FINANCIAL ALIGNMENT INITIATIVE

Massachusetts One Care: Preliminary Fifth Evaluation Report

April 2023

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FINANCIAL ALIGNMENT INITIATIVE
MASSACHUSETTS ONE CARE
PRELIMINARY FIFTH EVALUATION REPORT

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Glossary of Acronyms

ACSC	Ambulatory care sensitive condition
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CBO	Community Based Organization
CCA	Commonwealth Care Alliance
CMS	Centers for Medicare & Medicaid Services
CMT	Contract Management Team
CTM	Complaint Tracking Module
CY	Calendar year
DinD	Difference-in-differences
D-SNP	Dual Eligible Special Needs Plan
EOHHS	Executive Office of Health and Human Services
EQRO	External Quality Review Organization
FIDE-SNP	Fully Integrated Dual Eligible Special Needs Plan
FFS	Fee-for-service
HCBS	Home and community-based services
HCC	Hierarchical Condition Category
HEDIS	Healthcare Effectiveness Data and Information Set
HRA	Health risk assessment
ICP	Individual care plan
ICT	Interdisciplinary Care Team
IRE	Medicare Independent Review Entity
LTSS	Long-term services and supports

MA	Medicare Advantage[1]
MARx	Medicare Advantage Prescription Drug System
MCO	Managed care organization
MDS	Minimum Data Set
MLR	Medical loss ratio
MMCO	Medicare-Medicaid Coordination Office
MMP	Medicare-Medicaid Plan
MOU	Memorandum of Understanding
NF	Nursing facility
PACE	Program of All-Inclusive Care for the Elderly
PHE	Public Health Emergency
PMPM	Per member per month
SCO	Senior Care Options
SDRS	State Data Reporting System
SPMI	Serious and Persistent Mental Illness
UMMS	University of Massachusetts Medical School

[1] For the purposes of this report, we use the acronym MA sparingly, to avoid confusion with the abbreviation for the state of Massachusetts.

Executive Summary

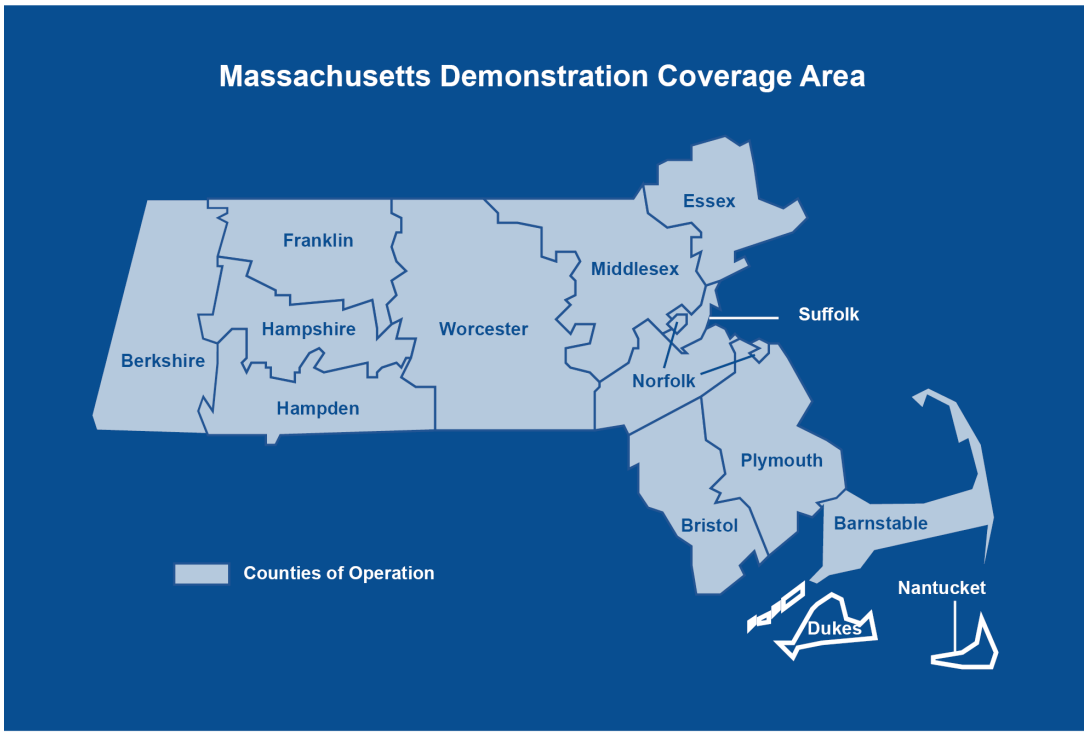
The Medicare-Medicaid Coordination Office and the Innovation Center at the Centers for Medicare & Medicaid Services (CMS) have created the Medicare-Medicaid Financial Alignment Initiative (FAI) to test, in partnerships with States, integrated care models for dually eligible beneficiaries. Massachusetts and CMS launched the One Care demonstration October 1, 2013. As of January 2022, One Care operated in 12 of Massachusetts' 14 counties. One Care is the only demonstration under the FAI that limits eligibility to dually eligible beneficiaries aged 21 to 64 at the time of enrollment. Enrollees who turn 65 may remain in One Care if they continue to meet eligibility requirements. Beneficiaries who have any other comprehensive private or public insurance, receive home and community-based service (HCBS) waiver services, or reside in an intermediate care facility for individuals with intellectual disabilities are not eligible for the demonstration.

One Care launched in October 2013, the first capitated demonstration under the FAI and the only one that focused on dually eligible beneficiaries under the age of 65. Over the course of the demonstration, Massachusetts has remained committed to delivering integrated and person-centered care to this population. One Care was implemented with a high degree of fidelity to the model design. The percentage of eligible beneficiaries enrolled in One Care increased throughout the demonstration, with approximately 27 percent of eligible beneficiaries enrolled as of December 31, 2021.

The demonstration has provided a level of care coordination not previously available to most dually eligible beneficiaries under the age of 65. Care coordination, including the ability to have a Long-term Supports Coordinator through a community-based organization, has helped connect enrollees to needed services. Although implementation of the LTS coordinator role as designed has been inconsistent over time, EOHHS and stakeholders continue to consider it an important feature of the demonstration. Stakeholder engagement has been a critical component of the One Care demonstration from its inception. The Implementation Council, a beneficiary-driven council, has continued to monitor One Care to promote delivery of enrollee-centered, coordinated, and culturally competent care.

The demonstration impact analysis showed somewhat mixed but mostly unfavorable results through 2019, including increased costs for the Medicare and Medicaid programs. However, results from CAHPS surveys show that most respondents reported a high degree of satisfaction with their health and drug plans over the course of the demonstration. Based on its experience with One Care, the Commonwealth remains committed to an integrated model of care for dually eligible individuals.

At the outset of the demonstration, Massachusetts and CMS competitively selected three managed care plans to operate Medicare-Medicaid Plans (MMPs); one plan withdrew from participation in the demonstration as of September 30, 2015. One Care has continued to extend its geographic area over time, with the two remaining MMPs (Commonwealth Care Alliance [CCA] and Tufts Health Public Plans [Tufts]) adding coverage area in 2020–2022, and a third plan (UnitedHealthcare) joining the demonstration effective January 1, 2022. This geographic growth significantly increased the ability to offer beneficiaries a choice of MMPs, with at least two MMPs operating in 10 of the 12 counties as of January 1, 2022. MMPs provide Medicare and Medicaid services, care coordination, and flexible benefits under a capitated payment model.



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 like this one. This fifth evaluation report for the One Care demonstration describes its implementation and includes an analysis of the demonstration's impacts on select outcomes. We include qualitative evaluation findings or data for 2019 through 2021, with brief updates through June 2022, and quantitative results for October 2013 through December 2019.

Highlights

Integration of Medicare and Medicaid	The joint CMS and Commonwealth Contract Management Team (CMT) effectively pivoted during the public health emergency (PHE) to address shifting priorities. CMT members felt that the demonstration's focus on innovation and integrated care translated into strategies during the PHE that better supported enrollees as compared to individuals served in a fee-for-service system.

Eligibility and Enrollment	From January 2019 to December 2021, total enrollment in One Care increased by just over 32 percent. Increases were primarily due to passive enrollment and suspension of Medicaid redeterminations during the PHE.
	To help reduce the number of involuntary terminations due to loss of Medicaid eligibility, the Executive Office of Health and Human Services (EOHHS) implemented deemed eligibility in 2022, which enabled enrollees to remain enrolled for up to 2 months while re-establishing Medicaid eligibility.
Care Coordination	CCA and Tufts continued to make design changes to their care coordination models in 2020.
	EOHHS implemented a Care Model Focus Initiative (CMFI) in January 2022 to improve performance around key aspects of beneficiary experience, service delivery, and operational accountability aimed at reinforcing the person-centered design goals of One Care.
Stakeholder Engagement	CMS, the Commonwealth, and the Implementation Council described the Council as critical to One Care's design in providing a level of accountability and stakeholder voice that would otherwise have been absent from the demonstration.
	Because One Care served people in the community who have complex behavioral health and long-term services and supports (LTSS) needs, the Implementation Council continued to press EOHHS and the MMPs for improvements in care assessment, care planning, and care coordination.
Financing and Payment	CMS and EOHHS made changes to some financing structures to account for impacts of the PHE. In calendar year (CY) 2020, MMPs received 100 percent of the withheld amount based solely on full reporting of applicable quality withhold measures. Medicare and Medicaid savings percentages were adjusted downward for CY 2021.
Quality of Care[2]	CCA and Tufts received 100 percent of their CY 2019 quality withhold payments.
	Healthcare Effectiveness Data and Information Set (HEDIS) measures declined for several quality measures in 2020, likely related to the impacts of the PHE.

[2] This refers to MMP-reported HEDIS quality of care measures discussed in ***Section 3.6, Quality of Care***. They are distinct from the quality of care measures evaluated in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care***, which refer to measures derived from Medicare claims and MMP encounters.

Beneficiary Experience	In 2021, at least 70 percent of respondents to the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey rated their MMP as a 9 or a 10, with 10 being the highest rating.
Demonstration Impact on Service Utilization and Quality of Care	As shown in ***Table ES-1,*** through the first 6 demonstration years, the demonstration was associated with an increase in the probability of any inpatient admission, of ambulatory care sensitive condition (ACSC) admissions (overall and chronic), and of any skilled nursing facility (SNF) admission, and the number of all-cause 30-day readmissions, relative to the comparison group. However, the probability of having any long-stay nursing facility (NF) use decreased and the number of physician evaluation and management (E&M) visits increased among all demonstration eligible beneficiaries, relative to the comparison group.
	The demonstration had a less favorable effect on beneficiaries with LTSS use, compared to those without LTSS (***Table ES-1***). The demonstration effect for those with LTSS use was an unfavorable increase in the probability of inpatient admissions, number of all-cause 30-day readmissions, preventable emergency department (ED) visits, and probability of SNF admission, relative to the demonstration effect for the non-LTSS population.
	For most outcomes, the demonstration did not have a differential impact on beneficiaries with serious and persistent mental illness (SPMI) compared to those without SPMI (***Table ES-1***), the exception being the number of all-cause 30-day readmissions. The demonstration effect for those with SPMI was an unfavorable increase in the number of all-cause 30-day readmissions, relative to the demonstration effect for those without SPMI.
Demonstration Impact on Cost Savings	As summarized in ***Table ES-2***, the demonstration was associated with an increase in Medicare Parts A and B costs over the first 6 demonstration years, relative to the comparison group.[3]
	The demonstration was also associated with an increase in Medicaid costs over the first 6 demonstration years, relative to the comparison group (***Table ES-2***).

Table ES-1 summarizes the cumulative effects of the Massachusetts demonstration on service utilization and quality of care outcomes over demonstration years 1–6 (demonstration start through 2019), relative to the comparison group. It also shows the difference in the

[3] Due to incomplete risk corridor data for demonstration years 4–6 (2017–2019) and the potential of recoupment from MMP plans for those years, the cost savings estimates presented in this report are preliminary.

demonstration effect for LTSS users relative to non-LTSS users, and for beneficiaries with SPMI relative to those without SPMI.

