Sensitive Condition |
| ADRD | Alzheimer's Disease and Related Dementias |
| CAHPS | Consumer Assessment of Healthcare Providers and Systems |
| CMS | Centers for Medicare & Medicaid Services |
| CMT | Contract Management Team |
| CTM | Complaint Tracking Module |
| DinD | Difference-in-differences |
| DMH | South Carolina's Department of Mental Health |
| D-SNP | Dual Eligible Special Needs Plan |
| ED | Emergency Department |
| EQRO | External Quality Review Organization |
| FAI | Financial Alignment Initiative |
| FFS | Fee-for-service |
| HCBS | Home and community-based services |
| HCC | Hierarchical Condition Category |
| HCP | Healthy Connections Prime |
| HEDIS | Healthcare Effectiveness Data and Information Set |
| HRA | Health risk assessment |
| ICP | Individual care plan |
| ICT | Interdisciplinary Care Team |
| IRE | Medicare Independent Review Entity |
| ITT | Intent-to-treat |
| LTC | Long term care |

| | |
|---|---|
| LTSS | Long-term services and supports |
| MA | Medicare Advantage |
| MARx | Medicare Advantage and Part D Inquiry System |
| MAXIMUS | the enrollment broker for Healthy Connections Prime |
| MDS | Minimum Data Set |
| MLR | Medical loss ratio |
| MMCO | Medicare-Medicaid Coordination Office |
| MMP | Medicare-Medicaid Plan |
| MOU | Memorandum of Understanding |
| NF | Nursing facility |
| OSA | Office for the Study of Aging at the University of South Carolina |
| PHE | Public Health Emergency |
| PMPM | Per member per month |
| PS | Propensity score |
| SCDHHS | South Carolina Department of Health and Human Services |
| SDRS | State Data Reporting System |
| SNF | Skilled Nursing Facility |
| SPMI | Serious and persistent mental illness |
| VBP | Value-based purchasing |

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# Executive Summary

The Medicare-Medicaid Coordination Office 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.

South Carolina and CMS launched the Healthy Connections Prime (HCP) demonstration in February 2015 to integrate care for Medicare-Medicaid beneficiaries throughout the State. Four health plans were competitively selected by the State and CMS to operate Medicare-Medicaid Plans (MMPs) with one departing the demonstration in August 2016. MMPs received capitated payments from CMS and the State to finance all Medicare and Medicaid services. MMPs also provide care coordination, a new palliative care benefit, and flexible benefits.

Beneficiaries who are 65 years or older and living in the community were eligible for the demonstration, which operated in 44 of the 46 counties in the State as of January 2021. Participants in three home and community-based services (HCBS) waiver groups were also eligible to participate.



**South Carolina Coverage Area**
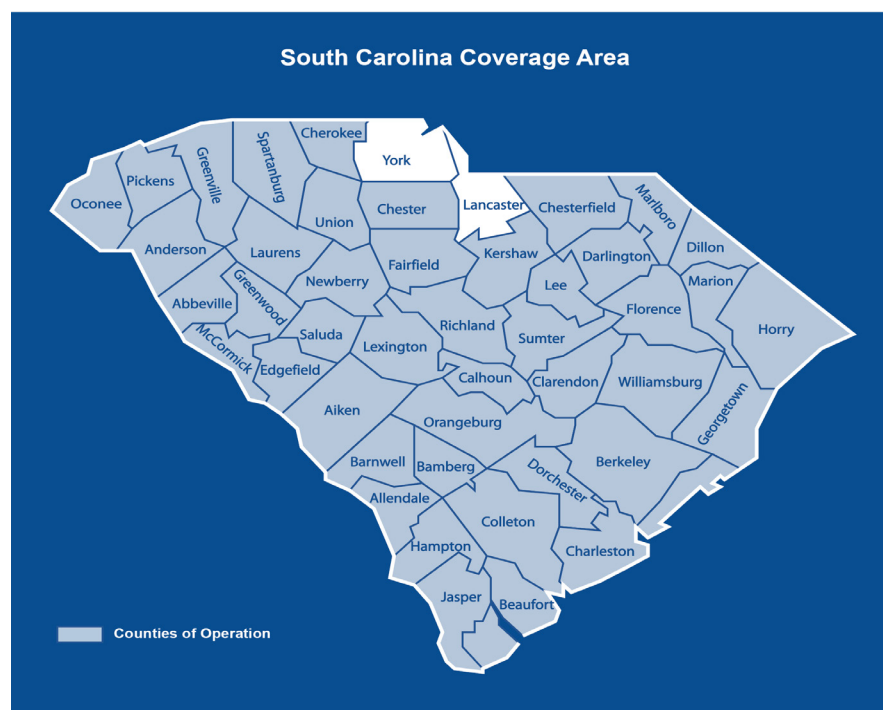
CMS contracted with RTI International to monitor demonstration implementation and to evaluate its impact on beneficiary experience, quality, utilization, and cost. The evaluation includes individual State-specific reports. This second evaluation report for the South Carolina demonstration describes implementation of the HCP demonstration and early analysis of the demonstration's impacts. The report includes findings from qualitative data for 2018 through 2020, with key qualitative information through early 2021 and quantitative results for February 2015 through December 2018. We used a variety of data sources to prepare this report (see *Appendix A*).

## Highlights

HCP began on February 1, 2015, and was due to expire on December 31, 2018. In July 2018, CMS, the State, and all three MMPs agreed to extend the demonstration until December 31, 2020 (CMS, 2018). It was extended again through December 31, 2023 (CMS, 2020). As of January 2021, the demonstration was operating in all but two counties. Despite experiencing some challenges during the current reporting period (2018–2020), including the COVID-19 public health emergency (PHE), overall, stakeholders viewed HCP as a success.

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|---|---|
| **Changes in Demonstration Design** | The three-way contract was amended twice during demonstration years 3 through 5. In July 2018, CMS and the State amended the contract to include major operational, care coordination, and financial changes and extended the demonstration until December 31, 2020. A July 2020 contract amendment extended the demonstration until December 31, 2023, and included minor changes. |
| **Integration of Medicare and Medicaid** | The turnover in South Carolina Department of Health and Human Services (SCDHHS) leadership staff responsible for HCP oversight was reported as a cause of concern. |
| | Plans reported success bringing on new providers but faced challenges contracting with certain specialty providers, such as dermatologists and ophthalmologists. |
| **Eligibility and Enrollment** | Enrollment steadily increased from 11,335 beneficiaries in January 2018 to 15,933 beneficiaries in December 2020, or 38 percent of the 41,799 eligible beneficiaries. This growth in enrollment was in large part due to the passive enrollment waves of Medicare Advantage enrollees in January 2019, July 2019, and January 2020. |
| | Plans and stakeholders reported aggressive marketing by Medicare Advantage plan representatives during the first passive enrollment wave. They said that Medicare Advantage brokers were financially incentivized to encourage enrollees to opt-out of HCP and enroll in a Medicare Advantage plan. |

| Care Coordination | The 2018 contract amendment included major changes to care coordination. Timeframes for comprehensive assessments were streamlined across new enrollees to within 90 days rather than at different intervals by enrollee risk level. Assessment completion also shifted from face-to-face completion for all enrollees to a choice between telephonic-based or face-to-face comprehensive assessments for low and moderate-risk enrollees. |
| | The turnover rate for care coordinators decreased from 29.4 percent in 2015 to 14.5 percent in 2020 despite an increase in average caseload. |
| Stakeholder Engagement | South Carolina's stakeholder community remained actively involved in the demonstration through a variety of activities between 2018 and 2020. |
| | In late 2020, stakeholders were optimistic about the possibility of a contract amendment that was expected to extend the demonstration's eligible population to include those under age 65 (ages 21–64) in 2022.[1] |
| Financing and Payment | MMPs reported concerns about the Medicaid capitation rates in 2019 and the delay in assignments to the appropriate rate. In 2020, while the delay in Medicaid rate assignment was still a concern, MMPs reported that the rates were adequate. |
| | MMPs noted that the delays in correct Medicaid rate-cell assignments are still a challenge, but that a monthly reconciliation of these payments with the State improved these delays in 2020. |
| | MMPs reported some challenges in submitting encounter data related to encounters for Medicaid covered services. |

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[1] In spring 2021, the State decided to halt population changes for the demonstration until it has a long-term MLTSS strategy in place. We will discuss demonstration changes that occur in 2021 in the next evaluation report.

| | |
|---|---|
| **Quality of Care** | The 2018 contract amendment modified some reporting requirements and quality withhold measures, in part to address MMP concerns of administration and reporting burden. |
| | All three MMPs received 100 percent of quality withhold payments in 2017 (demonstration year 2), and two of the three MMPs received 100 percent of quality withhold payments in 2018 (demonstration year 3). |
| **Beneficiary Experience** | CAHPS survey results and individual beneficiary interview results indicated that the majority of enrollees were satisfied with their HCP plan. |
| | Stakeholders reported few challenges with access to services between 2018 and 2020. However, beneficiaries had mixed experiences with access to transportation. |
| **Demonstration Impact on Service Utilization and Quality of Care** | As shown in **Table ES-1,** over the course of the first 3 demonstration years, the number of monthly physician visits increased and the probability of any inpatient admission decreased among all demonstration eligible beneficiaries, relative to the comparison group. However, the probability of having any long-stay nursing facility (NF) use increased, relative to the comparison group. There was no demonstration impact on emergency department (ED) visits, skilled nursing facility (SNF) admission, preventable ED visits, ambulatory care sensitive condition (ACSC) admission (overall and chronic), 30-day all-cause readmissions, or 30-day follow-up after mental health discharge. |
| | The demonstration impacted the population who receive long-term services and supports (LTSS) differently than the non-LTSS population (**Table ES-1**). The demonstration effect for those with LTSS use was an increase in the probability of inpatient admissions, the probability of SNF admissions, and the number of physician visits, relative to the demonstration effect for the non-LTSS population. |

| Demonstration Impact on Service Utilization and Quality of Care (continued) | **Table ES-1** shows the demonstration also impacted beneficiaries with serious and persistent mental illness (SPMI) differently than those without SPMI. The demonstration effect for those with an SPMI was a decrease in the probability of inpatient admissions and the probability of SNF admissions, relative to the demonstration effect for those without SPMI. |
|---|---|
| **Demonstration Impact on Cost Savings** | As summarized in **Table ES-2**, relative to the comparison group, the demonstration was not associated with statistically significant gross savings or losses to the Medicare program during demonstration years 1 and 2, [2] although it was associated with a statistically significant increase in Medicare costs during demonstration year 3. However, the cumulative impact estimate over all three demonstration years was not statistically significant. The demonstration was associated with statistically significant increased costs to the Medicaid program during demonstration years 2 and 3.[3] |
| | The Medicare savings calculations are based on Medicare Parts A and B spending either through fee-for-service or MA/HCP capitated rates. The Medicaid calculations are based on Medicaid fee-for-service and capitated payments. These estimates do not include Medicare Part D expenditures or Medicaid prescription drug costs, nor do they consider the actual payments for services paid by the HCP plans. |

    **Table ES-1** summarizes the cumulative impact estimates for the South Carolina demonstration during demonstration years 1–3 (demonstration start through 2018), relative to the comparison group. It also shows the difference in the demonstration effect for LTSS users relative to non-LTSS users, and for beneficiaries with SPMI relative to those without SPMI.

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[2] The demonstration year 1 effect estimate differs from the results shown in the First Evaluation Report. This difference is due to changes in our methodology. See **Appendix F** for more details.

[3] The Medicaid costs results should be interpreted with caution. For additional details about the data limitations of this analysis, please see **Appendix F**.

**Table ES-1**
**Summary of South Carolina cumulative demonstration impact estimates for demonstration period**
**(February 1, 2015–December 31, 2018)**

| Measure | Demonstration effect (all eligible beneficiaries) | Difference in demonstration effect (LTSS versus non-LTSS) | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|
| Probability of inpatient admission | Decrease[G] | Increase[R] | Decrease[G] |
| Probability of ambulatory care sensitive condition (ACSC) admission, overall | NS | NS | NS |
| Probability of ACSC admission, chronic | NS | NS | NS |
| Count of all-cause 30-day readmissions | NS | NS | NS |
| Probability of emergency department (ED) visits | NS | NS | NS |
| Count of preventable ED visits | NS | NS | NS |
| Probability of 30-day follow-up after mental health discharge | NS | NS | N/A |
| Probability of skilled nursing facility (SNF) admission | NS | Increase[R] | Decrease[G] |
| Probability of any long-stay nursing facility use | Increase[R] | N/A | N/A |
| Count of physician evaluation and management visits | Increase[G] | Increase[G] | 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. For additional details on results, see **Tables E-1, E-2**, and **E-3** in **Appendix E**. Green and red color-coded shading indicates where the direction of the difference-in-differences (DinD) estimate was favorable or unfavorable; green indicates favorable, and 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 "Demonstration effect (all 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 special population of interest (e.g., LTSS users) and another for the rest of the eligible population (e.g., non-LTSS users)—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 special population of interest compared to the rest of the eligible population. For a given outcome, the result shown for the entire eligible population and that separately for the special population can be different from each other.

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

*Table ES-2* summarizes the demonstration effects on total expenditures for all eligible beneficiaries, including the cumulative effect over the three-year demonstration period and the annual effect for each demonstration year for Medicare expenditures as well as the cumulative and annual effect estimates for Medicaid expenditures for demonstration years 2 and 3 (Medicaid data for demonstration 1 were incomplete and thus not analyzed).

**Table ES-2**
**Summary of South Carolina demonstration effects on total Medicare expenditures and on total Medicaid expenditures among all eligible beneficiaries (February 1, 2015–December 31, 2018)**

| Measure | Measurement period | Demonstration effect |
|---|---|---|
| Medicare Parts A and B cost | Cumulative (demonstration years 1–3) | NS |
| | Demonstration year 1 | NS |
| | Demonstration year 2 | NS |
| | Demonstration year 3 | Increase[R] |
| Medicaid cost | Cumulative (demonstration years 2–3) | Increase[R] |
| | Demonstration year 1 | N/A |
| | Demonstration year 2 | Increase[R] |
| | Demonstration year 3 | NS |

DinD = difference-in-differences; MMP = Medicare-Medicaid Plan; N/A = not applicable; NS = not statistically significant.
NOTES: Statistical significance is defined at the α = 0.05 level. For numeric estimates of the demonstration's effect on total Medicare expenditures, see *Figure 20* in *Section 6, Demonstration Impact on Cost Savings*. For numeric estimates of the demonstration's effect on total Medicaid expenditures, see *Figure 21* in *Section 6*. Red color coded shading indicates where the direction of the DinD estimate was unfavorable. To ensure accessibility for text readers and individuals with visual impairment, cells shaded red receive a superscript "R". In the column for "Demonstration effect," 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 specified measurement period. Demonstration year 1 is excluded from the Medicaid cost analysis because payments to the MMPs in South Carolina were not included in the T-MSIS data during the majority of demonstration year 1.
SOURCE: RTI analysis of Medicare and Medicaid claims (programs: 3050putexcel_SCDY3_Medicaid_regression.do; sc_dy3_1481_GLM.log)

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# 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) have created the Medicare-Medicaid Financial Alignment Initiative (FAI) to test, in partnerships with States, integrated care models for Medicare-Medicaid enrollees. The goal of the South Carolina demonstration is to develop person-centered care delivery models integrating the full range of medical, behavioral health, and long-term services and supports (LTSS) for Medicare-Medicaid enrollees, with the expectation that integrated delivery models would address the current challenges associated with the lack of coordination of Medicare and Medicaid benefits, financing, and incentives.

The First Evaluation Report includes extensive background information about the demonstration. This Second Evaluation Report provides implementation updates.

## 1.2    Purpose of this Report

CMS contracted with RTI International to monitor the implementation of the demonstrations under the FAI and to evaluate their impact on beneficiary experience, quality, utilization, and cost. In this report we include qualitative evaluation information for the calendar years 2018 through 2020 (demonstration years 3, 4, and 5, respectively), with relevant updates from early 2021. We provide updates to the first evaluation report in key areas, including enrollment, care coordination, beneficiary experience, and stakeholder engagement activities, and discusses the challenges, successes, and emerging issues identified during the reporting period. We present results on quality of care, service utilization, and costs for the period spanning February 1, 2015 to December 31, 2018.

## 1.3    Data Sources

We used a variety of data sources to prepare this report (see the following infographic). See *Appendix A, Data Sources* for additional detail.

## Data Sources

**KEY INFORMANT INTERVIEWS**

Site visit and key informant interviews

Quarterly monitoring calls with CMS and SCDHHS officials

**DEMONSTRATION DATA AND MATERIALS**

State Data Reporting System (SDRS) submissions

Demonstration policies, contracts, and other materials

**BENEFICIARY SATISFACTION DATA**

Medicare Advantage and Prescription Drug Plan Consumer Assessment of Healthcare Providers and Systems (CAHPS)

Individual beneficiary interviews conducted by another CMS contractor

**COMPLAINTS AND APPEALS DATA**

MMP data reported to SCDHHS and CMS

Complaint Tracking Module (CTM)

Medicare Independent Review Entity (IRE)

**QUALITY DATA**

State-specific quality measures

Medicare Healthcare Effectiveness Data and Information Set (HEDIS) measures

**SERVICE UTILIZATION DATA**

CMS administrative files

CMS Medicare claims and encounter data

Nursing Home Minimum Data Set

Medicare enrollment files

Medicaid enrollment files

Medicaid claims

Area Health and Resources Files

American Community Survey

**COST DATA**

CMS Medicare Advantage and Part D Inquiry System (MARx) data

Quality withhold repayments and risk corridor payments

Medicare Part A claims

Medicare Part B claims

Medicaid Analytic eXtract (MAX) claims

Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF)

# SECTION 2
# State Context and Demonstration Design

## 2.1    Overview of State Context

### 2.1.1    Managed Care Experience

As described in the First Evaluation Report, managed care was relatively new in the State and early in the demonstration providers were generally distrustful of contracting with managed care organizations, including the Medicare-Medicaid plans (MMPs). Individual providers, such as home health agencies and nursing facility (NF) owners, were particularly hesitant to engage with plans and often opted for single case contracts for an individual enrollee, rather than contracting more broadly with the MMP. As reported by the State, this shifted over time as providers became more familiar with Healthy Connections Prime (HCP).

### 2.1.2    HCBS Waivers

For individuals with disabilities or complex care needs, South Carolina operates nine HCBS waivers. Each waiver targets individuals with a unique set of disabilities and provides appropriate services to them. Beneficiaries participating in three of the nine waivers, the HIV/AIDS, Mechanical Ventilation Dependent, and Community Choices HCBS waivers, remain eligible to participate in the South Carolina demonstration. Beneficiaries from the remaining six HCBS waivers (Intellectual Disabilities and Related Disabilities, Head and Spinal Cord Injury, Community Supports, Medically Complex Children's, Pervasive Developmental Disorder, and Psychiatric Residential Treatment Facility Alternative Chance) are not eligible to participate in the demonstration (MOU, 2013).

### 2.1.3    Federal Funding

In September 2014, South Carolina received $4.5 million in Federal funds to support HCP planning and implementation. The State used these funds to contract vendors to assist with developing the demonstration. Federal funding for planning and implementation continued in the second demonstration year ($2.8 million) and the State contributed $0.9 million. No further Federal funds were provided to support HCP's planning and implementation. However, the State Long Term Care Ombudsman office, which functions as the demonstration's ombudsman or Prime Advocate, received Federal funding to support its role in the demonstration. Most recently, the Prime Advocate was awarded $388,992 for a 12-month period beginning in fall 2020 by CMS in collaboration with the Federal Administration for Community Living.

## 2.2    Changes in Demonstration Design

HCP is a capitated model demonstration in which the State of South Carolina, CMS, and MMPs entered into a three-way contract in 2015 to alleviate fragmentation and improve coordination of services for Medicare-Medicaid enrollees, enhance quality of care, and reduce costs for both the State and the Federal government. The design of the three-way contract and details of the demonstration are described in the First Evaluation Report. HCP was due to expire on December 31, 2018. In July 2018, CMS, the State, and all three MMPs agreed to extend the demonstration until December 31, 2020 (CMS, 2018). In July 2020, CMS, the State, and all three MMPs executed a contract amendment, extending the demonstration once again until December 31, 2023 (CMS, 2020).

The July 2018 contract amendment included several modifications to the demonstration, such as adjustments to the savings percentage and reporting and administrative requirements. The amendment also included operational changes such as adding passive enrollment of eligible beneficiaries enrolled in MA plans as discussed in ***Section 3.2, Eligibility and Enrollment.*** Changes to requirements for care coordination protocols and procedures as discussed in ***Section 3.3, Care Coordination*** provided greater flexibility to the MMPs.

The July 2020 contract amendment extended the demonstration to December 31, 2023, but due to the COVID-19 public health emergency (PHE), the executed amendment was an extension and included few changes. The most noteworthy updates were to the financing and payment for MMPs, such as applying an additional 1 percent quality withhold to the Medicare Parts A and B components that are specifically tied to an additional quality withhold measure , and an annual increase in the medical loss ratio (MLR) targets, as discussed in ***Section 3.5, Financing and Payment***.

We summarize key updates from the 2018 and 2020 contract amendments in ***Table 1*** below.

<div align="center">

**Table 1**
**Key demonstration updates and descriptions**

</div>

| Category | Update made |
|---|---|
| Operational | 2018<br>• Demonstration extended to December 31, 2020 with all three MMPs<br>• Allowed passive enrollment of eligible beneficiaries who are enrolled in a Medicare Advantage D-SNP plan<br>• Clarified that individuals residing in a nursing facility at the time of enrollment are not eligible for the demonstration<br>2020<br>• Demonstration extended to December 31, 2023, with all three MMPs participating<br>• Added a new Appendix L, Additional Medicare Waivers to:<br>  – include a previously established waiver to allow dually eligible beneficiaries to change enrollment on a monthly basis<br>  – add a new waiver specifying network adequacy methodology for dually eligible beneficiaries |

<div align="right">(continued)</div>

**Table 1 (continued)**
**Key demonstration updates and descriptions**

| Category | Update made |
|---|---|
| Care Coordination | **2018**<br>• Clarified administrative requirements related to assessments, including uniform 90-day assessment window for moderate and high-risk enrollees and in-home assessments only required of high-risk enrollees<br>• Removed references to the Initial Health Screen; MMPs to conduct comprehensive assessments<br>• Aligned timeframes for completing Comprehensive Assessments across all risk categories<br>• Aligned timeframes for MMPs to contact enrollees and review Individualized Care Plans for enrollees stratified as low-risk or moderate risk<br>• Clarified that MMPs should use Phoenix/Care Call, SCDHHS's automated waiver case management and service authorization system for high-risk enrollees only<br>• Clarified timing of and MMPs' role in conducting Long Term Care reassessments<br>• Clarified language related to how MMPs conduct Comprehensive Assessments including:<br>  – Plans may use internal tools for conducting Comprehensive Assessments of low-and moderate-risk enrollees<br>  – MMPs will conduct face-to-face Comprehensive Assessments and Comprehensive Reassessments for high-risk enrollees and may conduct face-to-face or telephonic Comprehensive Assessments and Comprehensive Reassessments for low-risk and moderate-risk enrollees |
| Financing and Payment | **2018**<br>• Reduced savings percentage rate for demonstration year 3 from 4 to 3 percent and held the savings percentage at 3 percent for demonstration year 4.<br>• Clarified the Home and Community Based Waiver Plus rate<br>• Updated timeframes related to medical loss ratio (MLR) calculations<br>• Updated contract renewal timeframes consistent with the updated scheduled end-date<br>**2020**<br>• Annual increase in the MLR targets<br>• Applied an additional 1 percent quality withhold to the Medicare rate component that is specifically tied to the Medicare quality withhold measure of Diabetes Care: Blood Sugar Controlled that applies a 1 percent withhold to the Medicare Parts A and B components of the rate. |

The State, CMS, and MMPs discussed additional demonstration changes that were under consideration for inclusion in a summer 2021 contract amendment. These changes will be discussed in future reports.

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# SECTION 3
# Update on Demonstration Implementation

In this section, we provide updates on important aspects of the demonstration that have occurred since the First Evaluation Report. This includes updates on integration efforts, enrollment, care coordination activities, stakeholder engagement activities, financing and payment, and quality management strategies.

## 3.1 Integration of Medicare and Medicaid

> Stakeholders were concerned by the turnover in SCDHHS leadership staff responsible for HCP oversight occurring while major changes to the demonstration were expected to be incorporated into a 2021 contract amendment.

> Plans reported success with bringing on new providers, but challenges in contracting with specialty providers, such as dermatologists and ophthalmologists.

CMS, the State, and the MMPs integrated Medicare and Medicaid services to provide a unified set of benefits and care coordination for enrollees, including the financing and delivery of primary and acute care, behavioral health, and LTSS. This section provides updates on the integration of Medicare and Medicaid services as they pertain to the joint management of the demonstration and the successes and challenges of developing an integrated delivery system at the plan and provider levels.

### 3.1.1 Joint Management of the Demonstration

Joint management of the demonstration by CMS and the State, through the contract management team (CMT), continued to be a key component of the demonstration. The MMPs continued to individually meet with the CMT for monthly plan-specific calls, and with all the MMPs for the monthly State-led operational calls. Between 2018–2020, topics addressed during these meetings included MA plan marketing practices during passive enrollment waves, care plan reviews (see *Section 3.9, Quality of Care*), and MMP outreach efforts. Two MMPs noted the importance of more interaction and dialogue with the CMT during these calls.

The State and MMPs also reinstated monthly HCBS interaction calls in early 2019. As of late 2019, these calls were held quarterly. When requested, CMS representatives also participated in the calls. The purpose of the HCBS interaction calls were to discuss topics specifically pertaining to the HCBS provider service experiences, waiver case manager interactions, or areas for further research, such as hospice versus personal care benefits interactions (see *Section 4.1, Impact of the Demonstration on Beneficiaries*).

*Changes in Leadership*

SCDHHS leadership responsible for HCP oversight turned over four times between 2018 and 2020. The most recent change brought HCP oversight to high-level State leadership. State staff saw this as a positive, but CMS had concerns about whether the new leadership would be adequately engaged with the demonstration given their range of responsibilities. These concerns resolved by 2021, as leadership had become more engaged and two new project managers were assigned to HCP to help the State work through the 2021 contract amendment.

The State's demonstration team remained consistent and effective in running day-to-day activities. In 2020, the MMPs noted that the demonstration team was a great partner, but stakeholders noted that if the demonstration grows, so too will the demand for additional demonstration staff. CMS and the State also indicated concern for the program team's bandwidth with major demonstration changes planned in the 2021 contract amendment possibly extending the demonstration's eligibility and doubling the number of participating MMPs.[4]

### 3.1.2   Integrated Delivery System

*Provider Arrangements and Services*

During the reporting period, the MMPs noted their successes in bringing on new providers, expanding into larger hospital systems, and meeting network adequacy requirements with providers to be able to operate in new counties. However, the MMPs shared that contracting with certain specialty providers, such as dermatologists and ophthalmologists, remained a challenge. According to one MMP in 2019, this was due to low reimbursement rates for those services.

In 2018, the State updated its Medicaid network adequacy requirements, decreasing the HCBS provider requirements from three to two providers by service type in each county (except in those counties with a high number of enrollees) (SCDHHS, 2018b). In addition, CMS allowed the MMPs to submit Medicare provider network adequacy submissions on an ad hoc basis through 2020. These two updates, along with a change in passive enrollment in counties with one operating MMP (see *Section 3.2, Eligibility and Enrollment*), enabled MMPs to add new counties to their service areas. As of January 2021, MMPs were operating in 44 of the 46 counties in South Carolina.

Between 2018 and 2020, HCBS providers reported frustration with MMP contracting practices. HCBS stakeholders reported losing 20–30 percent of their clients to the MMPs' preferred providers and facing steep reimbursement rate reductions. According to these informants, some enrollees reported dissatisfaction with the MMPs' preferred providers of durable medical equipment (DME), citing problems with supply quality and delivery.

As of early 2021, none of the three MMPs had implemented value-based purchasing (VBP) for HCP; however, in 2020, two plans reported using VBP in other lines of business, and all three MMPs expressed interest in expanding VBP in all lines of business, including HCP.

MMPs continued to contract with the State Department of Mental Health (DMH) for behavioral health services in community health centers located in each county. As of December 2020, of the approximately 16,000 HCP enrollees, only 715 were receiving services from DMH providers. The top three services used by HCP enrollees in 2020 were psychosocial rehabilitation services, nursing services, and injection administration services. In 2018, DMH, the State, and the MMPs reported challenges in serving HCP enrollees, including a shortage of staff qualified to serve older adults with complex needs or patients living with Alzheimer's disease or related dementias. One plan reported in 2020 that for new enrollees, it was challenging to get an

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[4] In spring 2021, the State decided to halt population changes for the demonstration until it has a long-term MLTSS strategy in place. Demonstration changes that occur in 2021 will be discussed in future evaluation reports.

appointment for behavioral health services and getting an enrollee to show up could be challenging if using transportation services.

The MMPs also described internal efforts made between 2018 and 2020 to meet the behavioral health needs of enrollees. Efforts mentioned by the MMPs included employing transition of care coaches who specialize in behavioral health and are instrumental in follow-up after hospitalizations, adding psychiatric providers to their teams, and expanding their provider networks to include psychiatrists, licensed professional counselors, and licensed social workers. However, one CMT member noted that behavioral health integration continued to be a challenge and remained a topic of discussion.

*Transition of HCBS Waiver Functions*

As of early 2021, the transition of HCBS waiver roles and responsibilities from the State to MMPs remained a goal of the demonstration. As described in the First Evaluation Report, the transition process systematically introduced these waiver functions to MMPs through a three-phase approach. In early 2020, CMS anticipated the transition of the remaining HCBS waiver functions from the State to the MMPs would take place by January 2021.[5] As of early 2021, this shift had not yet occurred, but the 2021 contract amendment is expected to include an updated timeframe for the third phase.

*Waiver-like Services and Social Determinants of Health*

At their discretion, MMPs also provided flexible benefits—known in South Carolina as "waiver-like" services—to enable enrollees to postpone institutionalization or prevent higher levels of care for frail beneficiaries. Examples have included respite, personal care, and safety equipment. These waiver-like services were previously provided to members who did not meet the level of care requirements to participate in or were waiting to participate in one of the three HCBS waivers included under the demonstration. However, in 2019, the MMPs adopted a process that authorized these benefits only after waiver eligibility has been determined for enrollees transitioning into waiver services. This led to a decline in flexible benefit use. In 2020, zero Absolute Total Care enrollees, 14 Select enrollees, and 12 Molina enrollees received some type of waiver-like service.

In response to the PHE, MMPs conducted more outreach calls to members, in addition to their routine calls. This extra outreach helped the MMPs identify new needs, for which they provided additional benefits to enrollees. Although the MMPs employed various strategies to meet these needs, all three plans offered 14 days of home-delivered meals for members who tested positive for COVID-19 or were quarantined. All three plans also offered pandemic-specific education on topics such as personal protective equipment, social distancing, and Centers for Disease Control and Prevention (CDC) guidelines.

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[5] Changes are specific to a shift in responsibility for the following functions: Full responsibility for assessments, development and monitoring of services plans, and self-directed attendant care and related functions. Please see the First Evaluation Report for additional details.

*Training and Support for Plans and Providers*

***Training and Marketing Support.*** The contract between the State and the University of South Carolina's Office for the Study of Aging (OSA) to conduct MMP staff training ended in July 2017. Since then, the State has partnered with OSA to house and track the use of the online trainings developed by OSA under the original contract. These trainings remained accessible to the plans at any time in an online repository. State officials reported in 2019 and 2020 that MMPs continued to use the online trainings to train new care coordinators. As part of the training tools developed by OSA, some care coordinators were trained to be Dementia Dialogue certified instructors to provide the most current and practical information on caring for people with dementia. In 2019, one care coordinator certified as a Dementia Dialogue instructor reported holding Dementia Dialogue workshops developed by OSA for beneficiaries, caregivers, and health professionals.

In 2020, SC Thrive, the beneficiary advocacy organization contracted to provide education and outreach, noted that one MMP requested a training on how to navigate their online resource platform, Thrive Hub, so the MMP could better assist their LTSS members and provide wraparound services. Within Thrive Hub, there is a resource directory for MMPs to see the available programs.

During the reporting period, one of the key duties of the Healthy Connections Prime Advocate was to engage MMPs or providers directly to resolve issues. Over time, as reported by the Prime Advocate, the MMPs have accepted the Prime Advocate as a member advocate and a resource.

Ikaso Consulting also maintained an active role in HCP between 2018 and 2020. Ikaso provided marketing support, including an initial review of all member-facing materials. In fall 2020, the State scaled back the provider-facing materials review requirements, eliminating the need to submit provider-facing materials for review before distribution. As a CMS representative explained, this was done at an MMP's request because the plan had materials, such as newsletters, going out to providers across lines of business. One MMP noted that this change reduced some of its administrative burden. Ikaso continued to also develop HCP-specific plan-facing materials, such as memos clarifying specific aspects of the demonstration. To keep current on HCP activities, Ikaso participated in monthly operational calls and weekly calls with the State to discuss program related activities they needed to be aware of.

***Phoenix System.*** As part of the July 2018 contract amendment, administration requirements were simplified, including reducing reporting requirements tied to Phoenix system measures to ease some of the MMPs' administrative burden. However, throughout 2018 and 2019, providers and MMPs continued to note issues with Phoenix. Concerns included waiver reimbursement reconciliation delays and challenges with certain provider systems not interfacing with Phoenix.

## 3.2 Eligibility and Enrollment

> Enrollment steadily increased from 11,335 in January 2018 to 15,933 in December 2020. The increase was in large part due to the passive enrollment waves in January 2019, July 2019, and January 2020 of MA D-SNP enrollees.

> MMPs and stakeholders reported aggressive marketing by MA plan representatives during the first passive enrollment wave. They said that MA brokers were financially incentivized to encourage enrollees to opt-out of HCP and enroll in a MA plan.

In this section we provide updates in eligibility and enrollment processes. We also discuss significant events affecting enrollment patterns during the timeframe covered by this report, including changes to passive enrollment and challenges in enrollee outreach and retention.

### 3.2.1 Eligibility

In December 2020, approximately 41,799 beneficiaries[6] were eligible for the demonstration. Eligibility during the reporting period remained unchanged, open to full benefit Medicare-Medicaid enrollees aged 65 or older and living in the community at the time of enrollment. Beneficiaries participating in the Community Choices, HIV/AIDS, or Mechanical Ventilation Dependent waiver programs are eligible for the demonstration. Individuals residing in an NF at the time of enrollment were not eligible for the demonstration. However, as clarified in the 2018 contract amendment, individuals who transitioned from an NF into the community, and were otherwise eligible, could elect to enroll in the demonstration and enrollees who entered an NF after their enrollment effective date remained in the demonstration (CMS, 2018, p. 2).

### 3.2.2 Phases of Enrollment

Once passive enrollment resumed in August 2017 (see the First Evaluation Report), it remained in place until July 2018, when it was suspended prior to the execution of the 2018 contract amendment. Passive enrollment resumed in September 2018 and remained in place through the rest of the reporting period.

Enrollment increased from 11,335 in January 2018 to 12,320 in December 2018. The 2018 contract amendment allowed the State to passively enroll any eligible Medicare Advantage beneficiary into HCP. The State operationalized this contract language by limiting passive enrollment out of MA D-SNP plans. Eligible MA D-SNP enrollees were passively enrolled in large waves in January 2019, July 2019, and January 2020. The addition of these three passive waves of MA enrollees increased enrollment in HCP. By December 2019 enrollment rose to 14,158 and by December 2020, to 15,933 (SCDHHS, n.d.).

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[6] Source: RTI State Data Reporting System; data are reported on the last day of each month.

### 3.2.3 Passive Enrollment Experience

Although the passive enrollment waves increased HCP enrollment, new member retention was a challenge. Early in the demonstration, MMPs were concerned with enrollees switching between MMPs; however, in 2019 and 2020, that concern shifted to disenrollments from MMPs to enroll back in MA plans from which they were passively enrolled. The State noted that D-SNP plans may have been more competitive by offering some over-the-counter cards of higher monetary value than the ones offered by MMPs.

Additionally, the State and MMPs reported that MA brokers were financially incentivized to use aggressive marketing strategies encouraging enrollees to opt out of HCP and enroll in a MA plan. Although the State has reinforced the MMPs' ability to use agents and brokers for education and enrollment (SCDHHS, 2020), MMPs noted that they are largely at a disadvantage without the ability to financially incentivize brokers. If an individual is interested in enrolling in HCP, the broker must do a soft transfer (hand off to another entity for enrollment) to the HCP enrollment vendor, Maximus. One MMP also indicated that the lack of lock-in period for HCP enrollees and allowing enrollees to disenroll out of the demonstration at any time was a challenge during the 2019 passive enrollment waves. These factors reportedly led to high opt-out and disenrollment rates during the reporting period.

As discussed in the First Evaluation Report, in July 2018, the State decided to allow eligible beneficiaries in counties in which only one MMP operates to be passively enrolled into that plan beginning fall 2018. This change, in combination with others made during the reporting period, allowed the MMPs to cover all but two counties as of early 2021. In 2020, one MMP reported that extending operations into new counties was a factor in the substantial number of new passive assignments. In the same year, stakeholders highlighted the addition of new counties as a major success of the demonstration in 2020.

### 3.2.4 Integration of Medicare and Medicaid Enrollment Systems

As of 2020, the State's enrollment vendor, Maximus, continued to operate the Healthy Connections Choices Customer Service Center. Beneficiaries could call the service center for options counseling and to enroll. The options counselor, SC Thrive, provided enrollment assistance and education and outreach activities. Maximus began accepting electronic enrollment applications submitted by SC Thrive during the reporting period.

## 3.3    Care Coordination

> The 2018 contract amendment made major changes to HCP's care coordination model. Timeframes for comprehensive assessments for all new enrollees were streamlined across new enrollees to within 90 days of enrollment rather than at different intervals by enrollee risk level. Assessment completion also shifted from face-to-face completion for all enrollees to a choice between telephonic or face-to-face comprehensive assessments for low and moderate-risk enrollees.

> The turnover rate for care coordinators decreased from 29.4 percent in 2015 to 14.5 percent in 2020 despite an increase in average caseload.

In this section, we provide a summary of the HCP care coordination model. We highlight the status of and major accomplishments in key care coordination components and processes: assessment, care planning, LTSS coordination, and information exchange.

During this reporting period, care coordination remained a central function of HCP and continued to be provided by the plans to all enrollees through care coordinators and multidisciplinary care teams. The plans' care coordination models were intended to be person-centered; to promote enrollees' ability to live independently; and to coordinate the full set of Medicare and Medicaid benefits, including medical, behavioral health, LTSS, and social support services. On July 1, 2018, CMS announced contract amendments that included several changes to the demonstration's care coordination model, including streamlining assessment timeframes for moderate-and high-risk enrollees, allowing telephonic or face-to-face assessments for low-and moderate-risk enrollees, and allowing flexibility in the types of tools for conducting comprehensive assessments for low-and moderate-risk enrollees. There were also changes to HCBS waiver services enrollment processes and coordination, as well as care transitions, during the reporting period. We discuss these changes below.

### 3.3.1    Contacting and Locating Enrollees

As the first step in coordinating care for new demonstration enrollees, a care coordinator contacts the enrollee to conduct a comprehensive assessment. Successfully contacting enrollees has been challenging throughout the demonstration. As shown in *Table 2*, the percentage of enrollees that HCP plans were unable to reach within 90 days of enrollment has generally increased over the course of the demonstration to date (2015–2020). In the last quarter of 2020, plans were unable to reach close to half of their enrollees (46 percent in quarter 4 of 2020 versus 7 percent in quarter 4 of 2015).

The increase in the percentage of members plans were unable to reach in 2019 and early 2020 may relate to the MA passive enrollment waves, during which MMPs reported difficulty contacting new enrollees due to incorrect or incomplete contact information. Plans described new modes of outreach to overcome this challenge, including using LexisNexis to find alternative contact information or increasing the number of outreach attempts. The MMPs did not note any specific challenges or modes to reach enrollees during the second half of 2020.

**Table 2**
**Percentage of members that Healthy Connections Prime plans were unable to reach following three attempts, within 90 days of enrollment, 2015–2020**

| Quarter | Calendar year 2015 | Calendar year 2016 | Calendar year 2017 | Calendar year 2018 | Calendar year 2019 | Calendar year 2020 |
|---|---|---|---|---|---|---|
| Q1 | N/A | 6.6 | 25.8 | 27.7 | 39.7 | 43.2 |
| Q2 | 7.6 | 21.9 | 14.4 | 26.8 | 30.0 | 34.7 |
| Q3 | 4.7 | 26.4 | 13.3 | 19.6 | 29.6 | 41.3 |
| Q4 | 6.8 | 19.3 | 38.9 | 29.4 | 32.0 | 45.7 |

MMP = Medicare-Medicaid Plan; N/A = not applicable; Q = quarter.
NOTES: Because the South Carolina demonstration began in February 2015, data are not applicable for quarter 1 of 2015. Advicare withdrew from the demonstration and is not included in data after quarter 3 of 2016.
SOURCE: RTI analysis of MMP-reported data for Core Measure 2.1 as of May 2021. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

### 3.3.2 Assessments

Prior to the 2018 contract amendment, care coordinators conducted a comprehensive assessment of medical, behavioral health, community-based or facility-based LTSS, and social needs within 60 days for enrollees deemed to be high- or moderate-risk, or 90 days for enrollees deemed to be low-risk through the screener. As part of the 2018 contract amendment changes, comprehensive assessments for all new enrollees were required to be completed within 90 calendar days of enrollment (CMS, 2018). The MMPs reported that this change reduced burden by streamlining assessment timelines regardless of enrollee risk status.

As part of the 2018 contract amendment changes, MMPs could also use their own tools for telephonic-based comprehensive assessments for low and moderate-risk enrollees. This was a shift away from required in-person assessments using the State-developed comprehensive assessment instrument for all enrollees. Early in this shift, the State and Prime Advocate noted some concerns about the inability to gain a comprehensive understanding of enrollees' situations without assessing them in-person. Care coordinators reported that even with this change, an in-person follow-up could still be completed if there was concern that an enrollee may have undisclosed or unmet needs. However, the State indicated that unless something changed that made a MMP consider an enrollee high-risk, face-to-face visits likely didn't occur.

Although one MMP said the shift to telephonic assessments required additional staff training on the process and updated timeline, overall, MMPs appreciated the reduced administrative burden and increased member engagement. According to one plan, the change helped to engage more members because MMP staff were able to complete assessments over the phone. Plans also reported that enrollees appreciated the fact that telephonic assessments took less time than in-person assessment, and that the former allowed them the option to not have a care coordinator in their homes.

*"We had a lot of administrative burden when we went to assess our members. They changed the assessment timeframe and moved them all to do the assessment within 90 calendar days of enrollment. That created the same process for all memberships regardless of status (low, moderate, high risk). When we started [the] demo, we had to do a face to do face assessment with all members. Now it has changed to only the high-risk population."*

– MMP (2019)

The PHE led to temporary changes in assessment requirements. In March 2020, the State requested and was granted flexibility for in-home visits for all enrollees during the PHE. Specifically, CMS loosened face-to-face care coordination activities required for high-risk enrollees if MMPs were able to substitute approved approaches, such as telephonic and telehealth visits, and if they were able to conduct assertive outreach to at-risk enrollees to mitigate risks and provide education on COVID-19. These flexibilities remained in place in early 2021.

*Table 3* shows the proportion of enrollees willing to participate in the assessment process, who could be reached, and who completed assessments within 90 days of enrollment. The percentage of assessments completed within 90 days of enrollment among all members decreased over the course of the demonstration to date (2015–2020), with a high of 89 in quarter 1 of 2016 and a low of 45 in quarter 4 of 2020. During the same period, the percentage of assessments completed within 90 days for enrollees willing to participate and who could be reached remained high with completion rates consistently over 90 percent since the beginning of 2016.