Table ES-1
Summary of Massachusetts cumulative demonstration effects on service utilization and quality of care measures for demonstration period, October 1, 2013–December 31, 2019

Measure	Demonstration effect (all eligible beneficiaries)	Difference in demonstration effect (LTSS versus non-LTSS)	Difference in demonstration effect (SPMI versus non-SPMI)
Monthly probability of any inpatient admission	Increase[R]	Increase[R]	NS
Monthly probability of any ambulatory care sensitive condition (ACSC) admission, overall	Increase[R]	NS	NS
Monthly probability of any ACSC admission, chronic	Increase[R]	NS	NS
Number of all-cause 30-day readmissions per 1,000 discharges	Increase[R]	Increase[R]	Increase[R]
Monthly probability of any emergency department (ED) visits	NS	NS	NS
Monthly number of preventable ED visits per 1,000 beneficiaries	NS	Increase[R]	NS
Probability of 30-day follow-up after mental health discharge	NS	NS	N/A
Monthly probability of any skilled nursing facility (SNF) admission	Increase[R]	Increase[R]	NS
Annual probability of any long-stay nursing facility use	Decrease[G]	N/A	N/A
Monthly number of physician evaluation and management visits per 1,000 beneficiaries	Increase[G]	NS	NS

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

NOTES: Statistical significance is defined at the α = 0.05 level. 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 (LTSS users or those with SPMI) 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 Medicare Parts A and B expenditures for all eligible beneficiaries, including both the cumulative effect over the six-year demonstration period and the annual effect for each demonstration year, as well as the cumulative and annual effects on Medicaid expenditures for the same demonstration period.

Table ES-2
Summary of Massachusetts demonstration effects on total Medicare and Medicaid expenditures among all eligible beneficiaries, October 1, 2013–December 31, 2019

Measure	Measurement period	Demonstration effect
Medicare Parts A and B cost	Cumulative (demonstration years 1–6)	Increase[R]
	Demonstration year 1	NS
	Demonstration year 2	NS
	Demonstration year 3	Increase[R]
	Demonstration year 4	Increase[R]
	Demonstration year 5	Increase[R]
	Demonstration year 6	Increase[R]
Medicaid cost	Cumulative (demonstration years 1–6)	Increase[R]
	Demonstration year 1	NS
	Demonstration year 2	Increase[R]
	Demonstration year 3	Increase[R]
	Demonstration year 4	Increase[R]
	Demonstration year 5	NS
	Demonstration year 6	Increase[R]

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 6-1*** in ***Section 6, Demonstration Impact on Cost Savings***. Red color-coded shading indicates where the direction of the DinD estimate was unfavorable. To ensure accessibility for text readers and individuals with visual impairments, 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.
SOURCE: RTI analysis of Medicare and Medicaid claims (programs: ma_dy6_0140_GLM.log; Massachusetts 5th Annual Report (DY6)/Medicaid/Syntax/30_Regression.do).

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 dually eligible beneficiaries. Key objectives of the Massachusetts demonstration, known as One Care, include improving the beneficiary experience in accessing care, delivering person-centered care, promoting independence in the community, improving quality, and eliminating cost shifting between Medicare and Medicaid (MOU, 2012, pp. 2–3). The Massachusetts Executive Office of Health and Human Services (EOHHS) administers One Care.

Implemented October 1, 2013, One Care integrates the full array of functions performed by Medicare and Medicaid. Massachusetts received Federal funding to support demonstration implementation as well as Federal funding to support the One Care Ombudsman program and options counseling for Medicare-Medicaid enrollees.[4] One Care is the only demonstration under the FAI that limits eligibility to dually eligible beneficiaries aged 21 to 64 at the time of enrollment. Dually eligible beneficiaries of these ages who are enrolled in Medicare Parts A and B, and eligible for Part D and certain Commonwealth Medicaid coverage types (MassHealth Standard or MassHealth CommonHealth) are eligible to enroll in One Care. Beneficiaries who have any other comprehensive private or public insurance, receive home and community-based service (HCBS) waiver services, or reside in an intermediate care facility for individuals with intellectual disabilities are not eligible for the demonstration. Enrollees who turn 65 may remain in One Care if they continue to meet eligibility requirements.

The demonstration's coverage area continued to extend over time. As of January 1, 2022, One Care operated in all 12 of the Commonwealth's mainland counties.[5] As of that date, there were three MMPs participating in the demonstration. Commonwealth Care Alliance (CCA) operated in 12 counties;[6] Tufts Health Public Plans (Tufts) operated in six counties;[7] and UnitedHealthcare Community Plan (UnitedHealthcare) entered the demonstration January 1, 2022, with operations in nine counties, including partial coverage in one county. With the entrance of a third MMP, beneficiaries had a choice of at least two MMPs in 10 of the 12 counties where One Care was offered.

[4] Since 2013, CMS has awarded Massachusetts $1,948,987 to support enrollment and counseling activities through the Commonwealth's State Health Insurance Program (SHIP) and the Aging and Disability Resource Centers. Since 2014, CMS has awarded Massachusetts $3,659,319 for the provision of ombudsman services. The Administration for Community Living (ACL) provides technical assistance to grantees through its Ombudsman Technical Assistance Program.

[5] The Commonwealth's remaining two counties are Dukes County (Martha's Vineyard Island) and Nantucket County (Nantucket Island).

[6] CCA extended to Bristol County effective January 1, 2019, and Barnstable County effective February 1, 2020. CCA moved from partial coverage in Plymouth to full coverage and extended into Berkshire County effective January 1, 2021.

[7] Tufts moved from partial to full coverage of Middlesex County effective March 1, 2020, and began operations in Bristol, Norfolk, and Plymouth Counties effective January 1, 2022.

The First Annual Report includes extensive background information about the demonstration. The Second, Third, and Preliminary Fourth Evaluation Reports provide earlier 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 calendar years (CYs) 2019 through 2021 (demonstration years 7 through 9, respectively), with relevant updates through early 2022.[8] We refer to this time period as "the reporting period" or "the report period" in the qualitative narrative. We provide updates to previous evaluation reports in key areas, including enrollment, care coordination, beneficiary experience, and stakeholder engagement activities, and discuss the challenges, successes, and emerging issues identified during the reporting period.

We present quantitative impact analysis results on quality of care, service utilization, and costs for the period spanning October 2013 through December 2019 (the first 6 demonstration years). The difference in timeframes between qualitative and quantitative analyses is due to the longer lag of secondary data used in quantitative analysis.

1.3 Data Sources

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

[8] Specifically, qualitative data sources include site visit data for 2019 to early 2021; MMP performance data for 2019 through 2021; and updates from monitoring calls with the State and CMS from early 2021 to early 2022.


Data Sources
KEY INFORMANT INTERVIEWS
Site visit interviews
Quarterly monitoring calls with CMS and Massachusetts Executive Office of Health and Human Services (EOHHS) officials
DEMONSTRATION DATA AND MATERIALS
State Data Reporting System (SDRS) submissions
Demonstration policies, contracts, and other materials
BENEFICIARY SATISFACTION DATA
Medicare Advantage Prescription Drug Plan Consumer Assessment of Healthcare Providers and Systems (CAHPS)
COMPLAINTS AND APPEALS DATA
MMP data reported to EOHHS 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
Area Health and Resources Files
American Community Survey
CMS Medicaid encounter data
COST DATA
CMS Medicare Advantage Prescription Drug 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

Demonstration Design and State Context

2.1 Changes in Demonstration Design

The three-way contract for the demonstration has been extended for 12-month periods every year since 2018. The contract effective January 1, 2022 extended One Care through December 31, 2023,[9] and included financial terms through CY 2023. The contract included provisions addressing PHE payments and incentives. It also added other operational language. Effective January 1, 2022, the three-way contract was amended to reflect the addition of a third MMP serving the demonstration.[10]

Implementation Effectiveness: Fidelity

As the demonstration is now in its ninth demonstration year (CY 2022), we have identified several measures as indicators of implementation effectiveness or success, based on the standard implementation science approach, that we believe are useful for this evaluation. The four measures are: (1) fidelity of the demonstration to the original design, (2) demonstration reach as measured by enrollment, (3) implementation dose as measured by the percent of newly enrolled beneficiaries that MMPs were unable to contact, and (4) the State's and CMS' reflections on demonstration effectiveness. We discuss each of these measures in this report, starting here, with fidelity.

Implementation fidelity can be considered as the degree to which an intervention is implemented as originally designed, even if adaptations to the strategy become necessary. For States, plans, and other stakeholders, including policy makers, it is helpful to reflect on the changes to the demonstration model that were made as implementation unfolded, and the impact of those changes. These findings can inform design or implementation of future models.

While some modifications to eligibility and financing have occurred over time, as seen in ***Table 2-1***, the underlying design model of One Care has not significantly changed. As discussed in this report and prior evaluation reports, operational details of the demonstration have continued to be refined over time based on experience in administering the demonstration and lessons learned.

An earlier contract amendment, effective April 1, 2019, incorporated changes to comply with the 2016 Medicaid Managed Care Rule[11] and codified some changes that had been in progress for several years. These changes were based on input from the Implementation Council and clarified requirements around the role of the LTSS coordinator on care teams and channels of communication between the demonstration's ombudsman program and the MMPs.

An important change that MassHealth and MMPs made during the reporting period was to implement deemed eligibility. Deeming allows enrollees who have lost Medicaid eligibility to remain in their MMPs for up to 2 months while Medicaid eligibility was re-established. During the deeming period the plan covers both Medicare and Medicaid services but receives only the Medicare capitation. The Medicaid capitation is paid retroactively if Medicaid eligibility is restored before the deeming period ended. The plan does not receive reimbursement if eligibility was not re-established. While this change became effective for April 2022, it was not anticipated

[9] See https://www.cms.gov/medicare-medicaid-coordination/medicare-and-medicaid-coordination/medicare-medicaid-coordination-office/financialalignmentinitiative/downloads/macontract.pdf As obtained on November 2, 2022.

[10] See https://www.mass.gov/doc/2022-one-care-three-way-contract-january-1-2022-model-0/download As obtained on May 26, 2022

[11] See 81 Fed. Reg. 27498-27901 (May 6, 2016), available at https://www.federalregister.gov/articles/2016/05/06/2016-09581/medicaidand-childrens-health-insurance-program-chip-programs-medicaid-managed-care-chip-delivered

to be operational until the end of the PHE because of the Federal regulations suspending Medicaid redeterminations.

From 2020 through mid-2022, MMPs made other changes per Federal and State guidance issued in response to the PHE, including changes to assessments, care management, service delivery, and other program operations. This included suspending in-person assessments and in-person care coordination, along with changes to other reporting and administrative requirements.

Table 2-1 illustrates the major changes to key One Care demonstration features from its start in late 2013 to mid-2022.

Table 2-1
Key changes to Massachusetts One Care over the course of the demonstration, October 2013 through mid-2022

Key demonstration feature	Changes to the original demonstration design
Timeline	One Care has been extended several times, most recently through December 31, 2023.
Eligibility	Broadened eligibility in late 2016 and early 2017 to allow additional beneficiaries to remain enrolled in One Care after turning 65 years old.
Geography/Number of participating MMPs	One Care originally had three MMPs, one of which left the demonstration at the end of 2015. Another MMP joined the demonstration effective January 1, 2022. One Care increased in geographic coverage over time to include all mainland (non-island) counties by January 2022.
Services/Carve-outs	No changes specific to the demonstration.
Payment structure	Although adjustments have been made from time to time to saving percentages and other payment metrics based on implementation experience and the PHE, CMS and EOHHS have not made significant changes to the underlying payment structure design.
Other changes	Although EOHHS and MMPs have continued to modify and refine operational elements of the demonstration, the design features have not significantly changed. Some of these features included use of CBOs to help coordinate LTSS services and creation of the member-driven Implementation Council. Most contractual changes to the demonstration have clarified or strengthened One Care's original goals of providing person-centered care.

CBO = Community-based Organization; CMS = Centers for Medicare & Medicaid Services; EOHHS = Executive Office of Health and Human Services; LTSS = Long-term Services and Supports; MMP = Medicare-Medicaid Plan; PHE = public health emergency.

2.2 Overview of State Context

As discussed in prior evaluation reports, EOHHS has historically used managed care as one of its primary strategies to improve care coordination and contain costs. Under its Section 1115(a) demonstration, MassHealth mandated Medicaid managed care enrollment for most of its

Medicaid-only members. Before the One Care demonstration, dually eligible beneficiaries under age 65 were ineligible to enroll in Medicaid managed care. These beneficiaries included those with the most complex conditions (including LTSS and behavioral health conditions), highest costs, and in greatest need of care coordination and care management. One Care provided a mechanism for the Commonwealth to provide comprehensive care coordination and integrated service delivery for these beneficiaries. Since implementation of One Care in 2013, MassHealth officials have reported that its broader health care reforms have aligned with the demonstration's principle of providing member-centered, coordinated, and culturally competent care, and that its experience with One Care helped shape aspects of those reforms.