**Table 3**
**Members whose assessments were completed within 90 days of enrollment, 2015–2020**

| Quarter | Total number of members whose 90th day of enrollment occurred within the reporting period and who were currently enrolled at the end of the reporting period | Percentage of assessments completed within 90 days of enrollment | |
|---------|---|---|---|
| | | **All members** | **All members willing to participate and who could be reached** |
| 2015 | | | |
| Q1 | N/A | N/A | N/A |
| Q2 | 1,470 | 72.8 | 80.8 |
| Q3 | 321 | 74.1 | 79.3 |
| Q4 | 177 | 83.1 | 89.6 |

(continued)

**Table 3 (continued)**
**Members whose assessments were completed within 90 days of enrollment, 2015–2020**

| Quarter | Total number of members whose 90th day of enrollment occurred within the reporting period and who were currently enrolled at the end of the reporting period | Percentage of assessments completed within 90 days of enrollment | |
| --- | --- | --- | --- |
| | | All members | All members willing to participate and who could be reached |
| **2016** | | | |
| Q1 | 226 | 89.4 | 97.6 |
| Q2 | 3,824 | 65.6 | 93.0 |
| Q3 | 3,707 | 59.9 | 95.1 |
| Q4 | 1,281 | 72.8 | 96.5 |
| **2017** | | | |
| Q1 | 1,874 | 63.8 | 92.1 |
| Q2 | 181 | 75.1 | 95.8 |
| Q3 | 180 | 73.9 | 91.7 |
| Q4 | 3,870 | 48.9 | 95.3 |
| **2018** | | | |
| Q1 | 987 | 62.3 | 95.9 |
| Q2 | 803 | 63.9 | 95.0 |
| Q3 | 562 | 72.4 | 97.6 |
| Q4 | 758 | 61.2 | 94.5 |
| **2019** | | | |
| Q1 | 4,231 | 49.7 | 96.8 |
| Q2 | 716 | 60.8 | 96.5 |
| Q3 | 1,863 | 60.0 | 94.7 |
| Q4 | 659 | 57.8 | 93.6 |
| **2020** | | | |
| Q1 | 3,472 | 45.7 | 92.9 |
| Q2 | 862 | 58.6 | 98.1 |
| Q3 | 1,277 | 52.0 | 97.6 |
| Q4 | 858 | 44.9 | 95.5 |

MMP = Medicare-Medicaid Plan; N/A = not applicable; Q = quarter.
NOTES: Because the South Carolina demonstration began in February 2015, data are not applicable for quarter 1 of 2015. Advicare withdrew from the demonstration and is not included in data after quarter 3 of 2016.
SOURCE: RTI analysis of MMP-reported data for Core Measure 2.1 as of May 2021. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

Care plan completion rates among all members decreased over time. *Table 4* shows that completion rates ranged from 75 to 87 percent in 2015, 51 to 90 percent in 2016, and 48 to 71 percent in 2017. During the same period, completion rates for all members willing to participate

and who could be reached remained high, only dropping below 84 percent in quarter 2 of 2016. This measure (SC 2.1) was retired in quarter 1 of 2018; care plan data for 2018, 2019, and 2020 are presented in **Table 5** using Core Measure 3.2.

**Table 4**
**Low, moderate, and high-risk members with an Individualized Care Plan completed within 90 days of enrollment, 2015–2017**

| Quarter | Total number of members whose 90th day of enrollment occurred within the reporting period | Percentage of care plans completed within 90 days of enrollment | |
|---|---|---|---|
| | | **All members** | **All members willing to complete a care plan and who could be reached** |
| **2015** | | | |
| Q1 | N/A | N/A | N/A |
| Q2 | 1,506 | 82.7 | 89.1 |
| Q3 | 322 | 74.8 | 84.3 |
| Q4 | 181 | 86.7 | 95.7 |
| **2016** | | | |
| Q1 | 230 | 90.0 | 97.6 |
| Q2 | 3,836 | 51.3 | 68.1 |
| Q3 | 3,711 | 57.3 | 90.5 |
| Q4 | 1,331 | 71.3 | 92.7 |
| **2017** | | | |
| Q1 | 2,072 | 65.8 | 90.6 |
| Q2 | 190 | 64.7 | 85.4 |
| Q3 | 184 | 71.2 | 89.1 |
| Q4 | 4,226 | 48.0 | 94.0 |

MMP = Medicare-Medicaid Plan; N/A = not applicable; Q = quarter.
NOTES: Because the South Carolina demonstration began in February 2015, data are not applicable for quarter 1 of 2015. Advicare withdrew from the demonstration and is not included in data after quarter 3 of 2016. In Table C and Table D, the "All Members" column refers to the total number of members with a care plan completed within 90 days divided by the total number of members whose 90th day of enrollment occurred within the reporting period.
SOURCE: RTI analysis of MMP-reported data for State-specific Measure SC 2.1 as of January 2021. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model South Carolina-Specific Reporting Requirements document.

**Table 5** shows that care plan completion rates for all members ranged from 60 to 71 percent in 2018, 47 to 56 percent in 2019, and were generally lower in 2020, ranging from 42 to 55 percent. Completion rates for members willing to participate and who could be reached ranged from 89 to 95 percent in 2018, 88 to 93 percent in 2019, and were also slightly lower in 2020, ranging from 88 to 95 percent.

**Table 5**
**Members with care plans completed within 90 days of enrollment, 2018–2020**

| Quarter | Total number of members whose 90th day of enrollment occurred within the reporting period and who were currently enrolled at the end of the reporting period | Percentage of care plans completed within 90 days of enrollment | |
|---|---|---|---|
| | | All members | All members willing to complete a care plan and who could be reached |
| 2018 | | | |
| Q1 | 987 | 59.8 | 89.3 |
| Q2 | 803 | 62.5 | 91.6 |
| Q3 | 562 | 71.0 | 95.2 |
| Q4 | 758 | 59.9 | 92.3 |
| 2019 | | | |
| Q1 | 4,231 | 47.4 | 92.7 |
| Q2 | 716 | 55.9 | 88.7 |
| Q3 | 1,863 | 54.4 | 87.6 |
| Q4 | 659 | 55.1 | 89.9 |
| 2020 | | | |
| Q1 | 3,472 | 41.9 | 87.6 |
| Q2 | 862 | 54.9 | 92.9 |
| Q3 | 1,277 | 49.4 | 94.9 |
| Q4 | 858 | 42.2 | 91.4 |

MMP = Medicare-Medicaid Plan; Q = quarter.
SOURCE: RTI analysis of MMP-reported data for Core Measure 3.2 as of May 2021. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

### 3.3.3 HCBS Waiver Services

Waiver enrollment among HCP enrollees steadily increased during the reporting period. As of December 2020, 3,016 HCP enrollees were also HCBS waiver participants, compared to 1,738 in December 2018 (SCDHHS, n.d.). Most of these enrollees utilized the Community Choices waiver; fewer than 50 enrollees utilized the HIV/AIDS or Mechanical Ventilator Dependent waivers. The delays in the HCBS waiver eligibility evaluation process described in the First Evaluation Report decreased over time. One plan reported that as of late 2020, qualifying members for waiver services was taking approximately 30 days, down from an estimated peak of 5–7 months in late 2019.

Early in the demonstration, MMPs described challenges in defining the responsibilities of MMP care coordinators and Community Long Term Care[7] waiver case managers and

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[7] CLTC was SCDHHS's division responsible for HCBS services for demonstration enrollees.

communication between care coordinators and waiver case managers. However, since 2018 MMPs reported an improvement in these working relationships.

*"[W]e've seen good examples of how good that collaboration can be. Waiver case managers are increasingly coming to more morning rounds and their feedback is that they are learning more about their member's medical situation by working with the care coordinators."*

*– MMP (2019)*

In mid-2019, SCDHHS and SC Thrive executed a second contract for SC Thrive to provide waiver application assistance to dually eligible enrollees who are transitioning into or need HCBS or LTC, including HCP enrollees (see *Section 3.4, Stakeholder Engagement*). However, even with SC Thrive's role in assisting enrollees with the waiver application process, MMPs noted that it was still difficult for potential enrollees to complete the financial portion of the waiver that determined their eligibility. One MMP raised this concern again in 2020 because enrollees could not get needed in-person assistance to complete the needed forms due to the PHE.

### 3.3.4    Care Transitions

Initially, the State worked with stakeholders and MMPs to develop transition planning policies and procedures to help enrollees and providers with enrollee care transitions. However, a CMT member reported in 2018 that care coordinators are not always aware of hospitalizations. In 2020, one MMP reported that awareness of enrollees' discharge dates was a care coordination challenge. According to the MMP, one reason for the lack of discharge date information was that the largest hospital system in the State excluded the MMP from discharge planning.

To improve care transitions, MMPs reported efforts to monitor enrollees in facilities including receiving a daily census report, establishing an on-site transition of care nursing team, and reaching out to facilities to help reach members within 72 hours post-discharge. One plan reported using care coordinators who volunteered to work on Saturdays to conduct additional outreach. In 2019, one plan reported working hard to improve their performance in this area but felt the related 30-day follow-up after hospitalization for mental illness measure was difficult to meet with a benchmark of 85 percent (see *Section 3.6, Quality of Care*).

### 3.3.5    Care Coordination Staffing

As shown in *Table 6*, the number of care coordinators, percentage of care coordinators assigned to care management activities, and average caseloads (member loads) increased overall during the demonstration to-date (2015–2020). In 2015, there were 24 full-time equivalent care managers in HCP plans who were responsible for approximately 90 enrollees each. By 2020 the number of care managers increased to 112, each with an average case load of 145 enrollees. Despite an increase in average caseload the turnover rate decreased from 29 percent in 2015 to 15 percent in 2020. Early in the demonstration, MMPs reported challenges retaining care

coordinators due to the high demand for them in the State and long driving distances to enrollees; however, this was not a reported challenge between 2018 and 2020.

**Table 6**
**Care coordination staffing, 2015–2020**

| Calendar year | Total number of care coordinators (FTE) | Percentage of care coordinators assigned to care management and conducting assessments | Member load per care coordinator assigned to care management and conducting assessments | Turnover rate (%) |
|---|---|---|---|---|
| 2015 | 24 | 83.3 | 90.3 | 29.4 |
| 2016 | 99 | 92.9 | 121.0 | 41.1 |
| 2017 | 94 | 92.6 | 132.1 | 13.0 |
| 2018 | 102 | 94.1 | 128.1 | 26.6 |
| 2019 | 116 | 94.0 | 129.6 | 13.4 |
| 2020 | 112 | 98.2 | 144.7 | 14.5 |

FTE = full-time equivalent; MMP = Medicare-Medicaid Plan.
SOURCE: RTI analysis of MMP-reported data for Core Measure 5.1 as of May 2021. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

Early in the demonstration, enrollees who participated in RTI focus groups indicated they knew who their care coordinator was (see the First Evaluation Report). However, in 2019 one beneficiary advocate noted that some members did not know who their care coordinators were and an MMP noted that care coordinator awareness was a concern among less engaged enrollees. The same advocate reported in 2020 that care coordinator awareness appeared to have improved, but noted that the observed shift may have been due to impacts of the PHE and therefore may have been an inaccurate gauge. During the PHE, MMPs reported increasing member outreach, with one plan stating in 2020 that relationships with members had strengthened because of increased member outreach.

Plans also reported maintaining an adequate number of care coordinators for their team, even during the PHE. Early during the PHE, however, plans did report various considerations in shifting to remote work, including remaining mindful of staff work/life balance, ensuring adequate staff were available if another staff member fell ill, and equipping a remote call center.

## 3.4    Stakeholder Engagement

> Strong stakeholder engagement continued to be a key feature of HCP. The State continued to work closely with its contractors to engage and assist beneficiaries.

> In response to the PHE, MMPs successfully switched to virtual or telephonic enrollee advisory committee meetings, and one MMP noted that they would most likely continue this type of engagement moving forward.

In this section we describe stakeholder engagement activities during the period of this report, and the impact of those efforts on the demonstration.

### 3.4.1    Targeted Outreach

Between 2018 and 2020, the State maintained communication with the stakeholder and advocate community via quarterly electronic stakeholder updates. The State largely focused its updates on provider outreach and training. Training included discussing covered services and how billing and claims work, and continuing education for those who had access to the Phoenix system. Other topics included member stories, flu vaccine reminders, and announcements of demonstration county extensions. In fall 2018, the State paused stakeholder updates to focus on the demonstration extension and on answering call center inquiries regarding the inclusion of the MA D-SNP population. The State resumed updates in June 2019 on a quarterly basis. In 2020, due to the PHE, the State only released June and December updates. In addition to updates on county extensions, SC Thrive's community outreach activities, and other demonstration updates, the June 2020 stakeholder update included information regarding policy changes and resources in response to the PHE.

In early 2021, the State began planning stakeholder outreach efforts in anticipation of the July 2021 contract amendment request to extend the demonstration's eligibility to include those under age 65 (ages 21–64) in 2022. Planning efforts included holding four separate virtual meetings to engage beneficiary advocates and providers—two per stakeholder group, respectively.[8]

The State successfully continued to leverage its contractors to conduct targeted beneficiary outreach. In June 2019, SC Thrive's 3-year contract with the State for HCP outreach and enrollment activities ended. The contract was shifted to a monthly basis from June through December 2019, and to a yearly contract starting in January 2020. In early 2019, SC Thrive also began contracting with the State for Community Long Term Care (CLTC) waiver application assistance to HCP enrollees (see *Section 3.3, Care Coordination*). Both contracts were renewed for 2021 with no set expiration date. In 2020, SC Thrive's outreach activities expanded to hard-to-serve areas by focusing on targeting groups, such as faith-based organizations, through digital marketing and informational webinars. To reduce disenrollment among passively enrolled

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[8] In spring 2021, the State decided to halt population changes for the demonstration until it has a long-term MLTSS strategy in place. We will discuss demonstration changes that occur in 2021 in the next evaluation report.

beneficiaries, SC Thrive also sent HCP newsletters informing members of the benefits available to them.

The Prime Advocate, the demonstration's ombudsman, has continued outreach to promote its services, including through the distribution of brochures, a website, and new partnerships with entities such as sororities, housing authorities, and faith-based organizations. The Prime Advocate also continued to provide ombudsman services and assist beneficiaries with issues such as inappropriate billing and Medicaid re-certification, enrollee awareness of their care coordinator, and interruptions in Medicaid coverage. In prior years of the demonstration MMPs reported that NF staff were advising enrollees to disenroll from the demonstration, believing the demonstration would reduce the numbers of beneficiaries using their services. Since then, the Prime Advocate has partnered with the State's long-term care ombudsman—the entity that works directly with nursing facilities—to educate nursing facilities on HCP. In 2019, the State advised the Prime Advocate that issues raised between nursing facilities and the MMPs by HCP enrollees should be referred to the plans for resolution.

### 3.4.2    Enrollee Advisory Committees

The demonstration required MMPs to establish an enrollee advisory committee. Between 2018 and 2019, the MMPs engaged enrollee advisory committees via in-person quarterly meetings that addressed a range of topics such as available benefits, and provided an opportunity for feedback on processes or resources. For example, in 2018, one plan asked members to develop common questions for providers and subsequently created an "Ask the Doctor" card that was then provided to all members as a reminder of potential questions to ask. To increase enrollee participation, in 2019, one plan altered meeting dates to weekends and another incorporated seasonal educational topics, such as hurricane disaster preparedness. Similarly, in 2020, three plans educated enrollees on the importance of getting a flu shot, especially in light of the PHE.

In mid-2020, during the PHE, the MMPs switched to virtual or telephonic quarterly meetings. Two MMPs noted increased attendance and/or engagement. One MMP provided early outreach and training on how to use the technology ahead of their virtual enrollee advisory committee meetings so that members would feel comfortable making this shift. One plan noted they would most likely continue this type of engagement post-PHE rather than return to in-person committee meetings.

## 3.5    Financing and Payment

> MMPs reported concerns about the State capitation rates in 2019 and the delay in enrollee assignments to the appropriate rates. In 2020, although the delay in Medicaid rate assignment was still a concern, monthly reconciliations of these payments were improving, and MMPs reported that the overall capitation rates were adequate.

> MMPs reported challenges in submitting encounter data, specifically related to encounters for Medicaid covered services.

In this section, we outline changes in financing and payment since the first demonstration year (2015–2016) and relevant findings related to these changes. Whereas MMPs expressed several varied concerns about HCP financing in the past, they raised few concerns during this reporting period.

### 3.5.1    Rate Methodology

*Rating Categories and Risk Adjustment*

HCP plan payments are based on risk-adjusted capitation rate categories. These rates are discounted to ensure savings to Medicare and Medicaid and are subject to quality withholds.

In 2019, the State adjusted the Medicaid capitation rate to incorporate administrative costs that the State would have incurred absent the demonstration. One MMP noted that the administrative adjustment made the Medicaid rate reasonable and enabled the plan to continue in the demonstration. That said, MMPs consistently noted in 2019 their desire for the Medicaid rate methodology to account for the service use experience of demonstration enrollees, rather than the historical FFS experience of the Medicaid dually eligible population. In 2020, MMPs continued to note their hope for a change in the Medicaid rate methodology, though the plans did not report any concerns about the adequacy of the capitated Medicaid and Medicare rates, despite the uncertainty caused by the PHE.

Early in the demonstration, MMPs highlighted challenges with the State's Medicaid rate cell assignments. MMPs reported then that the State's eligibility tracking system was not accurately identifying beneficiaries who transition into an NF from the community. For example, MMPs continued to receive a Medicaid community rate, beyond the 3-month rebalancing period, for enrollees residing in nursing facilities, causing financial challenges to the MMPs. MMPs noted that the delays in correct rate-cell assignments remained a challenge between 2018 and 2020, but that monthly reconciliation of these payments with the State improved in 2020.

HCBS-waiver rate cell assignments also continued to be a challenge, despite State-initiated improvements and streamlining of processes (see *Section 3.6, Quality of Care*). In 2019, one MMP indicated that these delays were a challenge and explained that the MMP could not continue to provide waiver-like services over a "10-month" timeframe and not get paid for it. Another plan noted in 2019 that the delay in placing an enrollee in a HCBS waiver rate cell (used

in the capitation payment calculations) caused challenges, but that they continued to provide waiver-like services on a case-by-case basis. The State continued to provide recoupment and payment reconciliation to address the financial consequences of these delays. By October 2019, HCBS payment reconciliation began occurring monthly. Although in 2020 the MMPs indicated that qualifying members for HCBS waiver services and monthly reconciliations had improved over time, timely payment remained a challenge.

*Savings Percentages*

The savings percentage built into the capitation rates was 3 percent in demonstration years 3, 4, and 5 (2018, 2019, and 2020). As indicated in the First Evaluation Report, keeping the annual savings percentage at 3 percent was an important contractual condition MMPs sought as part of the 2018 contract modification. As part of the 2020 contract amendment, the savings percentage applied to the Medicare and Medicaid capitation will remain at 3 percent through 2023.

*Quality Withhold Percentages*

In addition to built-in savings percentages, the MMPs are subject to quality withholds, requiring that they meet certain quality indicators to receive maximum payment. For demonstration years 3 through 5 (2018–2020) the quality withhold was 3 percent and will remain 3 percent through demonstration year 8 (2023) as part of the 2020 contract amendment. The 2020 contract amendment also added an additional 1 percent withhold on the Medicare Parts A and B portion of the rates starting in demonstration year 6 (2021). In August 2020, CMS published the results of quality withhold analyses covering demonstration year 3 (2018). See **Section 3.6, Quality of Care** for further discussion on MMP performance on the quality withhold measures.

*Medical Loss Ratio*

Under the 2018 contract amendment, the MLR target will remain at 85 percent for demonstration years 4 through 6 (2019–2021), 85.5 percent for demonstration year 7 (2022), and 86 percent in demonstration year 8 (2023). As in prior years, for MLRs below the target MLR, MMPs will refund the percentage difference between their calculated MLR and the MLR target, multiplied by the total capitation rate revenue for the coverage year (CMS, 2020).

### 3.5.2 Encounter Data

In 2020, MMPs still reported challenges submitting Medicaid encounter data, an issue they had raised in both 2018 and 2019. The State did not have the capacity to accept that data. In addition, at least one MMP reported difficulties differentiating between Medicare SNF encounters and Medicaid-financed long-stay NF encounter. The MMP is working with CMS to differentiate between the two service lines.

### 3.5.3 Cost Experience

Between 2018 and 2020, MMPs did not report the same level of concern on the capitated rates and their financial condition as was reported in the First Evaluation Report. An administrative rate increase on part of the Medicaid capitated rate was included as part of the

2018 contract amendment. MMPs reported that this increase helped, and that coupled with reductions in reporting and administrative requirements, the rates were more reasonable.

Enrollee Medicaid rate assignment delays and approvals remained a key financial concern for the MMPs through 2019. In 2020, although the delay in Medicaid rate assignment was still a concern, MMPs reported that the rates were adequate. One plan noted its plan is "breaking even."

In 2018, HCP expanded passive enrollment to include MA D-SNP enrollees (see **Section 3.2, Eligibility and Enrollment**). Despite an increase in MMP enrollment, the addition of these beneficiaries did not appear to have any financial consequence to the MMPs. Two MMPs noted that MA enrollees had a high disenrollment rate, limiting any positive or negative financial consequence of the inclusion of these beneficiaries.

The PHE impacted the plans' cost experience. All of the MMPs noted that early in the pandemic there were declines in utilization, but that the trend in service use was stabilizing over time. One plan highlighted that 2020 was an outlier year in terms of their cost experience because of unpredictable service utilization due to the PHE. Shifts in service utilization impact the risk scores for plans' enrollees and determine whether the CMS adjustment rates are appropriate. Generally, plans reported that despite the PHE, they were on sound financial footing.

## 3.6    Quality of Care

> The 2018 contract amendment modified some reporting requirements and quality withhold measures, in part to address MMP concerns of administrative and reporting burden.

> All three MMPs received 100 percent of quality withhold payments in 2017 (demonstration year 2), and two of the three MMPs received 100 percent of quality withhold payments in 2018 (demonstration year 3).

In this section we provide information on the quality measures for the demonstration, updates on the quality management structure and activities for the demonstration, and results from the Healthcare Effectiveness Data and Information Set (HEDIS). Results on the demonstration's impact on quality measures, separately defined using Medicare claims, are discussed in **Section 5, Demonstration Impact on Service Utilization and Quality of Care**.

### 3.6.1    Quality Measures

MMPs are required to report a range of quality measures used in determining whether they will recoup quality withholds retained from the Medicare capitation payments made by CMS or the Medicaid capitation payments made by the State. Additional quality measures are tracked to monitor and evaluate MMP performance, but those measures are not associated with the quality withholds.

Between 2018 and 2020 there were several changes to reporting requirements and quality withholds in response to MMP concerns and the PHE. As reported in the First Evaluation Report, early in the demonstration, MMPs raised concerns about the administrative burden of some of the quality measures. In response, some State-specific measures were removed such as the Hospital, Nursing Facility, and Community Transition Planning measure (Measure SC.2.5) after demonstration year 1 (2015–2016), and another State-specific measure called Management of Hospital, Nursing Facility, and Community Transitions for demonstration years after demonstration year 3 (2018). The 2018 contract amendment extended the assessment window to 90 days for moderate- and high-risk enrollees (CMS, 2018). This amendment was noted by one MMP and State officials as helpful in reducing unnecessary administrative burden (see **Section 3.3., Care Coordination**).

In 2019, Comprehensive Diabetes Care and Follow-up after Inpatient Hospital Discharge were added as a State-specific quality withhold measure. In addition, the 2020 amendment added a 1 percent withhold on the hemoglobin A1C measure for the Medicare Parts A and B portion starting in demonstration year 6 (2021). Two MMPs noted this shift was a big change, with one MMP noting that incorporating this diabetes measure as a quality withhold measure was appropriate for their enrollee population.

A key challenge reported in the First Evaluation Report was that the denominator—or number of enrollees in a plan—was too small for MMPs to meet the quality withhold and reporting requirements. In 2019, one MMP explained that there were quality measures that had not been used in the past because of the limited number of enrollees in the plan. As enrollment improved (see **Section 3.2, Eligibility and Enrollment**), in part because of the inclusion of MA enrollees, it was expected in 2018 that additional quality measures would be included. In 2020, one MMP noted that because of the PHE, data collection for some quality measures was difficult. For example, hemoglobin A1C checks require an in-person visit, and such visits were limited during the early stages of the pandemic. This MMP noted that telehealth was helpful for keeping members engaged with their provider, but that hemoglobin A1C checks still needed to be conducted in person.

In June 2018, CMS published the results for MMP performance on the quality withhold measures in demonstration year 2 (2017). In 2017, one of the three MMPs met the withhold benchmarks for all nine measures. Another of the three MMPs met benchmark performance for eight of the nine measures, and the third MMP met benchmarks for seven of the nine measures. The rate of Annual Flu Vaccine was not met by two of the three MMPs. In August 2020, demonstration year 3 (2018) quality withhold results were released. During demonstration year 3, two of the MMPs received 100 percent of the total withhold payments and one MMP received 75 percent of the total withhold payments (CMS, n.d). Quality withhold results for 2019 thru 2020 were not available at the time of this report. See **Section 3.5 Financing and Payment** for further information.

*Quality of Care*

Access to HCBS was a concern related to the quality of care delivered to MMP members in demonstration year 1. The demonstration design requires enrollment in the State's HCBS waivers, upon referral by an MMP. Delays in the HCBS enrollment process, as explained in the First Evaluation Report, led to MMP enrollees going without needed HCBS. In other cases, the

MMPs provided waiver-like services and applied to the State to recoup the incurred costs. In 2018, the State responded to MMPs' concerns about the HCBS waiver determination process by making extensive reforms and streamlining the process. As the State worked to improve the HCBS determination process and sped up payment, the appropriate rate cell assignment for HCBS users continued to lag. Further discussion of the financial implications of HCBS waiver enrollment delays are discussed in **Section 3.5, Financing and Payment**.

*Quality Management Structure and Activities*

As discussed in **Section 3.1, Integration of Medicare and Medicaid**, the MMPs continued to meet monthly with the CMT for plan-specific calls, for all-plan calls, and for operational calls with the State and CMS. The CMT often discusses operational and quality concerns on these calls. In 2019, the CMT reviewed a sample of MMP care plans, specifically for an enrollee with two hospital admissions within the last 6 months, an enrollee receiving LTC services, an enrollee with behavioral health needs and in the community, and an enrollee residing in an NF. The goal of these reviews was to provide feedback to MMPs from clinical experts to provide another layer of quality assurance on care plan development and to share best practices. Results from the 2018 review showed that the MMPs varied in the comprehensiveness of the care plans and one plan specifically had shortcomings in member involvement. In response, the CMT developed a promising practices document and met with the individual MMPs to provide feedback. In early 2021, the CMT began another round of reviews, specifically focused on care plans for enrollees with Alzheimer's and/or dementia, enrollees receiving waiver-like services, enrollees with behavioral health service needs, and those diagnosed with COVID-19. We will provide further information on the 2021 review in the next evaluation report.

The State's external quality review organization (EQRO), Carolina's Center for Medical Excellence (CCME), continued to work with MMPs on quality review activities, though their role in helping validate and review quality improvement projects (QIPs) had been relaxed since 2018. In 2018, the EQRO validated the six performance improvement projects (PIPs) the MMPs had engaged in during that year. These PIPs were focused on activities aimed at improving caregiver support, fall prevention, and flu vaccination rates. After 2018, formal State and EQRO review of MMP QIP and PIP activities was put on hold to account for the influx of demonstration eligible beneficiaries as part of the 2018 contract extension. By 2020, the State was not requiring QIP/PIP reviews to limit administrative burden on the MMPs in light of the PHE. Even so, MMPs reported in 2020 that their QIP activities included efforts to address inappropriate billing and improve care transition documentation.

### 3.6.2 HEDIS Quality Measures Reported for South Carolina Healthy Connections Prime MMPs

MMPs are required to report HEDIS data to CMS and the States. HEDIS is a measure set developed and maintained by the National Committee for Quality Assurance. It is used by the vast majority of commercial, Medicare, and Medicaid health plans to measure performance on dimensions of care and service in order to maintain and/or improve quality. In the FAI, MMPs report data on a subset of HEDIS measures that are required of all MA plans.

Five of the 13 Medicare HEDIS measures for MMP enrollees that RTI analyzes are reported in **Figures 1–5**, with results on all 13 measures appearing in **Table B-1** in **Appendix B**.

RTI identified these measures in its Aggregate Evaluation Plan based on their completeness, reasonability, and sample size. Calendar year data for 2016–2018 were available for all three HCP MMPs. In response to the COVID-19 PHE, CMS did not require Medicare plans (including MMPs) to submit HEDIS 2020 data covering the 2019 measurement year. Medicare plans (including MMPs) resumed normal reporting for measurement year 2020, with those data becoming available later in 2021.

Detailed descriptions of selected HEDIS measures can be found in the RTI Aggregate Evaluation Plan. Results reported in *Figures 1–5* show HCP MMPs' HEDIS performance data for calendar years 2016 through 2018 on measures for blood pressure control, 30-day follow-up after hospitalization for mental illness, good control of hemoglobin A1C (HbA1c) levels (<8.0 percent), medication review (one of the Care for Older Adults measures) and plan all-cause readmissions (ages 65+).

Although the primary focus of HEDIS analysis is to monitor trends over time in MMP performance, the figures and appendix table also compare MMP performance to national MA plan means for reference when available. We provide national MA plan means with the understanding that MA enrollees and demonstration enrollees may have different health and sociographic characteristics which would affect the results. Previous studies on health plan performance reveal poorer quality ratings for plans serving a higher proportion of dual eligible beneficiaries and beneficiaries with disabilities. Additionally, HEDIS measure performance, in particular, is slightly worse among Medicare plans active in areas with lower income and populations with a higher proportion of minorities (ASPE, 2016). Comparisons to national MA plan means should be considered with these limitations in mind.

As shown in ***Figure 1***, all MMPs improved performance on blood pressure control from 2016 to 2018, with some MMPs showing steadier patterns of improvement than others.

**Figure 1**
**Blood pressure control,[1] 2016–2018:**
**Reported performance rates for Healthy Connections Prime MMPs**
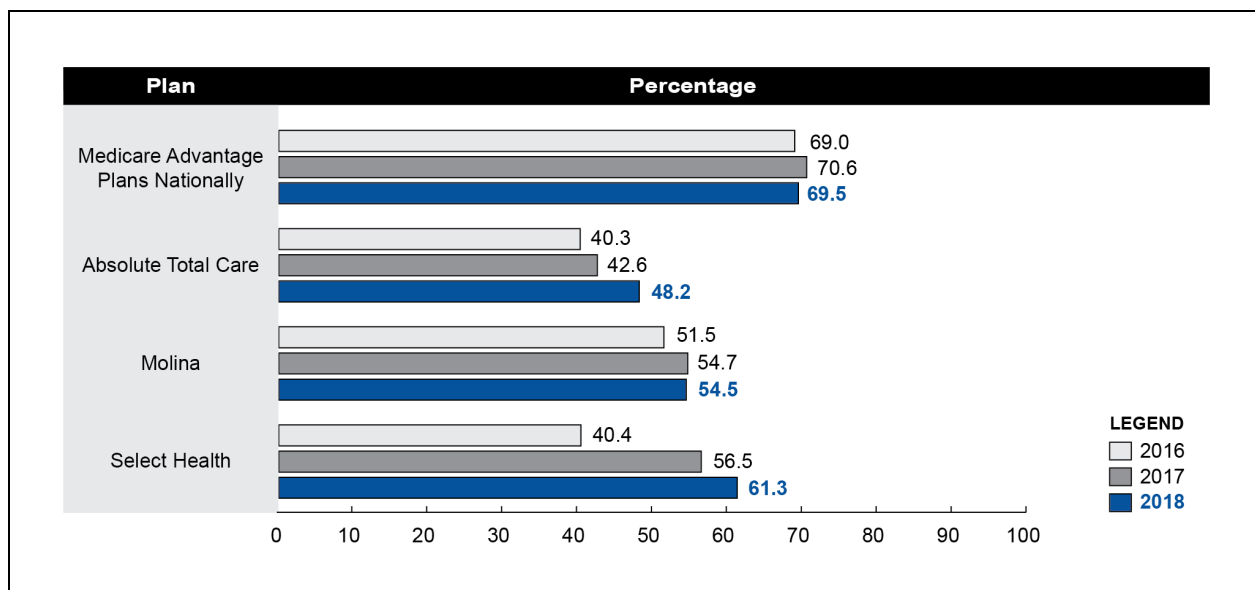


HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
[1] The following criteria were used to determine adequate blood pressure control: less than 140/90 mm Hg for enrollees 18–59 years of age; diagnosis of diabetes and <140/90 mm Hg for enrollees 60–85 years of age; no diagnosis of diabetes and <150/90 mm Hg for enrollees 60–85 years of age.
SOURCE: RTI analysis of 2016 through 2018 HEDIS measures.

*Figure 2* shows that for 30-day follow-up after hospitalization for mental illness, performance decreased from 2017–2018 for the one MMP meeting sample size requirements for reporting.

**Figure 2**
**30-day follow-up after hospitalization for mental illness,[1] 2016–2018:**
**Reported performance rates for Healthy Connections Prime MMPs**
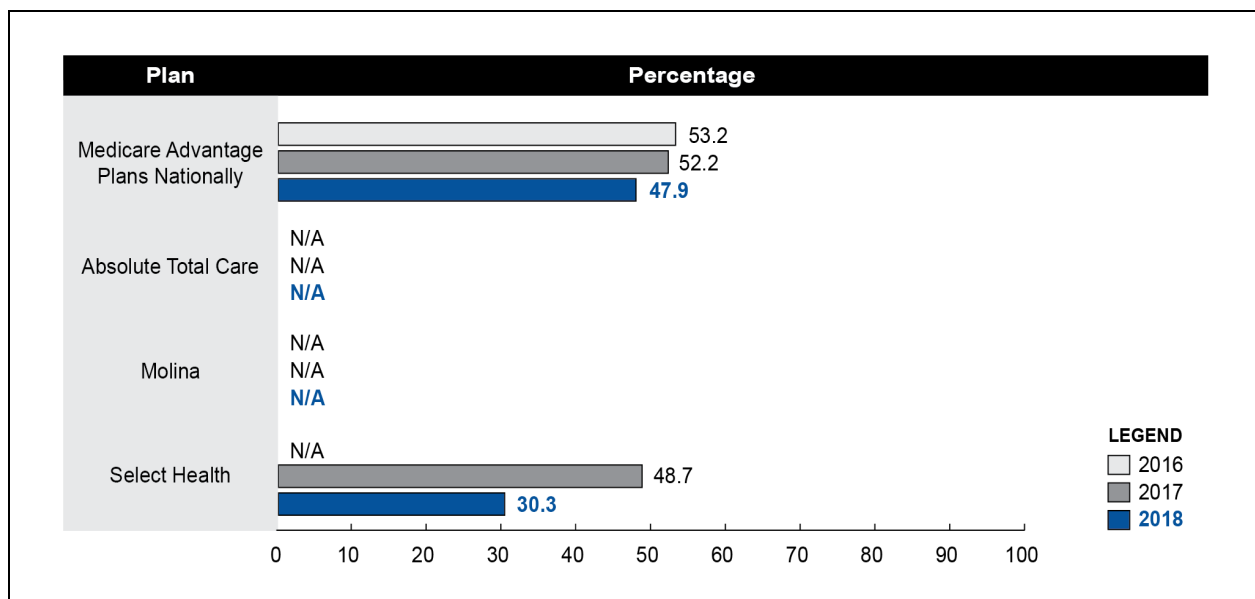


HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan; N/A = not applicable, where Medicare Advantage plans do not report such data, or where the number of enrollees in the MMP's provided HEDIS data available for inclusion in the measure was less than 30, and therefore not reported per RTI's decision rule for addressing low sample size.
[1] NCQA implemented a significant specification change with HEDIS 2018 (calendar year 2017), disallowing same-day follow up visits. National benchmarks fell from HEDIS 2018 to HEDIS 2019 (calendar year 2017 to calendar year 2018).
SOURCE: RTI analysis of 2016 through 2018 HEDIS measures.

As shown in ***Figure 3***, one MMP reported substantial year over year increases on controlling HbA1c levels (<8.0 percent) from 2016 to 2018, whereas the performance on the two other MMPs was mixed.

**Figure 3**
**Good control of HbA1c level (<8.0%), 2016–2018:**
**Reported performance rates for Healthy Connections Prime MMPs**
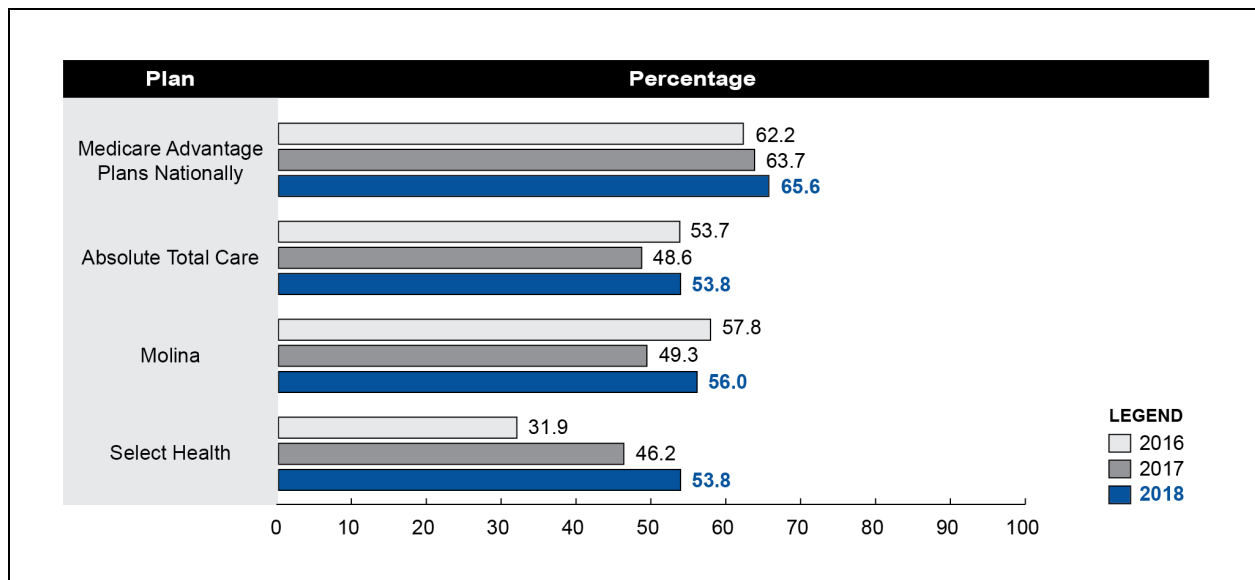


HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
SOURCE: RTI analysis of 2016 through 2018 HEDIS measures

*Figure 4* shows that for medication review (one of the Care for Older Adults measures), MMP performance varied from 2016 to 2018. One MMP steadily improved, one steadily declined, and the third had mixed performance. National MA plan mean data are not available for the Care for Older Adult measures.

**Figure 4**
**Medication review (one of the Care for Older Adults measures), 2016–2018:**
**Reported performance rates for Healthy Connections Prime MMPs**
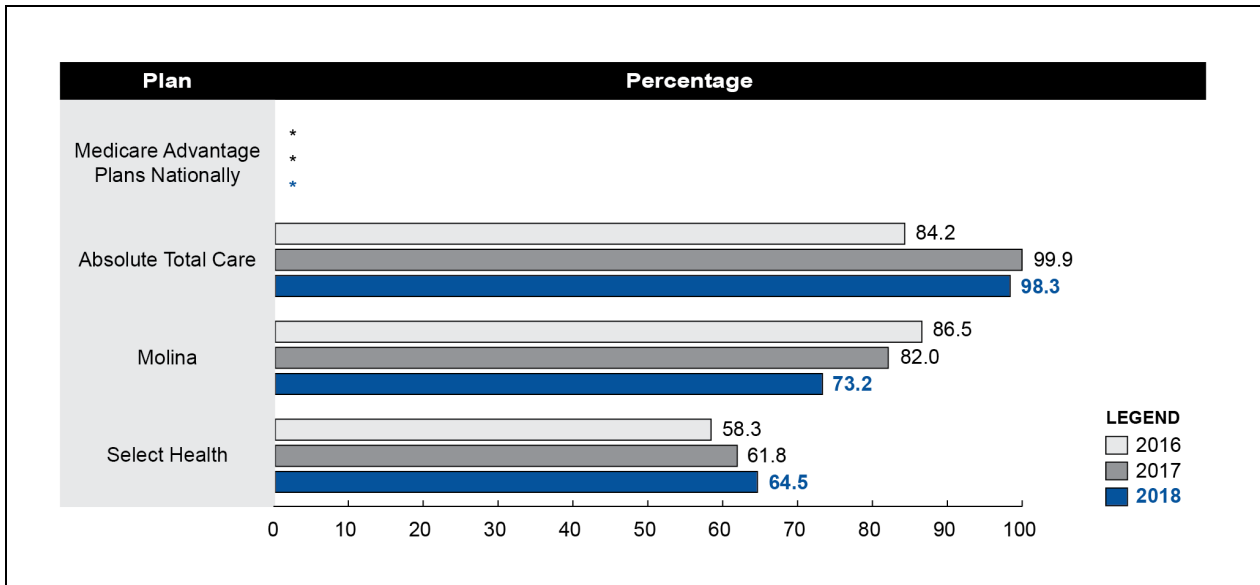


\* = not available, where MA plans nationally did not provide HEDIS data for this measure; HEDIS = Healthcare
   Effectiveness Data and Information Set; MA = Medicare Advantage; MMP = Medicare-Medicaid Plan.
SOURCE: RTI analysis of 2016 through 2018 HEDIS measures.

Plan all-cause readmissions for enrollees ages 65+ are reported in ***Figure 5*** as an observed-to-expected ratio, whereby an MMP's observed readmission rate is compared to its expected readmission rate given its beneficiary case mix; a value below 1.0 (shown by the vertical line at *x=1* in the figure below) is favorable and indicates that MMPs had fewer readmissions than expected for their populations based on case mix. ***Figure 5*** shows that for 2016–2018, all MMPs reported lower than expected readmissions for enrollees ages 65+ for years where data were available and sample size requirements were met. Performance across years varied by MMP.

**Figure 5**
**Plan all-cause readmissions: Ages 65+, 2016–2018:**
**Reported observed-to-expected ratios for Healthy Connections Prime MMPs**
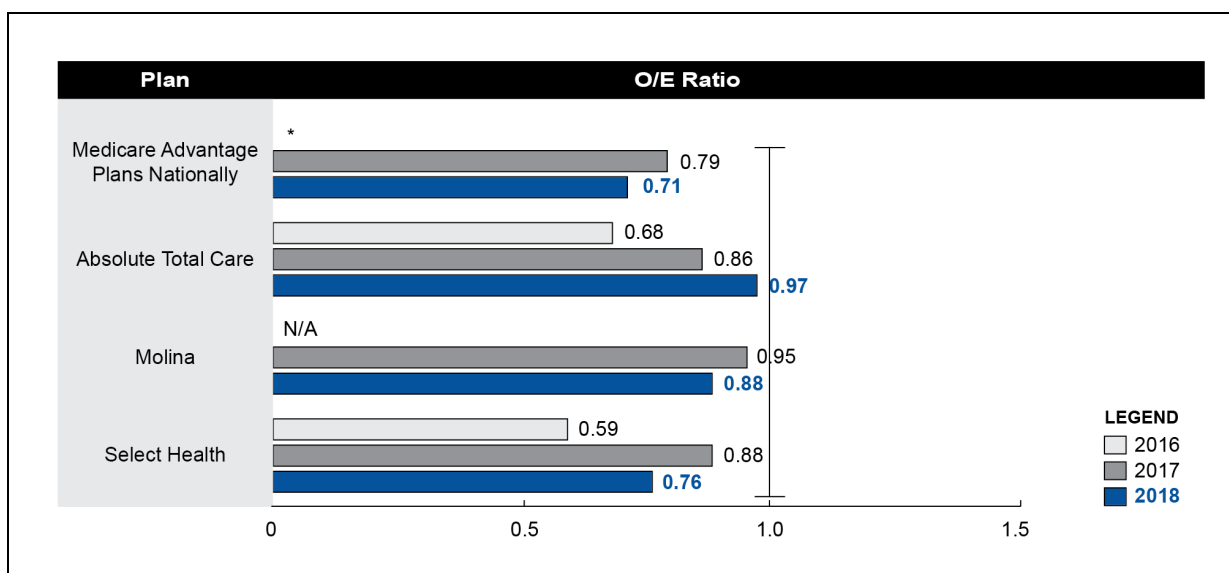


\* = not available, where RTI did not have access to MA plan national HEDIS data for this measure; HEDIS = Healthcare Effectiveness Data and Information Set; MA = Medicare Advantage; MMP = Medicare-Medicaid Plan; N/A = not applicable, where MA plans do not report such data, or where the number of enrollees in the MMP's provided HEDIS data available for inclusion in the measure was less than 30, and therefore not reported per RTI's decision rule for addressing low sample size.
SOURCE: RTI analysis of 2016 through 2018 HEDIS measures.

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# SECTION 4
# Beneficiary Experience

> CAHPS survey results and individual beneficiary interview findings indicate that the majority of enrollees are satisfied with their HCP plan.

> Few access to services challenges were reported between 2018 and 2020. However, beneficiaries had mixed experiences with access to transportation.

One of the main goals of the demonstrations under the FAI is to improve the beneficiary experience accessing Medicare and Medicaid services. In this section we highlight beneficiary experience with HCP, and provide information on beneficiary protections, data related to complaints and appeals, and critical incident and abuse reports.

For beneficiary experience, we draw on findings from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey, stakeholder interviews, and individual beneficiary interviews conducted in early 2021 by Alan Newman Research on behalf of CMS. See *Appendix A* for a full description of these data sources.

## 4.1    Impact of the Demonstration on Beneficiaries

### 4.1.1    *Overall Satisfaction with Healthy Connections Prime*

Individual beneficiary interview findings and CAHPS results for 2017–2019 indicated that the majority of enrollees were satisfied with HCP. Most individual beneficiary interview participants were very satisfied with the demonstration, with many reporting an overall sense of "being taken care of."

*"The reason I rated [the demonstration] so high is because I haven't had any problem with anything—with medicine, with my doctor appointments. My card is accepted wherever I go, so no problems."*

– Individual Beneficiary Interview Participant (2021)

Some other reasons given for participants' high satisfaction with HCP were a general peace of mind/lack of financial anxiety due to full coverage of, and attention to, health care needs; access to no-cost medical care, supplies and medication; and access to quality healthcare and skilled, compassionate health care providers.

*"This is the first plan I've been on where you didn't pay anything."*

– Individual Beneficiary Interview Participant (2021)

Regardless of where they lived or which MMP they were enrolled in, individual beneficiary interview participants found it difficult to identify any negatives about their HCP plan. The PHE had little effect on beneficiary interview participants' experience with their MMP. Most participants described their access to healthcare as continuous during the PHE.

*"It hasn't affected me going to any of my appointments."*

– Individual Beneficiary Interview Participant (2021)

CAHPS data also show high satisfaction among beneficiaries. *Figure 6* presents 2017–2019 CAHPS data for the percent of beneficiaries that rated the health plan as a 9 or 10 (on a scale of 0 to 10, 10 being the best rating).[9] Among the three MMPs, the percentage of CAHPS respondents who rated their health plan as a 9 or 10 increased overall for all three South Carolina MMPs from 2017 to 2019, ranging from 64 to 66 percent in 2017 and 66 to 74 percent in 2019.

**Figure 6**
**Beneficiary overall satisfaction, 2017–2019:**
**Percentage of beneficiaries rating their health plan as a 9 or 10**
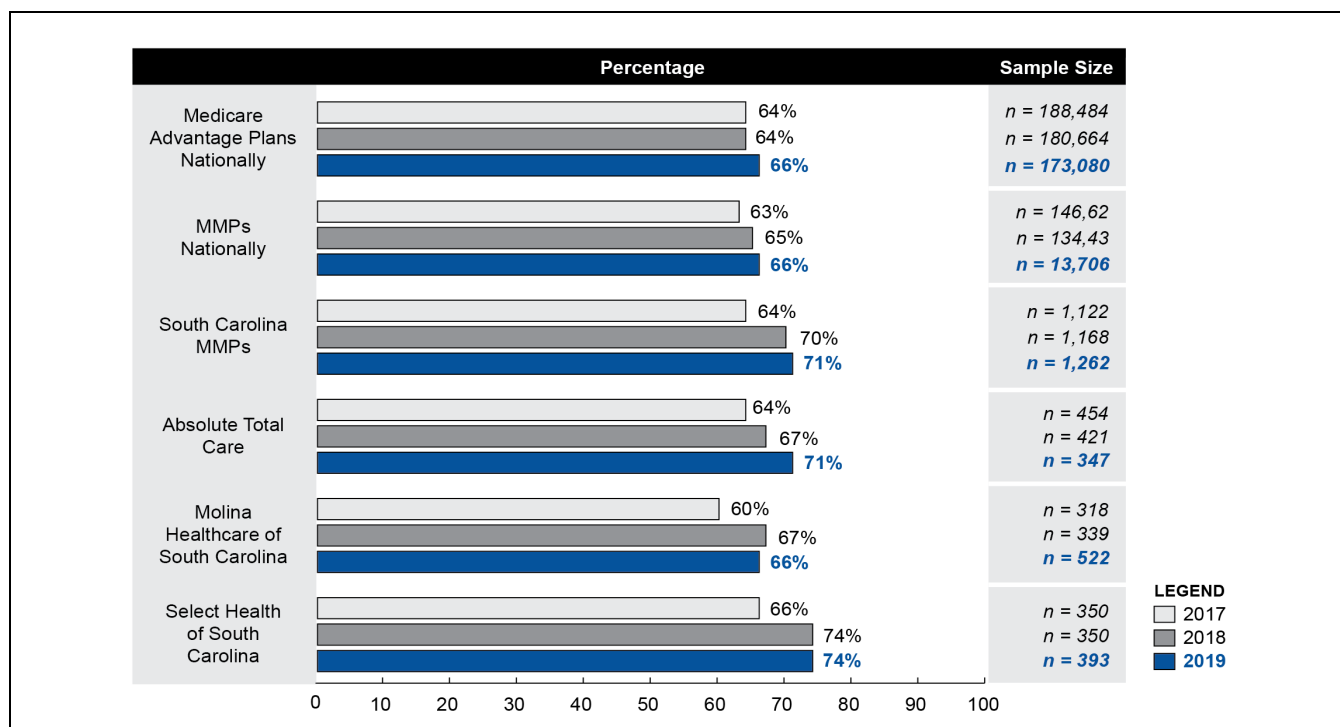


| | Percentage | Sample Size |
|---|---|---|
| Medicare Advantage Plans Nationally | 64% (2017) | n = 188,484 |
| | 64% (2018) | n = 180,664 |
| | **66% (2019)** | **n = 173,080** |
| MMPs Nationally | 63% (2017) | n = 146,62 |
| | 65% (2018) | n = 134,43 |
| | **66% (2019)** | **n = 13,706** |
| South Carolina MMPs | 64% (2017) | n = 1,122 |
| | 70% (2018) | n = 1,168 |
| | **71% (2019)** | **n = 1,262** |
| Absolute Total Care | 64% (2017) | n = 454 |
| | 67% (2018) | n = 421 |
| | **71% (2019)** | **n = 347** |
| Molina Healthcare of South Carolina | 60% (2017) | n = 318 |
| | 67% (2018) | n = 339 |
| | **66% (2019)** | **n = 522** |
| Select Health of South Carolina | 66% (2017) | n = 350 |
| | 74% (2018) | n = 350 |
| | **74% (2019)** | **n = 393** |

LEGEND: 2017, 2018, **2019**

CAHPS = Consumer Assessment of Healthcare Providers and Systems; MMP = Medicare-Medicaid Plan.
SOURCE: CAHPS data for 2017–2019. This item was case mix adjusted. The CAHPS question used for this item was: "Using any number from 0 to 10, where 0 is the worst health plan possible and 10 is the best health plan possible, what number would you use to rate your health plan?"

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[9] We provide national benchmarks from MA plans, where available, understanding that there are differences in the populations served by the HCP demonstration and the MA population, including health and socioeconomic characteristics that must be considered in the comparison of the demonstration to the national MA contracts.

As shown in ***Figure 7***, the percentage of CAHPS respondents who rated their drug plan as a 9 or 10 increased overall for all MMPs from 2017 to 2019. Additionally, a higher percentage of respondents across all three MMPs reported higher satisfaction with their drug plans than the national percentages for MA and MMPs between 2017 and 2019.

**Figure 7**
**Beneficiary overall satisfaction, 2017–2019:**
**Percentage of beneficiaries rating their prescription drug plan as a 9 or 10**
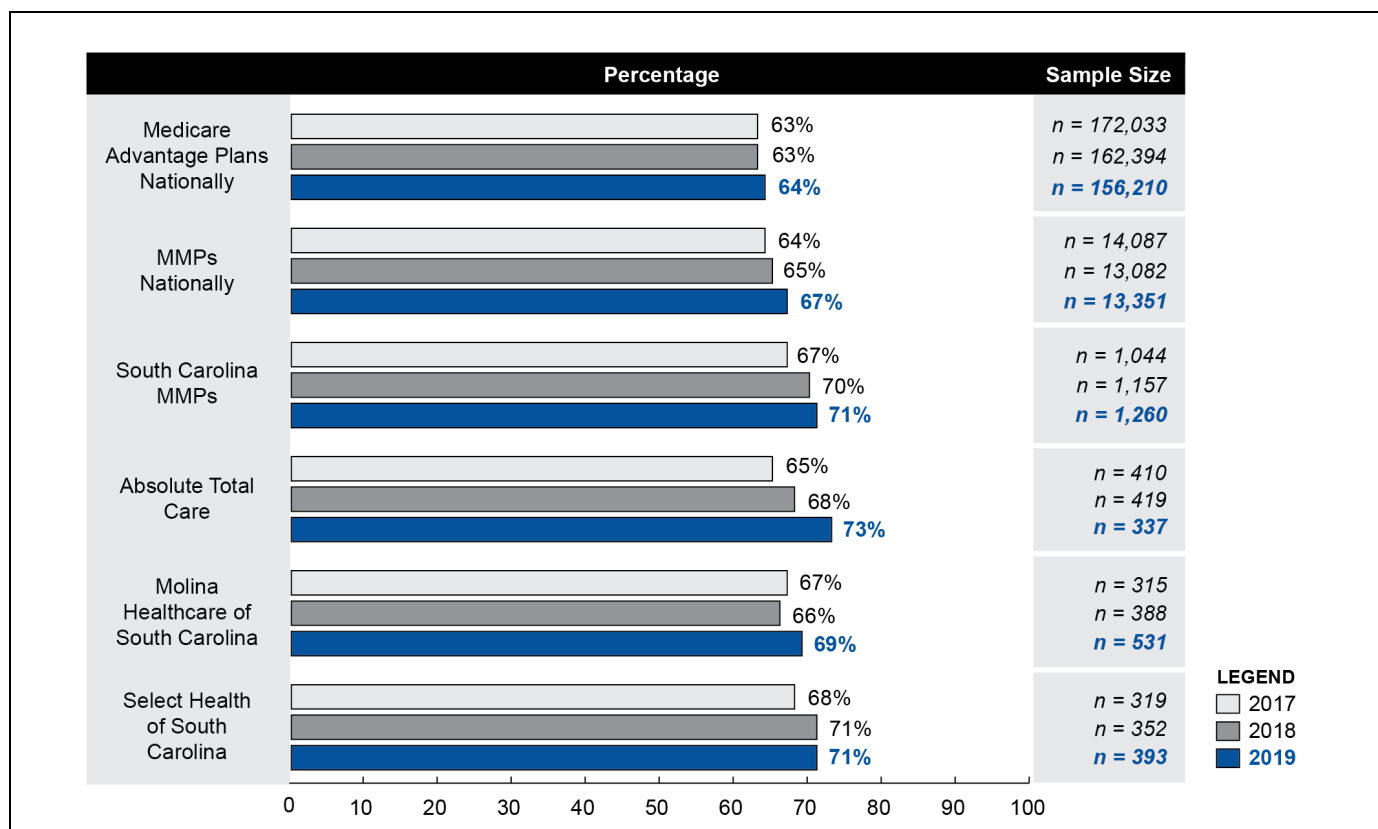
| | Percentage | Sample Size |
|---|---|---|
| **Medicare Advantage Plans Nationally** | 63% | n = 172,033 |
| | 63% | n = 162,394 |
| | 64% | n = 156,210 |
| **MMPs Nationally** | 64% | n = 14,087 |
| | 65% | n = 13,082 |
| | 67% | n = 13,351 |
| **South Carolina MMPs** | 67% | n = 1,044 |
| | 70% | n = 1,157 |
| | 71% | n = 1,260 |
| **Absolute Total Care** | 65% | n = 410 |
| | 68% | n = 419 |
| | 73% | n = 337 |
| **Molina Healthcare of South Carolina** | 67% | n = 315 |
| | 66% | n = 388 |
| | 69% | n = 531 |
| **Select Health of South Carolina** | 68% | n = 319 |
| | 71% | n = 352 |
| | 71% | n = 393 |

LEGEND: 2017, 2018, 2019

CAHPS = Consumer Assessment of Healthcare Providers and Systems; MMP = Medicare-Medicaid Plan.
SOURCE: CAHPS data for 2017–2019. This item was case mix adjusted. The CAHPS question used for this item was: "Using any number from 0 to 10, where 0 is the worst prescription drug plan possible and 10 is the best prescription drug plan possible, what number would you use to rate your prescription drug plan?"

As shown in ***Figure 8***, the percentage of CAHPS respondents reporting that their health plan "usually" or "always" gave them the information they needed was consistently greater than or equal to 87 percent for all MMPs reporting data for 2017 through 2019.

**Figure 8**
**Beneficiary experience with care coordination, 2017–2019:**
**Percentage of beneficiaries reporting that their health plan usually or always gave them information they needed**
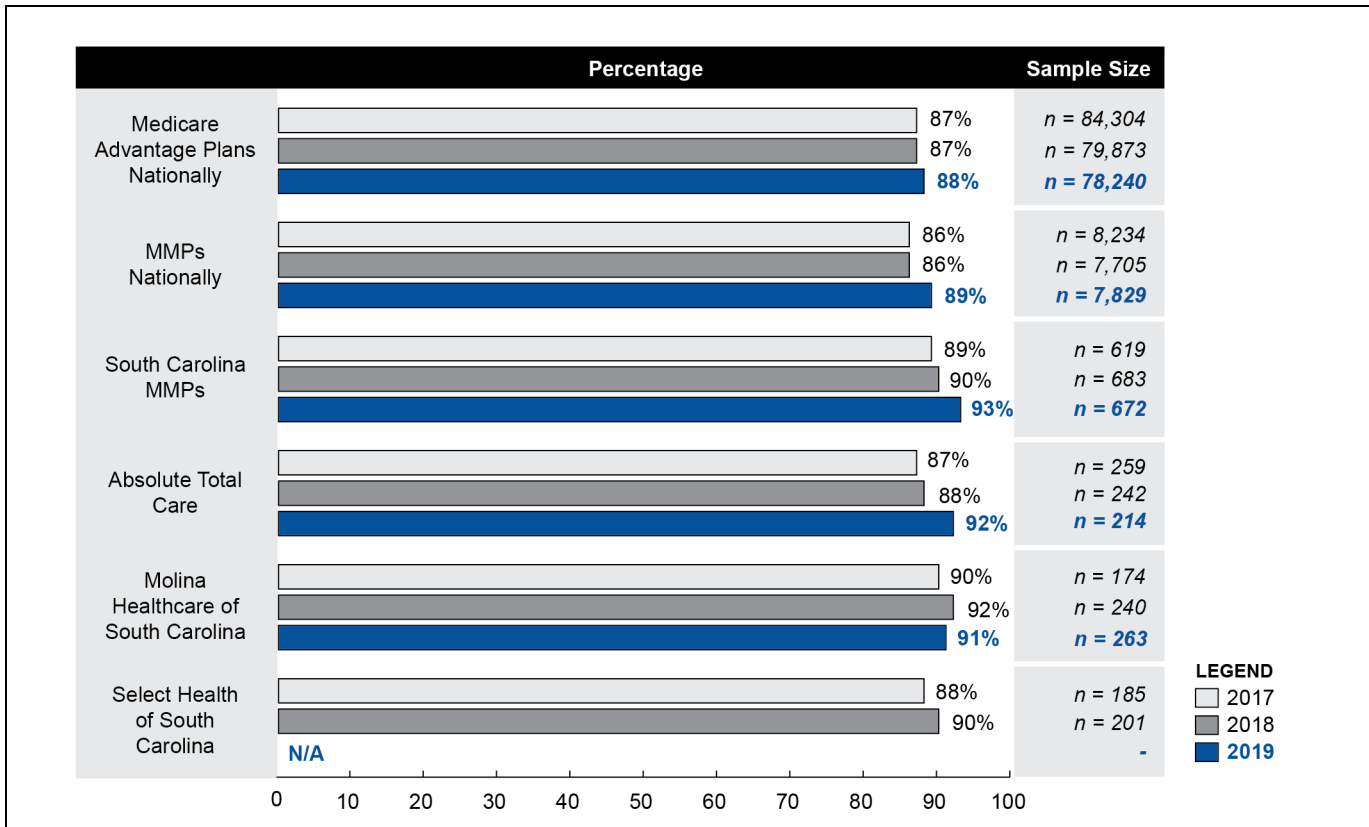


- = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; MMP = Medicare-Medicaid Plan; N/A = "Suppressed," i.e., when too few members provided responses (new as of 2019), or when the results have very low statistical reliability.

SOURCE: CAHPS data for 2017–2019. The CAHPS question used for this item was: "In the last 6 months, how often did your health plan's customer service give you the information or help you needed?"

*Figure 9* shows that for two of the three plans, the percentage of beneficiaries who reported that their personal doctors were "usually" or "always" informed about care received from specialists was the same in all years for which data was reported, indicating consistency over time. For the third MMP, this percentage increased overall from 2017 to 2019. All percentages were greater than or equal to 83 percent.

**Figure 9**
**Beneficiary experience with care coordination, 2017–2019:**
**Percentage of beneficiaries reporting that in past 6 months their personal doctors were usually or always informed about care from specialists**
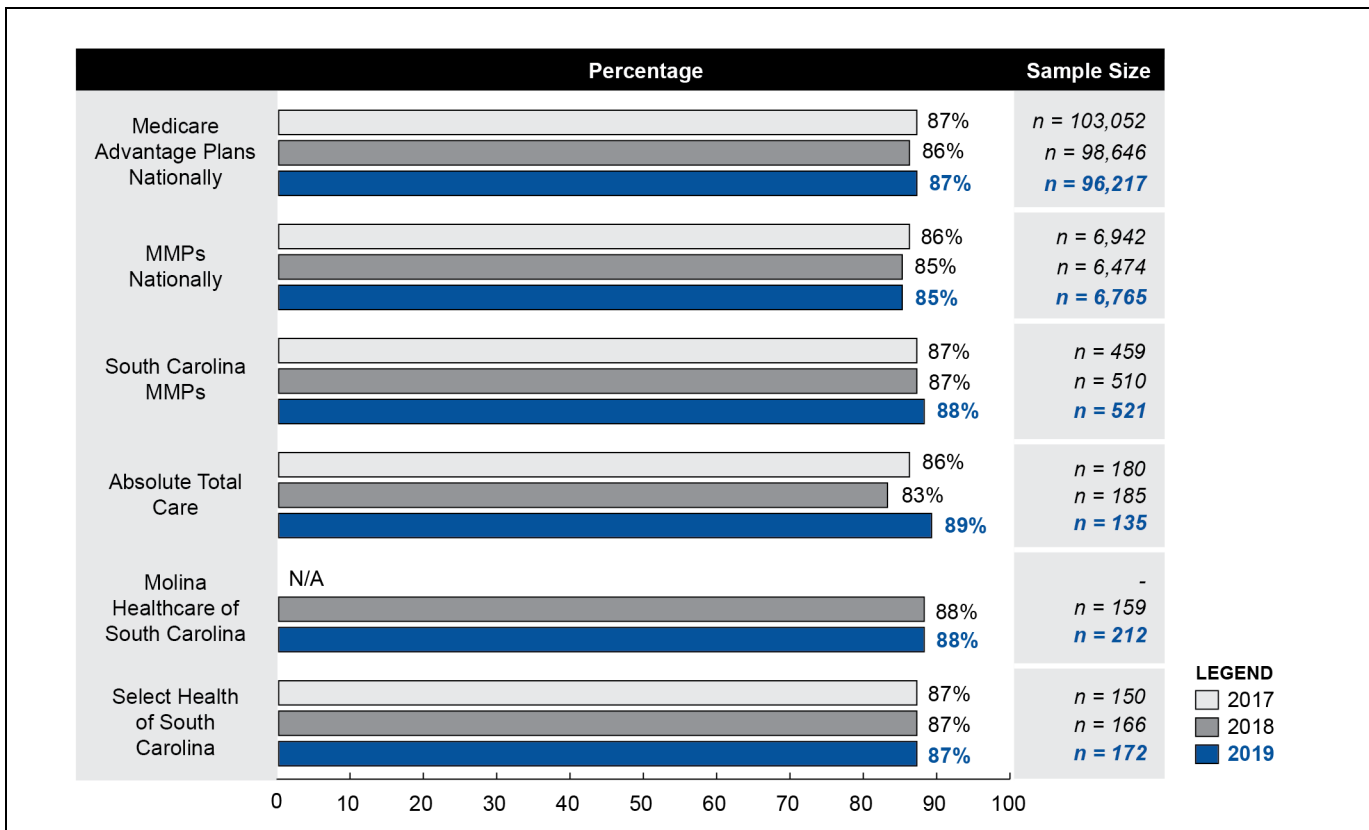


- = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; MMP = Medicare-Medicaid Plan; N/A = "Suppressed," i.e., when too few members provided responses (new as of 2019), or when the results have very low statistical reliability.

SOURCE: CAHPS data for 2017–2019. The CAHPS question used for this item was: "In the last 6 months, how often did your personal doctor seem informed and up-to-date about the care you got from specialists?"

Member testimonials shared by the MMPs and posted on the South Carolina HCP website indicate that, overall, the beneficiary experience has been positive.

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*One member lives with his extended family, who all help to care for him. However, none of the family members are fluent in English and this language barrier created difficulties for them when speaking with people outside of the family. During a recent call, the MMP care coordinator used an interpreter and spent a great deal of time explaining to the member and his family all of the services available to him from the MMP. The family was able to share their thoughts, care questions, and concerns and learn more about the MMP's benefits. The member and his family were very appreciative of the care coordinator and their willingness to engage an interpreter so they all could communicate. They thanked their health plan for not giving up on them.*

*– Member testimonial, shared by MMP (2019)*

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MMPs have made efforts to increase outreach to enrollees during the PHE. One plan made comfort calls to enrollees, which they reportedly appreciated. During this same period, this MMP also made additional outreach calls to members in areas where racial injustice protests were occurring to ensure they were well supported.

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*I'm 66 with a history of COPD and advanced emphysema, along with osteoporosis and GERD. Thus I can't afford to take any chances when it comes to procuring vaccines. I adhere to the COVID-19 rules; masks, social distancing, hand washing and a polyurethane face shield that I wear in conjunction with the mask. I only have one eye; my second eye is a prosthetic and my ophthalmologist said it'd be a good idea to completely cover my face to protect the remaining eye. Thank you again for the "get your flu shot letter." You really do look out for the well-being of the patient and I hope and pray it will always remain as such.*

*– Member testimonial, shared by MMP (2020)*

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### 4.1.2   Access to Services

Enrollee access to transportation during the reporting period was mixed. In 2019, two plans reported that even when beneficiaries scheduled transportation, they were sometimes not picked up by the transportation service, and so beneficiaries missed appointments. One plan noted that it had difficulties organizing transportation for enrollees to and from appointments during the early part of the PHE, but care coordinators addressed this concern as time went on. In 2020, a beneficiary advocate reported assisting enrollees with transportation to appointments and other access issues.

Hospice and personal care service policy interactions was a concern that developed during the reporting period. HCP enrollees declined hospice services because they were informed that hospice enrollment would result in losing their personal care hours, provided as

part of the Medicaid benefit. According to one stakeholder, the potential loss in personal care hours resulted from a State policy intended to minimize duplication of services and achieve savings for the Medicaid program. CMS could not identify any regulations prohibiting the receipt of both services simultaneously if there was an assessment of need and no overlap in the services.

Palliative care remained an underutilized benefit between 2018 and 2020, despite the State's 2017 collaboration with the Center to Advance Palliative Care to improve awareness and access to this benefit (see the First Evaluation Report). According to the 2019 Palliative Care and Quality of Life Study Committee report, close to 54 percent of South Carolinians, including MMP enrollees, who died in 2018 would have been eligible for palliative care (SCDHHS, 2019). This aligns with State officials' estimates that only about one-half of enrollees who were appropriate for the palliative care benefit received those services.

## 4.2    Beneficiary Protections

In this section we describe the beneficiary protections available to demonstration enrollees and enrollees' awareness and use of those protections. We also include a summary of grievance (complaint) and appeals data received from the sources outlined in *Table 7* and qualitative information collected by the RTI evaluation team.

### Table 7
### Beneficiary protection measures

| Measure | Explanation | Data source(s) | Reporting period |
|---|---|---|---|
| Grievance or complaint | Enrollees have the right to file a grievance with their MMP at any time. A grievance is a complaint or a dispute expressing dissatisfaction with the MMP or a provider, regardless of whether the enrollee is requesting a remedial action. Grievances are resolved at the MMP level. | Data reported by MMPs to CMS' FAI implementation contractor, NORC | 2015–2020 |
| | | CMS Complaint Tracking Module (CTM) for complaints received by SC DHHS and 1-800-Medicare[1] | 2015–2020 |
| Appeal | Enrollees have the right to appeal an MMP's decision to deny, terminate, suspend, or reduce services. Appeals are resolved at the MMP or IRE level. | Data reported by MMPs to CMS' FAI implementation contractor, NORC | 2015–2020 |
| | | Independent Review Entity (IRE), a second-level review of Medicare appeals[2] | 2015–2020 |

(continued)

**Table 7 (continued)**
**Beneficiary protection measures**

| Measure | Explanation | Data source(s) | Reporting period |
|---|---|---|---|
| Critical incidents and abuse reports | Critical incidents refer to any actual or alleged event or situation that creates a significant risk of substantial harm to the physical or mental health, safety or well-being of a member. Abuse refers to: Willful use of offensive, abusive, or demeaning language by a caretaker that causes mental anguish; knowing, reckless, or intentional acts or failures to act which cause injury or death to an individual or which places that individual at risk of injury or death.[3] | Data reported by MMPs to CMS' FAI implementation contractor, NORC | 2015–2020 |

[1] Data obtained from the Complaints Tracking Module (CTM) within CMS's HPMS system by RTI.
[2] Data provided to RTI by CMS.
[3] For a full definition, please see https://www.cms.gov/files/document/screportingrequirements02282020.pdf

Over the course of the demonstration, the analysis method for plan-reported grievances has changed.[10] Between 2015 and 2017, the number of MMP-reported grievances per 1,000 enrollees varied, with a low of 8 in quarter 1 of 2017 and a high of 21 in quarter 3 of 2015. Between 2018 and 2020, the number of grievances per 10,000 enrollee months initially increased and then decreased. There were 40 grievances per 10,000 enrollee months in quarter 1 of 2018; this rose to a high of 108 per 10,000 enrollee months in quarter 4 of 2018, and decreased to 33 grievances per 10,000 enrollee months in quarter 4 of 2020. Most complaints filed with the CMS CTM were about enrollment and disenrollment, benefits, access, and quality of care.[11]

As with grievance data, effective January 2018 the analysis method for plan-reported appeals changed from appeals per 1,000 enrollees to appeals per 10,000 enrollee months.[12] Between 2015 and 2017 the number of appeals per 1,000 enrollees showed an increasing trend. During this period, appeals were at 0 in quarter 1 of 2015, and ranged to a high of 24 appeals per 1,000 enrollees, in quarter 1 of 2017. From 2018 through 2020, the total appeals per 10,000 enrollee months varied significantly but decreased overall. In 2018, appeals per 10,000 enrollee months rose from 86 to 122. In quarter 1 of 2019, the number decreased to 64 per 10,000 enrollee months and then increased to 245 by quarter 4. In 2020 there was less variation: appeals were at 33 per 10,000 enrollee months in quarter 1 and 29 in quarter 4.

A total of 439 appeals were reported to the IRE from 2015 through 2020, of which 277 (63.1 percent) were upheld, 59 (13.4 percent) were overturned, 2 (0.5 percent) were partially

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[10] From 2015 through 2017, grievances data were analyzed per 1,000 enrollees. Effective January 2018, the method changed to analyze total grievances per 10,000 enrollee months.
[11] These complaints ranged from difficulty securing Part D prescriptions, to difficulty finding a network provider/pharmacy, to concerns about a denied claim.
[12] From 2015 through 2017, appeals data were analyzed per 1,000 enrollees. Effective January 2018, the method changed to analyze total appeals per 10,000 enrollee months.

overturned, 99 (22.6 percent) were dismissed, and 2 (0.5 percent) were withdrawn. The most common category of appeals referred to the IRE was for practitioner services.[13]

MMPs are required to report to CMS' implementation contractor, NORC, on the number of critical incidents and abuse reports for members receiving LTSS. For the HCP demonstration, the number of critical incident and abuse reports per 1,000 members receiving LTSS generally decreased during the demonstration to date (2015–2020), from a high of 17.7 reports in quarter 4 of 2015 to 0.6 reports in quarter 4 of 2020.

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[13] Examples of practitioner services include physician, chiropractic, dental, prosthetics/orthotics, and vision care.

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# Demonstration Impact on Service Utilization and Quality of Care
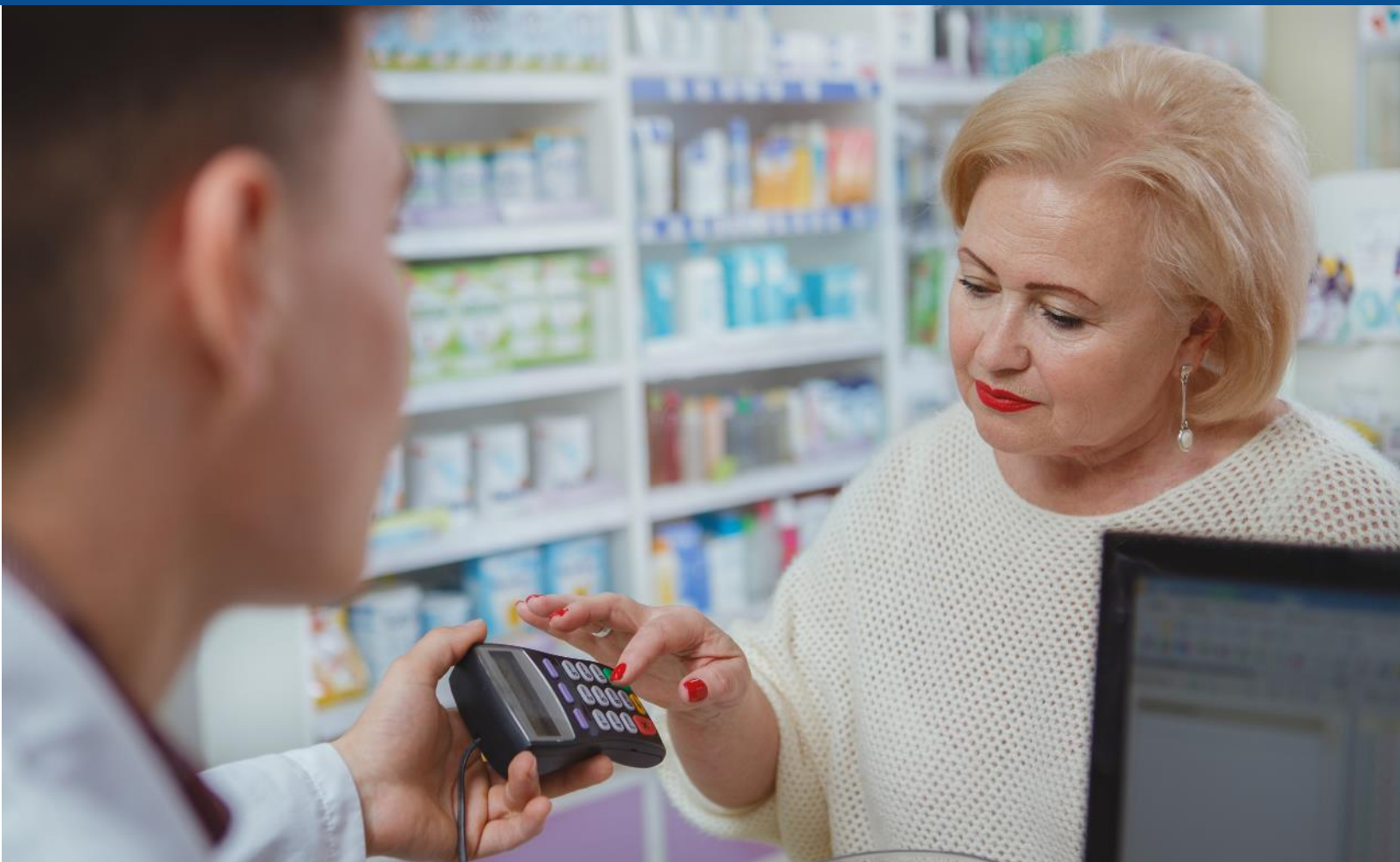
## 5.1    Methods Overview

The demonstrations under the FAI are intended to shift utilization from inpatient to ambulatory care, from NF care to 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 South Carolina demonstration in demonstration years 1–3 (February 1, 2015–December 31, 2018) on service utilization and quality of care outcomes among South Carolina demonstration eligible beneficiaries.

It should be noted that a number of modifications were made for this report that resulted in differences from the First Evaluation Report. First, the analyses in this section include MMP enrollees and FFS Medicare-Medicaid demonstration eligible beneficiaries only, whereas the previous analyses included MMP enrollees as well as eligible beneficiaries in both FFS and MA. Second, corrections were made to impact estimates from the First Evaluation Report that resulted in differences in our current impact estimates for demonstration year 1 (see *Appendix D* for additional details).

For this analysis, we used an intent-to-treat (ITT) approach that included all beneficiaries eligible for the demonstration, not just those who actually enrolled in the MMPs, to alleviate concerns of selection bias and to support generalizability of the results among the demonstration eligible population. Enrolled beneficiaries account for approximately 55 percent of all eligible beneficiaries (including FFS beneficiaries and MMP enrollees) in demonstration year 3. An ITT analysis mimics the real-world implementation of the demonstration.

We used a quasi-experimental DinD regression analysis with inverse propensity weighting to estimate the impact of the demonstration on the change in the probability or frequency of service utilization and quality of care outcomes, relative to the comparison group. Our analyses were conducted using Medicare enrollment and FFS claims data, MMP encounter data (although encounter data for Advicare was not included because those data were deemed incomplete), Area Health and Resource Files, and the American Community Survey. Please see *Appendix D* for more detail on our analytic methodology.

To help interpret the DinD estimate, we present the DinD estimate as both the absolute change in the probability (for a dichotomous outcome) or frequency (for a count outcome) of the outcome, relative to the comparison group, and a relative percent change of the average outcome value in the comparison group during the demonstration period. Thus, a positive DinD value may correspond to a greater increase or a smaller decrease in the outcome in the demonstration group relative to the comparison group, depending on the estimated trend in the outcome. For example, if the DinD estimate is positive and the trend is a decline in both the demonstration and comparison groups, then the interpretation of the DinD estimate is that the demonstration had a slower decline in the outcome, relative to the comparison group. Similarly, a negative value on the DinD estimate can result from either a greater decrease or a smaller increase in the outcome depending on the estimated trend in the demonstration group relative to the comparison group.

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. A

point estimate indicates a statistically significant demonstration effect if neither the upper nor lower bound of its confidence interval crosses zero.

In addition, we discuss the effects of the demonstration on two special populations of interest: beneficiaries who use LTSS and beneficiaries with serious and persistent mental illness (SPMI). The interest is in understanding whether the demonstration might have impacted each special population differently than the rest of the eligible population. We present the demonstration effects separately for LTSS users and for non-LTSS users, and also discuss any interaction effect (the difference between the two effects). This chapter only describes demonstration DinD impact estimates that are statistically significant with 95 percent confidence intervals. Estimates that are not statistically significant are not discussed. After that, we present the same type of results for beneficiaries with and without SPMI. For a complete list of DinD estimates with 95 and 90 percent confidence intervals, please see **Appendix E**.

## 5.2 Demonstration Impact on Service Utilization Among Eligible Beneficiaries

Overall, the demonstration increased the number of physician visits by 12.5 percent and decreased the probability of inpatient admission by 7.3 percent, relative to the comparison group. However, the demonstration also increased the probability of long-stay NF use by 11.9 percent, relative to the comparison group. There was no demonstration impact on the likelihood of an ED visit or SNF admission.

### 5.2.1 Cumulative Impact Over Demonstration Years 1–3

The goal of the South Carolina demonstration is to develop person-centered care delivery models integrating the full range of medical, behavioral health, and LTSS for Medicare-Medicaid enrollees ages 65 and older. The expectation is that this integrated delivery model will help improve access to care, reduce hospitalizations and long-stay NF stays, and improve quality of care.

**Table 8** shows the cumulative impacts of the demonstration on service utilization. The South Carolina demonstration has some expected and favorable impacts on service utilization. The monthly probability of any inpatient admission decreased and monthly physician evaluation and management (E&M) visits increased in the demonstration group, relative to the comparison group. However, counter to the goals of the demonstration, there also was an increase in the probability of any long-stay NF use, relative to the comparison group. There was no demonstration effect on the probability of ED visits or SNF admissions.

- The demonstration resulted in a 0.26 percentage point greater decrease in the monthly probability of any inpatient admission, relative to the comparison group. This decrease represents a difference of −7.3 percent relative to the predicted probability (0.0353) of inpatient admission among the comparison group during the demonstration period.

**Table 8**
**Cumulative demonstration effect on select service utilization measures for eligible beneficiaries in South Carolina, demonstration years 1–3 (February 1, 2015– December 31, 2018)**

| 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 | 0.0345 | 0.0295 | −7.3 | −0.0026** (−0.0043, −0.0008) | 0.0038 |
| | Comparison | 0.0381 | 0.0353 | | | |
| Probability of ED visit | Demonstration | 0.0546 | 0.0559 | NS | −0.0024 (−0.0050, 0.0002) | 0.0710 |
| | Comparison | 0.0614 | 0.0655 | | | |
| Count of physician E&M visits | Demonstration | 0.7309 | 0.8857 | 12.5 | 0.1096*** (0.0765, 0.1427) | <0.0001 |
| | Comparison | 0.8190 | 0.8750 | | | |
| Probability of SNF admission | Demonstration | 0.0079 | 0.0075 | NS | −0.0006 (−0.0013, 0.0001) | 0.1126 |
| | Comparison | 0.0099 | 0.0101 | | | |
| Probability of any long-stay NF use | Demonstration | 0.0262 | 0.0435 | 11.9 | 0.0068* (0.0016, 0.0120) | 0.0103 |
| | Comparison | 0.0414 | 0.0575 | | | |

*p < 0.05; **p < 0.01; ***p < 0.001
DinD = difference-in-differences; ED = emergency department; E&M = evaluation and management; NF = nursing facility; NS = not statistically significant; SNF = skilled nursing facility.
NOTES: The adjusted mean is the regression-adjusted predicted probability or number of events for the predemonstration and demonstration periods for the demonstration and comparison 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). The magnitude of a relative difference could be large when the underlying denominator is small. In such cases, the relative difference should be interpreted with caution.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data, and Minimum Data Set data.

- The cumulative demonstration effect on the number of physician visits was an increase of 0.1096 visits per month per beneficiary, relative to the comparison group. This monthly increase represents a difference of 12.5 percent relative to the predicted number of physician visits in the comparison group during the demonstration period (0.8750). The annualized increase in the number of physician visits as a result of the demonstration was 1.32 visits per year (calculated by 0.1096*12), relative to the comparison group.

  – This decrease in inpatient admissions, coupled with an increase in E&M visits, is consistent with the goals of the demonstration. As indicated in ***Section 3.3 Care Coordination***, MMPs reported a high percentage of enrollees with a care management plan completed from demonstration year 1 through demonstration year 3. This suggests that MMPs were successful engaging their enrollees, which may have led to better identification of medical needs and access to ambulatory services, as evidenced by a greater increase in E&M visits. The increase in E&M visits may have helped contribute to the decline in inpatient admissions.

■ That said, the decrease in the monthly probability of inpatient use may have resulted, in part, from secular trends observed among the eligible and not enrolled population (a decline from 3.8 to 3.3 percent), coupled with a *slower* decline in inpatient use in the comparison group. (see ***Appendix Table E-7***).

– The magnitude of the cumulative DinD estimate for E&M visits is largely driven by a greater increase in E&M visits in demonstration year 3. The impact identified (see below) in demonstration year 3 may be influenced by greater continuity of care coordinator staffing. As noted in **Section 3.3, Care Coordination**, the care-coordinator turnover rate declined from a high of 41.1 percent in demonstration year 1 to 26.6 percent in demonstration year 3.

• From demonstration year 1 to demonstration year 3, the annual probability of any long-stay NF use increased by 0.68 percentage points among the demonstration group relative to the comparison group. This impact represents a difference of 11.9 percent relative to the predicted average probability of any long-stay NF use among the comparison group during the demonstration period (0.0575).

– As reported in the [First Evaluation Report,](#) officials from two of the three MMPs noted their concern with access to care for those with LTSS use. Specifically, MMPs noted that many non-waiver enrollees needed HCBS waiver-like services to remain in the community. State officials further noted that errors and delays in eligibility determinations for HCBS waiver programs resulted in additional barriers to services. **Section 3.7, Financing and Payment** illustrate how these challenges continued from 2018 through 2020. These delays may have contributed to barriers to providing enrollees with the necessary LTSS to remain in community, and/or transition from an NF to the community. Moreover, **Table E-6** in **Appendix E** highlights an increasing prevalence of low-level of care among demonstration group beneficiaries from the baseline through the demonstration period, suggesting a greater propensity for accessing institutional services for LTSS needs.

### 5.2.2   Demonstration Impact in Each Demonstration Year

*Figures 10–14* show annual effects of the demonstration on all-cause inpatient admissions, ED visits, physician visits, SNF admissions, and long-stay NF use, respectively, with the cumulative effects also included as points of comparison. These annual impact estimates indicate that relative to the comparison group, the South Carolina demonstration decreased the probability of any monthly inpatient admission in demonstration years 1 and 2, while increasing the number of physician visits in each of the three demonstration years. The probability of SNF admission decreased only in the first demonstration year, and the probability of long-stay NF use increased in demonstration years 2 and 3 only, relative to the comparison group.

• The South Carolina demonstration decreased the monthly probability of any inpatient admission by 0.28 and 0.30 percentage points in demonstration years 1 and 2, respectively, relative to the comparison group (***Figure 10***). These absolute changes correspond with a 7.5 and 8.9 percent decrease, relative to the adjusted mean monthly

probability of any inpatient admission in the comparison group during demonstration years 1 and 2, respectively (***Table E-1 in Appendix E***).

- The South Carolina demonstration increased the monthly number of physician E&M visits by 0.0423, 0.0815, and 0.2419 in demonstration years 1, 2, and 3, respectively, relative to the comparison group (***Figure 12***). These absolute changes correspond with a 5.0, 9.1, and 27.1 percent increase relative to the adjusted mean monthly number of physician E&M visits in the comparison group during demonstration years 1, 2, and 3, respectively (***Table E-1***).

  – The demonstration effect on E&M visits in demonstration year 3 was particularly notable, and may reflect improvements in implementation and greater continuity in care coordination staff, as described in ***Section 5.2.1***.

- The monthly probability of SNF admissions decreased by 0.09 percentage points relative to the comparison group in demonstration year 1 only (***Figure 13***). This absolute change corresponds with an 8.7 percent decrease relative to the predicted mean probability of any SNF admission in the comparison group during demonstration year 1 (***Table E-1***). The impact in other demonstration years and the cumulative impact are not statistically significant.

  – ***Table E-4*** in ***Appendix E*** illustrates that the demonstration impact in year 1 was driven by a decline in the monthly average SNF use from 1 percent to 0.8 percent from baseline year 2 to demonstration year 1. By contrast, there was a less pronounced decline in the weighted average from the baseline period to demonstration year 1 in the comparison group.

- The South Carolina demonstration increased the probability of long-stay NF use relative to the comparison group in demonstration years 2 and 3 by 1.20 and 0.81 percentage points, respectively (***Figure 14***).

  – As described above in ***Section 5.2.1***, challenges in accessing needed HCBS among enrollees may have been a factor in annual increases in the probability of long-stay NF use, relative to the comparison group.