As reported in the Preliminary Fourth Evaluation Report, EOHHS submitted a concept paper to CMS on August 20, 2018, outlining its proposal to establish a new demonstration using 1115a demonstration authority. The proposed Duals Demonstration 2.0 combined elements of One Care and Senior Care Options (SCO), a Fully Integrated Dual Eligible Special Needs Plan (FIDE-SNP) for dually eligible individuals aged 65 and older. Discussions between EOHHS and CMS on the Duals Demonstration 2.0 were suspended in early 2020 due to the PHE. MassHealth and CMS resumed negotiations in the fall of 2020, but the status of the proposed demonstration remained uncertain.

In April 2022, CMS issued its Final Rule Contract Year 2023 Policy and Technical Changes to the Medicare Advantage and Medicare Prescription Drug Benefit Programs (the "Final Rule"), which impacts the status of demonstrations implemented under the FAI.[12] In early 2022, MassHealth staff reported they were in the process of reviewing and discussing the final rule issued by CMS, and its impact on One Care and its plans for Duals Demonstration 2.0. Consistent with the guidance issued by CMS in the Final Rule, EOHHS submitted a required transition plan dated September 30, 2022, stating its intention to transition One Care to a Fully Integrated Dual Eligible Special Needs Plan (FIDE-SNP) platform at the end of 2025 in order to continue the program. EOHHS described its on-going commitment to the principles and care model of One Care and its intention to work closely with CMS and stakeholders to carry forward the integration, and innovation achieved through One Care.

[12] MassHealth submitted comments on the proposed version of this rule, with several recommendations based on its experience with the SCO program and One Care. See https://www.mass.gov/doc/massachusetts-comments-on-cms-duals-proposed-rule-march-7-2022-0/download

SECTION 3

Update on Demonstration Implementation

In this section, we provide updates on important aspects of the demonstration that have occurred since the Preliminary Fourth 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

CMS and EOHHS reported that the Contract Management Team (CMT) was able to effectively pivot during the PHE to address shifting priorities. CMS and EOHHS officials felt that overall, the demonstration's focus on innovation and integrated care translated into strategies that better supported enrollees as compared to individuals served in a fee-for-service system.

In this section we provide updates on the management structure developed for One Care, including its joint management structure with CMS.

3.1.1 EOHHS Integrated Care Reorganization

In 2019, EOHHS consolidated oversight of One Care, SCO, and its Program of All-Inclusive Care for the Elderly (PACE) into an integrated care unit. Previously, the demonstration was managed in a different unit from SCO and PACE. EOHHS hoped to better align programs serving dually eligible beneficiaries and realize administrative efficiencies. Bringing One Care and SCO into the same unit was also in preparation for the proposed Duals Demonstration 2.0, which, if implemented, would operationally impact both One Care and SCO.

Most of EOHHS' focus in 2019 into early 2020 related to the MMP procurement process and continued engagement with CMS on MassHealth's proposal for Duals Demonstration 2.0. MassHealth staff reported the greatest challenge during that time was having sufficient time and resources to manage all the ongoing initiatives, from day-to-day operations to development of the MMP procurement and Duals Demonstration 2.0 proposals. They reported as a success that given these challenges, they were still able to engage with MMPs and stakeholders to improve beneficiary experience, which they viewed as their most important role.

3.1.2 Contract Management Team

To manage joint implementation and oversight of One Care, CMS and EOHHS participated on the CMT as part of the demonstration design. EOHHS and CMS continued to report a collaborative relationship and described the CMT as a good forum for communication, alignment, and problem-solving. MMPs also reported a positive experience with the CMT, noting that although there is always an expected level of push and pull, they had open communication and a very good relationship with both EOHHS and CMS members of the CMT. MMPs specifically described a strong partnership during the onset of the PHE.

Both CMS and EOHHS have worked really well together in concert during [the PHE]. They have been very diligent in communicating guidance that comes from both Federal and State government and have been very, very open to answering questions or going back to and getting answers to our questions and driving us through the process of this.

—MMP [2020]

Ongoing activities of the CMT during the reporting period included appeals and grievances monitoring, all-MMP meetings, monthly check-in calls with individual MMPs, and management of compliance monitoring and notifications. EOHHS reported almost daily ad hoc communications with CMS and the MMPs at the outset of the PHE to discuss impacts of COVID-19 and ways to support the plans operationally and in addressing beneficiary needs.

3.2 Eligibility and Enrollment

One Care has continued to grow its geographic footprint, with existing MMPs adding new counties and a third MMP entering the demonstration. As of January 1, 2022, One Care operated in all 12 mainland counties and offered a choice of at least two MMPs in 10 counties.

To help reduce the number of involuntary terminations due to loss of Medicaid eligibility, MassHealth and the MMPs implemented deemed eligibility in 2022, a process which enabled enrollees to remain enrolled for up to 2 months while re-establishing Medicaid eligibility.

In this section we provide updates in eligibility and enrollment processes, including integration of eligibility systems, enrollment methods, and outreach. We also discuss significant events affecting enrollment patterns during the timeframe covered by this report, including passive enrollment activities, the entrance of a third MMP, and the introduction of deemed eligibility to help address enrollment changes resulting from involuntary terminations due to loss of Medicaid eligibility.

3.2.1 Enrollment Experience

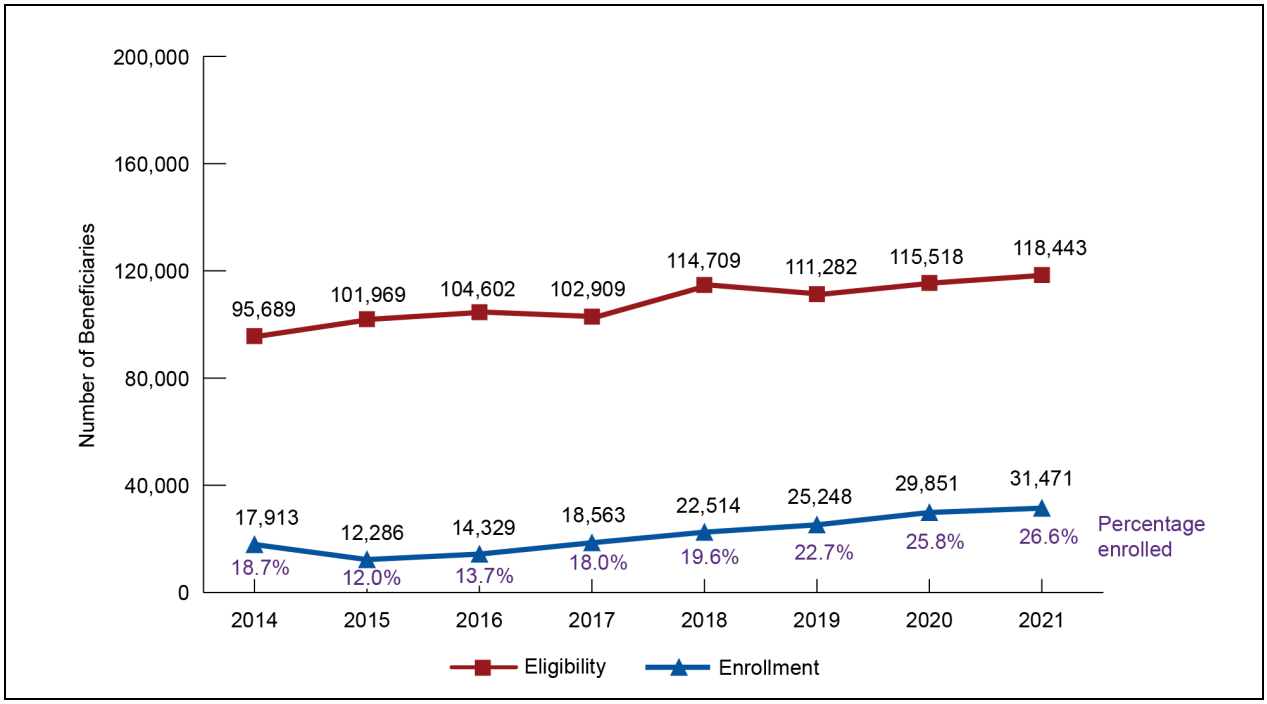
Enrollment in One Care has steadily increased over time, with some fluctuations based on the timing of passive enrollment into the demonstration. From December 2018 to December 2021, total enrollment increased by 40 percent (see ***Figure 3-1***). Just under 27 percent of all eligible beneficiaries in Massachusetts were enrolled in One Care as of December 31, 2021. As of January 1, 2021, approximately 90 percent of One Care beneficiaries were enrolled in one MMP (CCA). In 2021, both MMPs expressed interest in continuing to increase enrollment.

Implementation Effectiveness: Reach

"Reach" is an individual-level measure of participation and refers to the percentage of persons who are affected by a policy, program or initiative. To measure this in the FAI, we examine the percentage of eligible beneficiaries who are enrolled in the demonstration.

Figure 3-1 shows the changes in enrollment and in the percentage of eligible beneficiaries enrolled during the demonstration to date. The percentage of eligible beneficiaries enrolled in One Care has continued to increase from 2015 through 2021, with approximately 27 percent of eligible beneficiaries enrolled as of December 31, 2021.

Figure 3-1
One Care enrollment and eligibility at the end of each calendar year, 2014–2021



SDRS = State Data Reporting System.
NOTES: Enrollment and eligibility data reported in the SDRS may not match the finder file data used for quantitative analyses, because of the timing for completion and submitting the finder file versus the SDRS. The definition of eligibility used here, and also in ***Section 6, Demonstration Impact on Cost Savings***, includes FFS and Medicare Advantage populations.
SOURCE: SDRS data for 2014–2021. The SDRS items used to collect eligibility and enrollment were: "Total number of beneficiaries who are eligible to participate in the demonstration" and "Total number of beneficiaries who are enrolled in the demonstration, as of the end of the given month."

Effective January 1, 2022, a third MMP, UnitedHealthcare, began operations with opt-in only enrollment. Based on lessons learned from early One Care implementation, MassHealth and CMS began passive enrollment into UnitedHealthcare with a relatively small number of beneficiaries for an effective date of April 1, 2022. As of June 2022, UnitedHealthcare had 868 enrollees.[13]

3.2.2 Passive Enrollment

The MMP with the largest demonstration enrollment attributed the majority of its growth during the reporting period to passive enrollment. Passive enrollment into One Care was generally scheduled on a quarterly basis, although it did not always occur depending on MMP readiness, interest, and other considerations. EOHHS and CMS suspended passive enrollment planning in the spring of 2020 because of the PHE. It resumed in July 2020 for enrollments effective October 1, 2020, which was considered an achievement by EOHHS. Quarters with passive enrollment are noted in ***Table 3-1***. Both MMPs reported improved on-boarding processes that reduced the number of beneficiaries opting out.

Table 3-1
Passive enrollment schedule

Calendar year	January	April	July	October
2019	Passive enrollment	Passive enrollment	None	Passive enrollment
2020	Passive enrollment	None	None	Passive enrollment
2021	Passive enrollment	Passive enrollment	None	None

SDRS = State Data Reporting System.
SOURCE: SDRS data for 2019–2021.

Both CCA and Tufts expressed interest in seeing changes to the passive enrollment policies that did not allow for passive enrollment of beneficiaries who previously opted out at any point in the demonstration. MMPs and EOHHS voiced support for allowing passive enrollment of beneficiaries who had opted out early in the demonstration, when One Care was new and choice in MMPs was more limited. The Massachusetts Executive Office of Health and Human Services (EOHSS) included a design change recommendation in the proposed Duals Demonstration 2.0 to allow for passive enrollment of beneficiaries who previously opted out of One Care.

3.2.3 One Care Disenrollment Activity

An early 2019 MassHealth analysis indicated that a primary reason for disenrollment was involuntary loss of Medicaid eligibility, often occurring because a beneficiary did not complete redetermination requirements in a timely manner. Temporary loss of Medicaid eligibility negatively impacted beneficiary access to care and added administrative burden to the MMPs in

[13] Monthly Enrollment in Medicare-Medicaid Plans by Plan and by State, June 2021 to June 2022, published by the Integrated Care Resource Center: https://www.integratedcareresourcecenter.com/sites/default/files/MMP_Enroll_by_State_June_2022.pdf. As obtained on July 3, 2022.

managing enrollment processes. In 2020, involuntary terminations decreased because of the Federal guidance that suspended Medicaid redeterminations during the PHE. This decreased the number of enrollees involuntarily terminated from One Care. EOHHS anticipated there would be some enrollment challenges when Medicaid redeterminations resumed with the end of PHE, which, as of May 2022, was still in effect.

Effective April 2022, EOHHS implemented a change in the eligibility process to allow for deemed eligibility aimed at addressing some of the long-standing challenges associated with involuntary terminations due to temporary loss of Medicaid eligibility. The new deeming process enabled enrollees to remain in their MMPs for up to 2 months while the enrollee re-established Medicaid eligibility. During this 2-month period, enrollees continue to receive all One Care benefits. If Medicaid eligibility is not restored within 2 months, the beneficiary is disenrolled. Although this is expected to reduce some of the administrative challenges for MMPs related to disenrollment and subsequent re-enrollment, MMPs also hold financial risk for the cost of any Medicaid services incurred during the deemed period if a beneficiary does not regain eligibility. Because of the suspension of Medicaid eligibility redeterminations due to the PHE, the deeming process was designed at the systems level but had not yet been implemented with any beneficiaries.

MassHealth also conducted annual surveys, administered by the University of Massachusetts Medical School (UMMS), to better understand causes for voluntary disenrollment.[14] Respondents to the 2017—2019 surveys provided the following reasons for disenrolling: the inability to keep their primary care provider (25 percent); inability to keep their specialist, hospital, or clinic (19 percent); lack of coverage for needed services (15 percent); and administrative issues (6 percent).

3.3 Care Coordination

The MMPs implemented significant changes to their care coordination models in 2020. EOHHS, CMS and stakeholders reported initial implementation issues with both transitions.

To reinforce the original intent of One Care as a person-centered service model, MassHealth implemented a Care Model Focus Initiative (CMFI) in January 2022 to improve performance around key aspects of beneficiary experience, service delivery, and operational accountability.

In this section we provide a summary of the demonstration's care coordination model. We highlight the status of and major accomplishments in key care coordination components and processes: assessment, care planning, long-term services and supports (LTSS) coordination, and

[14] Survey results for 2017-2019 were presented to the Implementation Council at its April 13, 2021, meeting. The presentation can be accessed from: https://www.mass.gov/doc/implementation-council-disenrollment-presentation-4-13-21-0/download, as obtained July 7, 2022.

information exchange. The MMPs continued to modify operational aspects of their care model throughout the demonstration, including during this reporting period.

3.3.1 Outreach and Assessment

Recognizing the benefits of connecting beneficiaries to assessment and care planning as a first step to impact care and improve outcomes, the MMPs continued to focus on reducing the percentage of new enrollees that they were not able to reach following enrollment. As in past years, MMPs identified outdated or erroneous contact information as a continuing challenge.

As shown in ***Figure 3-2***, the percentage of enrollees that One Care MMPs were unable to reach generally decreased over the course of the demonstration to date, with a high of 39.1 percent in quarter 3 of 2014 and a low of 10.9 percent in quarter 3 of 2019.

As shown in ***Table 3-2***, over the course of the demonstration to date, the percentage of assessments completed within 90 days for all enrollees, and for enrollees willing to participate and who could be reached, were generally noticeably higher after the first three quarters of the demonstration, but showed great variation. After quarter 1 of 2018 until the end of the reporting period (quarter 4 of 2021), assessment completion rates for enrollees willing to participate and who could be reached remained close to or above 90 percent.

To improve assessment completion rates, one MMP reported implementing a streamlined on-boarding process to improve beneficiary experience and reduce opt-out rates. The MMP focused on reducing the number of initial contacts with enrollees requesting or providing information. It also established interim care support to address immediate needs of new enrollees until a care plan and care coordinator were in place.

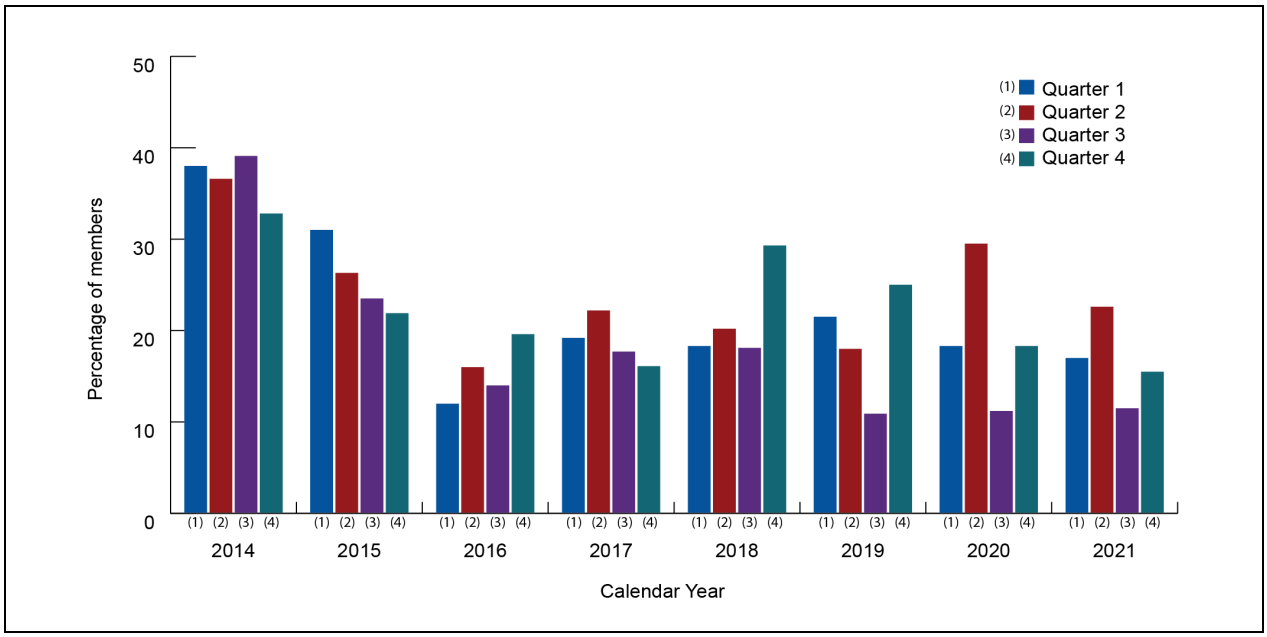
Implementation Effectiveness: Dose

Earlier in this report, we discussed "reach," which measures the percentage of persons who are affected by or participate in a *policy, program or initiative*. "Dose" is a measure of implementation effectiveness that refers to the amount of, exposure to, or uptake of an *intervention* provided to a target population within a program or initiative. In the FAI, the main intervention is care coordination.

Because we do not have a direct measure of how many enrollees receive care coordination, we use a proxy measure for dose: the percentage of enrollees that MMPs were not able to reach or locate. This measure gives a sense of how many enrollees were not able to make a choice to engage in care coordination. Without connecting with care coordinators, enrollees could not participate in health risk assessments (HRAs), have care plans, or identify care goals (these activities are discussed in this section).

Figure 3-2 shows that this measure generally decreased over the course of the demonstration to date, suggesting that a larger percentage of new enrollees was able to receive care coordination over time.

Figure 3-2
Percentage of members that Massachusetts One Care MMPs were unable to reach following three attempts, within 90 days of enrollment, 2014–2021



MMP = Medicare-Medicaid Plan.
NOTE: Data for Fallon Total Care are not included for quarter 4 of 2015 and forward because the MMP withdrew from the demonstration.
SOURCE: RTI analysis of MMP-reported data for Core Measure 2.1 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

Table 3-2
Massachusetts One Care MMP members whose assessments were completed within 90 days of enrollment, 2014–2021

Quarter	Total number of members whose 90th day of enrollment occurred within the reporting period	Percentage of members with assessments completed within 90 days of enrollment[1]	
		All members	All members willing to participate and who could be reached[2]
2014			
Q1	7,469	34.1	55.8
Q2	3,973	34.7	56.8
Q3	6,338	34.9	59.9
Q4	890	57.8	92.9

(continued)

Table 3-2 (continued)
Massachusetts One Care MMP members whose assessments were completed within 90 days of enrollment, 2014–2021

Quarter	Total number of members whose 90th day of enrollment occurred within the reporting period	Percentage of members with assessments completed within 90 days of enrollment[1]	
		All members	All members willing to participate and who could be reached[2]
2015			
Q1	1,389	53.4	84.3
Q2	750	68.1	99.8
Q3	616	69.6	96.6
Q4	827	64.2	85.8
2016			
Q1	815	42.1	57.5
Q2	301	69.1	83.9
Q3	1,205	59.6	93.4
Q4	1,315	59.8	79.6
2017			
Q1	2,676	61.1	78.3
Q2	2,040	61.2	82.3
Q3	1,767	56.6	72.9
Q4	1,830	50.2	61.7
2018			
Q1	1,366	63.0	80.5
Q2	1,988	72.7	95.1
Q3	1,996	77.4	96.4
Q4	2,825	62.4	92.1
2019			
Q1	2,416	70.1	93.1
Q2	1,949	68.8	89.2
Q3	704	76.1	89.8
Q4	2,498	61.6	86.8
2020			
Q1	2,426	66.6	85.1
Q2	3,020	62.5	92.0
Q3	421	82.9	95.6
Q4	2,202	72.1	91.3

(continued)

Table 3-2 (continued)
Massachusetts One Care MMP members whose assessments were completed within 90 days of enrollment, 2014–2021

Quarter	Total number of members whose 90th day of enrollment occurred within the reporting period	Percentage of members with assessments completed within 90 days of enrollment[1]	
		All members	All members willing to participate and who could be reached[2]
2021			
Q1	2,015	73.4	92.2
Q2	2,283	68.8	91.9
Q3	471	81.3	94.3
Q4	443	75.6	91.3

MMP = Medicare-Medicaid Plan; Q = quarter.
[1] The "all members" column presents the percentage of assessments completed for members whose 90th day of enrollment occurred within the reporting period. In the "all members willing to participate and who could be reached" column, the percentages exclude members who were documented as unwilling to participate in an assessment, and members who the MMP was unable to reach following three documented outreach attempts.
[2] The number of members willing to participate and who could be reached cannot be calculated using the corresponding percentages in this table. As indicated in table note 1, RTI used additional data points to calculate these percentages.
NOTE: Data for Fallon Total Care are not included for quarter 4 of 2015 and forward because the MMP withdrew from the demonstration.
SOURCE: RTI analysis of MMP-reported data for Core Measure 2.1 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

3.3.2 Care Planning and Care Coordination

Both MMPs continued to refine and modify their care models, with several changes implemented in 2019–2020. As reported in previous evaluation reports, the MMPs have continued to refine their care models over time based on lessons learned serving a complex population with high behavioral health and LTSS needs.

> *The change in the care model is to try to really figure out what is best for our population, how we can best serve them, and how we can get there. We are certainly willing to tweak the model or make changes as we move forward as we see necessary. If this model doesn't work, we are completely committed to trying something else. Obviously, we don't want to just keep changing and experimenting, but we are really committed to finding the best model for these members, and we are doing the best we can to figure out how to get there.*
>
> —MMP [2020]

Effective March 2020, one MMP contracted with an external vendor to provide services in the Worcester area. The vendor assumed all responsibilities for assessment, care coordination, and service delivery in that region. This change was part of ongoing efforts by the MMP to look at innovations and improvements in its care model design. Although the MMP reported working closely with the vendor leading up the transition, the MMP, EOHHS, and stakeholders reported

some early implementation issues. One example related to systems issues around exchange of information due to different data and records management software systems. Others related to ensuring that the vendor met One Care's standards for assessments and care planning and ensuring that the vendor fully incorporated care model requirements such as partnering with community-based organizations to provide coordination of long-term services and supports. Although the MMP and its vendor conducted multiple outreach activities to enrollees by phone and mail leading up to the transition, some stakeholders still reported initial confusion among beneficiaries with the change. The timing of the PHE contributed to some of these challenges.

This MMP maintained in-house care coordination management responsibilities for service areas other than Worcester. In those regions, the MMP transitioned to team-based "pods" for care coordination that were geographically based. In addition to care coordinators and clinicians, pods included peer specialists and community health workers. Enrollees were assigned to a pod based on their location and continued to be assigned a lead care coordinator based on their acuity. The pods coordinated with Long-term Supports (LTS) Coordinators involved with a member's care. The MMP described this as a more holistic, team-based approach to care.