**Figure 10
Cumulative and annual demonstration effects on inpatient admissions,
demonstration years 1–3 (February 1, 2015–December 31, 2018)**
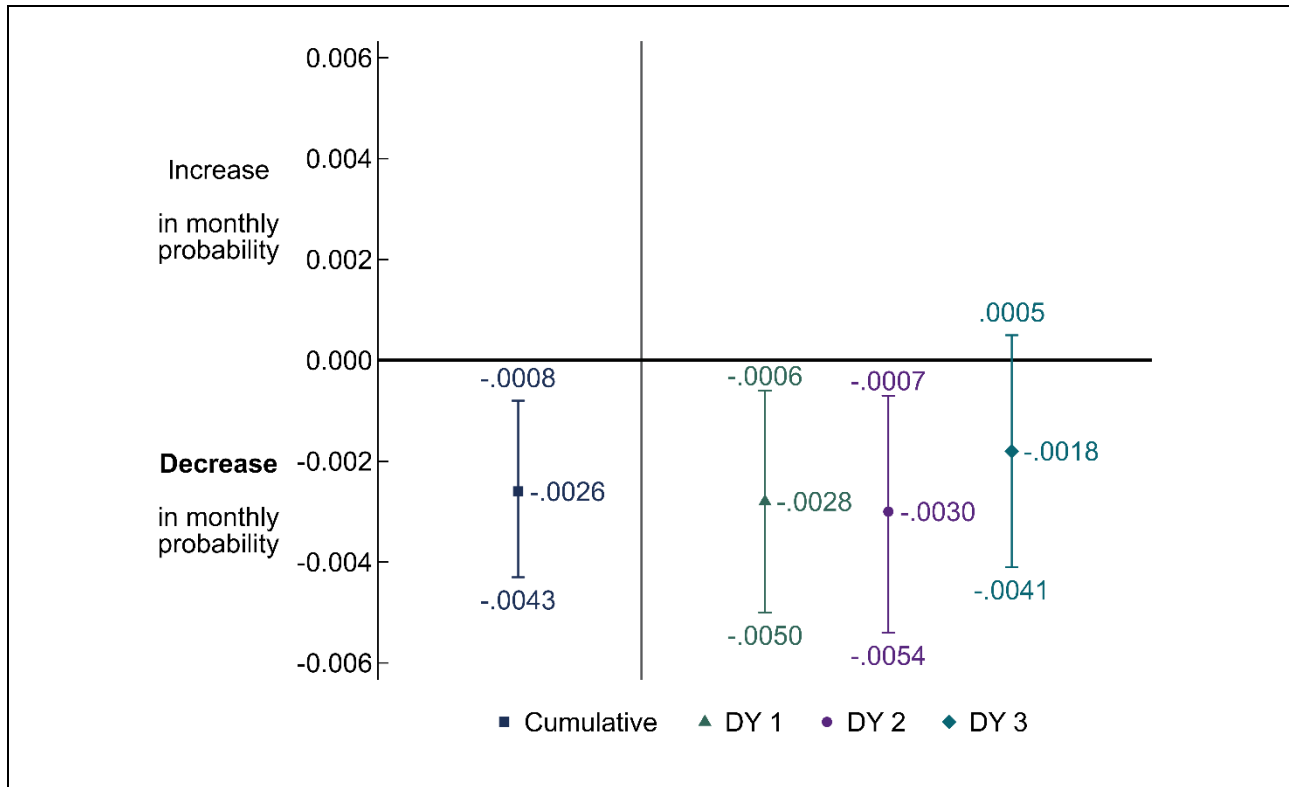


DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
**bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 11
Cumulative and annual demonstration effects on ED visits, demonstration years 1–3
(February 1, 2015–December 31, 2018)**
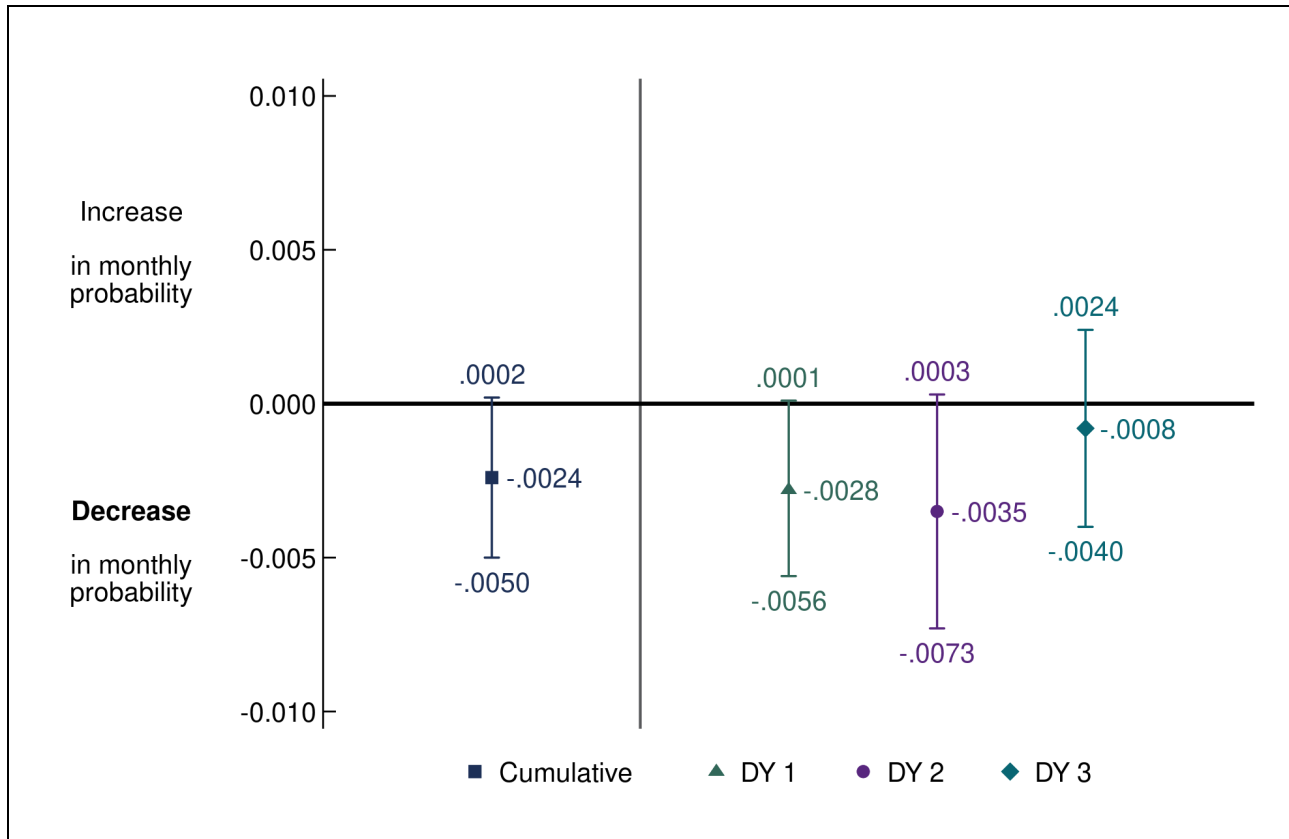


DY = demonstration year; ED = emergency department.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
   **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 12
Cumulative and annual demonstration effects on physician E&M visits,
demonstration years 1–3 (February 1, 2015–December 31, 2018)**
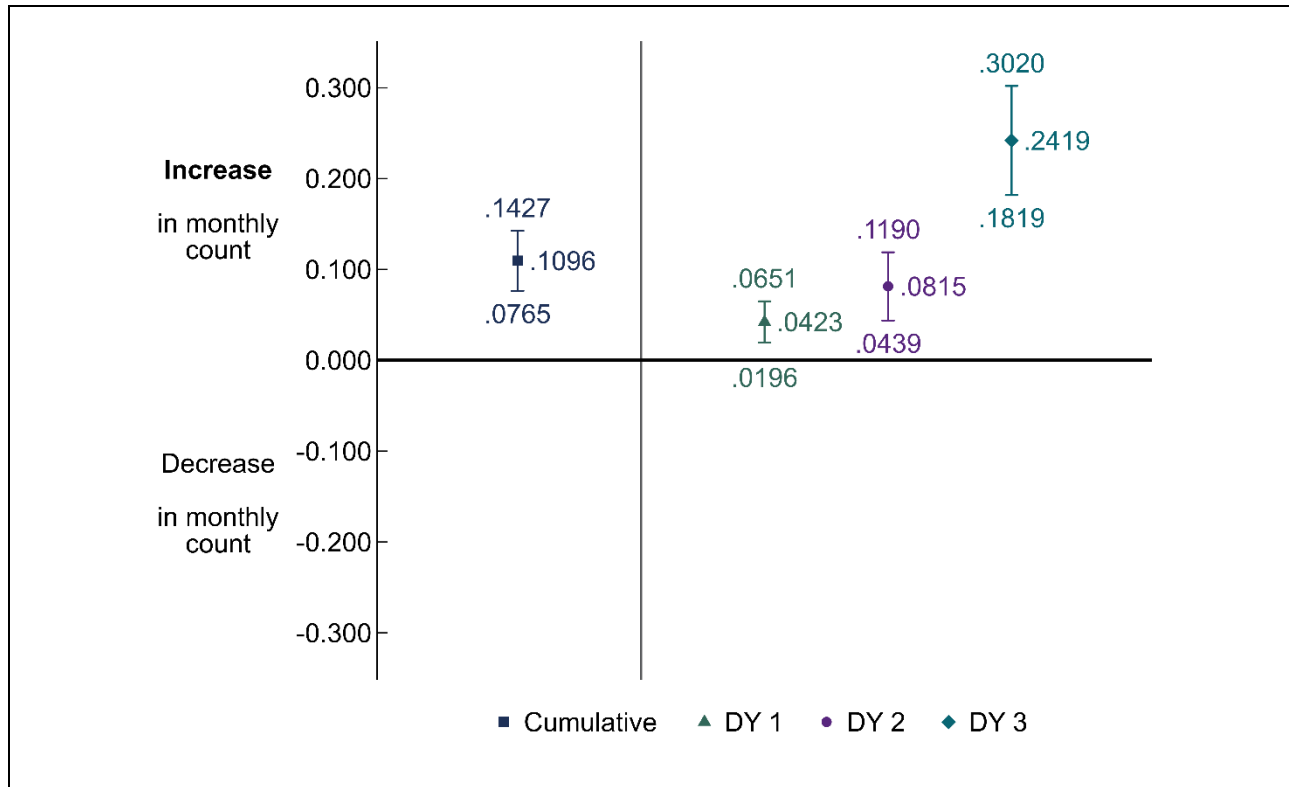


DY = demonstration year; E&M = evaluation and management.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 13
Cumulative and annual demonstration effects on SNF use, demonstration years 1–3
(February 1, 2015–December 31, 2018)**
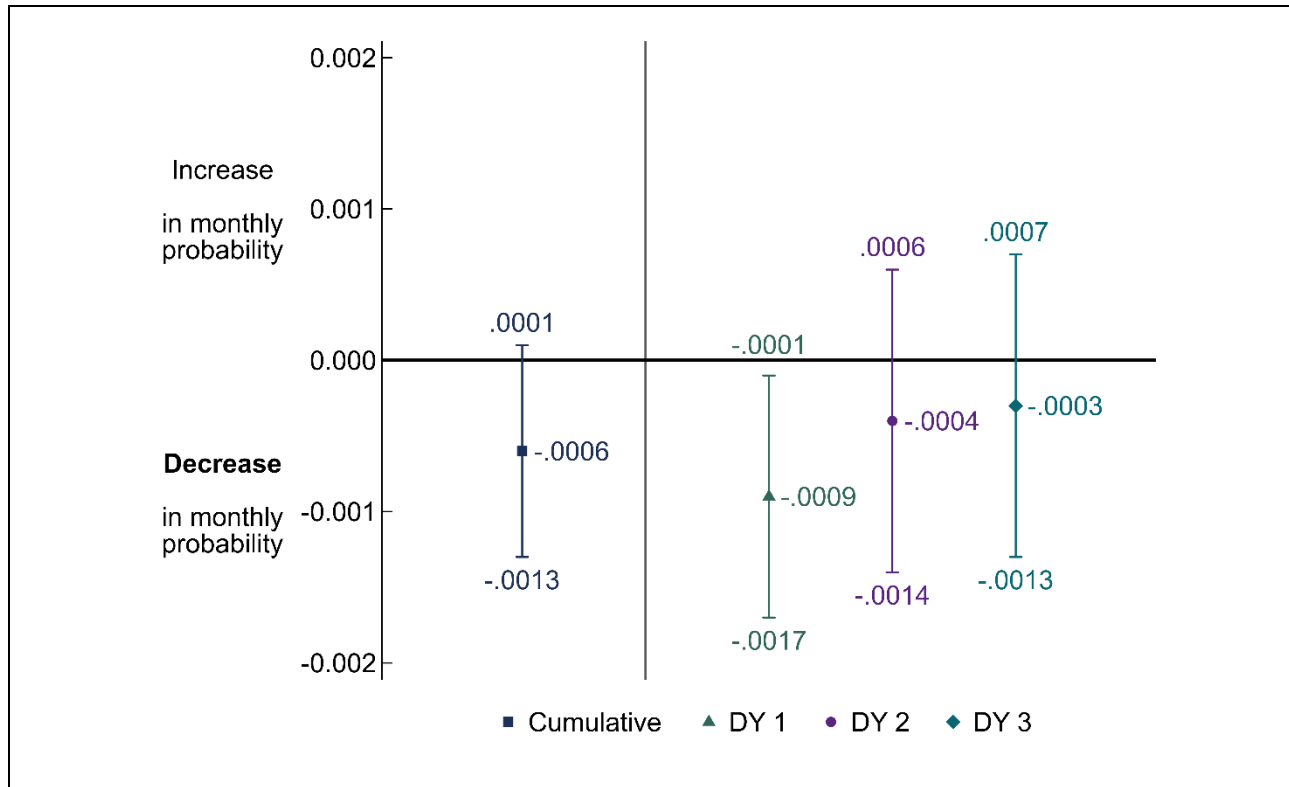


DY = demonstration year; NF = nursing facility.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in **bold.**
SOURCE: RTI International analysis of Minimum Data Set data.

**Figure 14**
**Cumulative and annual demonstration effects on long-stay NF use, demonstration years 1–3**
**(February 1, 2015–December 31, 2018)**
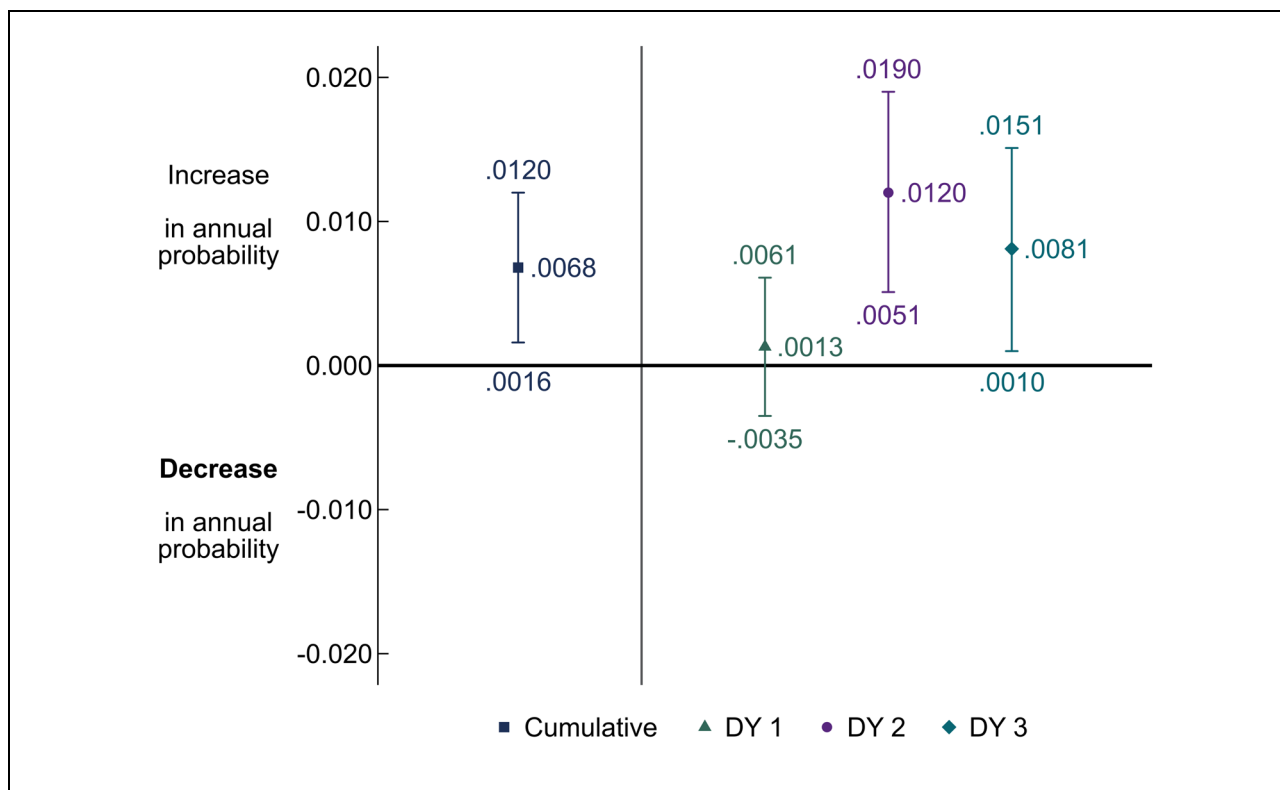


DY = demonstration year; NF = nursing facility.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in **bold.**
SOURCE: RTI International analysis of Minimum Data Set data.

## 5.3    Demonstration Impact on Quality of Care Among Eligible Beneficiaries

> The South Carolina demonstration did not have a statistically significant impact on any of the quality of care measures considered by this evaluation.

### 5.3.1    *Cumulative Impact Over Demonstration Years 1–3*

The South Carolina demonstration is expected to increase quality of care, as a result of care coordination and increased access to physician services. However, the demonstration did not have a statistically significant impact on any of the quality of care measures analyzed in this evaluation. *Table 9* illustrates the cumulative effect and adjusted means for these measures.

- Despite evidence that the MMPs were successful in engaging their enrollees leading to some improvements in access to care and reduction in hospitalizations (see

***Section 5.1***), the demonstration did not improve measures of quality of care, relative to the comparison group.

- As discussed above, there were challenges in accessing HCBS among enrollees eligible for those services, perhaps limiting any potential for preventing ED visits or avoidable hospitalizations.

- Additionally, as described in the First Evaluation Report, enrollee focus groups discussed challenges in accessing care, aging-specific services, and behavioral health services, while there were some who reported improved access to services such as medical care, durable medical equipment, and transportation after enrollment in the demonstration.

**Table 9**
**Cumulative demonstration effect on select quality of care measures for eligible beneficiaries in South Carolina, demonstration years 1–3**
**(February 1, 2015–December 31, 2018)**

| Measure | Group | Adjusted mean for predemonstration period | Adjusted mean for demonstration period | Relative difference (%) | Regression-adjusted DinD estimate (95% confidence interval) | *p*-value |
|---|---|---|---|---|---|---|
| Count of preventable ED visits | Demonstration | 0.0311 | 0.0330 | NS | −0.0009 (−0.0030, 0.0012) | 0.4155 |
| | Comparison | 0.0367 | 0.0399 | | | |
| Probability of ACSC admission, overall | Demonstration | 0.0081 | 0.0074 | NS | −0.0005 (−0.0015, 0.0005) | 0.3748 |
| | Comparison | 0.0090 | 0.0086 | | | |
| Probability of ACSC admission, chronic | Demonstration | 0.0049 | 0.0046 | NS | −0.0002 (−0.0011, 0.0006) | 0.5824 |
| | Comparison | 0.0053 | 0.0052 | | | |
| Probability of 30-day follow-up after mental health discharge | Demonstration | 0.2601 | 0.2239 | NS | 0.0325 (−0.0460, 0.1110) | 0.4176 |
| | Comparison | 0.3292 | 0.2525 | | | |
| Count of all-cause 30-day readmissions | Demonstration | 0.1907 | 0.1794 | NS | −0.0074 (−0.0281, 0.0132) | 0.4804 |
| | Comparison | 0.2146 | 0.2095 | | | |

*$p<0.05$; **$p<0.01$; ***$p<0.001$
ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; ED = emergency department; NS = not statistically significant.
NOTES: The adjusted mean is the regression-adjusted predicted probability or number of events for the predemonstration and demonstration periods for the demonstration and comparison 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*). The magnitude of a relative difference could be large when the underlying denominator is small. In such cases, the relative difference should be interpreted with caution.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

### 5.3.2 Demonstration Impact in Each Demonstration Year

*Figures 15–19* show the demonstration's annual effects on 30-day readmission, preventable ED visits, ACSC admissions (overall), ACSC admissions (chronic), and 30-day follow-up post mental health discharge, with the cumulative effect also shown as points of comparison. These annual impact estimates indicate that the South Carolina demonstration did not have a statistically significant impact on these quality of care measures in any of the 3 demonstration years (except for a statistically significant increase in 30-day follow-up post mental health discharge during demonstration year 3, a favorable finding).

**Figure 15**
**Cumulative and annual demonstration effects on 30-day readmissions,**
**demonstration years 1–3 (February 1, 2015–December 31, 2018)**
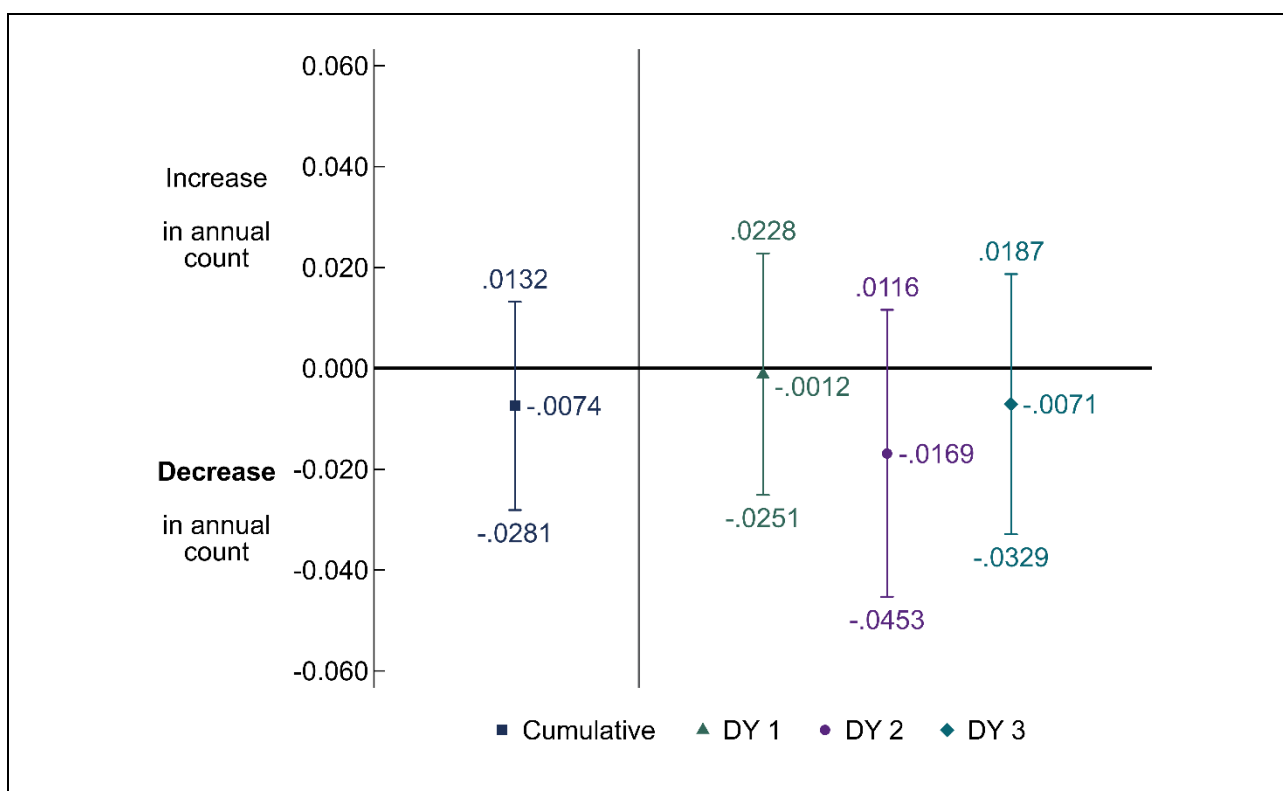


DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
  **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data

**Figure 16**
**Cumulative and annual demonstration effects on ACSC admissions (overall),**
**demonstration years 1–3 (February 1, 2015–December 31, 2018)**
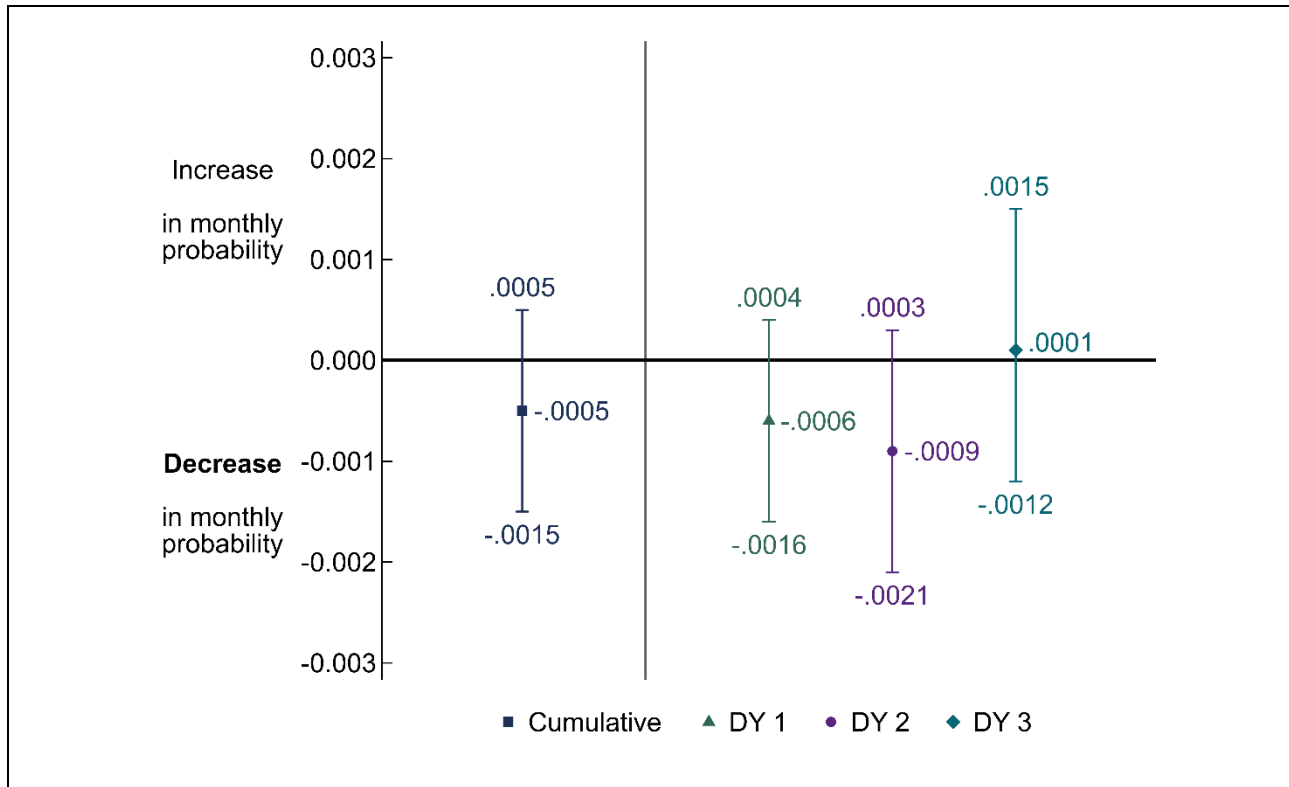


ACSC = ambulatory care sensitive condition; DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
   **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 17**
**Cumulative and annual demonstration effects on ACSC admissions (chronic),**
**demonstration years 1–3 (February 1, 2015–December 31, 2018)**
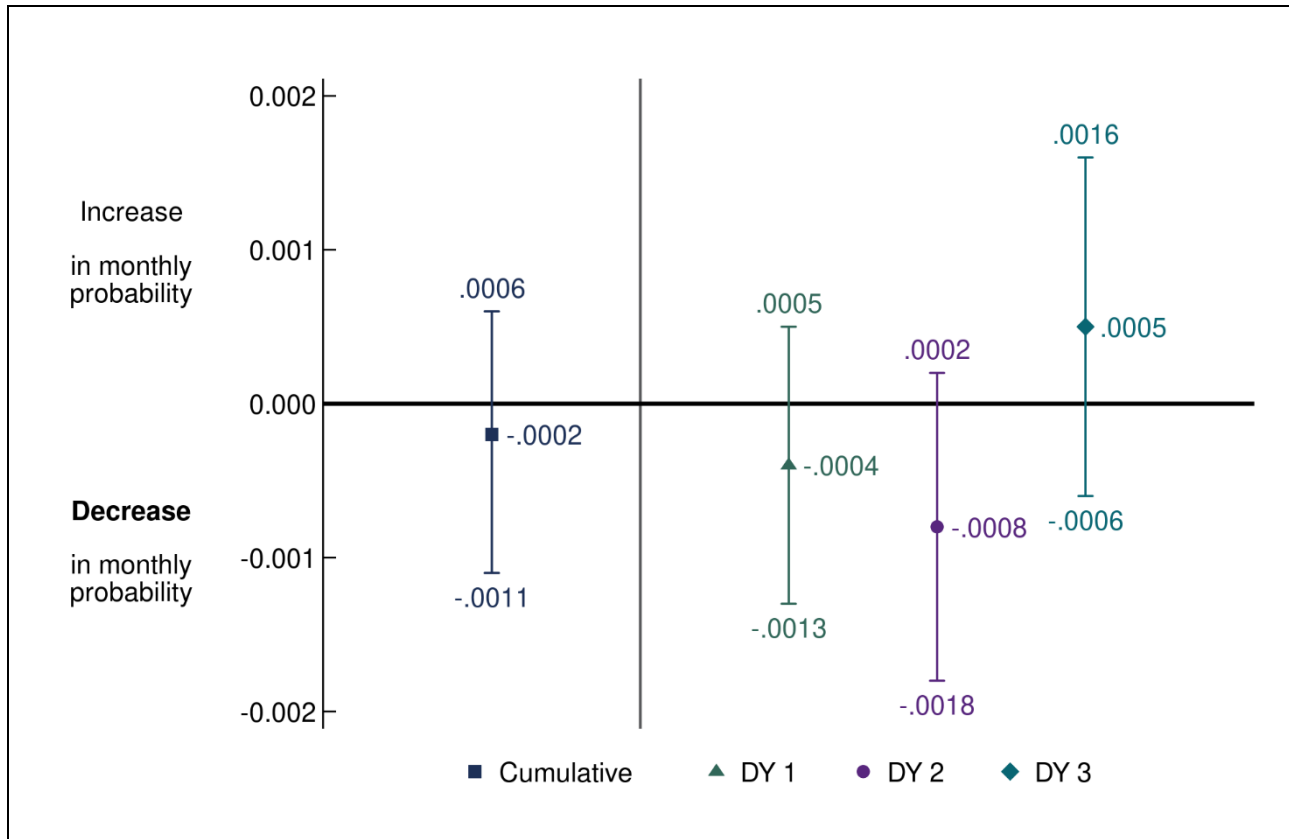


ACSC = ambulatory care sensitive condition; DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
   **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 18
Cumulative and annual demonstration effects on preventable ED visits,
demonstration years 1–3 (February 1, 2015–December 31, 2018)**
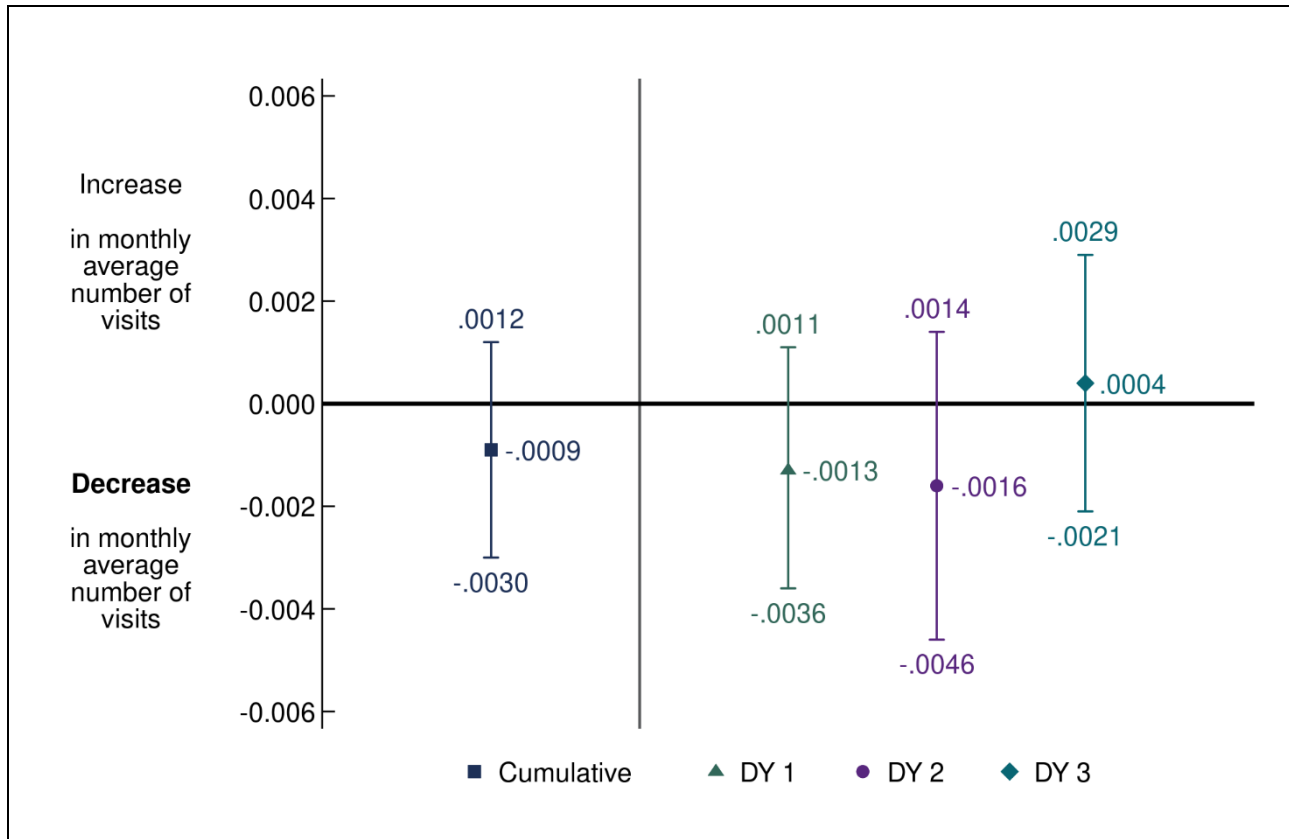


DY = demonstration year; ED = emergency department.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in
    **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

**Figure 19**
**Cumulative and annual demonstration effects on 30-day follow-up post mental health discharge, demonstration years 1–3 (February 1, 2015–December 31, 2018)**
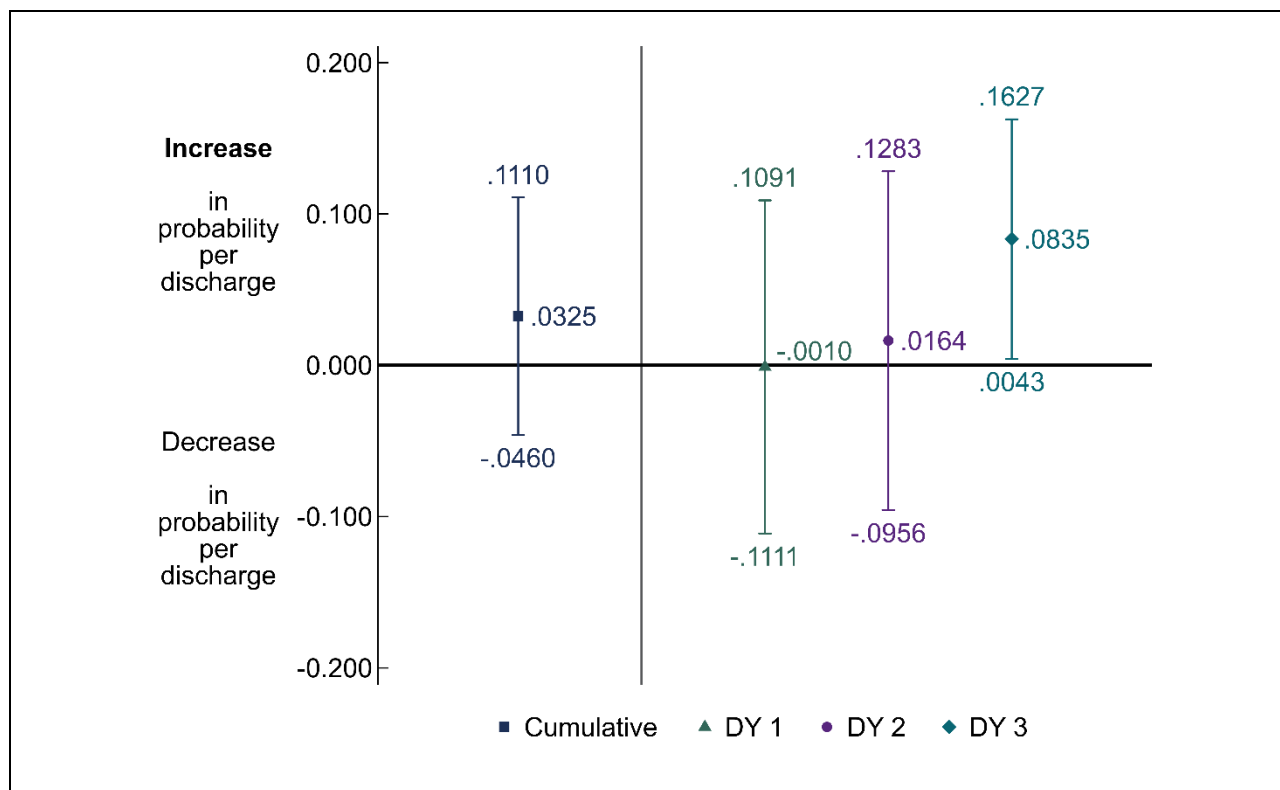


DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of the effect (Increase or Decrease) is in **bold.**
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

See *Appendix E, Tables E-4* through *E-8*, for unadjusted descriptive statistics for all service use and quality of care measures for the demonstration eligible population and for demonstration enrollees (i.e., beneficiaries who enrolled in MMPs).

## 5.4 Demonstration Impact on Special Populations

During demonstration years 1 through 3, the demonstration impacted the LTSS population differently than the non-LTSS population. The demonstration effect for those with LTSS use was an increase in the monthly probability of any inpatient admission and SNF admission and in the monthly number of physician E&M visits, relative to the demonstration effect for those without LTSS use. The demonstration did not have a statistically significant impact on the quality of care measures considered by this evaluation among either the LTSS population or the non-LTSS population.

The demonstration effect for beneficiaries with SPMI was a decrease in the probability of any inpatient admission and SNF admission, relative to the demonstration effect for those without SPMI. There was not a statistically significant impact on the quality of care measures considered by this evaluation among either the SPMI population or those without SPMI.

Two key goals of the South Carolina demonstration are to improve quality of care and lower spending for those with LTSS use and those with SPMI. Care coordination by the MMPs integrates medical care, behavioral health, and LTSS. The demonstration is expected to particularly impact service utilization and quality of care among eligible beneficiaries with LTSS needs or who have an SPMI, compared to those not in these special populations (see group definitions in *Appendix D*). The special population analyses indicate that the demonstration had mixed results for LTSS users and favorable results for beneficiaries with SPMI, relative to the demonstration impact among non-LTSS users and those without SPMI, respectively (see *Tables E-2* and *E-3* in *Appendix E*).

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

Additionally, further analyses were conducted to examine unadjusted service utilization measures by racial and ethnic groups among the eligible population for select utilization measures: inpatient admissions, ED (non-admit), primary care E&M physician visits, outpatient therapy (physical therapy, occupational therapy, and speech therapy), and hospice use (see *Appendix Figures E-1, E-2,* and *E-3* in *Appendix E*).

### 5.4.1 Beneficiaries Receiving Long-Term Services and Supports

The demonstration impacted service utilization measures for those with LTSS use differently than for those with no LTSS use (see *Table 10*). The demonstration effect for those with LTSS use was an increase in the monthly probability of any inpatient admission and SNF admission and in the monthly number of physician E&M visits, relative to the demonstration effect for those without LTSS use. As indicated in *Table D-1* in *Appendix D*, about 9.1 percent of the demonstration eligible population in demonstration year 3 had any LTSS use.

The demonstration had no differential effects on any quality of care measures among beneficiaries with LTSS use.

We also present estimates of the demonstration effect for LTSS users and non-LTSS users in each demonstration year, in **Table E-2** in **Appendix E**.

**Table 10**
**Cumulative demonstration effect on service utilization and quality of care measures, beneficiaries with LTSS use versus those without LTSS use in South Carolina, demonstration years 1–3 (February 1, 2015–December 31, 2018)**

| Measure | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | p-value | 95% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|
| **Service Utilization Measures** | | | | | | |
| Probability of inpatient admission | LTSS | 0.0017 | NS | 0.5035 | –0.0033, 0.0066 | 0.0050* |
| | Non-LTSS | –0.0033 | –14.0 | 0.0007 | –0.0052, –0.0014 | |
| Probability of ED visit | LTSS | –0.0035 | NS | 0.2401 | –0.0094, 0.0024 | –0.0024 |
| | Non-LTSS | –0.0011 | NS | 0.4131 | –0.0038, 0.0016 | |
| Count of physician E&M visits | LTSS | 0.1941 | 18.3 | <0.0001 | 0.1125, 0.2757 | 0.0878* |
| | Non-LTSS | 0.1063 | 14.2 | <0.0001 | 0.0752, 0.1374 | |
| Probability of SNF admission | LTSS | 0.0026 | NS | 0.0818 | –0.0003, 0.0056 | 0.0035* |
| | Non-LTSS | –0.0008 | –23.6 | 0.0105 | –0.0015, –0.0002 | |
| **Quality of Care Measures** | | | | | | |
| Count of preventable ED visits | LTSS | 0.0006 | NS | 0.8383 | –0.0050, 0.0062 | 0.0014 |
| | Non-LTSS | –0.0009 | NS | 0.4818 | –0.0032, 0.0015 | |
| Probability of ACSC admission, overall | LTSS | 0.0005 | NS | 0.7194 | –0.0024, 0.0035 | 0.0013 |
| | Non-LTSS | –0.0008 | NS | 0.0636 | –0.0016, 0.0000 | |
| Probability of ACSC admission, chronic | LTSS | 0.0008 | NS | 0.4690 | –0.0014, 0.0029 | 0.0014 |
| | Non-LTSS | –0.0006 | NS | 0.1306 | –0.0014, 0.0002 | |
| Probability of 30-day follow-up after mental health discharge | LTSS | –0.0000 | NS | 0.9996 | –0.1601, 0.1600 | –0.0264 |
| | Non-LTSS | 0.0263 | NS | 0.6300 | –0.0807, 0.1334 | |
| Count of all-cause 30-day readmissions | LTSS | –0.0099 | NS | 0.6409 | –0.0516, 0.0317 | 0.0161 |
| | Non-LTSS | –0.0260 | NS | 0.0720 | –0.0543, 0.0023 | |

*p<0.05; **p<0.01; ***p<0.001
ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; LTSS = long-term services and supports; NS = not statistically significant; SNF = skilled nursing facility.
NOTES: The magnitude of a relative difference could be large when the underlying denominator (the regression predicted mean outcome value for the comparison group during the demonstration period) is small. In such cases, the relative difference should be interpreted with caution.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

### 5.4.2   Beneficiaries with Serious and Persistent Mental Illness

The demonstration impacted those with SPMI differently than those without SPMI (see **Table 11** below). Specifically, the demonstration effect among those with SPMI was a decrease in the monthly probability of any inpatient admission and any SNF admission, relative to the demonstration effect among those without SPMI. As indicated in **Table D-1** in **Appendix D**, about 29.4 percent of the demonstration eligible population in demonstration year 3 had an SPMI.

**Table 11**
**Cumulative demonstration effect on service utilization and quality of care measures, beneficiaries with SPMI versus those without SPMI in South Carolina, demonstration years 1–3 (February 1, 2015–December 31, 2018)**

| Measure | Special population | Demonstration effect relative to comparison group | Relative difference (%) | *p*-value | 95% confidence interval | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|---|---|---|
| **Service utilization measures** | | | | | | |
| Probability of inpatient admission | SPMI | −0.0094 | −15.9 | 0.0018 | −0.0152, −0.0035 | −0.0084** |
| | Non-SPMI | −0.0010 | NS | 0.2162 | −0.0026, 0.0006 | |
| Probability of ED visit | SPMI | −0.0031 | NS | 0.4378 | −0.0110, 0.0048 | −0.0020 |
| | Non-SPMI | −0.0011 | NS | 0.4379 | −0.0040, 0.0017 | |
| Count of physician E&M visits | SPMI | 0.1789 | 13.7 | <0.0001 | 0.1035, 0.2543 | 0.0706 |
| | Non-SPMI | 0.1084 | 15.3 | <0.0001 | 0.0786, 0.1382 | |
| Probability of SNF admission | SPMI | −0.0037 | −18.1 | 0.0209 | −0.0068, −0.0006 | −0.0036* |
| | Non-SPMI | −0.0001 | NS | 0.8607 | −0.0007, 0.0006 | |
| **Quality of care measures** | | | | | | |
| Count of preventable ED visits | SPMI | −0.0016 | NS | 0.6794 | −0.0090, 0.0058 | −0.0012 |
| | Non-SPMI | −0.0004 | NS | 0.7409 | −0.0027, 0.0019 | |
| Probability of ACSC admission, overall | SPMI | −0.0002 | NS | 0.9162 | −0.0034, 0.0031 | 0.0001 |
| | Non-SPMI | −0.0003 | NS | 0.5165 | −0.0013, 0.0006 | |
| Probability of ACSC admission, chronic | SPMI | −0.0008 | NS | 0.6078 | −0.0039, 0.0023 | −0.0006 |
| | Non-SPMI | −0.0002 | NS | 0.5880 | −0.0009, 0.0005 | |
| Count of all-cause 30-day readmissions | SPMI | −0.0301 | NS | 0.2982 | −0.0869, 0.0266 | −0.0293 |
| | Non-SPMI | −0.0009 | NS | 0.9353 | −0.0223, 0.0206 | |

*$p<0.05$; **$p<0.01$; ***$p<0.001$

ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; NS = not statistically significant; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.