The other MMP further modified its care model in 2020. The MMP planned to change its model in March 2020 but delayed implementation until September 2020 due to the PHE. The MMP retooled its care coordination model to create geographically aligned teams which increased the use of health outreach workers. The plan also moved to telephonic care coordination. It reported a significant investment of resources in developing this new model and believed it allowed every member to have a person they could call at any time. Stakeholders, however, expressed concern that this weakened the primary care coordinator/enrollee relationship. MassHealth noted that although some changes were within the discretion of the MMP for its business model, the Commonwealth was monitoring changes closely to ensure that any modifications to the care coordination structure met contractual demonstration requirements for providing access to person-centered care coordination and service delivery.

[As a lesson learned], it's important to be able to reach the member where they are at and be able to contact them where they are comfortable, so having the ability of being able to either use a virtual visit, telephonic visit, or in-person visit based on their wishes, is extremely important.

—MMP [2021]

The MMPs were not able to conduct in-person assessments and meetings with beneficiaries during the PHE. Although this created challenges for care coordination activities, one MMP noted that it was able to connect to some enrollees during the PHE for the first time because people tended to be at home and answered the phone more frequently. Although MMPs reported increased contacts by telephone with enrollees, stakeholders pressed the MMPs and EOHHS for data not only on volume of calls but also on quality and outcomes of the outreach activities. The Implementation Council emphasized the need to ensure that enrollees, many who

were isolated and with complex needs, received person-centered support from a care coordinator they knew and who could help them address individualized needs.

CMS and MassHealth worked with the MMPs to help ensure that care coordination efforts addressed increased social determinants of health needs related to the pandemic. Plans were asked to identify PHE-related changes in benefits, outreach, or other strategies across domains such as housing, transportation, and social isolation. Efforts also included focusing on outreach to enrollees with limited English proficiency as well as minority cultural and ethnic groups to provide information and support during the PHE. MMPs reported increased food insecurity among enrollees and the need to help coordinate meal delivery, particularly with closures of day programs where meals were typically provided. One MMP prioritized addressing behavioral health needs, given a significant increase in opioid overdoses among its enrollee population and particularly when providers were still transitioning to telehealth and virtual visits and enrollees had no access to behavioral health services.

MMPs have reported care plan completion data in two different ways during the demonstration. In 2014–2017, One Care MMPs used a State-specific measure. As shown in ***Table 3-3,*** the percentage of all enrollees with a care plan completed within 90 days of enrollment generally increased in 2014 through 2017, with great variation among the quarters. The trend was similar for all enrollees willing to complete a care plan and who could be reached.

Table 3-3
Massachusetts One Care MMP members with care plans completed within 90 days of enrollment, 2014–2017

Quarter	Total number of members whose 90th day of enrollment occurred within the reporting period	Percentage of members with care plans completed within 90 days of enrollment[1]	
		All members	All members willing to complete a care plan and who could be reached[2]
2014			
Q1	5,871	22.8	32.8
Q2	3,977	25.8	41.0
Q3	6,330	24.8	39.2
Q4	886	37.0	59.1
2015			
Q1	1,398	48.1	65.2
Q2	748	54.3	73.2
Q3	614	59.3	80.4
Q4	821	68.3	79.9

(continued)

Table 3-3
Massachusetts One Care MMP members with care plans completed within 90 days of enrollment, 2014–2017

Quarter	Total number of members whose 90th day of enrollment occurred within the reporting period	Percentage of members with care plans completed within 90 days of enrollment[1]	
		All members	All members willing to complete a care plan and who could be reached[2]
2016			
Q1	810	50.6	63.5
Q2	291	61.5	72.8
Q3	1,208	63.8	81.1
Q4	1,317	56.4	74.2
2017			
Q1	2,682	60.0	76.9
Q2	2,048	59.7	80.1
Q3	1,769	53.0	68.2
Q4	1,830	47.8	58.5

MMP = Medicare-Medicaid Plan; Q = quarter.
[1] The "all members" column presents the percentage of care plans completed for members whose 90th day of enrollment occurred within the reporting period. In the "all members willing to complete a care plan and who could be reached" column, the percentages exclude members who were documented as unwilling to complete a care plan and members who the MMP was unable to reach following three documented outreach attempts.
[2] The number of members willing to complete a care plan and who could be reached cannot be calculated using the corresponding percentages in this table. As indicated in table note 1, RTI used additional data points to calculate these percentages.
NOTES: Data for Fallon Total Care are not included for quarter 4 of 2015 and forward because the MMP withdrew from the demonstration then. The State-specific measure MA 1.1 [Members with care plans within 90 days of enrollment] was retired in quarter 1 of 2018; care plan data for 2018 through 2021 are presented in Table D using Core Measure 3.2.
SOURCE: RTI analysis of MMP-reported data for State-specific MA 1.1 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Massachusetts-Specific Reporting Requirements document.

As of 2018, MMPs reported on care plan completion using one of the demonstration's core quality measures. As shown in ***Table 3-4***, after the first quarter of 2018, the percentage of care plans completed within 90 days of enrollment for enrollees who were reachable and willing to complete a care plan remained above 82 percent except for noticeably lower percentages in 2020. Percentages were also noticeably lower for all enrollees in 2020, possibly due to the onset of the PHE and modifications to care models, discussed earlier in this section (e.g., one MMP transitioning this responsibility to a vendor). Data for 2021 showed notable improvement.

Table 3-4
Massachusetts One Care MMP members with care plans completed within 90 days of enrollment, 2018–2021

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 members with care plans completed within 90 days of enrollment[1]	
		All members	All members willing to complete a care plan and who could be reached [2]
2018			
Q1	1,334	62.2	77.9
Q2	1,970	72.1	91.9
Q3	1,940	75.8	93.3
Q4	2,787	61.4	88.3
2019			
Q1	2,384	69.9	89.5
Q2	1,921	65.4	81.9
Q3	675	76.0	88.4
Q4	2,480	61.8	84.8
2020			
Q1	2,426	30.9	38.9
Q2	3,020	30.6	41.8
Q3	421	43.7	49.5
Q4	2,202	47.5	59.8
2021			
Q1	2,015	70.3	88.1
Q2	2,283	61.3	82.1
Q3	471	77.9	90.0
Q4	443	73.1	87.8

MMP = Medicare-Medicaid Plan; Q = quarter.
[1] The "all members" column presents the percentage of care plans completed for members whose 90th day of enrollment occurred within the reporting period. In the "all members willing to complete a care plan and who could be reached" column, the percentages exclude members who were documented as unwilling to complete a care plan and members who the MMP was unable to reach following three documented outreach attempts.
[2] The number of members willing to complete a care plan and who could be reached cannot be calculated using the corresponding percentages in this table. As indicated in table note 1, RTI used additional data points to calculate these percentages.
SOURCE: RTI analysis of MMP-reported data for Core Measure 3.2 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

As shown in ***Table 3-5***, after the first demonstration year (2014), the percentage of enrollees with at least one documented discussion of care goals in their initial care plan remained very high—often close to 100 percent—with a few exceptions in 2018 and 2019.

Table 3-5
Massachusetts One Care MMP members with documented discussions of care goals, 2014–2021

Quarter	Total number of members with an initial care plan completed	Percentage of members with at least one documented discussion of care goals in the initial care plan
2014		
Q1	2,218	72.4
Q2	2,668	57.5
Q3	3,039	60.1
Q4	2,892	64.2
2015		
Q1	1,956	98.4
Q2	2,038	97.3
Q3	573	98.8
Q4	641	99.7
2016		
Q1	501	98.0
Q2	565	96.6
Q3	618	99.0
Q4	970	100.0
2017		
Q1	1,562	99.9
Q2	1,574	99.7
Q3	1,540	99.4
Q4	1,257	92.4
2018		
Q1	1,872	86.3
Q2	2,088	95.4
Q3	2,054	95.5
Q4	1,790	99.2
2019		
Q1	2,174	97.5
Q2	2,554	95.7
Q3	2,243	83.1
Q4	2,852	75.2

(continued)

Table 3-5 (continued)
Massachusetts One Care MMP members with documented discussions of care goals, 2014–2021

Quarter	Total number of members with an initial care plan completed	Percentage of members with at least one documented discussion of care goals in the initial care plan
2020		
Q1	2,210	99.9
Q2	3,035	97.7
Q3	1,549	100.0
Q4	1,929	99.0
2021		
Q1	2,268	99.8
Q2	2,332	100.0
Q3	990	99.7
Q4	596	99.5

MMP = Medicare-Medicaid Plan; Q=quarter.
NOTE: Data for Fallon Total Care are not included for quarter 4 of 2015 and forward because the MMP withdrew from the demonstration.
SOURCE: RTI analysis of MMP-reported data for State-specific MA 1.2 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Massachusetts-Specific Reporting Requirements document.

As shown in ***Table 3-6***, from 2014 to 2021 the number of care coordinators generally increased, the percentage of care coordinators assigned to care management and conducting assessments noticeably decreased, and the average caseloads (member loads) for those fewer care coordinators who were doing direct care coordination increased fourfold. Implementation Council members expressed concern over the ability of care coordinators to manage assigned caseloads. Turnover rates fluctuated over the course of the demonstration. One MMP described care coordinator turnover but also reported finding adequate numbers of experienced applicants for open positions.

Table 3-6
Care coordination staffing at Massachusetts One Care MMPs, 2014–2021

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 (%)
2014	234	70.9	107.9	10.3
2015	125	80.0	122.9	14.4
2016	144	68.1	146.3	16.8
2017	218	44.5	191.6	10.7
2018	281	36.7	218.7	24.3
2019	322	27.3	286.9	17.2
2020	323	19.2	481.6	14.6
2021	361	18.8	467.0	23.0

FTE = full time equivalent; MMP = Medicare-Medicaid Plan.
NOTE: Data for Fallon Total Care are not included for quarter 4 of 2015 and forward because the MMP withdrew from the demonstration.
SOURCE: RTI analysis of MMP-reported data for Core Measure 5.1 as of April 2022. The technical specifications for this measure are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

As discussed on ***Section 3.4***, ***Stakeholder Engagement***, the Implementation Council remained focused on improving care planning and care coordination as a core design feature of One Care. Council members continued to describe inadequate awareness by beneficiaries of the care planning process.

> *Having a care plan and knowing what a care plan is and having signed it, that's pretty basic. If a beneficiary can't identify that, then that's problematic. Or if care plans are primarily medical goals and not social or life goals, that problematic.*
>
> —Implementation Council Member [2021]

From the start of One Care, some stakeholders have expressed concern that trying to grow enrollment in the demonstration too quickly would result in loss of person-centered approaches, particularly for care planning and care coordination activities. To help assure One Care was consistent with a comprehensive, person-centered service model, EOHHS implemented a CMFI in January 2022.[15] The goals of this initiative were to create clearer expectations and greater alignment across the demonstration for care coordination, service delivery, and operational accountability focused on beneficiary experience. Describing the care model for One Care as the "centerpiece" of the demonstration, EOHHS established a work group to assess

[15] For more information about the CMFI, see https://www.mass.gov/service-details/care-model-focus-initiative-cmfi-for-the-masshealth-one-care-program.

challenges with the demonstration's care model, prioritize core areas needing improvement, and identify action steps, deliverables, and timelines. Core work group members included representatives from MassHealth, My Ombudsman (which serves all enrollees in a MassHealth managed care or integrated care program), the MMPs, the Implementation Council, and CMS.

3.3.3 Long-term Services Coordination

One Care provides all enrollees the option of having an LTS coordinator from a Community-Based Organization (CBO) to coordinate LTSS. MMPs are required to contract with Aging Services Access Points, Independent Living Centers, and Recovery Learning Communities who fulfill this role. Although this model has received broad support as a key demonstration feature, MassHealth officials, MMPs, CBOs and other stakeholders reported varying degrees of success and challenge in the implementation of the model over time. The requirements and role of the LTS coordinator are described more fully in the First Annual Report.