NOTES: Probability of 30-day follow-up after mental health discharge is estimated on only those with a hospitalization for serious and persistent mental illness; the DinD estimate is reported in **Table 10**. The magnitude of a relative difference could be large when the underlying denominator (the regression predicted mean outcome value for the comparison group during the demonstration period) is small. In such cases, the relative difference should be interpreted with caution.

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

There were no differential effects of the demonstration among beneficiaries with an SPMI on any quality of care measures.

We also present estimates of the demonstration effect for beneficiaries with SPMI and those without SPMI in each demonstration year, in **Table E-3** in **Appendix E**.

# Demonstration Impact on Cost Savings

RTI evaluated the South Carolina demonstration's impact on Medicare Parts A and B costs and on Medicaid costs using a DinD analysis of beneficiaries eligible for the demonstration, relative to a comparison group. Our results show neither statistically significant cost increases nor savings to Medicare Parts A and B during the overall demonstration period, but a statistically significant increase in costs during demonstration year 3 ($54.45 per member per month [PMPM]), as a result of the demonstration.

Additionally, our results indicate statistically significant increased costs to Medicaid during the overall[14] demonstration period, as well as statistically significant increase in costs during demonstration year 2.

## 6.1    Methods Overview

As part of the capitated financial alignment model, South Carolina, CMS, and MMPs entered into a three-way contract to provide services to Medicare-Medicaid enrollees (South Carolina three-way contract, 2017). MMPs receive a blended, risk-adjusted prospective capitation payment to provide enrollees with Medicare Parts A, B, and D, and Medicaid services. CMS and South Carolina developed the capitation payment that accounts for the services provided and adjusts the Medicare component for each enrollee using CMS's hierarchical risk adjustment model to account for differences in the characteristics of enrollees. For further information on the rate development and risk adjustment process, see the Memorandum of Understanding and the three-way contract.[15]

This section presents the Medicare Parts A and B cost savings analysis for demonstration years 1 to 3 (calendar years 2015 to 2018). It should be noted that corrections were made to impact estimates from earlier reports that resulted in differences in our current cost savings impact estimates for demonstration year 1 (see *Appendix F* for additional details). This section also presents the Medicaid cost savings analysis for demonstration years 2 to 3 (calendar years 2017 to 2018).

We used an ITT analytic framework that includes beneficiaries eligible for the demonstration rather than only those who enrolled in the MMPs. For this analysis, enrolled beneficiaries account for approximately 29 percent of all eligible beneficiaries (including FFS beneficiaries, MMP enrollees, and MA enrollees) in demonstration year 3. The ITT framework alleviates concerns of selection bias and supports generalizability of the results among the demonstration eligible population. Results from a separate supplemental analysis using a more restricted group of MMP enrollees and their comparison group counterparts, are included in *Appendix F* (see *Table F-11*).

To evaluate the Medicare cost implications of the demonstration, RTI performed a difference-in-difference (DinD) analysis of Medicare Parts A and B expenditures that compares

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[14] Demonstration year 1 is excluded from the overall demonstration period in this Medicaid analysis.
[15] Available at: https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/SouthCarolina

demonstration eligible beneficiaries who 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 used quarterly files on demonstration eligible beneficiaries submitted by the State of South Carolina. Comparison group beneficiaries were identified through a two-step process. First, we identified comparison areas based on market characteristics. Second, we applied the same eligibility criteria to beneficiaries in the identified comparison areas. This process is further described in *Appendix C*. Once the two groups were finalized, we applied propensity score (PS) weighting in DinD analysis to balance key characteristics between the two groups.

RTI gathered predemonstration and demonstration monthly Medicare expenditure data for both the demonstration and comparison groups from two data sources, as summarized in *Table 12*. We obtained capitation payments paid to participating plans during the demonstration period, and payments to MA plans in the predemonstration and demonstration periods from the CMS Medicare Advantage and Part D Inquiry System (MARx). Part D payments were not included in this analysis. The capitation payments were the final reconciled payments paid by the Medicare program after taking into account risk score reconciliation and any associated retroactive adjustments in the system at the time of the data pull (March 2021). We also used Medicare FFS claims to calculate expenditures for beneficiaries who were not enrolled in an MMP or MA plan. These FFS claims included all Medicare Parts A and B services.

**Table 12**
**Data sources for monthly Medicare expenditures**

| Group | Predemonstration period (February 1, 2013–January 31, 2015) | Demonstration period (February 1, 2015–December 31, 2018) |
|---|---|---|
| Demonstration | Medicare FFS<br>MA capitation | Capitation rate for enrollees<br>MA capitation for non-enrollees<br>Medicare FFS for non-enrollees |
| Comparison | Medicare FFS<br>MA capitation | Medicare FFS<br>MA capitation |

FFS = fee-for-service; MA = Medicare Advantage.

We made several adjustments to the monthly Medicare expenditures to ensure that observed expenditure variations are not due to differences in Medicare payment policies in different areas of the country or the construction of the capitation rates (see *Appendix F*). *Table F-1* in *Appendix F* summarizes each adjustment and the application of the adjustments to FFS expenditures or to the capitation rate.

To estimate the effect 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 health care expenditure data. The model controlled for individual demographic and area-level characteristics (see *Appendix F*), employed PS weighting, and adjusted for clustering of observations at the county level. The key policy variable of interest in the model was an interaction term measuring the effect of being part of the demonstration

eligible group during the demonstration period, which estimates the demonstrations effect on Medicare expenditures.

To evaluate the Medicaid cost implications of the demonstration, RTI performed a DinD analysis of Medicaid expenditures, using the same demonstration and comparison groups that were defined for the Medicare cost savings analysis, the same regression methodology,[16] and the same weights. The outcome of interest was the sum of all Medicaid costs (excluding costs for prescription drugs), both FFS and capitated payments, for the demonstration and comparison groups. Both the Federal and State contributions are included in the measure of the Medicaid total cost of care. The main difference between the Medicare cost savings analysis and the Medicaid cost savings analysis is that due to incompleteness of the capitated payment data in the Transformed Medicaid Statistical Information System (T-MSIS) data for South Carolina in 2015 and 2016, only the effects for demonstration years 2 and 3 are estimated and reported (see **Figure F-2** in **Appendix F** for more details).

RTI gathered predemonstration and demonstration monthly Medicaid expenditure data for both the demonstration and comparison groups from two types of claims, as summarized in **Table 13**. We obtained capitation payments paid to participating plans during the demonstration period and capitated payments to Medicaid managed care plans in the predemonstration and demonstration periods from the Research Identifiable Files (RIFs) in the T-MSIS. We also used Medicaid FFS claims from the T-MSIS RIFs to calculate expenditures for beneficiaries who were not enrolled in an MMP or a Medicaid managed care plan. These FFS claims included all Medicaid services, with the exception of Medicaid claims for prescription drugs (which only marginally impact the Medicaid capitation payment received by MMPs).

**Table 13**
**Data sources for monthly Medicaid expenditures**

| Group | Predemonstration period (February 1, 2013–January 31, 2015) | Demonstration period (January 1, 2017–December 31, 2018) |
|---|---|---|
| Demonstration | Medicaid FFS Medicaid capitation | Medicaid FFS Medicaid capitation |
| Comparison | Medicaid FFS Medicaid capitation | Medicaid FFS Medicaid capitation |

FFS = fee-for-service

## 6.2   Demonstration Impact on Medicare Parts A and B Costs

**Table 14** shows the magnitude of the DinD estimate of the cumulative demonstration impact on Medicare Parts A and B cost, both in absolute dollar amount and relative to the adjusted mean expenditure level in the comparison group during the demonstration period. The adjusted mean monthly expenditure increased from the predemonstration period to the demonstration period similarly between both the demonstration and comparison groups. The

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[16] The Medicaid analysis uses all covariates used in the Medicare analysis; some additional Medicaid-specific covariates are included in the Medicaid regression analysis, as detailed in **Appendix F**.

cumulative DinD estimate of $15.35 PMPM, which amounts to a relative difference of 1.09 percent of the adjusted mean expenditure for the comparison group during the demonstration period, is not statistically significant ($p = 0.3462$). This suggests that overall, the South Carolina demonstration was not associated with statistically significant increases in Medicare costs relative to the comparison group.

**Table 14**
**Adjusted means and overall impact estimate for Medicare Parts A and B costs for eligible beneficiaries in South Carolina, demonstration years 1–3 (February 1, 2015–December 31, 2018)**

| Group | Adjusted mean for predemonstration period ($) | Adjusted mean for demonstration period ($) | Relative difference (%) | Adjusted coefficient DinD ($) | *p*-value |
|---|---|---|---|---|---|
| Demonstration | 1,173.68 | 1,346.52 | 1.09 | 15.35 | 0.3462 |
| Comparison | 1,232.22 | 1,397.72 | | | |

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1491_Percents.log)

In addition, we estimated the effect of the demonstration in each demonstration year. As shown in ***Figure 20***, the demonstration had no statistically significant effect in demonstration years 1, 2, and cumulatively (as shown by the confidence intervals crossing $0), so determining an impact on Medicare costs is inconclusive. However, the coefficient for demonstration year 3 was statistically significant, indicating an increase in Medicare cost as a result of the demonstration relative to the comparison group in that year. Note that these estimates rely on the ITT analytic framework, only account for Medicare Parts A and B cost, and use the capitation rate for the participating health plans rather than the actual amount the plan paid for services.

**Figure 20**
**Cumulative and annual demonstration effects on monthly Medicare Parts A and B costs,
demonstration years 1–3 (February 1, 2015–December 31, 2018)**
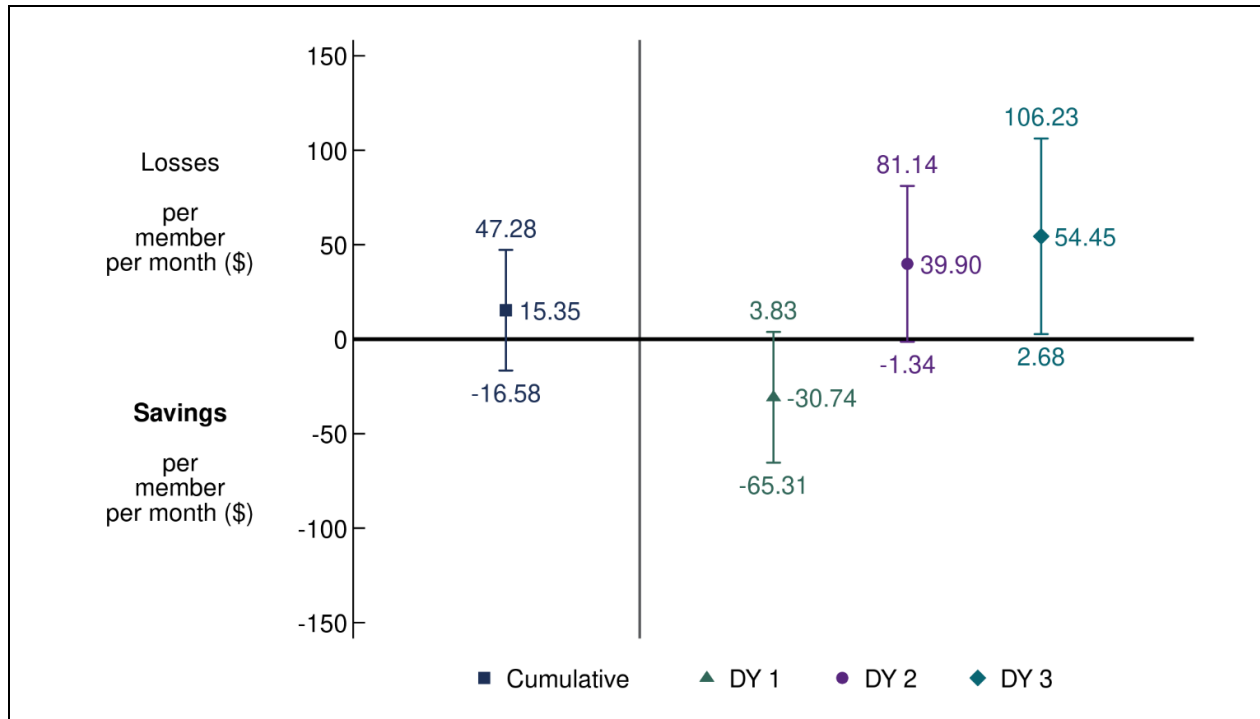


DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. "Losses"/"**Savings**" indicate increased/decreased costs for eligible beneficiaries in the demonstration group, relative to the comparison group. The expected direction of the effect (Losses or Savings) is in **bold.**
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1481_GLM.log)

## 6.3    Demonstration Impact on Medicaid Costs

*Table 15* shows the magnitude of the DinD estimate of the cumulative demonstration impact on Medicaid costs, both in absolute dollar amount and relative to the adjusted mean expenditure level in the comparison group during the demonstration period. The adjusted mean monthly expenditure increased from the predemonstration period to the demonstration period similarly between both the demonstration and comparison groups. The cumulative DinD estimate of $107.95 PMPM, which amounts to a relative difference of 14.64 percent of the adjusted mean expenditure for the comparison group during the demonstration period, is statistically significant ($p < 0.000$). This suggests that overall, the South Carolina demonstration was associated with statistically significant increases in Medicaid costs relative to the comparison group.

**Table 15**
**Adjusted means and overall impact estimate for Medicaid costs for eligible beneficiaries in South Carolina, demonstration years 2–3 (January 1, 2017–December 31, 2018)**

| Group | Adjusted mean for predemonstration period ($) | Adjusted mean for demonstration period ($) | Relative difference (%) | Adjusted coefficient DinD ($) | *p*-value |
|---|---|---|---|---|---|
| Demonstration | $269.24 | $524.80 | 14.64 | 107.95 | <0.000 |
| Comparison | $471.55 | $737.52 | | | |

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicaid claims (program: 3050putexcel_SCDY3_Medicaid_regression.do)

In addition, we estimated the effect of the demonstration in each of the two demonstration years included in the analysis. As shown in ***Figure 21***, the demonstration had a statistically significant effect in demonstration year 2, and cumulatively (as shown by the confidence intervals above $0) indicating an increase in Medicaid cost as a result of the demonstration relative to the comparison group in that year. The coefficient for demonstration year 3 was not statistically significant (as shown by the confidence interval crossing $0). Note that these estimates rely on the ITT analytic framework, exclude Medicaid prescription drug costs (which only marginally impact the capitation payment received by MMPs), and are reliant upon the completeness and the correctness of the Medicaid cost data included in the T-MSIS.

**Figure 21**
**Cumulative and annual demonstration effects on monthly Medicaid costs, demonstration years 2–3 (January 1, 2017–December 31, 2018)**
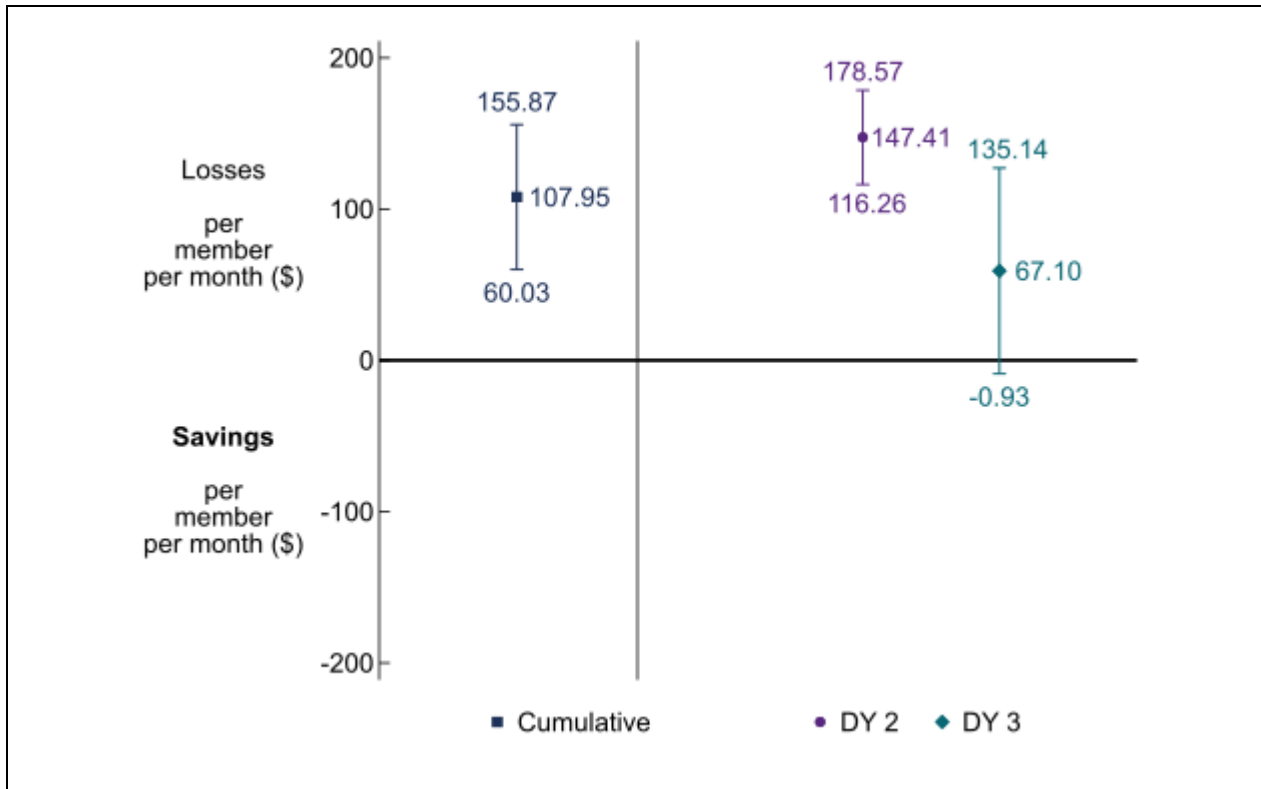


DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. "Losses"/"**Savings**" indicate increased/decreased costs for eligible beneficiaries in the demonstration group, relative to the comparison group. The expected direction of the effect (Losses or Savings) is in **bold.**
SOURCE: RTI analysis of Medicaid claims (program: 3050putexcel_SCDY3_Medicaid_regression.do)

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# SECTION 7
# Conclusions
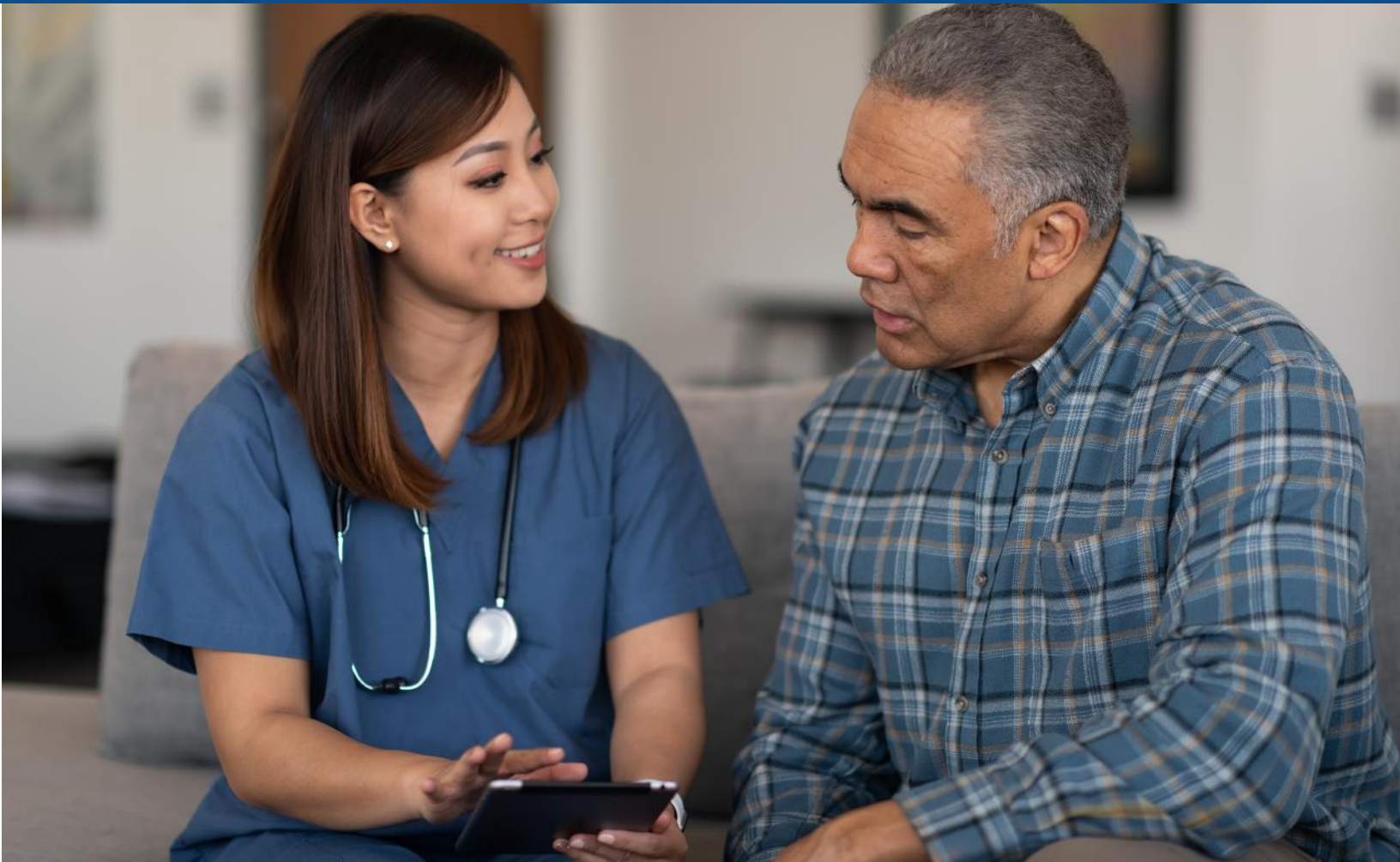
## 7.1    Implementation Successes, Challenges, and Lessons Learned

South Carolina, with CMS, maintained an effective partnership with three MMPs, providers, and stakeholders under the FAI with the aim of delivering and coordinating all medical, behavioral health, and LTSS for Medicare-Medicaid beneficiaries age 65 and older. As of December 2020, more than 60 percent of the State's 25,866 eligible[17] Medicare-Medicaid beneficiaries were enrolled in HCP across 42 of the 46 counties (two additional counties became operational on January 1, 2021) in South Carolina. The extension into new counties, bringing on new providers, and beneficiary outreach were all reported as major successes by stakeholders.

HCP enrollees responded with positive feedback in surveys and interviews. For example, most of the individual beneficiary interview participants reported being very satisfied with the demonstration. Even the PHE had little impact on participants' experience and satisfaction. Likewise, CAHPS beneficiary satisfaction data and member testimonials point to high satisfaction among HCP enrollees.

*"I'm satisfied. I don't know where I would be if I didn't have the Healthy Connections. It's really good. I don't have to worry about anything when I'm going to any doctor. When I go somewhere, I just don't even worry about it because they always take care of me."*

– Individual Beneficiary Interview Participant (2021)

HCP stakeholders also faced some challenges during the reporting period. Most notable among these was disenrollment during passive enrollment waves, difficulty submitting encounter data, rate-cell assignments, contracting with certain specialty providers, and providing appropriate behavioral services to enrollees. Although the PHE presented unique challenges to HCP in 2020, CMS, the State, the MMPs, and other stakeholders successfully adapted and continued to safely meet the needs of HCP enrollees.

Despite these challenges during the current reporting period (2018–2020), overall, stakeholders viewed HCP as a success, demonstrated by stakeholders' desire to have the demonstration not only continue, but to evolve.

*We certainly are advocates of keeping this program but expanding it to additional populations or use this as a platform for MLTSS here in SC. Our belief is it is a good program that is best interest of member, helps coordinate at Federal and State level with local plans to deliver better outcomes.*

– MMP (2020)

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[17] Source: RTI State Data Reporting System; data are reported on the last day of each month.

## 7.2    Demonstration Impact on Service Utilization and Costs

Impact analyses of service utilization and quality of care measures from demonstration year 1 through demonstration year 3 reveal mixed findings, with some favorable results such as expected declines in acute and post-acute services and increases in physician visits, but generally no impact on overall quality of care measures. Moreover, the demonstration resulted in potentially unfavorable effects such as increases in the annual probability of any long-stay nursing home use.

As described in greater detail in *Section 5.2.1, Cumulative Impact Over Demonstration Years 1–3,* the favorable impacts on inpatient use and physician visits may in part be driven by improvements in care coordination and staffing continuity over time. That said, there was a greater increase in long-stay NF use, relative to the comparison group. Access to community-based LTSS for enrollees was a challenge, in part due to delays in HCBS waiver and rate-cell assignments. These challenges may have contributed to barriers to keeping enrollees longer in the community or helping to transition enrollees out of an NF.

The demonstration had a differential effect for those with LTSS use and those with an SPMI on some measures, relative to the demonstration effect for the non-LTSS and non-SPMI special populations. The demonstration effect for LTSS users, which were only about 9 percent of all demonstration eligible beneficiaries in demonstration year 3, included an increase in the probability of inpatient admissions and SNF use and in the number of physician E&M visits, relative to the effect for non-LTSS users. The demonstration effect for beneficiaries with SPMI shows a decrease in the probability of any inpatient admission and SNF use relative to the demonstration effect for the non-SPMI beneficiaries.

The cumulative cost analysis did not find statistically significant savings or increased costs to the Medicare program over three demonstration years. The analysis of individual demonstration years also did not find statistically significant results in the first two demonstration years. However, increased costs (statistically significant) to the Medicare program were found for demonstration year 3. The cost analyses consider the costs of Medicare Parts A and B through fee-for-service expenditures, and capitation rates paid to MMP plans and MA plans. Capitation rates do not provide information on how much the plan paid for services and are based on characteristics of the beneficiary. Thus, capitation rates are not necessarily linked to actual service utilization. Further, the cost analyses do not consider Part D costs.

There was no evidence of Medicaid cost savings as a result of the South Carolina demonstration. The results of the Medicaid cost savings analyses using a DinD regression approach indicate a statistically significant increase of $107.95, PMPM, over demonstration years 2 through 3.

## 7.3    Next Steps

The RTI evaluation team will continue to collect information such as enrollment statistics and updates on key aspects of implementation on a quarterly basis from South Carolina officials through the online State Data Reporting System. We will continue to conduct annual virtual site visit calls with the State and demonstration stakeholders, and quarterly calls with HCP State and

CMS staff. RTI will review the results of any evaluation activities conducted by CMS or its contractors. We will also review any written reports or materials from the State summarizing State-sponsored evaluations, if applicable. RTI will conduct additional qualitative and quantitative analyses over the course of the demonstration.

As noted previously, the HCP demonstration has been extended through December 2023, which will provide further opportunities to evaluate the demonstration's performance. The next report will include a qualitative update on demonstration implementation, and analyses of quality, utilization and cost measures for those eligible for the 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 virtual site visits in South Carolina in 2018, 2019, and 2020. The team interviewed the following individuals: CMS, SCDHHS staff MMPs, state contractors, beneficiary advocates, and HCBS providers.

**Beneficiary interviews.** CMS contracted with Alan Newman Research to conduct 45 telephone in-depth interviews with Healthy Connections Prime (HCP) beneficiaries from across the State. Participants included 22 enrollees who used LTSS, and other benefits provided under South Carolina's HCBS waivers and 23 enrollees who did not use HCBS waiver services (referred to as "General" enrollees).

**Surveys.** Medicare requires all Medicare Advantage (MA) plans, including HCP plans, to conduct an annual assessment of beneficiary experiences using the Medicare Advantage and Prescription Drug Plan Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey instrument. This report includes survey results for a subset of the 2017–2019 survey questions. Findings are available at the MMP level. Some CAHPS items are case mix-adjusted. "Case mix" refers to the respondent's health status and sociodemographic characteristics, such as age or educational level, that may affect the ratings that the respondent provides. Without an adjustment, differences between entities could be due to case-mix differences rather than true differences in quality. The frequency count for some survey questions is suppressed because too few enrollees responded to the question. Comparisons with findings from all MA plans are available for core CAHPS survey questions.

**Demonstration data.** The RTI evaluation team reviewed data provided quarterly by South Carolina through the State Data Reporting System (SDRS). These reports include eligibility, enrollment, opt-out, and disenrollment data, and information reported by South Carolina on its integrated delivery system, care coordination, benefits and services, quality management, stakeholder engagement, financing and payment, and a summary of successes and challenges. This report also uses data for quality measures reported by HCP plans and submitted to CMS' implementation contractor, NORC.[18,19] Data reported to NORC include core quality measures that all MMPs are required to report, as well as State-specific measures that HCP plans are required to report. Due to reporting inconsistencies, MMPs occasionally resubmit data for prior demonstration years; therefore, the data included in this report are considered preliminary.

**Demonstration policies, contracts, and other materials.** The RTI evaluation team reviewed a wide range of demonstration documents, including demonstration and State-specific information on the CMS website;[20] and other publicly available materials on the HCP website.[21]

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[18] Data are reported for February 2015 through December 2020.

[19] The technical specifications for reporting requirements are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

[20] https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/FinancialModelstoSupportStatesEffortsinCareCoordination.html

[21] https://msp.scdhhs.gov/SCDue2/

**Conversations with CMS and SCDHHS officials**. To monitor demonstration progress, the RTI evaluation team engages in periodic phone conversations with SCDHHS and CMS. These might include discussions about new policy clarifications designed to improve plan performance, quality improvement work group activities, and contract management team actions.

**Complaints and appeals data.** Complaint (also referred to as grievance) data are from three separate sources: (1) complaints from beneficiaries reported by HCP plans to SCDHHS, and reported separately to CMS' implementation contractor, NORC[22], through Core Measure 4.2; (2) complaints received by SCDHHS or 1-800-Medicare and entered into the CMS electronic Complaint Tracking Module (CTM); and (3) qualitative data obtained by RTI on complaints. Appeals data are generated by MMPs and reported to SCDHHS and NORC, for Core Measure 4.2, and to the Medicare Independent Review Entity. This report also includes critical incidents and abuse data reported by HCP MMPs to SCDHHS and CMS' implementation contractor, NORC.

**HEDIS measures.** We report on a subset of Medicare Healthcare Effectiveness Data and Information Set (HEDIS) measures, a standard measurement set used extensively by managed care plans, that are required of all Medicare Advantage (MA) plans.

**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 both demonstration and comparison group members. Third, these administrative data were merged with Medicare claims and MMP Medicare and Medicaid encounter data, as well as the Minimum Data Set. Medicaid encounter data for beneficiaries enrolled in MMPs are also used to assess select service use, such as personal care and non-emergency medical transportation.

**Cost savings data.** Two primary data sources were used to support the cost savings analyses, capitation payments and Medicare FFS claims. Medicare capitation payments paid to South Carolina plans during the demonstration period were obtained for all demonstration enrollees from CMS Medicare Advantage and Part D Inquiry System (MARx) data. The capitation payments were the final reconciled payments paid by the Medicare program after taking into account risk score reconciliation and any associated retroactive adjustments in the system at the time of the data pull (March 2021). Quality withholds were applied to the capitation payments (quality withholds are not reflected in the MARx data), as well as quality withhold repayments based on data provided by CMS. Fee-for-service (FFS) Medicare claims were used to calculate expenditures for all comparison group beneficiaries, demonstration beneficiaries in the baseline period, and demonstration eligible beneficiaries who were not enrolled during the demonstration period. FFS claims included all Medicare Parts A and B services. For a comprehensive list of adjustments please refer to *Appendix F, Table F-1*.

Medicaid research identifiable files were used to calculate total Medicaid FFS and Medicaid Managed Care payments among demonstration and comparison group eligible

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[22] The technical specifications for reporting requirements are in the <u>Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements</u> document.

beneficiaries. Early years of the baseline and demonstration used the Medicaid Statistical Information Statistics (MSIS) Medicaid Analytic eXtract (MAX) while later years used the Transformed Medicaid Statistical Information System (T-MSIS) Analytic Files (TAF). The transition year varied by state with all Medicaid programs fully transitioning to TAF by January 1, 2016.

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# Healthy Connections Prime MMP Performance on Specific HEDIS Quality Measures, 2016–2018

*Table B-1* provides 2016 through 2018 HEDIS performance data for HCP MMPs. Using correlation coefficients that were 0.9 and above, or −0.9 and below, we have applied green and red shading to indicate where MMP performance over time for a given measure was steadily improving or worsening; green indicates a favorable trend, and red indicates an unfavorable one. We did not perform any testing for statistical significance for differences across years because of the limited data available. For measures without green or red shading, year-over-year MMP performance remained relatively stable between 2016 and 2018.

Absolute Total Care improved over time on measures for blood pressure control, retinal eye exams (within Comprehensive Diabetes Care submeasures), and outpatient visits (per 1,000 members), but worsened performance over time on measures for functional status assessments (within Care for Older Adults submeasures), plan all-cause readmissions (ages 65+), and emergency department (ED) visits (per 1,000 members).

Molina improved over time on both ambulatory care submeasures (outpatient and ED visits per 1,000 members), but worsened performance over time on medication review (within Care for Older Adults submeasures), retinal eye exams, and medical attention for nephropathy (both within Comprehensive Diabetes Care submeasures).

Select Health improved over time on measures for: blood pressure control (standalone measure), medication review and pain assessment (both within Care for Older Adults submeasures), receiving hemoglobin A1C (HbA1c) testing, controlling poor HbA1c levels (>9.0%), maintaining good HbA1c levels (<8.0%), and blood pressure control (all within Comprehensive Diabetes Care submeasures), and outpatient visits per 1,000 members, but worsened performance over time for adults' access to preventive/ambulatory health services and ED visits (per 1,000 members).

## Table B-1
## Healthy Connections Prime MMP performance on specific HEDIS quality measures for 2016–2018 by MMP

| Measure | National MA Plan Mean | Absolute Total Care | | | Molina | | | Specific Health | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (2018) | (2016) | (2017) | (2018) | (2016) | (2017) | (2018) | (2016) | (2017) | (2018) |
| Adults' access to preventive/ambulatory health services | 95.0 | 97.2 | 91.9 | 91.5 | 95.3 | 92.9 | 92.7 | 95.6[R] | 93.8[R] | 93.7[R] |
| Adult body mass index (BMI) assessment | 96.0 | 86.5 | 94.4 | 93.4 | 94.7 | 100.0 | 98.3 | 83.3 | 97.0 | 94.0 |
| Blood pressure control[1] | 69.5 | 40.3[G] | 42.6[G] | 48.2[G] | 51.5 | 54.7 | 54.5 | 40.4[G] | 56.5[G] | 61.3[G] |
| Breast cancer screening | 72.7 | N/A | 82.0 | 66.3 | N/A | 64.1 | 57.1 | N/A | 72.6 | 55.9 |
| Colorectal cancer screening | 70.5 | 45.5 | 68.1 | 51.3 | 58.2 | 65.3 | 51.8 | 33.0 | 57.9 | 57.1 |
| Disease modifying anti-rheumatic drug therapy in rheumatoid arthritis | 77.8 | N/A | 75.0 | N/A | N/A | N/A | N/A | N/A | 65.9 | 61.5 |
| Follow-up after hospitalization for mental illness (30 days)[2] | 47.9 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 48.7 | 30.3 |
| **Antidepressant medication management** | | | | | | | | | | |
| Effective acute phase treatment[3] | 72.1 | N/A | N/A | 75.0 | N/A | N/A | 69.1 | N/A | 62.3 | 79.0 |
| Effective continuation phase treatment[4] | 56.1 | N/A | N/A | 67.5 | N/A | N/A | 50.9 | N/A | 54.7 | 68.4 |
| **Care for older adults** | | | | | | | | | | |
| Advance care planning | N/A | 9.3 | 17.3 | 16.1 | 37.8 | 59.6 | 44.3 | 17.8 | 17.8 | 24.8 |
| Medication review | N/A | 84.2 | 99.9 | 98.3 | 86.5[R] | 82.0[R] | 73.2[R] | 58.3[G] | 61.8[G] | 64.5[G] |
| Functional status assessment | N/A | 90.2[R] | 87.6[R] | 85.9[R] | 63.5 | 77.1 | 66.4 | 39.6 | 40.4 | 49.9 |
| Pain assessment | N/A | 92.8 | 92.7 | 87.8 | 87.8 | 89.5 | 80.5 | 48.6[G] | 56.0[G] | 60.3[G] |
| **Comprehensive diabetes care** | | | | | | | | | | |
| Received hemoglobin A1C (HbA1c) testing | 94.3 | 91.6 | 91.1 | 91.5 | 100.0 | 95.4 | 95.6 | 92.0[G] | 92.5[G] | 94.7[G] |
| Poor control of HbA1c level (>9.0%) (higher is worse) | 23.1 | 41.1 | 43.0 | 35.3 | 33.3 | 41.8 | 31.1 | 62.0[G] | 47.7[G] | 37.0[G] |
| Good control of HbA1c level (<8.0%) | 65.6 | 53.7 | 48.6 | 53.8 | 57.8 | 49.3 | 56.0 | 31.9[G] | 46.2[G] | 53.8[G] |
| Received eye exam (retinal) | 73.7 | 46.3[G] | 51.2[G] | 58.2[G] | 73.3[R] | 63.7[R] | 56.5[R] | 51.3 | 52.1 | 60.6 |

(continued)

**Table B-1 (continued)**

**Healthy Connections Prime MMP performance on specific HEDIS quality measures for 2016–2018 by MMP**

| Measure | National MA Plan Mean | Absolute Total Care | | | Molina | | | Specific Health | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (2018) | (2016) | (2017) | (2018) | (2016) | (2017) | (2018) | (2016) | (2017) | (2018) |
| Received medical attention for nephropathy | 95.5 | 90.5 | 95.2 | 94.2 | 97.8[R] | 96.3[R] | 95.6[R] | 95.6 | 95.4 | 96.4 |
| Blood pressure control (<140/90 mm Hg) | 69.1 | 48.4 | 38.1 | 46.0 | 64.4 | 51.9 | 58.6 | 46.0[G] | 49.6[G] | 54.7[G] |
| **Initiation and engagement of alcohol and other drug (AOD) dependence treatment** | | | | | | | | | | |
| Initiation of AOD treatment[5] | 33.6 | N/A | 43.9 | 39.1 | N/A | 60.4 | 46.5 | N/A | 47.0 | 39.3 |
| Engagement of AOD treatment[6] | 4.5 | N/A | 3.0 | 3.5 | N/A | 5.7 | 2.8 | N/A | 8.4 | 4.5 |
| **Plan all-cause readmissions (Observed-to-expected ratio [7])** | | | | | | | | | | |
| Age 18–64 | 0.75 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| Age 65+ | 0.71 | 0.68[R] | 0.86[R] | 0.97[R] | N/A | 0.95 | 0.88 | 0.59 | 0.88 | 0.76 |
| **Ambulatory care (per 1,000 members)** | | | | | | | | | | |
| Outpatient visits | 9,606.0 | 5,492.1[G] | 6,845.5[G] | 7,914.3[G] | 8,447.7[G] | 8,918.9[G] | 9,123.9[G] | 7,803.5[G] | 8,148.5[G] | 8,810.3[G] |
| Emergency department visits (higher is worse) | 600.8 | 920.7[R] | 924.0[R] | 952.7[R] | 841.8[G] | 808.0[G] | 781.0[G] | 794.1[R] | 809.6[R] | 833.0[R] |

BMI = body mass index; HEDIS = Health Effectiveness Information and Data Set; MA = Medicare Advantage; MMP = Medicare-Medicaid Plan; N/A = not applicable, where MA plans do not report such data, or where the number of enrollees in the MMP's provided HEDIS data available for inclusion in the measure was less than 30, and therefore not reported per RTI's decision rule for addressing low sample size.

[1] The following criteria were used to determine adequate blood pressure control: less than 140/90 mm Hg for members 18–59 years of age; diagnosis of diabetes and <140/90 mm Hg for members 60–85 years of age; no diagnosis of diabetes and <150/90 mm Hg for members 60–85 years of age.

[2] NCQA implemented a significant specification change with HEDIS 2018 (CY 2017), disallowing same-day follow up visits. National benchmarks fell from HEDIS 2018 to HEDIS 2019 (CY 2017 to CY 2018)

[3] Represents the percentage of members who remained on an antidepressant medication for at least 84 days (12 weeks).

[4] Represents the percentage of members who remained on an antidepressant medication for at least 180 days (6 months).

[5] Represents percentage of members who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis.

[6] Represents the percentage of members who initiated treatment and who had two or more additional services with a diagnosis of AOD within 30 days of the initiation visit.

[7] Plan all-cause readmissions are reported as an observed-to-expected ratio. A value below 1.0 is favorable and indicates that MMPs had fewer readmissions than expected for their populations based on case mix. Values of N/A appearing for Plan all-cause readmissions in the South Carolina First Evaluation Report have been updated in the current report to provide the actual result.

Green and red color-coded shading indicates where performance over time for a given measure was steadily improving or worsening; green indicates a favorable trend, where red indicates an unfavorable one. To ensure accessibility for text readers and individuals with sight disabilities, cells shaded green or red receive, respectively, a superscript "G" or "R". Detailed descriptions of HEDIS measures presented can be found in the RTI Aggregate Evaluation Plan.

SOURCE: RTI Analysis of 2016 through 2018 HEDIS measures.

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# Appendix C

# Comparison Group Methodology for South Carolina

# Demonstration Years 2 & 3

This appendix presents the comparison group selection and assessment results for the South Carolina demonstration.

Results for comparison group selection and assessment analyses are prepared for each demonstration year. The annual report for the first demonstration year and two prior predemonstration years for the South Carolina demonstration was publicly released in November 2018.

This report provides the comparison group results for the second and third performance years for the Healthy Connections Prime demonstration in South Carolina (January 1, 2017–December 31, 2018) and notes any major changes in the results since the first performance year.

## C.1 Demonstration and Comparison Group Characteristics

The SC FAI demonstration area consists of 23 counties that are part of 10 Metropolitan Statistical Areas (MSAs) (Greenville-Anderson-Mauldin; Columbia; Hilton Head Island-Bluffton-Beaufort; Augusta-Richmond; Spartanburg; Charleston-North Charleston; Sumter; Charlotte-Concord-Gastonia; Myrtle Beach-Conway-North Myrtle Beach; and Florence) and 20 non-metropolitan counties in South Carolina. The comparison area is comprised of 32 counties in 11 MSAs from four States, plus 19 non-metropolitan counties in Virginia. The pool of States was limited to those with timely submission of Medicaid data to CMS. These geographic areas have changed since the First Evaluation Report to reflect the exclusion of beneficiaries in Arkansas counties due to the prevalence of errors in Arkansas' data submitted to CMS.

Beneficiaries who are ineligible for the demonstration include those who are under age 65, have Medicare as a secondary payor, are not enrolled in Medicare Parts A and Part B, reside in an intermediate care facility or nursing facility, are enrolled in the Program of All-inclusive Care for the Elderly (PACE) or hospice, or have end stage renal disease (ESRD). We assess these exclusion criteria on a quarterly basis for the demonstration and comparison group in the predemonstration period and for the comparison group in the demonstration period. We use finder files provided by the State to identify the eligible population for the demonstration group during the demonstration period, applying the exclusion criteria to their State finder file in the demonstration period to ensure comparability with the comparison group and the demonstration group during the predemonstration period.

MA enrollees are eligible and may opt into the South Carolina demonstration through demonstration year 3. This report includes the MA population in the cost savings analysis, described in *Appendix F*. However, due to concerns on the completeness and accuracy of MA encounter data for years prior to 2016, RTI excluded demonstration eligible beneficiaries with any MA enrollment from the service utilization analysis, described in *Appendix E*. The population analyzed for the service utilization outcomes includes only demonstration eligible full-benefit Medicare and Medicaid beneficiaries enrolled in Medicare fee-for-service (FFS) or in MMPs. *Table C-1* displays the number and percentage of beneficiaries who were in MA during the study period and included in the cost-savings analysis but excluded from the service utilization analysis. The prevalence of beneficiaries enrolled in MA per year ranges from 39 to 58 percent in the demonstration group, and from 16 to 33 percent in the comparison group across the study period.

Further analytic exclusions were performed such as: (1) removing beneficiaries with missing geographic information, (2) removing beneficiaries with zero months of eligibility during each analytic period, (3) removing beneficiaries who moved between the demonstration area and the comparison area any time during the entire study period, and (4) removing beneficiaries who died before the beginning of each analytic period. After applying these exclusions, the number of demonstration group beneficiaries has largely remained stable over the two predemonstration years and three demonstration years, ranging between 43,236 and 48,970 beneficiaries per year. The comparison group has contained roughly as many beneficiaries as the demonstration group, with its count of beneficiaries per year ranging from 39,868 to 46,615.

**Table C-1**
**Number and percentage of beneficiaries in the demonstration and comparison groups who were enrolled in Medicare Advantage at any point during each period**

| Group | Predemonstration year 1 | Predemonstration year 2 | DY 1 | DY 2 | DY 3 |
|---|---|---|---|---|---|
| Demonstration | | | | | |
| Final count of beneficiaries | 46,885 | 49,220 | 49,804 | 47,607 | 49,672 |
| Count of beneficiaries with Medicare Advantage | 18,364 | 20,542 | 25,456 | 25,646 | 28,783 |
| Percent of beneficiaries with Medicare Advantage (denominator is final count of beneficiaries per period) | 39% | 42% | 51% | 54% | 58% |
| Comparison | | | | | |
| Final count of beneficiaries | 107,392 | 111,780 | 123,275 | 119,533 | 122,426 |
| Count of beneficiaries with Medicare Advantage | 17,114 | 19,148 | 26,786 | 26,287 | 39,854 |
| Percent of beneficiaries with Medicare Advantage (denominator is final count of beneficiaries per period) | 16% | 17% | 22% | 22% | 33% |

DY = demonstration year.

## C.2  Propensity Score Estimates

RTI's methodology uses propensity scores (PSs) to examine initial differences between the demonstration and comparison groups in each analysis period. Weights are calculated based on these scores and applied to the data in order to improve comparability between the two groups. If propensity weights do not adequately balance the two groups, entropy balancing weights are applied instead.

A propensity score 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 region-level characteristics measured at the ZIP code (ZIP Code Tabulation Area) level. Compared to the analysis for the previous evaluation report, an

additional explanatory variable was added to the PS model for the share of months during the year for which a beneficiary was enrolled in an MA plan.

The logistic regression coefficients and z-values for the covariates included in the propensity model for the South Carolina demonstration year 3 are shown in *Table C-2*. The largest relative differences were that demonstration participants were more likely to be Black, more likely to have ESRD, less likely to participate in other Medicare shared savings programs (other MDM), and tended to have greater shares of months of non-MMP MA plan enrollment in demonstration year 3 than the beneficiaries in the comparison group. In addition, ZIP code-level group differences associated with percentage of married households, households with residents older than 60, those with residents under 18, rate of elderly unemployment, and distances to the nearest hospital and the nearest nursing facility (NF) were observed between the demonstration and comparison groups. The magnitude of the group differences for all variables prior to PS weighting can be found in *Table C-3*.

## C.3  Propensity Score Overlap

The distributions of PSs by group for demonstration year 3 are shown in *Figure C-1* before and after PS weighting. Estimated scores for both the demonstration group and comparison group topped out at around 0.99. The unweighted comparison group (dashed line) is concentrated in the range of PSs from 0.20 to 0.60. Inverse probability of treatment weighting pulls the distribution of weighted comparison group PSs (dotted line) very close to that of the demonstration group (solid line).

Any beneficiaries who have estimated PSs below the smallest estimated value in the demonstration group are removed from the comparison group. However, because of the very broad range of PSs found in the SC demonstration data, in practice no beneficiaries were removed from the comparison group in demonstration year 3.

**Table C-2**
**Logistic regression estimates for South Carolina propensity score models**
**in demonstration year 3, January 1, 2018–December 31, 2018**

| Characteristic | Demonstration year 3 | | |
|---|---|---|---|
| | Coef. | Standard error | z-score |
| Age (years) | −0.0070 | 0.0009 | −7.382 |
| Died during year | 0.0124 | 0.0311 | 0.398 |
| Female (0/1) | 0.2374 | 0.0167 | 14.224 |
| Black (0/1) | 0.3651 | 0.0157 | 23.260 |
| Disability as original reason for entitlement (0/1) | 0.0208 | 0.0209 | 0.996 |
| ESRD (0/1) | 0.6157 | 0.1745 | 3.529 |
| Share mos. eligible for demonstration during year (prop.) | 0.1256 | 0.0280 | 4.480 |
| Share mos. Medicare Advantage plan enrolled during year (prop.) | 0.5960 | 0.0167 | 35.682 |
| HCC risk score | 0.0040 | 0.0080 | 0.499 |
| Other MDM | −0.8805 | 0.0238 | −37.054 |
| MSA (0/1) | −0.0554 | 0.0208 | −2.660 |
| % of pop. living in married household | −0.0200 | 0.0007 | −29.733 |
| % of households w/member >= 60 yrs. | 0.0447 | 0.0011 | 41.387 |
| % of households w/member < 18 yrs. | 0.0080 | 0.0013 | 6.124 |
| % of elderly adults with college education | 0.0296 | 0.0008 | 38.146 |
| % of elderly adults with self-care limitation | −0.0024 | 0.0016 | −1.536 |
| % of unemployed elderly adults | −0.0225 | 0.0012 | −19.114 |
| Distance to nearest hospital (mi.) | −0.0271 | 0.0017 | −15.927 |
| Distance to nearest nursing facility (mi.) | 0.1602 | 0.0026 | 61.041 |
| Intercept | −1.9840 | 0.1072 | −18.514 |

ESRD = end-stage renal disease; HCC = Hierarchical Condition Category; MDM = Master Data Management; MSA = metropolitan statistical area.

**Figure C-1**
**Distribution of beneficiary-level propensity scores in the South Carolina demonstration and comparison groups, weighted and unweighted, January 1, 2018–December 31, 2018**
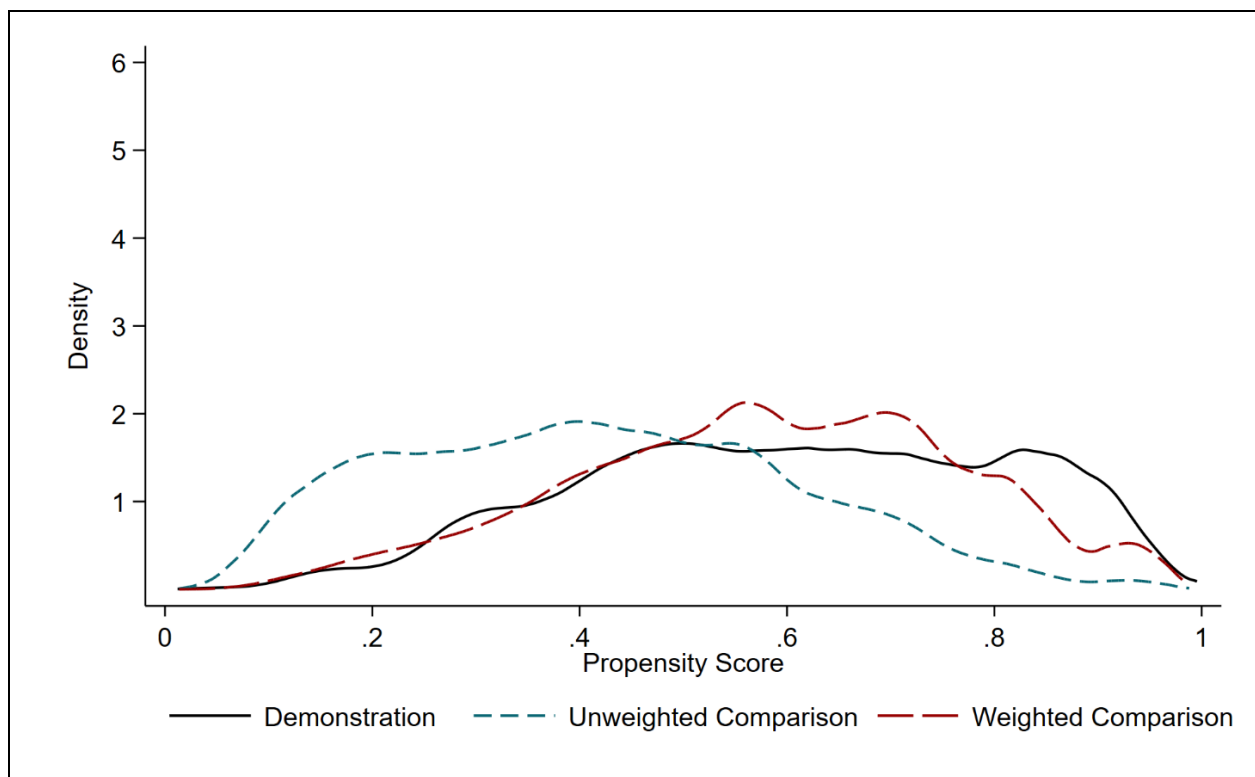


## C.4    Group Comparability

Covariate balance refers to the extent to which the characteristics used in the PS are similar (or "balanced") between 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 such that groups are considered comparable if the standardized covariate difference is less than 0.10 standard deviations.

The group means and standardized differences for all beneficiary characteristics are shown for demonstration year 3 in *Table C-3*. The column of unweighted standardized differences indicates that several of these variables were not balanced prior to weighting. The following 10 variables had unweighted standardized differences exceeding 0.10 in absolute value: whether a beneficiary was Black, share of months enrolled in a non-MMP MA plan during the year, percent participating in other Medicare shared savings programs (other MDM), whether the bene lived in an MSA, percent of population living in a married household, percent of households with members above the age of 60, percent of households with members below the age of 18, percent of unemployed older adults, and the distances (in miles) to the nearest hospital and NF.

**Table C-3**
**South Carolina dually eligible beneficiary covariate means by group before and after weighting—demonstration year 3:**
**January 1, 2018–December 31, 2018**

| Characteristic | Demonstration group mean | Comparison group mean | Propensity-weighted comparison group mean | E-balance-weighted comparison group mean | Unweighted standardized difference | Propensity-weighted standardized difference | E-balance-weighted standardized difference |
|---|---|---|---|---|---|---|---|
| Age | 75.050 | 75.397 | 75.112 | 75.033 | −0.043 | -0.008 | 0.002 |
| Died | 0.064 | 0.075 | 0.068 | 0.067 | −0.043 | -0.014 | −0.010 |
| Female | 0.688 | 0.685 | 0.690 | 0.685 | 0.006 | -0.005 | 0.006 |
| Black | 0.556 | 0.398 | 0.499 | 0.532 | 0.320 | 0.114 | 0.049 |
| Disability as original reason for entitlement | 0.148 | 0.137 | 0.149 | 0.146 | 0.029 | -0.004 | 0.006 |
| ESRD | 0.003 | 0.001 | 0.003 | 0.002 | 0.031 | -0.002 | 0.001 |
| Share mos. eligible for demonstration during year | 0.855 | 0.845 | 0.848 | 0.851 | 0.036 | 0.026 | 0.014 |
| Share mos. Medicare Advantage plan enrolled during year | 0.503 | 0.318 | 0.472 | 0.483 | 0.402 | 0.066 | 0.042 |
| HCC score | 1.354 | 1.324 | 1.352 | 1.357 | 0.033 | 0.002 | −0.002 |
| Other MDM | 0.069 | 0.217 | 0.071 | 0.076 | −0.433 | -0.006 | −0.027 |
| MSA | 0.674 | 0.816 | 0.729 | 0.692 | −0.332 | -0.121 | −0.038 |
| % of pop. living in married household | 63.102 | 65.298 | 63.996 | 63.265 | −0.176 | -0.068 | −0.014 |
| % of households w/member >= 60 | 42.071 | 37.694 | 41.931 | 41.613 | 0.492 | 0.015 | 0.056 |
| % of households w/member < 18 | 29.167 | 30.662 | 29.313 | 29.013 | −0.228 | -0.022 | 0.025 |
| % of adults under 65 with college education | 18.737 | 18.714 | 18.610 | 18.655 | 0.002 | 0.010 | 0.007 |
| % of adults under 65 with self-care limitation | 9.643 | 9.363 | 9.555 | 9.728 | 0.056 | 0.017 | −0.016 |
| % of unemployed elderly adults | 3.027 | 3.732 | 2.952 | 3.002 | −0.111 | 0.012 | 0.004 |
| Distance to nearest hospital | 10.563 | 8.339 | 9.465 | 10.124 | 0.357 | 0.173 | 0.065 |
| Distance to nearest nursing facility | 8.238 | 5.593 | 7.556 | 7.602 | 0.609 | 0.141 | 0.132 |

ESRD = end-stage renal disease; HCC = Hierarchical Condition Category; MDM = Master Data Management; MSA = metropolitan statistical area.

Propensity weighting (shown in the column labeled propensity-weighted standardized difference) reduced the standardized differences below the threshold level of 0.10 in absolute value for many but not all covariates. Four covariates remained imbalanced (whether a beneficiary was Black, whether the bene lived in an MSA, and the distances to the nearest hospital and NF). When more than two covariates remain imbalanced after propensity weighting, we consider entropy balancing weights. Standardized differences after applying entropy balancing weights (shown in the column labeled E-balance-weighted standardized differences) are reduced to below the threshold level of 0.10 in absolute value for all but one covariate (distance to the nearest NF). This indicates that the demonstration and comparison groups are adequately comparable after applying entropy balancing weights.

## C.5    Enrollee Results

We also applied our weighting methodology to the demonstration enrollee population (approximately 21 percent of the eligible demonstration population). We define the enrollee group, along with its comparison group, as follows: (1) the demonstration enrollees are those with at least 3 months of enrollment during the 3-year demonstration period as well as three months of eligibility during the 2-year predemonstration period, and (2) the corresponding comparison group beneficiaries are those with at least 3 months of eligibility in both the 3-year demonstration period and the 2-year predemonstration period.

As was the case for all eligible beneficiaries, the unweighted values of several covariates differed substantially between the demonstration and comparison group for enrollees in each baseline and demonstration year. After weighting, the standardized differences of all covariates were reduced to less than 0.10 in absolute value.

## C.6    Weights for Service Utilization Analyses

A third set of weights was produced specifically for the analyses of service utilization with two adaptations to the methodology used to produce weights for all eligible beneficiaries. The first is the explicit exclusion of beneficiaries who were ever enrolled in an MA plan. Due to concerns on the completeness and accuracy of MA encounter data for years prior to 2016, and at the request and approval of CMS, RTI made a key methodological change from previous reports by excluding the MA population from the service utilization analysis. The second methodological adaptation is the exclusion of beneficiaries ever enrolled in a Medicare-Medicaid Plan (MMP) for which there is not complete or valid encounter data.

These exclusions reduced the number of beneficiaries by roughly 30,000 in the demonstration group and by roughly 15,000 in the comparison group. The resulting demonstration group sample ranged between 15,023 and 17,057 beneficiaries each year; the comparison group sample ranged between 25,565 and 27,603 beneficiaries each year.

Despite difference in sample sizes, the results of the weighting analysis were similar to those for all eligible beneficiaries. While the unweighted values of several covariates differed substantially between the demonstration and comparison group in each baseline and demonstration year, the standardized differences of all covariates were reduced to less than 0.10 in absolute value after weighting.

## C.7    Summary

The South Carolina demonstration and comparison groups were initially distinguished by differences in four individual-level covariates as well as six area-level variables. However, entropy balancing weights successfully reduced all but one of these covariate discrepancies below the generally accepted threshold for standardized differences. As a result, the weighted South Carolina groups are adequately balanced with respect to 18 of the 19 variables we consider for comparability. Further analyses of the enrollee group and the service utilization group yielded very similar results to the main analysis on the all-eligible population presented in this appendix.

# Appendix D
# Service Utilization Methodology

## D.1　Methodology

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

### D.1.1　Evaluation Design

RTI International is using an intent-to-treat (ITT) approach for the quantitative 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). We use a quasi-experimental DinD regression analysis with inverse propensity weighting to estimate the impact of the demonstration on the change in the probability or frequency of service utilization outcomes, relative to the 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. This approach alleviates concerns of selection bias and supports generalizability of the results among the demonstration eligible population. Without mandatory participation, some eligible beneficiaries enroll in the demonstration to receive the interventions while others do not, even though they are eligible and have the opportunity to do so. The relative proportion of the enrolled versus the eligible but not enrolled beneficiaries varies across the demonstration States. An ITT analysis—which includes the entire eligible population in the demonstration group and its comparison group counterpart—is most appropriate by yielding impact estimates that would best mimic the real-world implementation of the demonstration accounting for the variability in voluntary enrollment across different States.

### D.1.2　Sample Selection

The study population includes all full-benefit Medicare-Medicaid eligible beneficiaries residing in the demonstration and comparison areas who meet the demonstration eligibility criteria. For details on applying the demonstration eligibility criteria and the comparison group identification strategy, see *Appendix B*.

MA enrollees are eligible and may opt into the South Carolina demonstration. This report includes the MA population in the cost savings analysis, described in *Appendix F*. However, due to concerns on the completeness and accuracy of MA encounter data for years prior to 2016, RTI excluded demonstration eligible beneficiaries with any Medicare Advantage enrollment from the service utilization analysis. Therefore, the service utilization analysis includes only beneficiaries enrolled in Medicare FFS throughout the study period. The prevalence of beneficiaries with any month of Medicare Advantage during a year, prior to exclusion, ranges from 39 to 58 percent in the demonstration group, and 16 to 33 percent in the comparison group during the predemonstration and demonstration periods (see *Appendix C, Table C-1*).

### D.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, MMP Medicare and Medicaid encounter data, as well as the Minimum Data Set (MDS).

### D.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 race/ethnicity.

- **Demonstration eligible beneficiaries.** A full-benefit Medicare-Medicaid eligible beneficiary in a quarter who met any other specific demonstration eligibility criteria.
  - Beneficiaries in the demonstration period are identified from quarterly State finder files.
  - Beneficiaries in the 2-year predemonstration period are identified by applying the eligibility criteria in each separate predemonstration quarter.

- **Long-term services and supports (LTSS).** A demonstration eligible beneficiary with any use of institutional or home and community-based services (HCBS) during the observation year.

- **Serious and persistent mental illness (SPMI).** A demonstration eligible beneficiary with at least one inpatient or outpatient mental health visit for schizophrenia or episodic mood disorder within the previous 2 years of the observation year.

- **Enrollees.** A demonstration eligible beneficiary with any month of enrollment in the demonstration during the demonstration year.

The analyses were conducted for each year in the 2-year predemonstration period (February 1, 2013, to January 31, 2015) and for the 3 demonstration years (February 1, 2015, to December 31, 2018) for both the demonstration and comparison groups in each of the five analytic periods. Additionally, corrections were made to impact estimates from earlier reports that resulted in differences in our current impact estimates for demonstration year 1. Specifically, we made the following corrections: (1) confirmed dual status for State-identified FAI eligible beneficiaries against IDR data, removing erroneous zeros in the dependent variable, and (2) applied IDR-based exclusion criteria for all monthly observations in the comparison group and demonstration group during the predemonstration and demonstration periods, and to the demonstration group during the predemonstration and demonstration periods. These updates, coupled with restricting the service utilization analysis sample to only FFS demonstration eligible beneficiaries and MMP enrollees, result in differences between our current estimates for demonstration year 1 and the estimates reported in the First Evaluation Report..

**Table D-1** presents descriptive statistics on the independent variables used in multivariate difference-in-differences (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, all MMP enrollees, all beneficiaries who are eligible for the demonstration who are not enrolled, demonstration eligible beneficiaries with any LTSS use, and demonstration eligible beneficiaries with an SPMI.

The most prevalent age group among LTSS users was age 85 and over, with 35.0 percent; otherwise 65 to 74 years was the most prevalent age group, ranging from 57.4 to 61.7 percent. African American and White beneficiaries were equally represented in the demonstration and comparison groups. Among the LTSS user demonstration population, the majority were African American (58.2 percent), and among those with SPMI in the demonstration population, the majority were White (64.1 percent).

Across all groups, most beneficiaries were female (63.3 to 74.0 percent), did not have disability as the primary reason for Medicare entitlement, did not have end-stage renal disease, and were more likely to be reside in a metropolitan area.

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. 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. HCC scores ranged between 1.1 and 1.4 among all groups except LTSS users in the demonstration group, for which the average HCC score was 1.9.

There were limited differences in area- and market-level characteristics. Those who were in the comparison group resided in counties with higher Medicaid spending per dually eligible beneficiary ($12,295 versus $8,779 in the demonstration group) and higher population density (239 people per sq. mi. vs 179 people per sq. mi. in the demonstration group). Other area- and market-level characteristics were comparable.

**Table D-1**
**Characteristics of 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 | 16,526 | 26,543 | 9,124 | 7,402 | 1,509 | 4,855 |
| Demographic characteristics | | | | | | |
| Age | | | | | | |
|   65 to 74 | 59.8 | 59.3 | 61.7 | 57.4 | 34.7 | 61.0 |
|   75 to 84 | 24.3 | 25.0 | 24.4 | 24.3 | 30.4 | 24.3 |
|   85 and older | 15.9 | 15.6 | 13.9 | 18.3 | 35.0 | 14.7 |
| Female | | | | | | |
|   No | 34.3 | 34.2 | 36.7 | 31.4 | 26.9 | 26.0 |
|   Yes | 65.7 | 65.8 | 63.3 | 68.6 | 73.1 | 74.0 |
| Race/ethnicity | | | | | | |
|   White | 47.4 | 46.8 | 43.6 | 52.1 | 40.4 | 64.1 |
|   African American | 47.8 | 46.9 | 50.7 | 44.3 | 58.2 | 33.2 |
|   Hispanic | 1.4 | 1.5 | 1.8 | 1.0 | 0.4 | 1.1 |
|   Asian | 1.9 | 2.7 | 2.3 | 1.5 | 0.7 | 0.7 |
| Disability as reason for original Medicare entitlement | | | | | | |
|   No | 86.3 | 86.3 | 87.0 | 85.4 | 77.3 | 81.4 |
|   Yes | 13.7 | 13.7 | 13.0 | 14.6 | 22.7 | 18.6 |
| ESRD status | | | | | | |
|   No | 99.8 | 99.8 | 99.7 | 99.9 | 99.5 | 99.8 |
|   Yes | 0.2 | 0.2 | 0.3 | 0.1 | 0.5 | 0.2 |
| MSA | | | | | | |
|   No | 34.6 | 33.9 | 34.4 | 34.9 | 36.8 | 29.7 |
|   Yes | 65.4 | 66.1 | 65.6 | 65.1 | 63.2 | 70.3 |

(continued)

| Characteristics | Demonstration group | Comparison group | Demonstration group enrollees | Demonstration group eligible, non-enrollees | Demonstration group, LTSS users | Demonstration group, SPMI diagnosis |
|---|---|---|---|---|---|---|
| Participating in Shared Savings Program | | | | | | |
| No | 83.0 | 82.4 | 99.8 | 62.3 | 77.2 | 80.1 |
| Yes | 17.0 | 17.6 | 0.2 | 37.7 | 22.8 | 19.9 |
| HCC score | 1.2 | 1.2 | 1.1 | 1.3 | 1.9 | 1.4 |
| Market characteristics | | | | | | |
| Medicare spending per dual, ages 19+ ($) | 16,436.6 | 16,294.2 | 16,442.2 | 16,429.7 | 16,417.3 | 16,444.0 |
| MA penetration rate | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Medicaid-to-Medicare fee index (FFS) | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
| Medicaid spending per dual, ages 19+ ($) | 8,779.3 | 12,294.9 | 8,745.9 | 8,820.5 | 8,815.4 | 8,877.0 |
| Fraction of dually eligible beneficiaries using NF, ages 65+ | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Fraction of dually eligible beneficiaries using HCBS, ages 65+ | 0.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 |
| Fraction of dually eligible beneficiaries using personal care, ages 19+ | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Fraction of dually eligible beneficiaries with Medicaid managed care, ages 19+ | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Population per square mile, all ages | 179.2 | 238.8 | 181.6 | 176.2 | 178.4 | 191.7 |
| Patient care physicians per 1,000 population | 0.7 | 0.6 | 0.7 | 0.7 | 0.7 | 0.7 |

(continued)

**Table D-1 (continued)**
**Characteristics of 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 |
|---|---|---|---|---|---|---|
| Area characteristics | | | | | | |
| % of pop. living in married households | 63.5 | 63.6 | 63.4 | 63.6 | 63.1 | 64.8 |
| % of adults with college education | 19.1 | 18.7 | 19.2 | 18.9 | 17.6 | 18.8 |
| % of adults with self-care limitations | 9.5 | 9.6 | 9.5 | 9.6 | 10.1 | 9.5 |
| % of adults unemployed | 2.9 | 2.9 | 3.0 | 2.8 | 3.1 | 3.0 |
| % of household with individuals younger than 18 | 29.3 | 29.1 | 29.1 | 29.5 | 29.0 | 29.5 |
| % of household with individuals older than 60 | 42.2 | 42.0 | 42.2 | 42.2 | 43.0 | 41.5 |
| Distance to nearest hospital | 10.6 | 10.5 | 10.6 | 10.6 | 10.7 | 10.1 |
| Distance to nearest nursing facility | 8.3 | 8.2 | 8.3 | 8.3 | 8.3 | 8.0 |

ESRD = end-stage renal disease; FFS = fee-for-service; HCBS = home and community-based services; 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.
NOTE: Analysis conducted on demonstration eligible FFS population and Medicare-Medicaid Plan enrollees.

### D.1.6 Descriptive and Regression Outcomes

This report presents several measures on various aspects of service utilization, access to care, cost, quality of care and care coordination. There are 12 settings analyzed using Medicare claims data which include both institutional and community settings: inpatient admission, including psychiatric and non-psychiatric, emergency department (ED) visits and ED psychiatric visits, observational stays, skilled nursing facility (SNF) stays, hospice use, primary care, outpatient therapy (PT, OT, ST), independent therapy, and other hospital outpatient services.

We also calculate descriptive statistics for the following quality of care measures: 30-day all-cause risk-standardized readmission rate, preventable ED visits, 30-day follow-up after hospitalization for mental illness, ACSC admissions overall and chronic (Agency for Healthcare Research and Quality [AHRQ] Prevention Quality Indicator [PQI] #90 and PQI #92), depression screening, and pneumococcal vaccinations.

*Table D-2* presents additional details on these measures and the service utilization measures used in the outcome regression models.

### D.1.7 Nursing Facility-Related Measures

Two measures of annual NF-related utilization are derived from the MDS. Characteristics of new long-stay NF residents at admission are also included to monitor nursing facility case mix and acuity levels.

- NF admission rate

- Percentage of long-stay NF users

- Functional status of new long-stay NF residents

- Percent of new long-stay NF residents with severe cognitive impairment

- Percent of new long-stay NF residents with a low level of care need.

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.

**Table D-2**
**Detailed definitions and measure specifications for the utilization, quality of care, and nursing facility-related outcome measures**

| Outcome measure | Definition | Detailed specifications |
|---|---|---|
| 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. | • The following were identified using the last four digits of provider number:<br>– inpatient rehabilitation facilities = 3025–3099 OR the 3rd position of provider number equals R or T;<br>– long-term care hospitalizations = 2000–2299;<br>– inpatient hospitalizations = 0001–0979 OR 1300–1399; observational stays are excluded (revenue center code = 0760, 0762. AND HCPCS = G0378, G0379). |
| Monthly ED use | The monthly probability of having any ED visit that occurred during the month that did not result in an inpatient admission. | • Identified any claim with a revenue center code = 0450, 0451, 0452, 0456, 0459, or 0981 AND not followed by 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. | • Identified physician office visits on either any physician claim line, federally qualified health center claim line, or rural health center claim line:<br>– Office or Other Outpatient = 99201–99205 or 99211–99215;<br>– Nursing Facility Services = 99304–99310, 99315, 99316, or 99318;<br>– Domiciliary, Rest Home, or Custodial Care Services = 99324–99328, 99334–99337 or 99339–99340;<br>– Home Services = 99341–99345 or 99347-99350;<br>– Initial Medicare Visit = G0402;<br>– Annual Wellness Visit = G0438, G0439. |
| Monthly SNF admissions | The monthly probability of having any SNF admission within the month. | • Identified any SNF claims with a claim type code = 4018, 4021, or 4028; where CLM_ACTV_CARE_FROM_DT to place in the observation month. |

(continued)

**Table D-2 (continued)**
**Detailed definitions and measure specifications for the utilization, quality of care, and nursing facility-related outcome measures**

| Outcome measure | Definition | Detailed specifications |
|---|---|---|
| Any long-stay nursing facility (NF) use | The annual probability of residing in a nursing facility for 101 days or more during the year. | Long-stay use is defined as a stay in an NF for 101 days or more as of a beneficiary's last quarter of demonstration eligibility and is derived from the Minimum Data Set (MDS). |
| 30-day all-cause risk-standardized readmission | This is calculated descriptively as the rate of risk-standardized readmission, defined as the percent of enrollees who were readmitted within 30 days following a hospital discharge, as well as the count of the number risk-standardized readmissions that occurs during the year. | For both the numerator and denominator, identify all acute inpatient stays with a discharge date during the measurement period. Benes are included only if eligible during the month(s) of admission and discharge as well as during the 30-day follow-up period. $$\frac{\left(\frac{\sum_{ig} x_{ig}}{\sum_{ig} n_{ig}} * C\right)}{Prob_g} * 100$$ Numerator: <ul><li>$C$ = the national average of 30-day readmission rate, .238.</li><li>$x_{ig}$ = the total number of readmissions for individual $i$ in group $g$.</li><li>$n_{ig}$ = the total number of hospital admissions for individual i in group g.</li></ul> Denominator: $Prob_g$ = the annual average adjusted probability of readmission for individuals in group $g$. Multiply by 100 to get the final measure score. |
| Annual count of 30-day all-cause readmissions | The annual count of the number of readmissions per beneficiary period. | Among beneficiaries with any index inpatient admission, defined above, a readmission is defined as the following any inpatient admission within 30 days of the index discharge date. |
| Monthly preventable ED visits | This is estimated as a continuous variable of weighted ED visits that occur during the month. | Numerator: Sum of the relative percent of ED visits per diagnosis (see 1–4 below) for conditions that are either preventable/avoidable or treatable in a primary care setting.[1] The algorithm uses four categories for ED utilization, 1–3 are included in the numerator for this measure and 4 is excluded: <ol><li>Non-emergent;</li><li>Emergent/primary care treatable;</li><li>Emergent/ED care needed—preventable/avoidable;</li><li>*Excluded*—Emergent/ED care needed—not preventable/avoidable.</li></ol> Denominator: All demonstration-eligible Medicare-Medicaid beneficiaries. |

(continued)

**Table D-2 (continued)**
**Detailed definitions and measure specifications for the utilization, quality of care, and nursing facility-related outcome measures**

| Outcome measure | Definition | Detailed specifications |
|---|---|---|
| 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. | Numerator: Outpatient or carrier visit with a mental health provider within 30 days from the inpatient discharge. One of the following must be met to be included:<br>• Visit with a mental health practitioner AND SPMI diagnosis;<br>• Visit to a behavioral healthcare facility; OR<br>• Visit to a non-behavioral healthcare facility with a diagnosis of mental illness.<br>Denominator: Discharges for an acute inpatient setting (including acute-care psychiatric facilities) for treatment of SPMI AND no readmission within 30 days. Benes are included only if eligible during both the month of the discharge and the 30-day follow-up period. |
| ACSC admissions—overall composite (AHRQ PQI #90) | The monthly probability of any acute discharge that meet the AHRQ PQI #90 (Prevention Quality Overall Composite) criteria within the month. | Numerator: Total number of discharges that meet the inclusion and exclusion criteria for 12 Prevention Quality Indicators (PQIs) for ambulatory care-sensitive conditions including diabetes—short-term complications (PQI #1); diabetes—long-term complications (PQI #3); COPD or asthma (PQI #5); hypertension (PQI #7); heart failure (PQI #8); dehydration (PQI #10); bacterial pneumonia (PQI #11); UTI (PQI #12); angina without procedure (PQI #13); uncontrolled diabetes (PQI #14); asthma in younger adults (PQI #15); lower-extremity amputations among diabetics (PQI #16)<br>Denominator: All demonstration-eligible Medicare-Medicaid beneficiaries. |
| ACSC admissions—chronic composite (AHRQ PQI #92) | The monthly probability of any acute discharge that meet the AHRQ PQI #92 criteria within the month. | Numerator: Total number of discharges that meet the inclusion and exclusion criteria for eight Prevention Quality Indicators (PQIs) for ambulatory care-sensitive chronic conditions including diabetes—short-term complications (PQI #1); diabetes—long-term complications (PQI #3); COPD or asthma (PQI #5); hypertension (PQI #7); heart failure (PQI #8); uncontrolled diabetes (PQI #14); asthma in younger adults (PQI #15); lower-extremity amputations among diabetics (PQI #16)<br>Denominator: All demonstration-eligible Medicare-Medicaid beneficiaries. |

(continued)

**Table D-2 (continued)**
**Detailed definitions and measure specifications for the utilization, quality of care, and nursing facility-related outcome measures**

| Outcome measure | Definition | Detailed specifications |
|---|---|---|
| Depression screening and follow-up | Number of depression screenings per eligible beneficiary per month. | Numerator: Demonstration-eligible Medicare-Medicaid enrollees whose screening for clinical depression using an age-appropriate standardized tool:<br>• Received a depression screening, tested positive and had a follow-up plan is identified by CLM_LINE_HCPCS_CD = 'G8431.'<br>• Received a depression screening, tested positive and follow-up plan not required is identified by CLM_LINE_HCPCS_CD = 'G8510.'<br>• Received a depression screening, tested positive and not eligible for follow-up plan is identified by CLM_LINE_HCPCS_CD = 'G8940.'<br>• Received a depression screening, tested positive, no follow-up plan and reason not documented is identified by CLM_LINE_HCPCS_CD = 'G8511.'<br>Denominator: All demonstration-eligible Medicare-Medicaid beneficiaries. |
| Pneumococcal vaccination for eligible beneficiaries 65 years and older | This is calculated as the average number of months where an eligible beneficiaries received a pneumococcal vacation during the demonstration year. | Numerator: Demonstration eligible beneficiaries age 65 or older who received a Pneumococcal vaccination or previously received the vaccination in this month.<br>• Received a Pneumococcal vaccination or previously received the vaccination is identified by CLM_LINE_HCPCS_CD = '4040F' **AND** HCPCS_1_MDFR_CD ≠ '8P' **AND** HCPCS_2_MDFR_CD ≠ '8P.'<br>Denominator: Demonstration eligible beneficiary who was 65 years or older during the observation month. |

[1] The lists of diagnoses preventable/avoidable or treatable were developed by researchers at the New York University Center for Health and Public Service Research. https://wagner.nyu.edu/faculty/billings/nyued-background 🔗

### D.1.8 Descriptive Statistics and Regression Methodology for Determining Demonstration Impact

**Descriptive statistics.** For any health care service type, we calculate average monthly utilization per 1,000 eligible months, the average monthly utilization per 1,000 user months (i.e. a user month is month in which there was any use of the service), and the average monthly percentage with any use of the service. Because full-benefit dual eligibility status for the demonstration can vary by month over time for any individual, the analytic observations are at the monthly level. We calculate monthly averages by predemonstration and demonstration year, which account for the variation in demonstration eligibility that any one beneficiary may have.

Specifically, the utilization measures were calculated as the aggregate sum of the unit of measurement (counts, admissions, etc.) divided by the aggregated number of eligible member months (and user months) within each demonstration and comparison group by analytic year. We weight all of the descriptive statistics using inverse PS weighting, described in *Appendix B*. *Appendix D* contains the descriptive tables with these results.

In addition, six quality of care and care coordination measures representing specific utilization types of interest are presented in the report. 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.

The following table also describes the risk-standardized readmission rate calculation for descriptive analysis. The average adjusted probabilities for the overall eligible population are listed below.

| Average adjusted probability of readmission by demonstration group | |
|---|---|
| **Demonstration group** | **Average adjusted probability of readmission** |
| Predemonstration year 1 | |
| South Carolina | 0.1669 |
| Comparison | 0.1688 |
| Predemonstration year 2 | |
| South Carolina | 0.1668 |
| Comparison | 0.1736 |
| Demonstration year 1 | |
| South Carolina | 0.1655 |
| Comparison | 0.1741 |
| Demonstration year 2 | |
| South Carolina | 0.1626 |
| Comparison | 0.1712 |
| Demonstration year 3 | |
| South Carolina | 0.1631 |
| Comparison | 0.1702 |

**DinD approach**. To estimate the demonstration impact on our selected outcome measures, we conducted a multivariate DinD regression model with inverse PS weighting. We estimated two general types of models. The first model estimated the demonstration effect on the outcome over the entire demonstration period.

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

where *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 $\beta_0$ reflects the comparison group predemonstration period mean adjusted for demographic and market effects, $\beta_1$ reflects the average difference between post period and predemonstration period in the comparison group, $\beta_2$ reflects the difference in the demonstration group and comparison group at predemonstration, and $\beta_3$ 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, we also produce an annual effects model to estimate the demonstration impact per year:

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

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. 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 (e.g., for the number of monthly physician visits).

We used regression results to calculate the marginal effects of demonstration impact. To account for correlation in the error terms, we used clustered standard errors at the county level.

Two outcomes are modelled at a beneficiary-period level. Both the annual probability of any long stay nursing home visit and the annual number of readmissions are estimated at a beneficiary—period level. This approach requires the use of an additional control variable to account for the variation of exposure to the potential outcome.

Impact estimates across the entire demonstration period are determined using the DinD methodology and presented in figures for all demonstration eligible beneficiaries. We present a table displaying the cumulative estimate along with the adjusted means for each group and time period for the eligible population. We also display figures showing the annual effects of the

demonstration among the overall eligible population. 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.

To determine whether the demonstration had an effect on the SPMI and LTSS populations, a triple interaction term is used to estimate the interaction effect of each special population (i.e., Demonstration * Post * LTSS). In **Section 5, Demonstration Impact on Service Utilization and Quality of Care** we report the cumulative DinD estimates for both the special population of interest and the rest of the eligible population, and test the difference in the demonstration effect for each estimate. Annual triple-DinD results are shown in **Appendix E, Tables E-2** and **E-3**.

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 take into account 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 regression adjusted mean for each of the four groups using the regression coefficients stored from Step 1.

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 D-3** 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 D-3**
**Logistic regression results on monthly inpatient admissions**
(n = 2,545,309 person months)

| Independent variables | Coefficient | Standard error | z-value | p-value |
|---|---|---|---|---|
| Post period | −0.0814 | 0.0232 | −3.50 | 0.001 |
| Demonstration group | −0.1055 | 0.0509 | −2.07 | 0.038 |
| Interaction of post period x demonstration group | −0.0828 | 0.0272 | −3.05 | 0.002 |
| Age (continuous) | −0.0814 | 0.0232 | −3.50 | 0.001 |
| Female | −0.1275 | 0.0207 | −6.15 | <0.001 |
| Black | −0.1764 | 0.0252 | −6.99 | <0.001 |
| Hispanic | −0.5393 | 0.0670 | −8.05 | <0.001 |
| Asian | −0.7626 | 0.0471 | −16.20 | <0.001 |
| Other race/ethnicity | −0.4810 | 0.0864 | −5.57 | <0.001 |
| Disability as reason for Medicare entitlement | 0.0332 | 0.0240 | 1.38 | 0.168 |
| End-stage renal disease | 0.9841 | 0.0885 | 11.12 | <0.001 |
| Participation in other Shared Savings Program | 0.1122 | 0.0232 | 4.83 | <0.001 |
| Hierarchical Condition Category score | 0.4043 | 0.0074 | 54.50 | <0.001 |
| Metropolitan statistical area residence | 0.0986 | 0.0601 | 1.64 | 0.101 |
| Medicare spending per dual, ages 19+ | 0.0000 | 0.0000 | −0.94 | 0.345 |
| Percent of population married | −0.0019 | 0.0007 | −2.62 | 0.009 |
| MA penetration rate | −0.0661 | 0.3762 | −0.18 | 0.861 |
| Medicaid-Medicare fee index | 1.9030 | 0.6559 | 2.90 | 0.004 |
| Fraction of dually eligible beneficiaries using nursing facility, ages 65+ | −0.5756 | 0.5434 | −1.06 | 0.289 |
| Fraction of dually eligible beneficiaries using HCBS, ages 65+ | 0.1777 | 0.3895 | 0.46 | 0.648 |
| Fraction of dually eligible beneficiaries using personal care, ages 19+ | 0.2115 | 0.4793 | 0.44 | 0.659 |
| Population per square mile, all ages | −0.0004 | 0.0002 | −1.99 | 0.047 |
| Patient care physicians per 1,000 population | 0.1833 | 0.1495 | 1.23 | 0.220 |
| Percent of adults with college education | −0.0023 | 0.0010 | −2.31 | 0.021 |
| Percent of adults who are unemployed | −0.0007 | 0.0008 | −0.90 | 0.369 |
| Percent of adults with self-care limitation | 0.0011 | 0.0013 | 0.85 | 0.398 |
| Distance to nearest hospital | −0.0014 | 0.0017 | −0.81 | 0.420 |
| Distance to nearest nursing facility | 0.0000 | 0.0019 | 0.02 | 0.987 |

(continued)

**Table D-3 (continued)**
**Logistic regression results on monthly inpatient admissions**
(n = 2,545,309 person months)

| Independent variables | Coefficient | Standard error | z-value | p-value |
|---|---|---|---|---|
| Percent of households with individuals younger than 18 | 0.0025 | 0.0022 | 1.12 | 0.262 |
| Percent of households with individuals older than 60 | 0.0022 | 0.0015 | 1.42 | 0.156 |
| Intercept | −5.8302 | 0.8256 | −7.06 | <0.001 |

HCBS = home and community-based services.