As in prior years, CBOs reported that the LTS role could be implemented differently across MMPs and in some cases, differently within an MMP depending on the geographic area. One CBO noted the importance of having electronic access to enrollee care plans and assessments for efficiency while also needing to have direct connections to care coordinators to resolve issues efficiently and effectively. The CBO identified effective and open communication strategies as the most important element of their relationship with the MMPs. Overall, CBOs and stakeholders still felt there were opportunities to create more meaningful connections and share expertise between the MMP care coordinator and the LTS coordinator role with the aim of best addressing enrollees' LTSS and community needs. Implementation Council members also recommended higher utilization of Recovery Learning Centers as LTS coordinators who have lived experiences and skills to support One Care members.

Not being able to conduct in-person visits during the PHE created challenges for LTS coordinators who often functioned as "eyes and ears" on the ground and whose role depended on creating trust or a bond with the enrollee. MMPs reported heightened collaboration with CBOs during the pandemic to coordinate with food pantries, community volunteers and other community-based resources.

3.4 Stakeholder Engagement

CMS, EOHHS, and Implementation Council members described the council as critical to One Care's design, providing a level of accountability and stakeholder voice that would otherwise have been absent.

Implementation Council members continued to press for improvements in care planning and care coordination, recognizing that One Care serves people who have the most complex needs in the Commonwealth in terms of health care needs, social supports, and income levels.

As noted in earlier evaluation reports, the creation of an Implementation Council was a key design feature of the demonstration for ensuring robust ongoing stakeholder engagement. 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 Implementation Council

CMS and EOHHS expressed continued support of the Implementation Council as an effective vehicle for hearing the voice of beneficiaries and other stakeholders. Members are selected through an EOHHS solicitation process; the most recent solicitation was in 2021 for terms beginning in 2022. The Implementation Council is a beneficiary-driven committee, with the majority of its membership, as well as its leadership, required to be MassHealth members with disabilities, or family members or guardians of MassHealth members with disabilities. The Implementation Council is supported by staff from UMMS. Council members described this support as "invaluable" to the operation of the council.

The Implementation Council is hugely beneficial. I think it is critical. It is something that I would love to see not just for FAI demonstrations but for other initiatives more broadly…They push us in a way that is important… [Council members who are beneficiaries] offer a perspective of a lived experience, of having certain medical conditions, having certain SDOH [social determinants of health] needs, being enrolled in one of the plans, and having to navigate that system of access and services. There's no way that I personally would ever be able to appreciate or reflect that perspective without directly [hearing from] people who experience it, and I can't overstate the importance of that.

—CMS [2022]

Meetings occurred monthly and included updates by EOHHS and presentations by MMPs and others on topics of interest to the council. CMS was not a member of the council but regularly attended meetings. My Ombudsman presented to the council quarterly. Following presentations, the Implementation Council typically engaged in "round robin" or brainstorming sessions to develop action steps or recommendations based on the information presented. The council continued its focus on care planning, the care coordinator role, and the extent to which person-centered care principles were being implemented. Some members expressed concern that the role of the care coordinator and the purpose of the care plan were still not sufficiently clear to enrollees.

In 2019–2020, the Implementation Council was proactive in providing feedback on the MMP procurement process and proposed design of the Duals Demonstration 2.0. The council viewed its role as even more critical as Massachusetts planned its transition to a new demonstration. It was particularly focused on ensuring One Care and any new demonstration included effective strategies for measuring quality of care and health outcomes. Council members believed they have been able to lead in this area, particularly advocating for CMS and the Commonwealth to ensure health equity is a key priority.

The Implementation Council has been invaluable [to One Care]. We keep reiterating our goal and our hope that we want to help MassHealth make this a success... We want to make sure we are aligned where the gaps in care are and where the gaps are in the plans for fulfilling the contractual requirements, that we can support their work in terms of what we do on the council. In other words, if we identify similar issues [as MassHealth], we want to push them to make sure that they're addressing them. And having that external push gives MassHealth the ability to say look, we're hearing directly from the consumers, we're hearing directly from people about what's not working and therefore we need to have it in the contract… Unless you've got that body, that bee always buzzing, it makes it more difficult.

—Implementation Council Member [2021]

During the PHE, the Implementation Council effectively transitioned to a virtual meeting platform as the council had used virtual platforms for some of its work prior to the PHE. For example, it already had established protocols to provide American Sign Language interpreters and CART.[16] While acknowledging there were benefits for some participants of having in-person interactions, CMS, EOHHS, and council members felt that the virtual format increased access to meetings because participants did not need to travel.

The Implementation Council engaged in several strategies to widen participation and input into their work. For example, council members in Massachusetts continued to meet with members of the Implementation Council for the FAI demonstration in Rhode Island; they described the cross-fertilization of ideas and experiences across demonstrations and States as very valuable. The Implementation Council engaged with MMP consumer advisory boards (CABs), although a key barrier was the inability of MMPs to share CAB member names because of confidentiality concerns.

The Implementation Council also held a statewide Town Hall meeting on December 14, 2021 to hear from beneficiaries about their experiences in One Care.[17] Findings highlighted the importance of MMPs' building trust between enrollees and their care coordinators, and a need for greater awareness and involvement of enrollees in the care planning process and the setting of care goals.

3.4.2 Consumer Advisory Boards

As part of the demonstration, each MMP established a CAB to provide regular feedback to the MMP on One Care and care delivery. CABs continued to meet by phone and virtually during the PHE. One MMP provided tutorials and guides to CAB members on the use of technology and found that a virtual format increased access to meetings and allowed for broader engagement during the PHE. Continued engagement on the CAB also helped address the increasing isolation some beneficiaries were experiencing. Many of the topics discussed in 2020

[16] Communication Access Realtime Translation, real time captioning.
[17] A full summary is included as part of the minutes for the January 11, 20202 Implementation Council meeting https://www.mass.gov/lists/2022-one-care-implementation-council#january-11,-2022-. Retrieved as of June 4, 2022.

related to the PHE. For example, one MMP's CAB provided input on the design and communication of a $100 benefit the MMP put in place to help members with supplies and other immediate needs arising from the PHE.

3.5 Financing and Payment

Changes were made to some of the financing structures to account for impacts of the PHE. MMPs received 100 percent of the withheld amount for CY 2020 based solely on full reporting of all applicable quality withhold measures. Medicare and Medicaid savings percentages were adjusted downward for CY 2021.

The financial experience of the two MMPs remained relatively the same as previous years, with one reporting profits and the other remaining close to break-even for 2019—2020.

In this section we outline changes in financing and payment since 2019 and discuss relevant findings. The First Annual Report includes a full description of the financial design of the demonstration; the Second, Third, and Preliminary Fourth Evaluation Reports discuss subsequent changes and modifications through 2019. Each contract extension includes the financial terms for the demonstration extension period.

3.5.1 Demonstration Design and Updates

The key components of One Care's financial structure include rating categories and rate adjustments, savings percentages, performance incentives, and risk corridors.

MMPs receive three monthly payments for each enrollee: one amount from CMS for coverage of Medicare Parts A and B services, one amount from CMS reflecting coverage of Medicare Part D services, and a third amount from MassHealth reflecting coverage for Medicaid services. CMS and EOHHS annually review and adjust the capitated payment as necessary.[18] With the onset of the PHE, the Medicaid capitated payment from EOHHS for CY 2020 included temporary rate increases for several services.[19]

The savings percentages[20] apply to the Medicare Parts A and B and Medicaid baseline spending amounts. The savings percentages do not apply to the Part D component of the capitation rate. Quality withholds are intended to help ensure that dually eligible individuals receive high quality care and to encourage quality improvement. Both CMS and EOHHS withhold a percentage of their respective components of the capitation rate paid to each MMP.

[18] See the following EOHHS website to access One Care capitated rate reports: https://www.mass.gov/service-details/one-care-capitated-rate-reports

[19] See Demonstration to Integrate Care for Dual Eligible Individuals (One Care) CY 2020 Final Medicare-Medicaid Rate Report (February 10, 2021), pages 2–3. https://www.mass.gov/doc/one-care-cy2020-payment-rates-february-2021-av-0/download (accessed June 10, 2022).

[20] Aggregate savings percentages for the demonstration were determined in advance by CMS and the State, based on the expectation that the demonstration could achieve savings for both parties while paying adequate rates to MMPs.

MMPs are eligible for repayment of the withheld amounts subject to their performance on a combination of CMS Core and State-specific quality withhold measures. ***Table 3-7*** shows changes to the savings percentages and quality withholds from 2018-2021.

Table 3-7
One Care savings percentages and quality withholds, 2018–2021

	CY 2018 (DY5)	CY 2019 (DY6)	CY2020 (DY7)	CY2021 (DY8)
Savings percentages	0.50%	0.50%	0.50%	0.75% for the Medicare A and B component and 0.50% for the Medicaid component[2]
Quality Withhold[1]	1.50%	1.75%	1.75%	1.75%

CY = calendar year; DY = demonstration year.
[1] Based on a contract amendment effective August 1, 2020, CMS and EOHHS were able in their sole discretion to provide flexibilities via administrative guidance for the quality withholds for demonstration years 6, 7, and/or 8
[2] The Commonwealth of Massachusetts state of emergency related to COVID-19 was effective through June 15, 2021; therefore, the DY 8 savings percentage for both the Medicare Parts A and B Component and the MassHealth (Medicaid) Component of the capitated rate was 0.50 percent.

An August 2018 contract extension modified the terms of the risk corridors that applied in CY 2019.[21] Those modifications were incorporated without further changes into future contract extensions for CY 2020 and CY 2021.

3.5.2 MMP Financial Experience

The financial experience of the two MMPs remained relatively the same as in previous years, with one MMP reporting profits and the other remaining close to break-even for 2019-2020. The MMPs and EOHHS reported in 2021 that the PHE complicated analysis of financial performance because of changes in service utilization at the onset of the PHE, temporary benefits provided by MMPs, and temporary rate changes.

3.6 Quality of Care

Final calculations of the 2019 withholds showed both MMPs receiving 100 percent of quality withhold payments.

CMS did not require MMPs to submit Healthcare Effectiveness Data and Information Set (HEDIS) data covering the 2019 measurement year. The HEDIS measure performance decreased for several quality measures in 2020, likely related to the impacts of COVID-19.

[21] As of CY 2019, MMPs were fully at risk for gains and losses from 0–2.0 percent and over 8.0 percent (as a percent of the defined total adjusted capitation rate revenue). For gains and losses between 2.1 percent and 8.0 percent, the MMP and CMS/EOHHS established 50/50 risk sharing. See Addendum to three-way contract issued July 11, 2018, pp. 7–8. https://www.mass.gov/doc/fifth-one-care-contract-addendum-extension-june-11-2018/download (retrieved June 27, 2022).

In this section we provide updates on One Care's quality measures and HEDIS results. We discuss results of the demonstration's impact on quality measures, separately defined using Medicare claims, in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care***.

3.6.1 Core and State-specific Quality Measures

As described in the First Annual Report, MMPs are required to report standardized quality measures, some of which are subject to withhold payments that are repaid based on MMP performance. As described in ***Section 3.5, Financing and Payment***, CMS and EOHHS withhold a certain percentage of their respective components of the capitation rates (i.e., to the Medicare Parts A and B, and Medicaid components; no withhold is applied to the Medicare Part D component). The MMP is eligible to earn back some or all of the withheld amounts based on its performance on a set of quality withhold measures.

For 2019, both MMPs met 100 percent of the Massachusetts-specific measures and 80 percent of the core measures (one MMP did not meet the benchmark for flu vaccines and the other MMP did not meet the benchmark for encounter data reporting). For 2020, all FAI MMPs were able to receive 100 percent of the withheld amount for CY 2020 based solely on full reporting of all applicable quality withhold measures, due to extreme and uncontrollable circumstances of the PHE. Both MMPs provided complete reporting on both core and Massachusetts-specific measures and received 100 percent of the withhold. Final CY 2021 results were not available at the time of this report.

3.6.2 Quality Improvement Activities

One Care MMPs are required to conduct two Performance Improvement Projects (PIPs) annually as specified in the three-way contract. MMPs submitted proposed topics for three-year projects to MassHealth for its review and approval and initiated their implementation in 2018. The MMPs' work on these projects continued through 2020, the third year of the three-year quality cycle. MassHealth reported that implementing the PIPs over time allowed for more timely recommendations and real time review that allowed MMPs to more effectively incorporate suggestions for improved outcomes.

For the PIPs, one MMP focused on improving the rate of cervical cancer screening and cardiovascular disease prevention for enrollees with mental illness and multiple risk factors. The other MMP focused on improving therapy visit rates for members with depression and reducing emergency department utilization. An External Quality Review Organization (EQRO) conducts an analysis and evaluation of aggregated information on quality, timeliness, and access to the health care services to Medicaid recipients, including a review of the MMPs' PIPs. Based on its review of the PIPs, the EQRO did not discern any issues related to either MMP's quality of care or the timeliness of or access to care. As part of its work, the EQRO details strengths and opportunities for improvement.[22]

[22] The full report published by the EHRO can be accessed at: https://www.mass.gov/doc/masshealth-one-care-eqr-technical-report-2020-0/download

3.6.3 COVID-19 Quality Activities

During the PHE, EOHHS collected data on morbidity and mortality rates across its integrated care programs. Preliminary data indicated that One Care had lower rates of morbidity and mortality due to COVID-19 in 2020 compared to the SCO and PACE programs. In part, One Care serves a younger population, only a small percent of whom reside in a nursing facility setting. In Spring 2021, MassHealth created incentive payments for plans to increase vaccination rates for their members. For One Care, incentives would be paid to MMPs that, by June 30, 2021, fully vaccinated at least 80 percent of their members in the 20 cities or towns identified by the Commonwealth as disproportionately impacted by COVID-19.

EOHHS reported a renewed focus on developing quality strategies to address racial inequity, an issue highlighted by the PHE. This work tied to broader MassHealth efforts to identify and resolve health disparities related to race, ethnicity, language, and disability (RELD) to provide equitable care. In 2020, EOHHS began assessing the ability of MassHealth, MMPs and providers to collect, analyze, and provide RELD data, with a goal of ensuring that EOHHS and MMPs have the infrastructure needed to measure and report on health disparities. This work was ongoing as of 2022.

In response to the coronavirus epidemic, we found that the MMPs had an understanding of the real impacts of [social determinants of health], and the way that race and ethnicity impact health…they have been very focused on specific populations and the need to look at unique strategies that are person-specific…there is an understanding that there is never a population too small to be focused on. That is really inherent in the belief of an integrated approach that is very person-specific and ultimately has an impact population-wide.

—EOHHS [2021]

3.6.4 HEDIS Quality Measures

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 Medicare Advantage plans.

Five of the 13 Medicare HEDIS measures for MMP enrollees that RTI analyzes are reported in ***Figures 3-3 through 3-9*** 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. HEDIS data for 2015–2020 were available for both MMPs, although in response to the PHE, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year. Medicare plans (including MMPs) resumed normal reporting for measurement year 2020. In early 2021, MMPs reported anticipating declines in some measures due to the onset of COVID-19.

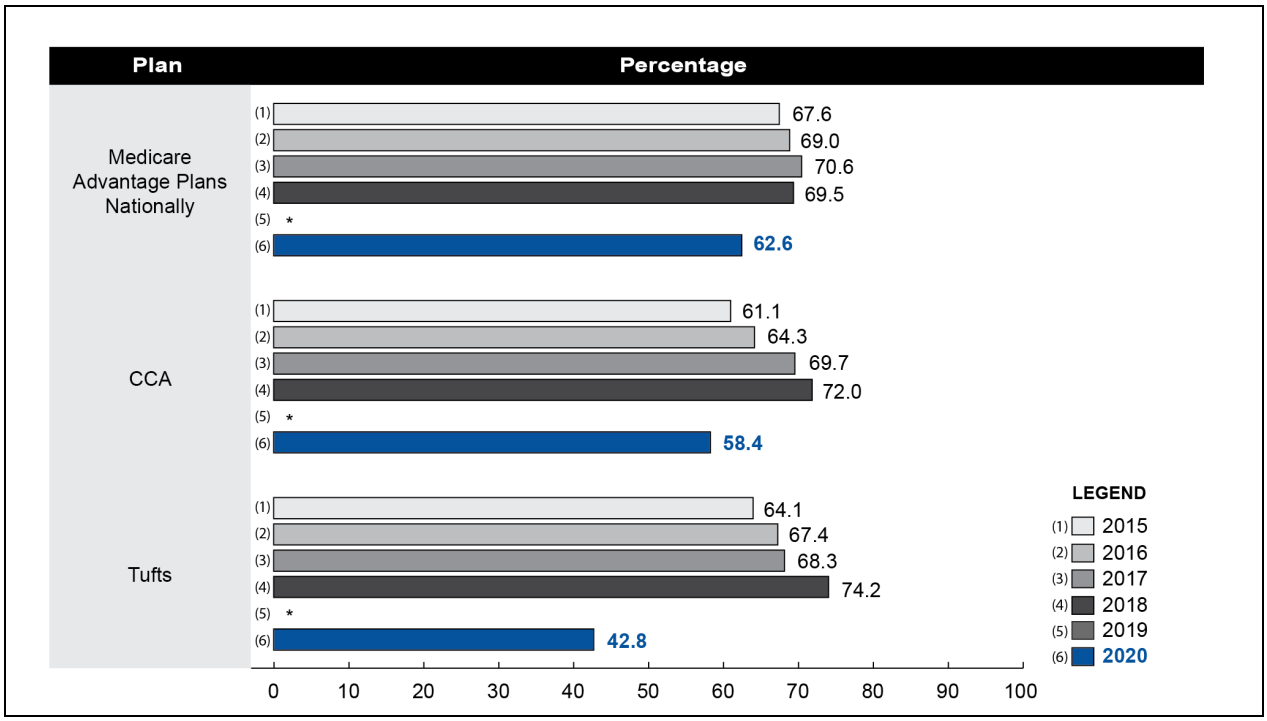
Detailed descriptions of selected HEDIS measures can be found in the RTI Aggregate Evaluation Plan. Results reported in ***Figures 3-3 through 3-9*** show OneCare MMPs' 2015 through 2020 HEDIS performance data on measures for blood pressure control, 30-day follow-up after hospitalization for mental illness, 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 18–64 and ages 65+).[23]

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

As shown in ***Figure 3-3***, both MMPs steadily increased performance for blood pressure control from 2015 through 2018. Both CCA and Tufts had decreases in measure performance for the 2020 reporting year.

[23] These are hospital readmissions.

Figure 3-3
Blood pressure control[1], 2015–2020:
Reported performance rates for One Care MMPs



* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.

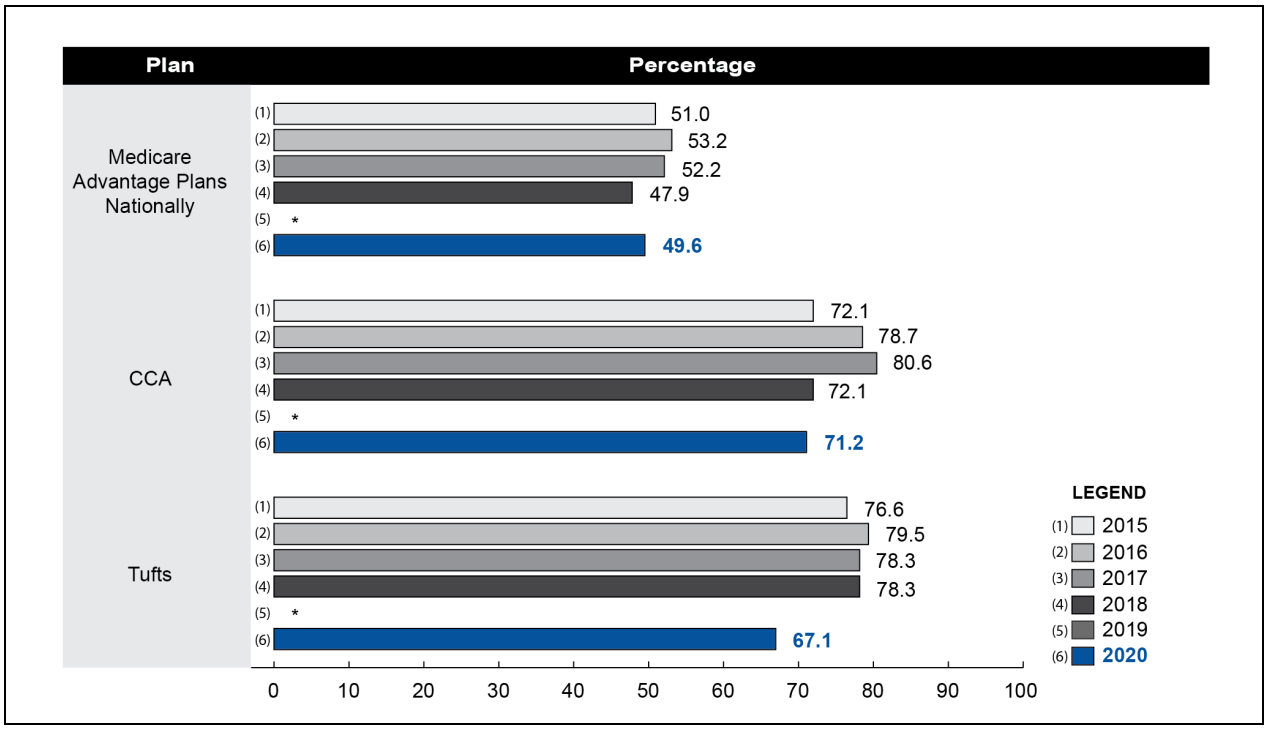
[1] The following criteria were used to determine adequate blood pressure control: less than 140/90 mm Hg for enrollees 18–59 years of age; diagnosis of diabetes and <140/90 mm Hg for enrollees 60–85 years of age; no diagnosis of diabetes and <150/90 mm Hg for enrollees 60–85 years of age.

NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.

SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

Figure 3-4 shows that for 30-day follow-up after hospitalization for mental illness, Tufts' performance remained relatively stable between 2015 and 2018, and then decreased in 2020 whereas CCA's increased between 2015 and 2017, and then continued to decrease from 2018 to 2020.

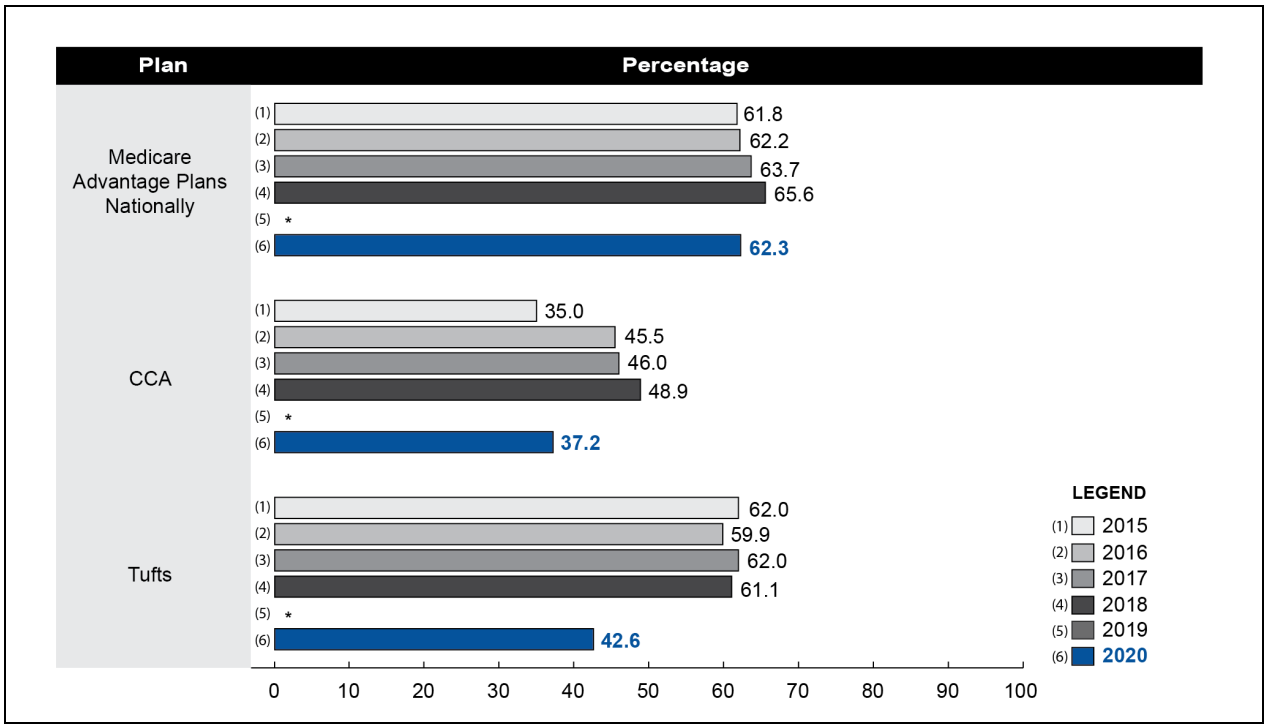
Figure 3-4
30-day follow-up after hospitalization for mental illness[1], 2015–2020: Reported performance rates for One Care MMPs



* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
[1] NCQA implemented a significant specification change with HEDIS 2017, disallowing same-day follow-up visits. National benchmarks fell from HEDIS 2017 to HEDIS 2018.
NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.
SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

As shown in ***Figure 3-5,*** CCA substantially increased performance on controlling HbA1c levels (<8.0 percent) between 2015 and 2016, and then remained relatively stable between 2016 and 2018 before decreasing in 2020. Between 2015 and 2018, Tufts' performance remained relatively stable, and then decreased in 2020.