# Appendix E
# Descriptive and Special Population Supplemental Analysis

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

**Table E-1**
**Cumulative and annual demonstration impacts on service utilization and quality of care measures for eligible beneficiaries in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Adjusted DinD estimate | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval |
|---|---|---|---|---|---|
| **Probability of inpatient admission** | | | | | |
| Cumulative | −0.0026 | −7.3 | 0.0038 | −0.0043, −0.0008 | −0.0041, −0.0011 |
| Demonstration year 1 | −0.0028 | −7.5 | 0.0112 | −0.0050, −0.0006 | −0.0046, −0.0010 |
| Demonstration year 2 | −0.0030 | −8.9 | 0.0125 | −0.0054, −0.0007 | −0.0050, −0.0010 |
| Demonstration year 3 | −0.0018 | NS | 0.1257 | −0.0041, 0.0005 | −0.0037, 0.0001 |
| **Count of all-cause 30-day readmissions** | | | | | |
| Cumulative | −0.0074 | NS | 0.4804 | −0.0281, 0.0132 | −0.0248, 0.0099 |
| Demonstration year 1 | −0.0012 | NS | 0.9242 | −0.0251, 0.0228 | −0.0213, 0.0189 |
| Demonstration year 2 | −0.0169 | NS | 0.2446 | −0.0453, 0.0116 | −0.0408, 0.0070 |
| Demonstration year 3 | −0.0071 | NS | 0.5884 | −0.0329, 0.0187 | −0.0287, 0.0145 |
| **Probability of ACSC admission, overall** | | | | | |
| Cumulative | −0.0005 | NS | 0.3748 | −0.0015, 0.0005 | −0.0013, 0.0004 |
| Demonstration year 1 | −0.0006 | NS | 0.2471 | −0.0016, 0.0004 | −0.0014, 0.0002 |
| Demonstration year 2 | −0.0009 | NS | 0.1570 | −0.0021, 0.0003 | −0.0019, 0.0001 |
| Demonstration year 3 | 0.0001 | NS | 0.8407 | −0.0012, 0.0015 | −0.0010, 0.0013 |
| **Probability of ACSC admission, chronic** | | | | | |
| Cumulative | −0.0002 | NS | 0.5824 | −0.0011, 0.0006 | −0.0010, 0.0005 |
| Demonstration year 1 | −0.0004 | NS | 0.3888 | −0.0013, 0.0005 | −0.0011, 0.0003 |
| Demonstration year 2 | −0.0008 | NS | 0.1303 | −0.0018, 0.0002 | −0.0017, 0.0001 |
| Demonstration year 3 | 0.0005 | NS | 0.3591 | −0.0006, 0.0016 | −0.0004, 0.0014 |
| **Probability of ED visit** | | | | | |
| Cumulative | −0.0024 | NS | 0.0710 | −0.0050, 0.0002 | −0.0046, −0.0002 |
| Demonstration year 1 | −0.0028 | NS | 0.0550 | −0.0056, 0.0001 | −0.0051, −0.0004 |
| Demonstration year 2 | −0.0035 | NS | 0.0681 | −0.0073, 0.0003 | −0.0067, −0.0003 |
| Demonstration year 3 | −0.0008 | NS | 0.6303 | −0.0040, 0.0024 | −0.0035, 0.0019 |

(continued)

**Table E-1 (continued)**
**Cumulative and annual demonstration impacts on service utilization and quality of care measures for eligible beneficiaries in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Adjusted DinD estimate | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval |
|---|---|---|---|---|---|
| **Count of preventable ED visits** | | | | | |
| Cumulative | −0.0009 | NS | 0.4155 | −0.0030, 0.0012 | −0.0026, 0.0009 |
| Demonstration year 1 | −0.0013 | NS | 0.2951 | −0.0036, 0.0011 | −0.0033, 0.0007 |
| Demonstration year 2 | −0.0016 | NS | 0.2945 | −0.0046, 0.0014 | −0.0041, 0.0009 |
| Demonstration year 3 | 0.0004 | NS | 0.7668 | −0.0021, 0.0029 | −0.0017, 0.0025 |
| **Probability of SNF admission** | | | | | |
| Cumulative | −0.0006 | NS | 0.1126 | −0.0013, 0.0001 | −0.0012, 0.0000 |
| Demonstration year 1 | −0.0009 | −8.7 | 0.0338 | −0.0017, −0.0001 | −0.0016, −0.0002 |
| Demonstration year 2 | −0.0004 | NS | 0.4607 | −0.0014, 0.0006 | −0.0012, 0.0005 |
| Demonstration year 3 | −0.0003 | NS | 0.5854 | −0.0013, 0.0007 | −0.0012, 0.0006 |
| **Probability of any long-stay NF use** | | | | | |
| Cumulative | 0.0068 | 11.9 | 0.0103 | 0.0016, 0.0120 | 0.0025, 0.0112 |
| Demonstration year 1 | 0.0013 | NS | 0.5878 | −0.0035, 0.0061 | −0.0027, 0.0054 |
| Demonstration year 2 | 0.0120 | 21.4 | 0.0007 | 0.0051, 0.0190 | 0.0062, 0.0179 |
| Demonstration year 3 | 0.0081 | 12.0 | 0.0243 | 0.0010, 0.0151 | 0.0022, 0.0139 |
| **Probability of 30-day follow-up after mental health discharge** | | | | | |
| Cumulative | 0.0325 | NS | 0.4176 | −0.0460, 0.1110 | −0.0334, 0.0984 |
| Demonstration year 1 | −0.0010 | NS | 0.9855 | −0.1111, 0.1091 | −0.0934, 0.0914 |
| Demonstration year 2 | 0.0164 | NS | 0.7747 | −0.0956, 0.1283 | −0.0776, 0.1103 |
| Demonstration year 3 | 0.0835 | 36.8 | 0.0388 | 0.0043, 0.1627 | 0.0170, 0.1500 |
| **Number of physician E&M visits** | | | | | |
| Cumulative | 0.1096 | 12.5 | <0.0001 | 0.0765, 0.1427 | 0.0818, 0.1374 |
| Demonstration year 1 | 0.0423 | 5.0 | 0.0003 | 0.0196, 0.0651 | 0.0232, 0.0614 |
| Demonstration year 2 | 0.0815 | 9.1 | <0.0001 | 0.0439, 0.1190 | 0.0499, 0.1130 |
| Demonstration year 3 | 0.2419 | 27.1 | <0.0001 | 0.1819, 0.3020 | 0.1915, 0.2923 |

ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; NS = not statistically significant; SNF = skilled nursing facility.

NOTES: The magnitude of a relative difference could be large when the underlying denominator (the regression predicted mean outcome value for the comparison group during the demonstration period) is small. In such cases, the relative difference should be interpreted with caution.

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

**Table E-2**
**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with LTSS use versus those without LTSS use in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | p-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|---|---|
| **Service Utilization Measures** | | | | | | | | |
| Probability of inpatient admission | Cumulative | LTSS users | 0.0017 | NS | 0.5035 | −0.0033, 0.0066 | −0.0025, 0.0059 | 0.0050* |
| | | Non-LTSS users | −0.0033 | −14.0 | 0.0007 | −0.0052, −0.0014 | −0.0049, −0.0017 | |
| | Demonstration year 1 | LTSS users | 0.0022 | NS | 0.4854 | −0.0041, 0.0086 | −0.0030, 0.0075 | 0.0064* |
| | | Non-LTSS users | −0.0042 | −16.9 | 0.0002 | −0.0063, −0.0020 | −0.0060, −0.0023 | |
| | Demonstration year 2 | LTSS users | 0.0004 | NS | 0.9127 | −0.0071, 0.0079 | −0.0059, 0.0067 | 0.0034 |
| | | Non-LTSS users | −0.0030 | −13.7 | 0.0111 | −0.0053, −0.0007 | −0.0049, −0.0011 | |
| | Demonstration year 3 | LTSS users | 0.0017 | NS | 0.7212 | −0.0078, 0.0113 | −0.0063, 0.0098 | 0.0040 |
| | | Non-LTSS users | −0.0022 | NS | 0.0670 | −0.0046, 0.0002 | −0.0042, −0.0002 | |
| Probability of ED visit | Cumulative | LTSS users | −0.0035 | NS | 0.2401 | −0.0094, 0.0024 | −0.0085, 0.0014 | −0.0024 |
| | | Non-LTSS users | −0.0011 | NS | 0.4131 | −0.0038, 0.0016 | −0.0034, 0.0011 | |
| | Demonstration year 1 | LTSS users | −0.0037 | NS | 0.2704 | −0.0104, 0.0029 | −0.0093, 0.0018 | −0.0018 |
| | | Non-LTSS users | −0.0019 | NS | 0.2076 | −0.0048, 0.0010 | −0.0043, 0.0006 | |
| | Demonstration year 2 | LTSS users | −0.0071 | NS | 0.1417 | −0.0165, 0.0024 | −0.0150, 0.0008 | −0.0055 |
| | | Non-LTSS users | −0.0015 | NS | 0.4014 | −0.0051, 0.0020 | −0.0045, 0.0015 | |
| | Demonstration year 3 | LTSS users | 0.0011 | NS | 0.7997 | −0.0072, 0.0093 | −0.0059, 0.0080 | 0.0008 |
| | | Non-LTSS users | 0.0002 | NS | 0.8916 | −0.0033, 0.0038 | −0.0027, 0.0032 | |

(continued)

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with LTSS use versus those without LTSS use in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|---|---|
| **Service Utilization Measures (continued)** | | | | | | | | |
| Count of physician E&M visits | Cumulative | LTSS users | 0.1941 | 18.3 | <0.0001 | 0.1125, 0.2757 | 0.1256, 0.2625 | 0.0878* |
| | | Non-LTSS users | 0.1063 | 14.2 | <0.0001 | 0.0752, 0.1374 | 0.0802, 0.1324 | |
| | Demonstration year 1 | LTSS users | 0.1228 | 12.2 | 0.0004 | 0.0545, 0.1910 | 0.0655, 0.1800 | 0.0897** |
| | | Non-LTSS users | 0.0331 | 4.5 | 0.0041 | 0.0105, 0.0557 | 0.0141, 0.0521 | |
| | Demonstration year 2 | LTSS users | 0.2177 | 19.8 | 0.0002 | 0.1016, 0.3338 | 0.1203, 0.3151 | 0.1303* |
| | | Non-LTSS users | 0.0874 | 11.6 | <0.0001 | 0.0514, 0.1234 | 0.0572, 0.1176 | |
| | Demonstration year 3 | LTSS users | 0.3560 | 30.8 | <0.0001 | 0.2172, 0.4947 | 0.2395, 0.4724 | 0.1247* |
| | | Non-LTSS users | 0.2312 | 30.5 | <0.0001 | 0.1756, 0.2869 | 0.1845, 0.2780 | |
| Probability of SNF admission | Cumulative | LTSS users | 0.0026 | NS | 0.0818 | −0.0003, 0.0056 | 0.0001, 0.0051 | 0.0035* |
| | | Non-LTSS users | −0.0008 | −23.6 | 0.0105 | −0.0015, −0.0002 | −0.0014, −0.0003 | |
| | Demonstration year 1 | LTSS users | 0.0034 | 18.3 | 0.0313 | 0.0003, 0.0065 | 0.0008, 0.0060 | 0.0046** |
| | | Non-LTSS users | −0.0012 | −32.7 | 0.0014 | −0.0019, −0.0005 | −0.0018, −0.0006 | |
| | Demonstration year 2 | LTSS users | 0.0025 | NS | 0.3254 | −0.0024, 0.0074 | −0.0017, 0.0066 | 0.0031 |
| | | Non-LTSS users | −0.0006 | NS | 0.0635 | −0.0013, 0.0000 | −0.0012, −0.0001 | |
| | Demonstration year 3 | LTSS users | 0.0009 | NS | 0.6997 | −0.0035, 0.0052 | −0.0028, 0.0045 | 0.0014 |
| | | Non-LTSS users | −0.0005 | NS | 0.2062 | −0.0013, 0.0003 | −0.0012, 0.0002 | |

(continued)

**Table E-2 (continued)**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with LTSS use versus those without LTSS use in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|---|---|
| **Quality of Care Measures** | | | | | | | | |
| Count of preventable ED visits | Cumulative | LTSS users | 0.0006 | NS | 0.8383 | −0.0050, 0.0062 | −0.0041, 0.0053 | 0.0014 |
| | | Non-LTSS users | −0.0009 | NS | 0.4818 | −0.0032, 0.0015 | −0.0029, 0.0011 | |
| | Demonstration year 1 | LTSS users | −0.0005 | NS | 0.8610 | −0.0066, 0.0055 | −0.0056, 0.0045 | 0.0010 |
| | | Non-LTSS users | −0.0015 | NS | 0.2843 | −0.0043, 0.0013 | −0.0039, 0.0008 | |
| | Demonstration year 2 | LTSS users | 0.0007 | NS | 0.8863 | −0.0086, 0.0100 | −0.0071, 0.0085 | 0.0018 |
| | | Non-LTSS users | −0.0012 | NS | 0.4377 | −0.0041, 0.0018 | −0.0036, 0.0013 | |
| | Demonstration year 3 | LTSS users | 0.0032 | NS | 0.4099 | −0.0044, 0.0107 | −0.0032, 0.0095 | 0.0029 |
| | | Non-LTSS users | 0.0003 | NS | 0.8424 | −0.0026, 0.0032 | −0.0021, 0.0027 | |
| Probability of ACSC admission, overall | Cumulative | LTSS users | 0.0005 | NS | 0.7194 | −0.0024, 0.0035 | −0.0019, 0.0030 | 0.0013 |
| | | Non-LTSS users | −0.0008 | NS | 0.0636 | −0.0016, 0.0000 | −0.0015, −0.0001 | |
| | Demonstration year 1 | LTSS users | 0.0014 | NS | 0.3604 | −0.0016, 0.0044 | −0.0011, 0.0039 | 0.0024 |
| | | Non-LTSS users | −0.0011 | −19.6 | 0.0163 | −0.0019, −0.0002 | −0.0018, −0.0003 | |
| | Demonstration year 2 | LTSS users | −0.0015 | NS | 0.5023 | −0.0060, 0.0029 | −0.0052, 0.0022 | −0.0006 |
| | | Non-LTSS users | −0.0009 | NS | 0.0735 | −0.0019, 0.0001 | −0.0017, −0.0001 | |
| | Demonstration year 3 | LTSS users | 0.0005 | NS | 0.8161 | −0.0041, 0.0051 | −0.0033, 0.0044 | 0.0009 |
| | | Non-LTSS users | −0.0004 | NS | 0.5397 | −0.0015, 0.0008 | −0.0013, 0.0006 | |

(continued)

**Table E-2 (continued)**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with LTSS use versus those without LTSS use in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|---|---|
| **Quality of Care Measures (continued)** | | | | | | | | |
| Probability of ACSC admission, chronic | Cumulative | LTSS users | 0.0008 | NS | 0.4690 | −0.0014, 0.0029 | −0.0010, 0.0026 | 0.0014 |
| | | Non-LTSS users | −0.0006 | NS | 0.1306 | −0.0014, 0.0002 | −0.0012, 0.0001 | |
| | Demonstration year 1 | LTSS users | 0.0009 | NS | 0.4921 | −0.0016, 0.0033 | −0.0012, 0.0029 | 0.0016 |
| | | Non-LTSS users | −0.0007 | NS | 0.0750 | −0.0015, 0.0001 | −0.0014, −0.0001 | |
| | Demonstration year 2 | LTSS users | −0.0007 | NS | 0.6547 | −0.0040, 0.0025 | −0.0035, 0.0020 | 0.0002 |
| | | Non-LTSS users | −0.0010 | −25.7 | 0.0276 | −0.0019, −0.0001 | −0.0017, −0.0003 | |
| | Demonstration year 3 | LTSS users | 0.0025 | NS | 0.0801 | −0.0003, 0.0052 | 0.0001, 0.0048 | 0.0025 |
| | | Non-LTSS users | −0.0001 | NS | 0.9208 | −0.0011, 0.0010 | −0.0009, 0.0008 | |
| Probability of 30-day follow-up after mental health discharge | Cumulative | LTSS users | −0.0000 | NS | 0.9996 | −0.1601, 0.1600 | −0.1343, 0.1342 | −0.0264 |
| | | Non-LTSS users | 0.0263 | NS | 0.6300 | −0.0807, 0.1334 | −0.0635, 0.1162 | |
| | Demonstration year 1 | LTSS users | 0.0094 | NS | 0.9364 | −0.2224, 0.2413 | −0.1852, 0.2040 | 0.0449 |
| | | Non-LTSS users | −0.0354 | NS | 0.6091 | −0.1711, 0.1003 | −0.1493, 0.0785 | |
| | Demonstration year 2 | LTSS users | −0.0031 | NS | 0.9725 | −0.1790, 0.1728 | −0.1507, 0.1446 | −0.0102 |
| | | Non-LTSS users | 0.0071 | NS | 0.9320 | −0.1556, 0.1697 | −0.1294, 0.1436 | |
| | Demonstration year 3 | LTSS users | −0.0018 | NS | 0.9881 | −0.2381, 0.2345 | −0.2001, 0.1965 | −0.0950 |
| | | Non-LTSS users | 0.0932 | NS | 0.0613 | −0.0044, 0.1908 | 0.0113, 0.1751 | |

(continued)

**Table E-2 (continued)**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with LTSS use versus those without LTSS use in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | p-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (LTSS versus non-LTSS) |
|---|---|---|---|---|---|---|---|---|
| **Quality of Care Measures (continued)** | | | | | | | | |
| Count of all-cause 30-day readmissions | Cumulative | LTSS users | −0.0099 | NS | 0.6409 | −0.0516, 0.0317 | −0.0449, 0.0250 | 0.0161 |
| | | Non-LTSS users | −0.0260 | NS | 0.0720 | −0.0543, 0.0023 | −0.0498, −0.0022 | |
| | Demonstration year 1 | LTSS users | 0.0120 | NS | 0.6483 | −0.0396, 0.0636 | −0.0313, 0.0553 | 0.0388 |
| | | Non-LTSS users | −0.0268 | NS | 0.1613 | −0.0642, 0.0107 | −0.0582, 0.0047 | |
| | Demonstration year 2 | LTSS users | −0.0475 | NS | 0.2064 | −0.1211, 0.0262 | −0.1093, 0.0143 | −0.0110 |
| | | Non-LTSS users | −0.0365 | −22.8 | 0.0165 | −0.0663, −0.0066 | −0.0615, −0.0114 | |
| | Demonstration year 3 | LTSS users | −0.0106 | NS | 0.6947 | −0.0638, 0.0425 | −0.0552, 0.0340 | 0.0051 |
| | | Non-LTSS users | −0.0158 | NS | 0.3894 | −0.0517, 0.0202 | −0.0460, 0.0144 | |

\* $p < 0.05$; \*\* $p < 0.01$; \*\*\* $p < 0.001$

ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; LTSS = long-term services and supports; NS = not statistically significant; SNF = skilled nursing facility.

NOTES: The magnitude of a relative difference could be large when the underlying denominator (the regression predicted mean outcome value for the comparison group during the demonstration period) is small. In such cases, the relative difference should be interpreted with caution.

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

**Table E-3**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with SPMI versus those without SPMI in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|---|---|---|---|---|
| **Service Utilization Measures** | | | | | | | | |
| Probability of inpatient admission | Cumulative | SPMI | −0.0094 | −15.9 | 0.0018 | −0.0152, −0.0035 | −0.0143, −0.0044 | −0.0084** |
| | | Non-SPMI | −0.0010 | NS | 0.2162 | −0.0026, 0.0006 | −0.0023, 0.0003 | |
| | Demonstration year 1 | SPMI | −0.0077 | −12.5 | 0.0148 | −0.0140, −0.0015 | −0.0130, −0.0025 | −0.0060 |
| | | Non-SPMI | −0.0017 | NS | 0.1205 | −0.0038, 0.0004 | −0.0035, 0.0001 | |
| | Demonstration year 2 | SPMI | −0.0109 | −18.3 | 0.0038 | −0.0182, −0.0035 | −0.0171, −0.0047 | −0.0095* |
| | | Non-SPMI | −0.0013 | NS | 0.1578 | −0.0032, 0.0005 | −0.0029, 0.0002 | |
| | Demonstration year 3 | SPMI | −0.0101 | −18.7 | 0.0094 | −0.0178, −0.0025 | −0.0165, −0.0037 | −0.0107** |
| | | Non-SPMI | 0.0006 | NS | 0.4935 | −0.0011, 0.0024 | −0.0009, 0.0021 | |
| Probability of ED visit | Cumulative | SPMI | −0.0031 | NS | 0.4378 | −0.0110, 0.0048 | −0.0098, 0.0035 | −0.0020 |
| | | Non-SPMI | −0.0011 | NS | 0.4379 | −0.0040, 0.0017 | −0.0035, 0.0013 | |
| | Demonstration year 1 | SPMI | −0.0028 | NS | 0.5413 | −0.0117, 0.0061 | −0.0102, 0.0047 | −0.0012 |
| | | Non-SPMI | −0.0016 | NS | 0.3148 | −0.0047, 0.0015 | −0.0042, 0.0010 | |
| | Demonstration year 2 | SPMI | −0.0040 | NS | 0.4098 | −0.0136, 0.0055 | −0.0120, 0.0040 | −0.0013 |
| | | Non-SPMI | −0.0027 | NS | 0.2199 | −0.0070, 0.0016 | −0.0063, 0.0009 | |
| | Demonstration year 3 | SPMI | −0.0030 | NS | 0.4939 | −0.0114, 0.0055 | −0.0101, 0.0042 | −0.0042 |
| | | Non-SPMI | 0.0012 | NS | 0.4461 | −0.0019, 0.0044 | −0.0014, 0.0039 | |

(continued)

**Table E-3 (continued)**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with SPMI versus those without SPMI in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|---|---|---|---|---|
| **Service Utilization Measures (continued)** | | | | | | | | |
| Count of physician E&M visits | Cumulative | SPMI | 0.1789 | 13.7 | <0.0001 | 0.1035, 0.2543 | 0.1157, 0.2422 | 0.0706 |
| | | Non-SPMI | 0.1084 | 15.3 | <0.0001 | 0.0786, 0.1382 | 0.0834, 0.1334 | |
| | Demonstration year 1 | SPMI | 0.0853 | 6.8 | 0.0078 | 0.0225, 0.1481 | 0.0326, 0.1380 | 0.0363 |
| | | Non-SPMI | 0.0490 | 6.8 | 0.0003 | 0.0224, 0.0756 | 0.0267, 0.0713 | |
| | Demonstration year 2 | SPMI | 0.1107 | 8.2 | 0.0135 | 0.0229, 0.1985 | 0.0370, 0.1844 | 0.0206 |
| | | Non-SPMI | 0.0901 | 12.6 | <0.0001 | 0.0532, 0.1270 | 0.0592, 0.1210 | |
| | Demonstration year 3 | SPMI | 0.3368 | 25.2 | <0.0001 | 0.2291, 0.4444 | 0.2464, 0.4271 | 0.1053* |
| | | Non-SPMI | 0.2314 | 33.7 | <0.0001 | 0.1818, 0.2811 | 0.1898, 0.2731 | |
| Probability of SNF admission | Cumulative | SPMI | −0.0037 | −18.1 | 0.0209 | −0.0068, −0.0006 | −0.0063, −0.0011 | −0.0036* |
| | | Non-SPMI | −0.0001 | NS | 0.8607 | −0.0007, 0.0006 | −0.0006, 0.0005 | |
| | Demonstration year 1 | SPMI | −0.0032 | NS | 0.0725 | −0.0067, 0.0003 | −0.0062, −0.0003 | −0.0027 |
| | | Non-SPMI | −0.0005 | NS | 0.2236 | −0.0013, 0.0003 | −0.0012, 0.0002 | |
| | Demonstration year 2 | SPMI | −0.0043 | −20.7 | 0.0146 | −0.0078, −0.0009 | −0.0072, −0.0014 | −0.0045** |
| | | Non-SPMI | 0.0002 | NS | 0.6071 | −0.0007, 0.0011 | −0.0005, 0.0010 | |
| | Demonstration year 3 | SPMI | −0.0038 | NS | 0.0527 | −0.0077, 0.0000 | −0.0071, −0.0006 | −0.0043* |
| | | Non-SPMI | 0.0004 | NS | 0.3288 | −0.0004, 0.0013 | −0.0003, 0.0012 | |

(continued)

**Table E-3 (continued)**
**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with SPMI versus those without SPMI in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | *p*-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|---|---|---|---|---|
| **Quality of Care Measures** | | | | | | | | |
| Count of preventable ED visits | Cumulative | SPMI | −0.0016 | NS | 0.6794 | −0.0090, 0.0058 | −0.0078, 0.0046 | −0.0012 |
| | | Non-SPMI | −0.0004 | NS | 0.7409 | −0.0027, 0.0019 | −0.0023, 0.0015 | |
| | Demonstration year 1 | SPMI | −0.0021 | NS | 0.5940 | −0.0097, 0.0056 | −0.0085, 0.0043 | −0.0015 |
| | | Non-SPMI | −0.0006 | NS | 0.6303 | −0.0030, 0.0018 | −0.0026, 0.0014 | |
| | Demonstration year 2 | SPMI | −0.0017 | NS | 0.6976 | −0.0103, 0.0069 | −0.0089, 0.0055 | −0.0002 |
| | | Non-SPMI | −0.0015 | NS | 0.3890 | −0.0049, 0.0019 | −0.0044, 0.0014 | |
| | Demonstration year 3 | SPMI | −0.0009 | NS | 0.8246 | −0.0089, 0.0071 | −0.0076, 0.0058 | −0.0019 |
| | | Non-SPMI | 0.0010 | NS | 0.4458 | −0.0016, 0.0037 | −0.0012, 0.0032 | |
| Probability of ACSC admission, overall | Cumulative | SPMI | −0.0002 | NS | 0.9162 | −0.0034, 0.0031 | −0.0029, 0.0026 | 0.0001 |
| | | Non-SPMI | −0.0003 | NS | 0.5165 | −0.0013, 0.0006 | −0.0011, 0.0005 | |
| | Demonstration year 1 | SPMI | −0.0005 | NS | 0.7783 | −0.0041, 0.0031 | −0.0035, 0.0025 | −0.0002 |
| | | Non-SPMI | −0.0003 | NS | 0.5361 | −0.0014, 0.0007 | −0.0012, 0.0005 | |
| | Demonstration year 2 | SPMI | −0.0004 | NS | 0.8047 | −0.0038, 0.0030 | −0.0033, 0.0024 | 0.0004 |
| | | Non-SPMI | −0.0009 | NS | 0.1344 | −0.0020, 0.0003 | −0.0018, 0.0001 | |
| | Demonstration year 3 | SPMI | 0.0004 | NS | 0.8530 | −0.0037, 0.0044 | −0.0030, 0.0038 | 0.0001 |
| | | Non-SPMI | 0.0003 | NS | 0.6041 | −0.0008, 0.0013 | −0.0006, 0.0012 | |

(continued)

**Table E-3 (continued)**

**Cumulative and annual demonstration impacts on service utilization and quality of care measures on beneficiaries with SPMI versus those without SPMI in South Carolina, February 1, 2015–December 31, 2018**

| Measure | Demonstration year | Special population | Demonstration effect relative to the comparison group | Relative difference (%) | p-value | 95% confidence interval | 90% confidence interval | Difference in demonstration effect (SPMI versus non-SPMI) |
|---|---|---|---|---|---|---|---|---|
| **Quality of Care Measures (continued)** | | | | | | | | |
| Probability of ACSC admission, chronic | Cumulative | SPMI | −0.0008 | NS | 0.6078 | −0.0039, 0.0023 | −0.0034, 0.0018 | −0.0006 |
| | | Non-SPMI | −0.0002 | NS | 0.5880 | −0.0009, 0.0005 | −0.0008, 0.0004 | |
| | Demonstration year 1 | SPMI | −0.0013 | NS | 0.4279 | −0.0044, 0.0019 | −0.0039, 0.0014 | −0.0011 |
| | | Non-SPMI | −0.0002 | NS | 0.6140 | −0.0011, 0.0006 | −0.0009, 0.0005 | |
| | Demonstration year 2 | SPMI | −0.0017 | NS | 0.3598 | −0.0053, 0.0019 | −0.0047, 0.0013 | −0.0010 |
| | | Non-SPMI | −0.0007 | NS | 0.1158 | −0.0016, 0.0002 | −0.0014, 0.0000 | |
| | Demonstration year 3 | SPMI | 0.0004 | NS | 0.8284 | −0.0032, 0.0039 | −0.0026, 0.0034 | 0.0000 |
| | | Non-SPMI | 0.0003 | NS | 0.4457 | −0.0005, 0.0012 | −0.0004, 0.0011 | |
| Count of all-cause 30-day readmissions | Cumulative | SPMI | −0.0301 | NS | 0.2982 | −0.0869, 0.0266 | −0.0778, 0.0175 | −0.0293 |
| | | Non-SPMI | −0.0009 | NS | 0.9353 | −0.0223, 0.0206 | −0.0189, 0.0171 | |
| | Demonstration year 1 | SPMI | −0.0352 | NS | 0.3753 | −0.1129, 0.0426 | −0.1004, 0.0301 | −0.0434 |
| | | Non-SPMI | 0.0083 | NS | 0.5453 | −0.0185, 0.0351 | −0.0142, 0.0308 | |
| | Demonstration year 2 | SPMI | −0.0305 | NS | 0.2996 | −0.0881, 0.0271 | −0.0788, 0.0179 | −0.0139 |
| | | Non-SPMI | −0.0166 | NS | 0.2941 | −0.0476, 0.0144 | −0.0426, 0.0094 | |
| | Demonstration year 3 | SPMI | −0.0240 | NS | 0.3727 | −0.0766, 0.0287 | −0.0682, 0.0202 | −0.0225 |
| | | Non-SPMI | −0.0015 | NS | 0.9267 | −0.0331, 0.0301 | −0.0280, 0.0250 | |

\* $p < 0.05$; \*\* $p < 0.01$; \*\*\* $p < 0.001$

ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; NS = not statistically significant; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.

NOTES: The magnitude of a relative difference could be large when the underlying denominator (the regression predicted mean outcome value for the comparison group during the demonstration period) is small. In such cases, the relative difference should be interpreted with caution.

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

**Table E-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.[1] In addition, average counts of service use 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 South Carolina 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 E-5**) and NF-related measures derived from the MDS (**Table E-6**). 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 E-4**). However, there were a few outcomes where some differences were apparent. For example, physician E&M visits among users was substantially higher during the demonstration period for the demonstration vs. the comparison group, and ED use and outpatient therapy use were higher for the comparison group compared to the demonstration group.

As with the service utilization measures, the South Carolina demonstration eligible beneficiaries were broadly similar to the comparison group in many of the RTI quality of care and care coordination measures (**Table E-5**). In general, preventable ED visits and pneumococcal vaccination were higher in the comparison group than in the demonstration group across all years. ACSC admissions (overall and chronic) were more prevalent in the comparison group during demonstration years 1 and 2, but the reverse was true for demonstration year 3, while screening for clinical depression was higher in the demonstration group during the same period. No clear pattern was evident for rates of 30-day all-cause risk-standardized readmission or the number of 30-day follow-up visits after mental health discharges.

Finally, across all years, the demonstration group 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 E-6**). There were differences in some characteristics of long-stay NF residents at admission: relative to the comparison group, demonstration eligible beneficiaries had lower functional status, a higher proportion of beneficiaries with severe cognitive impairment, and, during the demonstration period, increasing rates of low level of care need beneficiaries.

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[1] Due to concerns on the completeness and accuracy of MA encounter data for years prior to 2016, RTI excluded demonstration eligible beneficiaries with any MA enrollment from the service utilization analysis.

**Table E-4**
**Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| Number of demonstration eligible beneficiaries | | 16,922 | 17,057 | 16,422 | 15,022 | 16,526 |
| Number of comparison beneficiaries | | 25,560 | 26,221 | 27,598 | 26,114 | 26,543 |
| **Institutional setting** | | | | | | |
| Inpatient admissions[1] | | | | | | |
| % with use | Demonstration | 3.9 | 4.1 | 3.4 | 3.0 | 3.0 |
| Utilization per 1,000 user months | | 1,135.8 | 1,142.6 | 1,137.3 | 1,120.2 | 1,142.7 |
| Utilization per 1,000 eligible months | | 44.2 | 46.4 | 38.2 | 33.8 | 34.0 |
| Inpatient admissions[1] | | | | | | |
| % with use | Comparison | 4.0 | 4.2 | 3.7 | 3.4 | 3.3 |
| Utilization per 1,000 user months | | 1,112.6 | 1,140.0 | 1,131.7 | 1,126.1 | 1,123.7 |
| Utilization per 1,000 eligible months | | 44.0 | 47.7 | 42.4 | 38.5 | 36.7 |
| Inpatient psychiatric | | | | | | |
| % with use | Demonstration | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Utilization per 1,000 user months | | 1,076.3 | 1,068.4 | 1,068.2 | 1,046.5 | 1,088.2 |
| Utilization per 1,000 eligible months | | 0.7 | 0.7 | 0.7 | 0.6 | 0.8 |
| Inpatient psychiatric | | | | | | |
| % with use | Comparison | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Utilization per 1,000 user months | | 1,070.0 | 1,057.5 | 1,041.3 | 1,049.7 | 1,042.1 |
| Utilization per 1,000 eligible months | | 0.7 | 0.6 | 0.6 | 0.9 | 0.7 |

(continued)

**Table E-4 (continued)**
**Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| Inpatient nonpsychiatric | Demonstration | | | | | |
| % with use | | 3.8 | 4.0 | 3.3 | 3.0 | 2.9 |
| Utilization per 1,000 user months | | 1,133.3 | 1,141.5 | 1,136.0 | 1,119.1 | 1,140.2 |
| Utilization per 1,000 eligible months | | 43.5 | 45.7 | 37.5 | 33.2 | 33.1 |
| Inpatient nonpsychiatric | Comparison | | | | | |
| % with use | | 3.9 | 4.1 | 3.7 | 3.3 | 3.2 |
| Utilization per 1,000 user months | | 1,110.2 | 1,138.3 | 1,131.0 | 1,124.4 | 1,120.8 |
| Utilization per 1,000 eligible months | | 43.2 | 47.0 | 41.8 | 37.5 | 35.9 |
| Emergency department use (non-admit) | Demonstration | | | | | |
| % with use | | 5.5 | 5.8 | 5.6 | 5.6 | 5.7 |
| Utilization per 1,000 user months | | 1,180.2 | 1,172.0 | 1,201.2 | 1,204.5 | 1,228.1 |
| Utilization per 1,000 eligible months | | 65.3 | 68.0 | 67.0 | 67.2 | 70.5 |
| Emergency department use (non-admit) | Comparison | | | | | |
| % with use | | 6.2 | 6.4 | 6.5 | 6.6 | 6.5 |
| Utilization per 1,000 user months | | 1,178.9 | 1,184.4 | 1,208.7 | 1,243.8 | 1,207.2 |
| Utilization per 1,000 eligible months | | 73.1 | 75.9 | 79.1 | 82.3 | 78.5 |

**Table E-4 (continued)**
**Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| Emergency department use (psychiatric) | Demonstration | | | | | |
|   % with use | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
|   Utilization per 1,000 user months | | 1,081.3 | 1,052.1 | 1,076.3 | 1,078.0 | 1,195.0 |
|   Utilization per 1,000 eligible months | | 1.7 | 1.7 | 1.8 | 2.0 | 2.5 |
| Emergency department use (psychiatric) | Comparison | | | | | |
|   % with use | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
|   Utilization per 1,000 user months | | 1,057.8 | 1,114.2 | 1,057.7 | 1,054.7 | 1,074.3 |
|   Utilization per 1,000 eligible months | | 1.7 | 2.4 | 2.1 | 2.3 | 2.1 |
| Observation stays | Demonstration | | | | | |
|   % with use | | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 |
|   Utilization per 1,000 user months | | 1,023.7 | 1,014.5 | 1,041.9 | 1,037.0 | 1,054.8 |
|   Utilization per 1,000 eligible months | | 7.4 | 7.4 | 7.4 | 7.3 | 8.6 |
| Observation stays | Comparison | | | | | |
|   % with use | | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 |
|   Utilization per 1,000 user months | | 1,028.6 | 1,029.8 | 1,041.7 | 1,033.6 | 1,026.6 |
|   Utilization per 1,000 eligible months | | 8.0 | 8.2 | 8.6 | 8.0 | 7.9 |

**Table E-4 (continued)**
**Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| Skilled nursing facility | Demonstration | | | | | |
| % with use | | 0.8 | 1.0 | 0.8 | 0.8 | 0.8 |
| Utilization per 1,000 user months | | 1,071.9 | 1,075.7 | 1,074.2 | 1,078.3 | 1,080.7 |
| Utilization per 1,000 eligible months | | 8.8 | 11.2 | 8.8 | 8.8 | 9.0 |
| Skilled nursing facility | Comparison | | | | | |
| % with use | | 1.0 | 1.2 | 1.0 | 1.0 | 1.0 |
| Utilization per 1,000 user months | | 1,081.5 | 1,077.9 | 1,084.5 | 1,076.8 | 1,073.4 |
| Utilization per 1,000 eligible months | | 10.5 | 12.5 | 11.3 | 10.6 | 10.7 |
| Hospice | Demonstration | | | | | |
| % with use | | 1.0 | 1.9 | 1.0 | 1.1 | 1.1 |
| Utilization per 1,000 user months | | 1,022.4 | 1,027.8 | 1,027.7 | 1,020.3 | 1,022.6 |
| Utilization per 1,000 eligible months | | 10.1 | 19.3 | 10.6 | 11.1 | 10.9 |
| Hospice | Comparison | | | | | |
| % with use | | 0.7 | 1.4 | 1.0 | 1.3 | 1.3 |
| Utilization per 1,000 user months | | 1,015.7 | 1,014.6 | 1,016.9 | 1,017.0 | 1,012.2 |
| Utilization per 1,000 eligible months | | 7.4 | 14.0 | 9.9 | 12.9 | 13.0 |

(continued)

**Table E-4 (continued)**
**Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| **Non-institutional setting** | | | | | | |
| Primary care E&M visits | Demonstration | | | | | |
|   % with use | | 47.4 | 48.1 | 47.4 | 47.5 | 48.2 |
|   Utilization per 1,000 user months | | 1,622.6 | 1,652.3 | 1,764.3 | 1,961.5 | 2,312.9 |
|   Utilization per 1,000 eligible months | | 769.6 | 795.2 | 835.7 | 931.1 | 1,114.4 |
| Primary care E&M visits | Comparison | | | | | |
|   % with use | | 48.9 | 50.1 | 49.2 | 49.8 | 49.4 |
|   Utilization per 1,000 user months | | 1,663.8 | 1,733.2 | 1,718.1 | 1,786.8 | 1,802.8 |
|   Utilization per 1,000 eligible months | | 813.1 | 868.7 | 845.7 | 890.7 | 890.1 |
| Outpatient therapy (PT, OT, ST) | Demonstration | | | | | |
|   % with use | | 1.4 | 1.9 | 1.7 | 2.1 | 2.2 |
|   Utilization per 1,000 user months | | 14,833.3 | 18,160.8 | 16,827.9 | 17,736.7 | 15,790.9 |
|   Utilization per 1,000 eligible months | | 205.6 | 342.1 | 282.5 | 371.3 | 345.5 |
| Outpatient therapy (PT, OT, ST) | Comparison | | | | | |
|   % with use | | 1.6 | 2.3 | 2.0 | 2.7 | 3.2 |
|   Utilization per 1,000 user months | | 22,282.6 | 23,521.9 | 23,518.2 | 24,494.6 | 23,716.3 |
|   Utilization per 1,000 eligible months | | 346.6 | 532.1 | 477.8 | 667.1 | 761.4 |

(continued)

## Table E-4 (continued)
## Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018

| Measures by setting | Group | Predemonstration year 1 | Predemonstration year 2 | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|---|---|
| Independent therapy (PT, OT, ST) | | | | | | |
| % with use | Demonstration | 0.6 | 0.6 | 0.7 | 0.7 | 0.9 |
| Utilization per 1,000 user months | | 13,444.2 | 15,721.8 | 14,966.4 | 13,342.0 | 13,403.6 |
| Utilization per 1,000 eligible months | | 80.8 | 99.3 | 103.5 | 91.2 | 118.1 |
| Independent therapy (PT, OT, ST) | | | | | | |
| % with use | Comparison | 0.6 | 0.5 | 0.7 | 0.7 | 0.8 |
| Utilization per 1,000 user months | | 10,955.0 | 11,297.5 | 11,840.1 | 10,142.8 | 11,066.8 |
| Utilization per 1,000 eligible months | | 65.6 | 61.7 | 83.0 | 69.5 | 84.8 |
| Other hospital outpatient services | | | | | | |
| % with use | Demonstration | 25.9 | 26.2 | 24.9 | 24.2 | 25.6 |
| Utilization per 1,000 user months | | — | — | — | — | — |
| Utilization per 1,000 eligible months | | — | — | — | — | — |
| Other hospital outpatient services | | | | | | |
| % with use | Comparison | 23.7 | 24.1 | 23.9 | 25.2 | 24.8 |
| Utilization per 1,000 user months | | — | — | — | — | — |
| Utilization per 1,000 eligible months | | — | — | — | — | — |

— = 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 claims and encounter data.

**Table E-5**
**Quality of care and care coordination outcomes for the demonstration and comparison groups in South Carolina,**
**February 1, 2015–December 31, 2018**

| 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 | 20.1 | 22.6 | 21.4 | 19.7 | 19.5 |
| | Comparison | 18.9 | 21.6 | 20.1 | 20.2 | 19.0 |
| Preventable emergency department visits per eligible month | Demonstration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Comparison | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Rate of 30-day follow-up after hospitalization for mental illness (%) | Demonstration | 29.5 | 32.5 | 25.1 | 24.2 | 28.3 |
| | Comparison | 35.6 | 31.0 | 27.2 | 25.6 | 22.4 |
| Ambulatory care sensitive condition admissions per eligible month— overall composite (AHRQ PQI #90) | Demonstration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Comparison | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Ambulatory care sensitive condition admissions per eligible month— chronic composite (AHRQ PQI #92) | Demonstration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Comparison | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Screening for clinical depression per eligible month | Demonstration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Comparison | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Pneumococcal vaccination for patients age 65 and older per eligible month | Demonstration | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Comparison | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

AHRQ PQI = Agency for Healthcare Research and Quality Prevention Quality Indicator.
SOURCE: RTI International analysis of Medicare FFS claims and encounter data.

**Table E-6**

**MDS long-stay NF utilization and characteristics at admission for the demonstration and comparison groups in South Carolina, February 1, 2015–December 31, 2018**

| 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 | 14,985 | 14,706 | 12,303 | 12,742 | 13,949 |
| New long-stay NF admissions per 1,000 eligible beneficiaries | | 14.1 | 21.3 | 32.9 | 17.1 | 13.1 |
| Number of comparison beneficiaries | Comparison | 22,582 | 22,382 | 20,600 | 22,106 | 22,181 |
| New long-stay NF admissions per 1,000 eligible beneficiaries | | 19.2 | 21.9 | 37.6 | 22.5 | 19 |
| Number of demonstration beneficiaries | Demonstration | 15,039 | 14,991 | 12,343 | 13,185 | 14,532 |
| Long-stay NF users as % of eligible beneficiaries | | 1.4 | 3.6 | 3.8 | 5.0 | 5.2 |
| Number of comparison beneficiaries | Comparison | 22,714 | 23,030 | 20,781 | 22,913 | 23,320 |
| Long-stay NF users as % of eligible beneficiaries | | 2.1 | 4.7 | 4.5 | 5.5 | 6.7 |
| **Characteristics of new long-stay NF residents at admission** | | | | | | |
| Number of admitted demonstration beneficiaries | Demonstration | 212 | 313 | 405 | 218 | 183 |
| Number of admitted comparison beneficiaries | Comparison | 435 | 490 | 774 | 498 | 422 |
| Functional status (RUG-IV ADL scale) | Demonstration | 8.5 | 8.5 | 8.1 | 8.3 | 7.7 |
| Functional status (RUG-IV ADL scale) | Comparison | 8.8 | 8.8 | 8.6 | 8.8 | 8.5 |
| Percent with severe cognitive impairment | Demonstration | 50.2 | 50.4 | 45.8 | 47.6 | 44.8 |
| Percent with severe cognitive impairment | Comparison | 44.1 | 43.9 | 41.8 | 47.9 | 40.7 |
| Percent with low level of care need | Demonstration | 0.7 | 1.0 | 1.0 | 1.4 | 2.4 |
| Percent with low level of care need | Comparison | 1.3 | 4.0 | 1.6 | 1.1 | 0.8 |

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 Nursing Home Minimum Data Set data.

*Tables E-7* and *E-8* present descriptive statistics for the demonstration 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.[2]

Non-enrollees generally had higher utilization than the demonstration enrollees across most service settings (*Table E-7*). For the quality of care and care coordination measures, non-enrollees had a higher preventable ED visits, rates of 30-day all-cause risk-standardized readmission, screening for clinical depression, and pneumococcal vaccination (*Table E-8*).

**Table E-7**
**Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|
| Number of demonstration enrollees | | 6,093 | 7,994 | 9,124 |
| Number of demonstration non-enrollees | | 10,324 | 6,506 | 7,132 |
| **Institutional setting** | | | | |
| Inpatient admissions[1] | Enrollees | | | |
| % with use | | 2.4 | 2.2 | 2.4 |
| Utilization per 1,000 user months | | 1,113.6 | 1,080.7 | 1,134.4 |
| Utilization per 1,000 eligible months | | 27.2 | 24.0 | 27.1 |
| Inpatient admissions[1] | Non-enrollees | | | |
| % with use | | 3.8 | 3.5 | 3.3 |
| Utilization per 1,000 user months | | 1,146.4 | 1,149.6 | 1,149.3 |
| Utilization per 1,000 eligible months | | 43.6 | 40.0 | 37.7 |
| Inpatient psychiatric | Enrollees | | | |
| % with use | | 0.1 | 0.0 | 0.1 |
| Utilization per 1,000 user months | | 1,133.3 | 1,000.0 | 1,113.9 |
| Utilization per 1,000 eligible months | | 0.9 | 0.5 | 1.0 |
| Inpatient psychiatric | Non-enrollees | | | |
| % with use | | 0.1 | 0.1 | 0.1 |
| Utilization per 1,000 user months | | 1,071.4 | 1,100.0 | 1,026.3 |
| Utilization per 1,000 eligible months | | 0.6 | 0.7 | 0.6 |
| Inpatient nonpsychiatric | Enrollees | | | |
| % with use | | 2.4 | 2.2 | 2.3 |
| Utilization per 1,000 user months | | 1,110.6 | 1,079.5 | 1,126.4 |
| Utilization per 1,000 eligible months | | 26.2 | 23.5 | 26.2 |
| Inpatient nonpsychiatric | Non-enrollees | | | |
| % with use | | 3.8 | 3.4 | 3.2 |
| Utilization per 1,000 user months | | 1,145.0 | 1,147.3 | 1,150.5 |
| Utilization per 1,000 eligible months | | 43.0 | 39.2 | 36.9 |

(continued)

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[2] Due to concerns on the completeness and accuracy of MA encounter data for years prior to 2016, RTI excluded demonstration eligible beneficiaries with any MA enrollment from the service utilization analysis.

**Table E-7 (continued)**
**Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|
| Emergency department use (non-admit) | | | | |
| % with use | Enrollees | 4.7 | 5.0 | 5.3 |
| Utilization per 1,000 user months | | 1,210.6 | 1,197.0 | 1,272.1 |
| Utilization per 1,000 eligible months | | 57.4 | 59.7 | 67.4 |
| Emergency department use (non-admit) | | | | |
| % with use | Non-enrollees | 5.7 | 6.0 | 6.1 |
| Utilization per 1,000 user months | | 1,201.1 | 1,215.2 | 1,190.1 |
| Utilization per 1,000 eligible months | | 69.0 | 73.4 | 73.1 |
| Emergency department use (psychiatric) | | | | |
| % with use | Enrollees | 0.2 | 0.2 | 0.2 |
| Utilization per 1,000 user months | | 1,067.8 | 1,119.3 | 1,245.6 |
| Utilization per 1,000 eligible months | | 1.7 | 1.9 | 2.4 |
| Emergency department use (psychiatric) | | | | |
| % with use | Non-enrollees | 0.2 | 0.2 | 0.2 |
| Utilization per 1,000 user months | | 1,075.0 | 1,051.3 | 1,164.1 |
| Utilization per 1,000 eligible months | | 1.9 | 2.1 | 2.3 |
| Observation stays | | | | |
| % with use | Enrollees | 0.6 | 0.6 | 0.7 |
| Utilization per 1,000 user months | | 1,206.4 | 1,059.1 | 1,082.8 |
| Utilization per 1,000 eligible months | | 7.1 | 6.1 | 8.1 |
| Observation stays | | | | |
| % with use | Non-enrollees | 0.8 | 0.8 | 0.9 |
| Utilization per 1,000 user months | | 1,022.9 | 1,027.6 | 1,026.9 |
| Utilization per 1,000 eligible months | | 7.8 | 8.7 | 8.9 |
| Skilled nursing facility | | | | |
| % with use | Enrollees | 0.4 | 0.5 | 0.7 |
| Utilization per 1,000 user months | | 1,021.4 | 1,095.4 | 1,086.1 |
| Utilization per 1,000 eligible months | | 3.9 | 5.9 | 7.1 |
| Skilled nursing facility | | | | |
| % with use | Non-enrollees | 0.9 | 0.9 | 0.8 |
| Utilization per 1,000 user months | | 1,086.9 | 1,060.2 | 1,061.2 |
| Utilization per 1,000 eligible months | | 10.2 | 9.1 | 8.9 |

(continued)

**Table E-7 (continued)**
**Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|
| Hospice | | | | |
| % with use | Enrollees | 0.7 | 0.3 | 0.4 |
| Utilization per 1,000 user months | | 1,044.0 | 1,035.4 | 1,015.8 |
| Utilization per 1,000 eligible months | | 7.0 | 3.2 | 4.3 |
| Hospice | | | | |
| % with use | Non-enrollees | 0.7 | 0.5 | 0.7 |
| Utilization per 1,000 user months | | 1,026.1 | 1,022.7 | 1,013.7 |
| Utilization per 1,000 eligible months | | 7.3 | 5.3 | 6.9 |
| **Non-institutional setting** | | | | |
| Primary care E&M visits | | | | |
| % with use | Enrollees | 41.7 | 41.7 | 43.1 |
| Utilization per 1,000 user months | | 2,646.1 | 2,345.0 | 2,920.1 |
| Utilization per 1,000 eligible months | | 1,104.4 | 977.2 | 1,259.6 |
| Primary care E&M visits | | | | |
| % with use | Non-enrollees | 48.4 | 51.5 | 53.5 |
| Utilization per 1,000 user months | | 1,658.8 | 1,723.0 | 1,760.6 |
| Utilization per 1,000 eligible months | | 802.5 | 887.0 | 942.1 |
| Outpatient therapy (PT, OT, ST) | | | | |
| % with use | Enrollees | 0.9 | 0.9 | 1.2 |
| Utilization per 1,000 user months | | 7,914.6 | 9,548.6 | 10,428.7 |
| Utilization per 1,000 eligible months | | 69.9 | 86.8 | 126.7 |
| Outpatient therapy (PT, OT, ST) | | | | |
| % with use | Non-enrollees | 1.5 | 1.5 | 2.4 |
| Utilization per 1,000 user months | | 16,224.3 | 13,784.9 | 16,019.9 |
| Utilization per 1,000 eligible months | | 248.9 | 212.7 | 377.1 |
| Independent therapy (PT, OT, ST) | | | | |
| % with use | Enrollees | 0.5 | 0.5 | 0.6 |
| Utilization per 1,000 user months | | 14,518.5 | 12,715.8 | 11,760.1 |
| Utilization per 1,000 eligible months | | 73.9 | 57.5 | 75.5 |
| Independent therapy (PT, OT, ST) | | | | |
| % with use | Non-enrollees | 0.8 | 1.0 | 1.2 |
| Utilization per 1,000 user months | | 14,690.2 | 12,975.9 | 14,803.9 |
| Utilization per 1,000 eligible months | | 116.2 | 126.0 | 177.0 |

(continued)

**Table E-7 (continued)**
**Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in South Carolina, February 1, 2015–December 31, 2018**

| Measures by setting | Group | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|
| Other hospital outpatient services | | | | |
| % with use | Enrollees | 17.8 | 19.8 | 22.8 |
| Utilization per 1,000 user months | | — | — | — |
| Utilization per 1,000 eligible months | | — | — | — |
| Other hospital outpatient services | | | | |
| % with use | Non–enrollees | 26.0 | 27.6 | 29.3 |
| Utilization per 1,000 user months | | — | — | — |
| Utilization per 1,000 eligible months | | — | — | — |

— = 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 and encounter data.

**Table E-8**
**Quality of care and care coordination outcomes for demonstration enrollees and non-enrollees in South Carolina, February 1, 2015–December 31, 2018**

| Quality and care coordination measures | Group | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|---|
| 30-day all-cause risk-standardized readmission rate (%) | Enrollees | 18.5502 | 18.5134 | 17.3947 |
| | Non-enrollees | 21.1813 | 20.7129 | 19.9970 |
| Preventable ED visits per eligible month | Enrollees | 0.0277 | 0.0290 | 0.0315 |
| | Non-enrollees | 0.0347 | 0.0365 | 0.0355 |
| Rate of 30-day follow-up after hospitalization for mental illness (%) | Enrollees | 34.0000 | 29.8851 | 31.3253 |
| | Non-enrollees | 24.0385 | 20.4918 | 26.6667 |
| Ambulatory care sensitive condition admissions per eligible month—overall composite (AHRQ PQI #90) | Enrollees | 0.0067 | 0.0053 | 0.0096 |
| | Non-enrollees | 0.0099 | 0.0099 | 0.0083 |
| Ambulatory care sensitive condition admissions per eligible month—chronic composite (AHRQ PQI #92) | Enrollees | 0.0038 | 0.0036 | 0.0076 |
| | Non-enrollees | 0.0057 | 0.0063 | 0.0049 |
| Screening for clinical depression per eligible month | Enrollees | 0.0013 | 0.0010 | 0.0036 |
| | Non-enrollees | 0.0025 | 0.0052 | 0.0058 |
| Pneumococcal vaccination for patients age 65 and older per eligible month | Enrollees | 0.0037 | 0.0024 | 0.0017 |
| | Non-enrollees | 0.0088 | 0.0122 | 0.0038 |

AHRQ PQI = Agency for Healthcare Research and Quality Prevention Quality Indicator; ED = emergency department.
SOURCE: RTI International analysis of Medicare FFS claims and encounter data.

***E-9*** presents descriptive statistics for the demonstration enrollees for services traditionally paid by Medicaid, to help understand the Medicaid utilization experience over time.

**Table E-9**
**Medicaid use for demonstration enrollees in South Carolina,**
**February 1, 2015–December 31, 2018**

| Measure | Demonstration year 1 | Demonstration year 2 | Demonstration year 3 |
|---|---|---|---|
| **Home and community-based services (HCBS)** | | | |
| Personal care | | | |
|    Users as % of enrollees per enrollee month (%) | 0.0 | 0.0 | <0.1 |
|    Service days per enrollee month | 0.00 | 0.00 | <0.01 |
|    Service days per user month | 0.00 | 0.00 | 8.18 |
| Other HCBS services | | | |
|    Users as % of enrollees per enrollee month (%) | 0.9 | 0.5 | 1.1 |
|    Service days per enrollee month | 0.03 | 0.02 | 0.03 |
|    Service days per user month | 3.40 | 3.35 | 3.06 |
| **Non-institutional services** | | | |
| Behavioral health services | | | |
|    Users as % of enrollees per enrollee month (%) | 1.3 | 1.5 | 1.8 |
|    Service days per enrollee month | 0.03 | 0.03 | 0.04 |
|    Service days per user month | 1.97 | 2.15 | 2.16 |
| Non-emergency transportation | | | |
|    Users as % of enrollees per enrollee month (%) | 3.3 | 3.5 | 4.0 |
|    Service days per enrollee month | 0.05 | 0.04 | 0.04 |
|    Service days per user month | 1.37 | 1.00 | 1.00 |

SOURCE: Urban Institute analysis of Medicaid encounter data.

## E.1 Service Use by Demographic Characteristics of Eligible Beneficiaries

To examine any differences in racial and ethnic groups, ***Figures E-1, E-2***, and ***E-3*** provide month-level results for five settings of interest for South Carolina 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 eligible beneficiaries with any use of the respective service, and counts per 1,000 demonstration eligible beneficiaries.

***Figure E-1*** presents the percentage of use of selected Medicare services. A higher percentage of White beneficiaries had an inpatient admission, a hospice admission, monthly primary care visits, and outpatient therapy visits, compared to other races. ED visits were slightly more prevalent among African American beneficiaries than among White beneficiaries.

The counts of services used among users of each respective service are presented in *Figure E-2*, and there were limited differences across racial groups for inpatient admissions, ED visits, hospice use, and primary care E&M visits. White beneficiaries had the highest use of outpatient therapy visits.

*Figure E-3* presents counts of services across all South Carolina 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 somewhat different from those of users of services in *Figure E-2*. African American beneficiaries had more ED visits relative to the other racial groups, and White beneficiaries had more inpatient admissions, hospice admissions, primary care E&M visits, and outpatient therapy visits relative to the other racial groups.
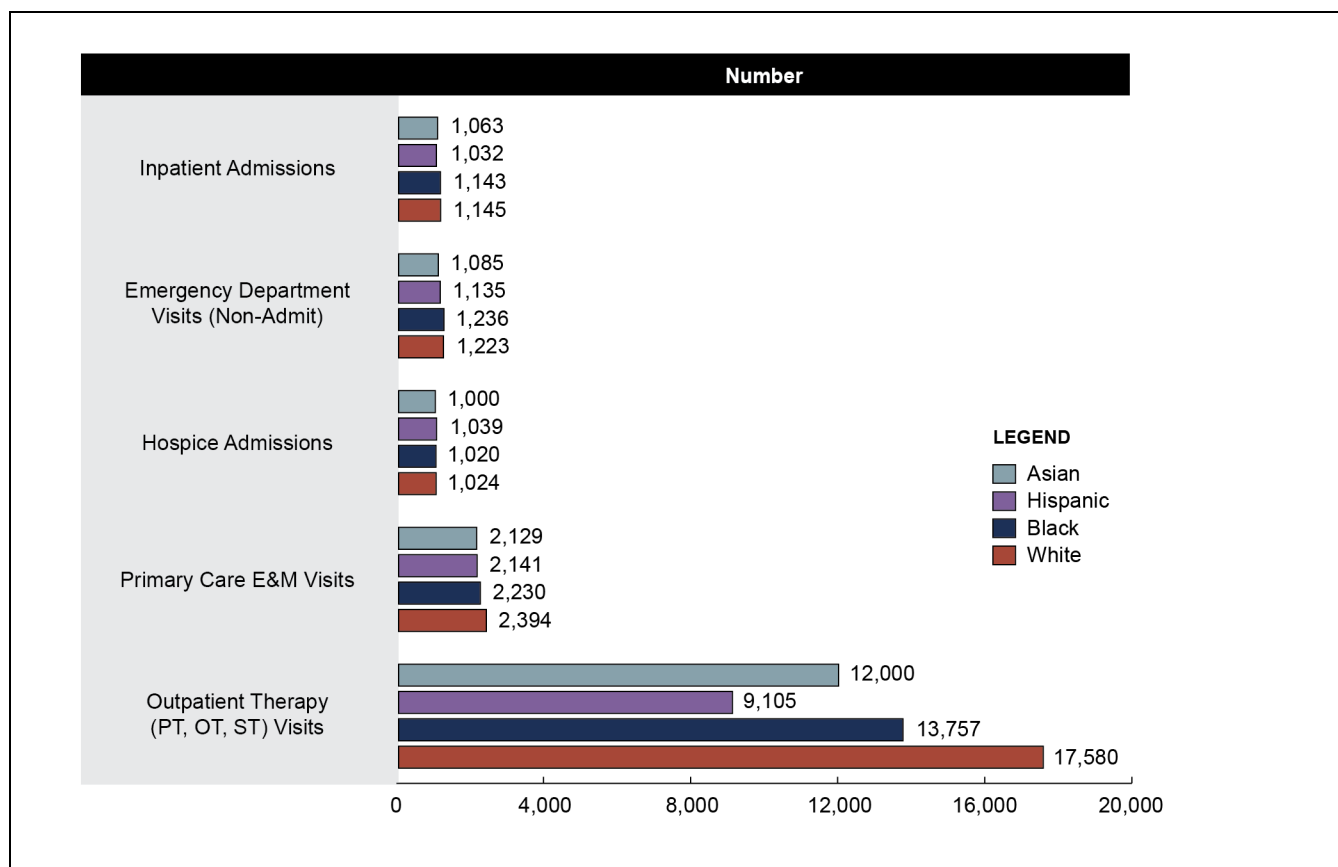
**Figure E-1**
**Percent with use of selected Medicare services among South Carolina demonstration eligible beneficiaries, January 1, 2018–December 31, 2018**
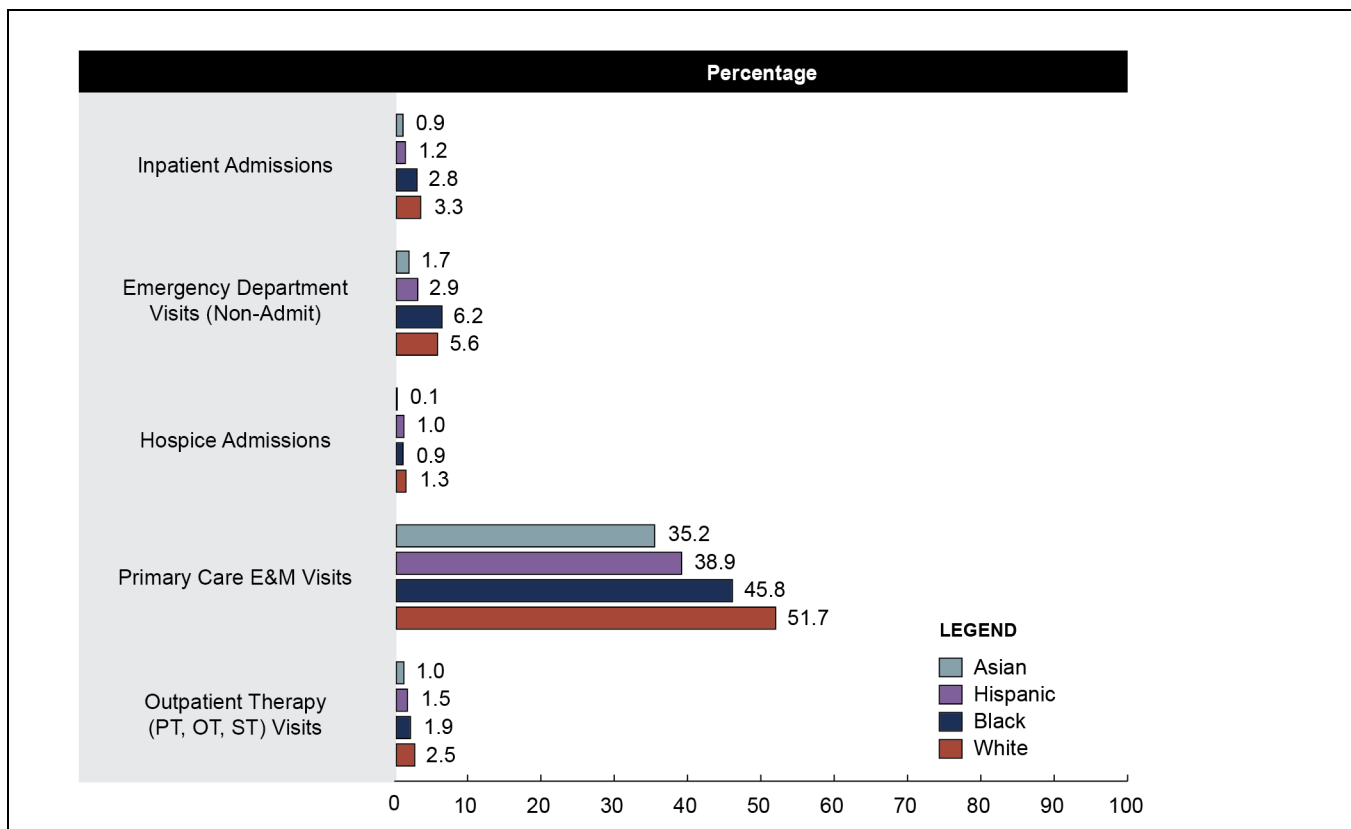


E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

**Figure E-2**
**Service use per 1,000 user months among South Carolina demonstration eligible beneficiaries,**
**January 1, 2018–December 31, 2018**



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

**Figure E-3**
**Service use per 1,000 eligible months among South Carolina demonstration eligible beneficiaries, January 1, 2018–December 31, 2018**
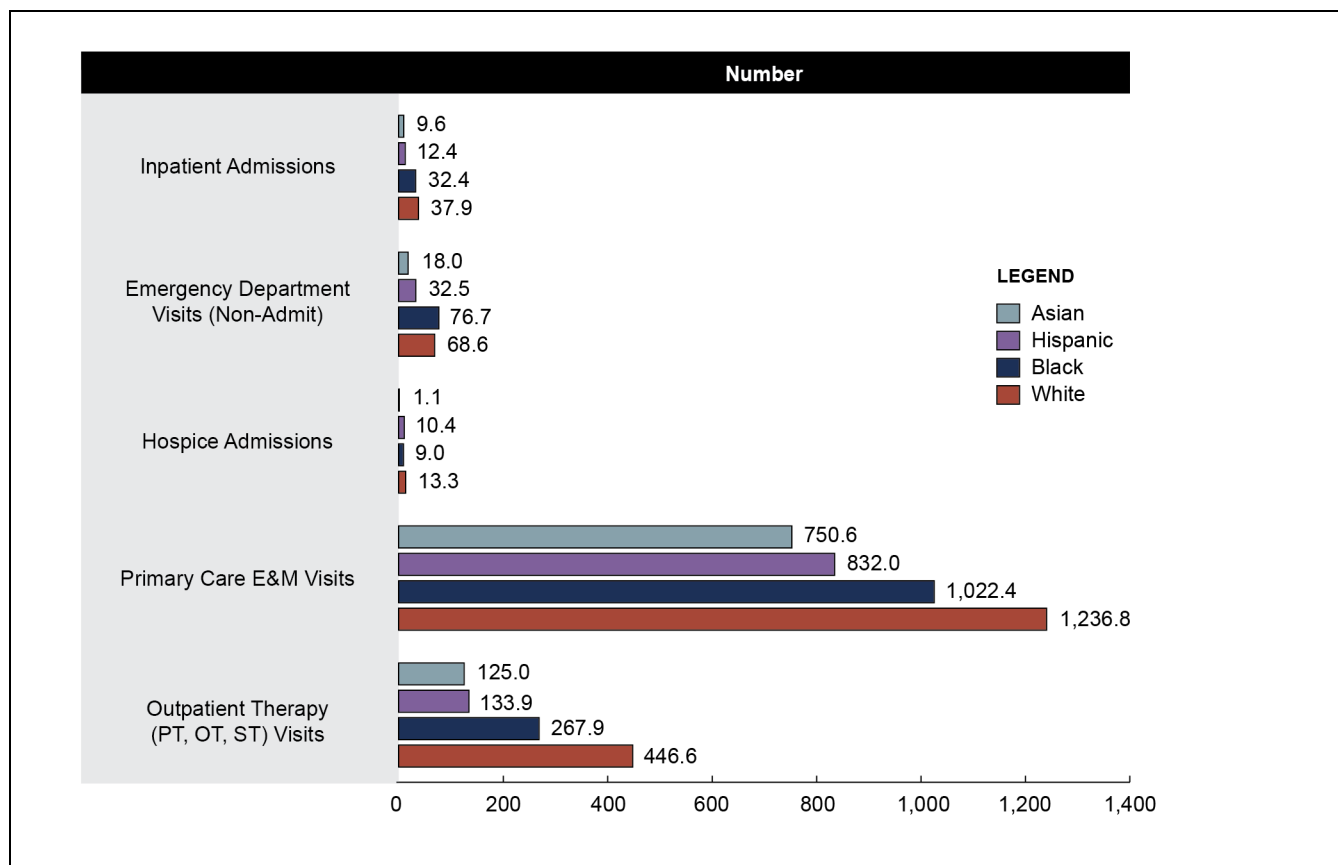


E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

# Appendix F
# Cost Savings Methodology and Supplemental Tables

## F.1   Adjustments to Medicare Expenditures

Several adjustments were made to the monthly Medicare expenditures to ensure that observed expenditures variations are not due to differences in Medicare payment policies in different areas of the country or the construction of the capitation rates. ***Table F-1*** summarizes each adjustment and the application of the adjustments to FFS expenditures or to the capitation rate.

Additionally, corrections were made to impact estimates from earlier reports that resulted in differences in our current impact estimates for demonstration year 1. We attribute the differences in the estimates to changes in the definition of the intervention group and implementing monthly exclusion criteria. Specifically, we made the following corrections: (1) confirmed dual status for State-identified FAI eligible beneficiaries against IDR data, and (2) applied IDR-based exclusion criteria for all monthly observations in the comparison group during the predemonstration period and demonstration period, and to the demonstration group during the predemonstration period and demonstration period.

**Table F-1**
**Adjustments to Medicare expenditures variable**

| Data source | Adjustment description | Reason for adjustment | Adjustment detail |
|---|---|---|---|
| FFS | Indirect Medical Education (IME) | Capitation rates do not include IME. | Do not include IME amount from FFS payments. |
| FFS | Disproportionate Share Hospital (DSH) Payments and Uncompensated Care Payments (UCP) | The capitation rates reflect DSH and UCP adjustments. | Include DSH and UCP payments in total FFS payment amounts. |
| FFS | 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%. |
| Capitation rate (MA and MMP) | Medicare Sequestration Payment Reductions | Under sequestration Medicare payments were reduced by 2% starting April 1, 2013. Sequestration is not reflected in the capitation rates. | Reduced capitation rate by 2%. |

(continued)

**Table F-1 (continued)**
**Adjustments to Medicare expenditures variable**

| Data source | Adjustment description | Reason for adjustment | Adjustment detail |
|---|---|---|---|
| Capitation rate (MA) | Bad debt | The Medicare portion of the capitation rate includes an upward adjustment to account for bad debt. Bad debt is not included in the FFS claim payments and therefore needs to be removed from the capitation rate for the savings analysis. (Note: "bad debt" is reflected in the hospital "pass through" payment.) | Reduced capitation rate to account for bad debt load (historical bad debt baseline percentage). This is 0.91% for CY 2013, 0.89% for CY 2014, 0.89% for CY 2015, 0.97% for CY 2016, 0.81% for CY 2017, and 0.82% for CY 2018. |
| Capitation rate (MMP) | Bad debt | The Medicare portion of the capitation rate includes an upward adjustment to account for bad debt. Bad debt is not included in the FFS claim payments and therefore needs to be removed from the capitation rate for the savings analysis. (Note, "bad debt" is reflected in the hospital "pass through" payment.) | Reduced blended capitation rate to account for bad debt load (historical bad debt baseline percentage). This is 0.91% for CY 2013, 0.89% for CY 2014, 0.89% for CY 2015, 0.97% for CY 2016, 0.81% for CY 2017 and 0.82% for CY 2018. Reduced the FFS portion of the capitation rate by an additional 1.71% for CY 2015, 1.84% for CY 2016, 1.74% for CY 2017 and 1.77% for CY2018 to account for the disproportional share of bad debt attributable to Medicare-Medicaid enrollees in Medicare FFS. |
| FFS and capitation rate (MA and MMP) | Average Geographic Adjustments (AGA) | The Medicare portion of the capitation rate reflects the most current hospital wage index and physician geographic practice cost index by county. FFS claims also reflect geographic payment adjustments. To ensure that change over time is not related to differential change in geographic payment adjustments, both the FFS and the capitation rates were "unadjusted" using the appropriate county-specific AGA factor. | Medicare FFS expenditures were divided by the appropriate county-specific 1-year AGA factor for each year. Capitation rates were divided by the appropriate county-specific 5-year AGA factor for each year. Note that the AGA factor applied to the capitated rates for 2014 reflected the 50/50 blend that was applicable to the payment year. |

(continued)

**Table F-1 (continued)**
**Adjustments to Medicare expenditures variable**

| Data source | Adjustment description | Reason for adjustment | Adjustment detail |
|---|---|---|---|
| Capitation rate (MA and MMP) | Education user fee | No adjustment needed. | Capitation rates in the MARx database do not reflect the education user fee adjustment (this adjustment is applied at the contract level). Note, education user fees are not applicable in the FFS context and do not cover specific Part A and Part B services. While they result in a small reduction to the capitation payment received by MMPs, we did not account for this reduction in the capitated rate. |
| Capitation rate (MMP) | Quality withhold | A 1% quality withhold was applied in the first demonstration year, 2% was applied in the second demonstration year, and a 3% quality withhold was applied in the third demonstration year but was not reflected in the capitation rate used in the analysis. | Final quality withhold repayments for CY 2015, CY 2016, CY 2017, and CY 2018 were incorporated into the dependent variable construction. |

CY = calendar year; FFS = fee-for-service; MA = Medicare Advantage; MARx = Medicare Advantage and Part D Inquiry System; MMP = Medicare-Medicaid Plan.

The capitation payments in MARx reflect the savings assumptions applied to the Medicare components of the rate (1 percent for the first demonstration year, 2 percent for the second demonstration year, and 3 percent for the third demonstration year), but do not reflect the quality withhold amounts.

No adjustments were made to the Medicaid claims and capitation payment amounts from the MAX and T-MSIS files, beyond winsorizing the monthly total cost of care amounts at the 99th percentile for each State and year.

## F.2    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 both Medicare and Medicaid models were as follows:
  – Age
  – Sex
  – Race/ethnicity
  – Enrolled in another Medicare shared saving program

- – End-stage renal disease status
- – Disability as reason for Medicare entitlement
- – MA status

- Area-level variables included in both Medicare and Medicaid savings models were as follows:
  - – Medicare spending per Medicare-Medicaid enrollee age 19 or older
  - – MA penetration rate
  - – Medicaid-to-Medicare FFS fee index for all services
  - – Medicaid spending per Medicare-Medicaid enrollee age 19 or older
  - – Proportion of Medicare-Medicaid enrollees using
    - ▪ NFs, age 65 or older
    - ▪ HCBS, age 65 or older
    - ▪ Medicaid managed care, age 19 or older
    - ▪ Personal care, age 65 or older
  - – Physicians per 1,000 population
  - – Population per square mile
  - – Percentage of population living in married household
  - – Percentage of households with member greater than age 60
  - – Percentage of households with member less than age 18
  - – Percentage of adults with college degree
  - – Unemployment rate
  - – Percentage of adults with self-care limitation
  - – Distance to nearest hospital
  - – Distance to nearest NF

- Demographic variables included only in the Medicaid model were:
  - – Medicaid eligibility (medically needy, aged, disabled, and missing)

## F.3   Medicare Results

Once we finalized the adjustments to the dependent variable, we tested a key assumption of a DinD model: parallel trends in the predemonstration period. We plotted the mean monthly Medicare expenditures for both the comparison group and demonstration group, with the PS weights applied. ***Figure F-1*** shows the resulting plot and suggests that there were parallel trends in the predemonstration period.

**Figure F-1**
**Mean monthly Medicare expenditures (weighted), predemonstration and demonstration period, demonstration and comparison group, February 2013–December 2018**
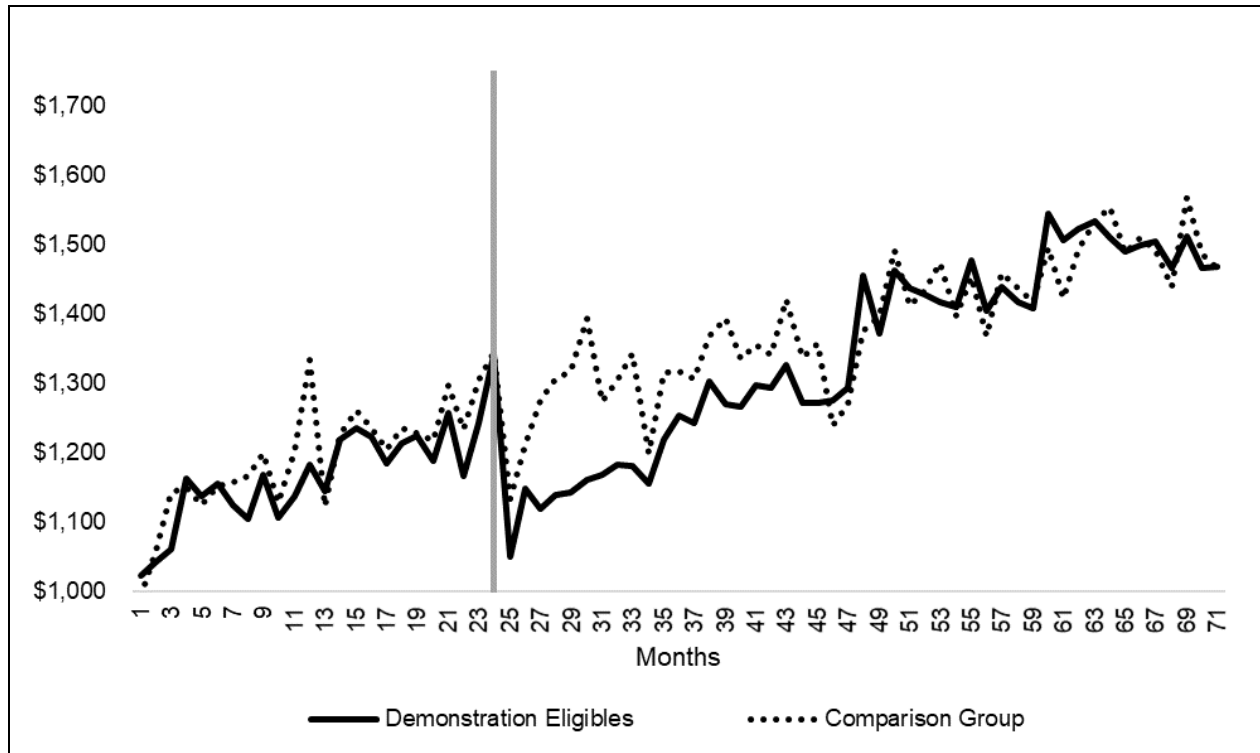


SOURCE: RTI Analysis Medicare data (program: 1471_SDY3_trend.log).

The DinD values in each table represent the overall impact on savings using descriptive statistics. These effects are descriptive in that they are arithmetic combinations of simple means, without controlling for covariates. The change in the demonstration group minus the change in the comparison group is the DinD value. This value would be equal to zero if the differences between predemonstration and the demonstration year were the same for both the demonstration group and the comparison group. A negative value would indicate savings for the demonstration group, and a positive value would indicate losses for the demonstration group. However, if the DinD confidence interval includes zero, then the value is not statistically significant. These results are only meant to provide a descriptive exploration of the results; the results presented in the *Section 6* and *Table F-8* represent the most accurate adjusted impact on Medicare costs.

*Tables F-2, F-3,* and *F-4* show the mean monthly Medicare expenditures for the demonstration group and comparison group in the predemonstration and each demonstration period, unweighted.

**Table F-2**
**Mean monthly Medicare expenditures for demonstration group and comparison group,**
**predemonstration period and demonstration year 1, unweighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 1 (Feb 2015–Dec 2016) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1,196.34) | $1,218.95 ($1,185.62, $1,252.29) | $48.38 ($26.29, $70.47) |
| Comparison | $1,203.49 ($1,121.29, $1,285.68) | $1,216.74 ($1,137.73, $1,295.74) | $13.25 ($−7.29, $33.79) |
| DinD | N/A | N/A | $35.13 ($5.57, $64.69) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

**Table F-3**
**Mean monthly Medicare expenditures for demonstration group and comparison group,**
**predemonstration period and demonstration year 2, unweighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 2 (Jan 2017–Dec 2017) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1196.34) | $1,427.11 ($1,396.28, $1,457.95) | $256.55 ($230.47, $282.62) |
| Comparison | $1,203.49 ($1,121.29, $1,285.68) | $1,364.96 ($1,290.74, $1,439.18) | $161.47 ($129.65, $193.30) |
| DinD | N/A | N/A | $95.07 ($54.70, $135.44) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

**Table F-4**
**Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 3, unweighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 3 (Jan 2018–Dec 2018) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1,196.34) | $1,501.79 ($1,469.48, $1,534.11) | $331.22 ($304.62, $357.83) |
| Comparison | $1,203.48 ($1,121.29, $1,285.68) | $1,427.62 ($1,364.68, $1,490.55) | $224.13 ($190.67, $257.59) |
| DinD | N/A | N/A | $107.09 ($65.12, $149.07) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

**Table F-5**
**Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 1, weighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 1 (Feb 2015–Dec 2016) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1,196.34) | $1,218.95 ($1,185.62, $1,252.29) | $48.38 ($26.29, $70.47) |
| Comparison | $1,198.50 ($1,149.59, $1,247.40) | $1,310.65 ($1,256.60, $1,364.71) | $112.16 ($80.47, $143.84) |
| DinD | N/A | N/A | −$63.77 (−$101.69, −$25.86) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

**Table F-6**
**Mean monthly Medicare expenditures for demonstration group and comparison group,**
**predemonstration period and demonstration year 2, weighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 2 (Jan 2017–Dec 2017) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1,196.34) | $1,427.11 ($1,396.28, $1,457.95) | $256.55 ($230.47, $282.62) |
| Comparison | $1,198.50 ($1,149.59, $1,247.40) | $1,426.51 ($1,374.15, $1,478.87) | $228.01 ($192.69, $263.33) |
| DinD | N/A | N/A | $28.53 (−$14.56, $71.63) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

**Table F-7**
**Mean monthly Medicare expenditures for demonstration group and comparison group,**
**predemonstration period and demonstration year 3, weighted**

| Group | Predemonstration period (Feb 2013–Jan 2015) (95% confidence intervals) | Demonstration year 3 (Jan 2018–Dec 2018) (95% confidence intervals) | Difference (95% confidence intervals) |
|---|---|---|---|
| Demonstration | $1,170.57 ($1,144.80, $1,196.34) | $1,501.79 ($1,469.48, $1,534.11) | $331.22 ($304.62, $357.83) |
| Comparison | $1,198.50 ($1,149.59, $1,247.40) | $1,495.77 ($1,448.76, $1,542.78) | $297.28 ($258.54, $336.01) |
| DinD | N/A | N/A | $33.95 (−$12.22, $80.12) |

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1501_Tables.log)

## F.4    Medicare Regression

*Table F-8* shows the main results from the DinD analysis for demonstration years 1–3 and for the entire demonstration period, controlling for beneficiary demographics and market characteristics.

**Table F-8**
**Demonstration effects on Medicare Parts A and B expenditures among eligible**
**beneficiaries—DinD regression results**

| Period | Adjusted coefficient DinD ($) | *p*-value | 95% confidence interval ($) | 90% confidence interval ($) |
|---|---|---|---|---|
| Demonstration year 1 (February 2015–December 2016) | −30.74 | 0.0814 | (−65.31, 3.83) | (−59.76, −1.72) |
| Demonstration year 2 (January 2017–December 2017) | 39.90 | 0.0579 | (−1.34, 81.14) | (5.29, 74.51) |
| Demonstration year 3 (January 2018–December 2018) | 54.45 | 0.0392 | (2.68, 106.23) | (11.01, 97.90) |
| Cumulative (Demonstration years 1–3, February 2015–December 2018) | 15.35 | 0.3462 | (−16.58, 47.28) | (−11.45, 42.14) |

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1481_GLM.log)

*Table F-9* presents the results from the DinD analysis for the enrollee-subgroup. The enrollee-subgroup analysis focused on beneficiaries identified as enrolled for at least 3 months in the demonstration period and with at least 3 months of baseline eligibility. Note that a subset of the comparison group developed for the ITT analysis was used in the enrollee subgroup analyses. Comparison group beneficiaries used in the enrollee subgroup analyses were required to have at least 3 months of eligibility in the demonstration period (February 1, 2015–December 31, 2018) and at least 3 months of eligibility in the predemonstration period (February 1, 2013–January 31, 2015), analogous to the criteria for identifying enrollees. The results indicate statistically significant additional costs associated with enrollees. This enrollee sub-group analysis is limited by the absence of person-level data on characteristics that potentially would lead an individual in a comparison area to enroll in a similar demonstration, and thus the results should only be considered in the context of this limitation.

**Table F-9**
**Demonstration effects on Medicare Parts A and B expenditures for enrolled beneficiaries relative to the comparison group—DinD regression results**

| Period | Adjusted coefficient DinD ($) | *p*-value | 95% confidence interval ($) | 90% confidence interval ($) |
|---|---|---|---|---|
| Demonstration Year 1 (February 2015–December 2016) | 82.88 | <0.001 | (43.05, 122.71) | (49.45, 116.31) |
| Demonstration Year 2 (January 2017–December 2017) | 168.48 | <0.001 | (105.76, 231.21) | (115.84, 221.12) |
| Demonstration year 3 (January 2018–December 2018) | 178.68 | <0.001 | (114.77, 242.59) | (125.05, 232.31) |
| Cumulative (Demonstration Years 1–3, February 2015–December 2018) | 136.90 | <0.001 | (96.56, 177.24) | (103.05, 170.76) |

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: sc_dy3_1511_Enrollee.log)

## F.5    Medicaid Results

Unless otherwise noted, the Medicaid cost analysis uses the same regression methodology, the same regression covariates, the same comparison group, and the same PS weights as the Medicare cost analysis. Additional regression covariates used only in the Medicaid cost analysis are specified in **Section F.2**.

Using the Medicaid data, we tested the parallel trends in the predemonstration period. We plotted the mean monthly Medicaid expenditures for both the comparison group and demonstration group, with the PS weights applied. Monthly Medicaid total cost of care amounts were winsorized at the 99th percentile within each State and year. **Figure F-2** show the weighted plots suggesting parallel trends in the predemonstration period.

In addition to observing parallel trends in the predemonstration period, the plot reveals that there is a potential problem with the data in South Carolina during the first demonstration year (February 2015 through December 2016). The monthly total cost of care declines much more than we would expect at the beginning of 2015 and remains low until the middle of 2016. Further investigation of the Medicaid cost data reveals that there are no South Carolina claims containing the capitated payments for those beneficiaries who are enrolled in the participating MMPs until July of 2016. Due to the missing data, we opted to omit the first demonstration year (February 2015 through December 2016) from the analysis and focus on the second and third demonstration years, where the T-MSIS data contains the capitated payments for those beneficiaries who are enrolled in the participating MMPs.

**Table F-10** shows the Medicaid results from the DinD analysis for demonstration years 2–3 and for those 2 years combined, controlling for beneficiary demographics and market characteristics. Demonstration year 1 was not included in analysis due to missing data described above.

**Table F-10**
**Demonstration effects on Medicaid expenditures for eligible beneficiaries relative to the comparison group—DinD regression results**

| Period | Adjusted coefficient DinD ($) | *p*-value | 95% confidence interval ($) | 90% confidence interval ($) |
|---|---|---|---|---|
| Demonstration Year 1 (February 2015–December 2016) | — | — | — | — |
| Demonstration Year 2 (January 2017–December 2017) | 160.57 | <0.0001 | (131.01, 190.12) | (135.76, 185.37) |
| Demonstration year 3 (January 2018–December 2018) | 118.84 | 0.0002 | (56.48, 181.21) | (66.51, 171.18) |
| Cumulative (Demonstration Years 2–3, January 2017–December 2018) | 142.53 | <0.0001 | (100.11, 184.96) | (106.93, 178.14) |

— = data not available; DinD = difference-in-differences.
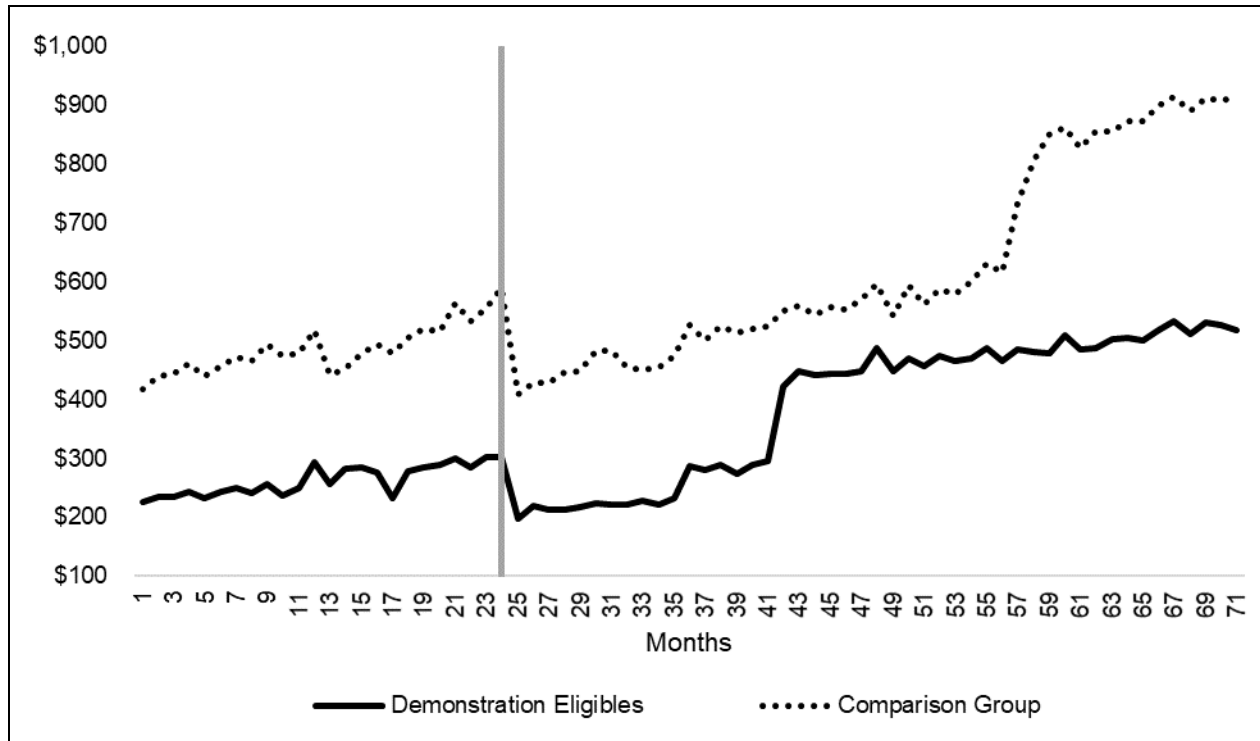SOURCE: RTI analysis of Medicaid claims (program: 3050putexcel_SCDY3_Medicaid_regression.do)
Note: Demonstration Year 1 was not included in analysis due to data irregularities described in *section F.5*.

Note that there were no adjustments made to the Medicaid payment amounts to account for differences across states in the capitation rates or FFS payments for services. Each State has its own unique payment system; there is no underlying national payment system—as there is in Medicare—by which payments can be standardized. Instead, we account for differences across States in Medicaid payment rates and services covered by including in the regressions controls for the following:

- Medicaid spending per Medicare-Medicaid enrollee age 19 or older,

- proportion of Medicare-Medicaid enrollees using nursing facilities,

- proportion of Medicare-Medicaid enrollees using HCBS,

- proportion of Medicare-Medicaid enrollees using Medicaid managed care, and

- proportion of Medicare-Medicaid enrollees using personal care.

Differences in Medicaid eligibility across States are accounted for using the Medicaid eligibility categories as controls in the regressions.

**Figure F-2**
**Mean monthly Medicaid expenditures (weighted), predemonstration and demonstration period, demonstration and comparison group, February 2013–December 2018**



NOTES: Demonstration year 1, which corresponds with months 25–47, was not included in analysis due to data irregularities described in **Section F.5**. The comparison group's mean expenditure increases at month 59 corresponds with a known reimbursement change for dually eligible beneficiaries participating in Virginia Medicaid.
SOURCE: RTI Analysis of South Carolina demonstration eligible and comparison group Medicaid data (program: Medicaid\stata\Trends.do).

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