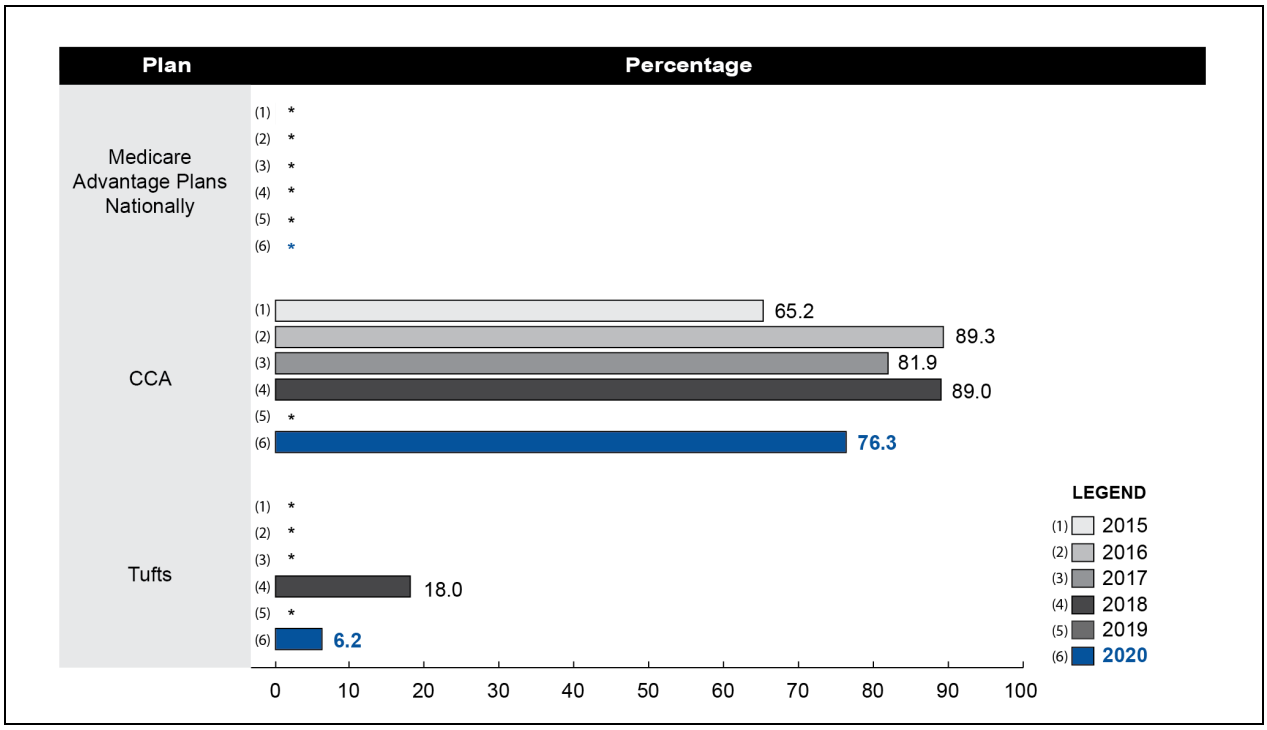
Figure 3-5
Good control of HbA1c level (<8.0%), 2015–2020:
Reported performance rates for One Care MMPs



* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.
SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

Figure 3-6 shows that for medication review (one of the Care for Older Adults measures), CCA improved performance from 2015 to 2020, with the most pronounced increase was between 2015 and 2016. Tufts' percentages are very low where data were available and sample size requirements were met. National Medicare Advantage plan mean data are not available for the Care for Older Adult measures.

Figure 3-6
Medication review (one of the Care for Older Adults measures), 2015–2020: Reported performance rates for One Care MMPs

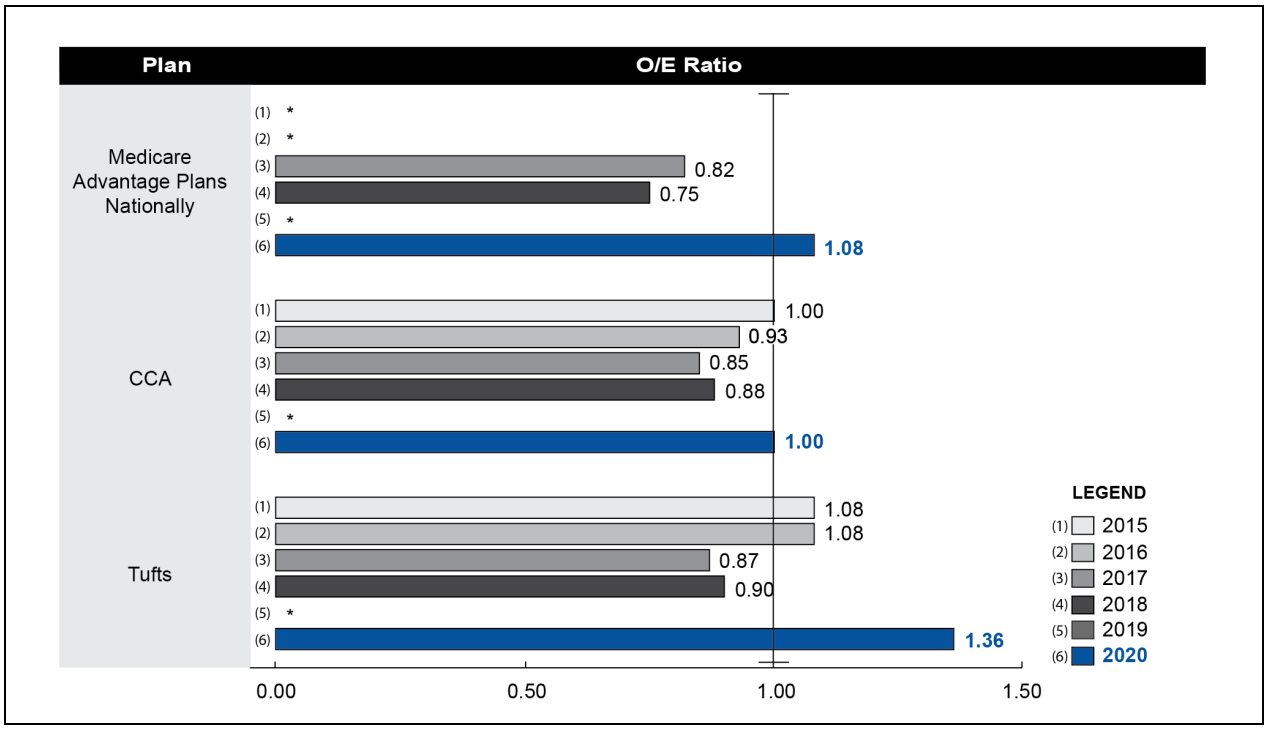


* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
NOTES: Medicare Advantage plans nationally did not provide HEDIS data for this measure. In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.
SOURCE: RTI analysis of 2015 through 2020 HEDIS measures

Plan all-cause readmissions for enrollees ages 18–64 and 65+ are reported in ***Figure 3-7*** and ***Figure 3-8***, respectively, 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.

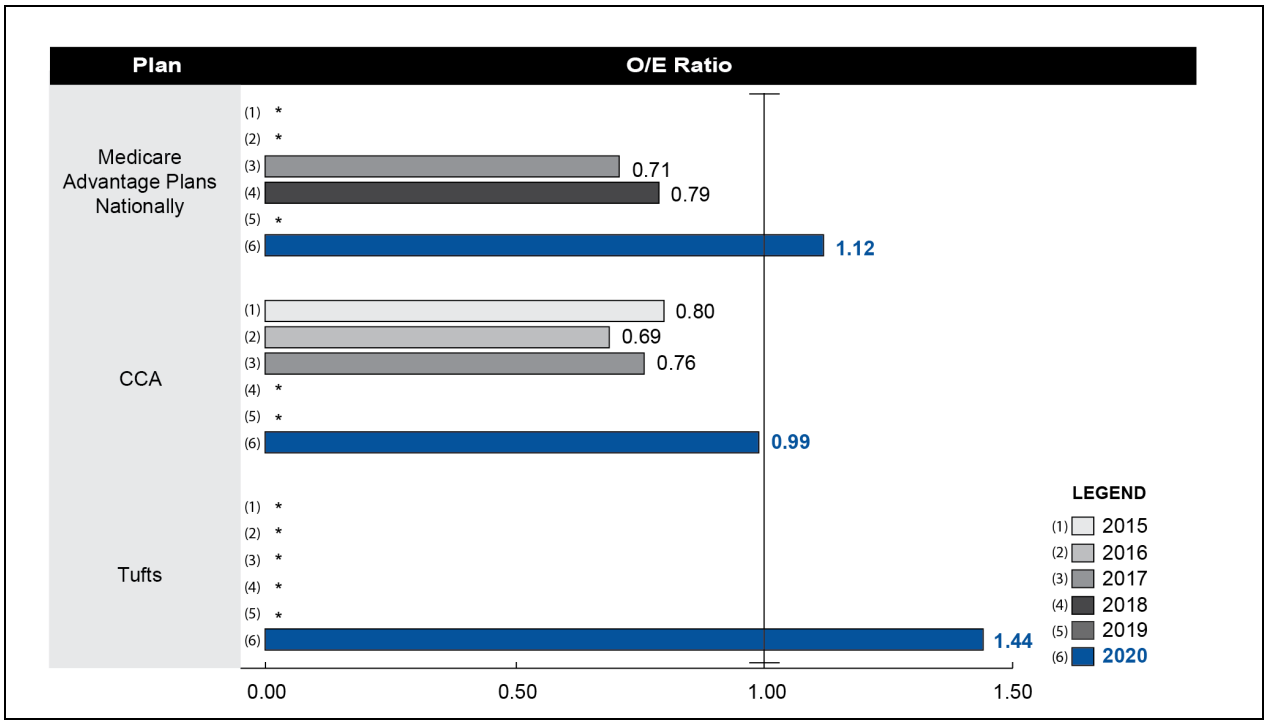
Figure 3-7 shows that both MMPs gradually reduced readmissions over time for enrollees age 18–64 from 2015 to 2018. In 2020, both MMPs reported higher readmission rates than previous years, potentially related to COVID-19. ***Figure 3-8*** shows a similar trend, but for enrollees ages 65+ where data were available and sample size requirements were met.

Figure 3-7
Plan all-cause readmissions, ages 18–64, 2015–2020:
Reported observed-to-expected ratios for One Care MMPs



* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
NOTES: Medicare Advantage plans nationally did not provide HEDIS data for this measure in measurement years 2015 and 2016. In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.
SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

Figure 3-8
Plan all-cause readmissions, ages 65+, 2015–2020:
Reported observed-to-expected ratios for One Care MMPs



* = data not available; CCA= Commonwealth Care Alliance; HEDIS = Healthcare Effectiveness Data and Information Set; MMP = Medicare-Medicaid Plan.
NOTES: Medicare Advantage plans nationally did not provide HEDIS data for this measure in measurement years 2015 and 2016. In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS data covering the 2019 measurement year.
SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

SECTION 4

Beneficiary Experience

Findings from a One Care Quality of Life Survey for 2019 indicated that 84 percent of respondents strongly agreed or agreed they had good relationships with their providers. 78 percent strongly agreed or agreed they could easily get medical services they needed.

In 2021, at least 70 percent of respondents to the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey rated their MMP as a 9 or a 10, with ten being the highest rating.

One of the main goals of the demonstrations under the FAI is to improve the beneficiary experience accessing Medicare and Medicaid. In this section we discuss beneficiary experience with One Care and beneficiary protections.

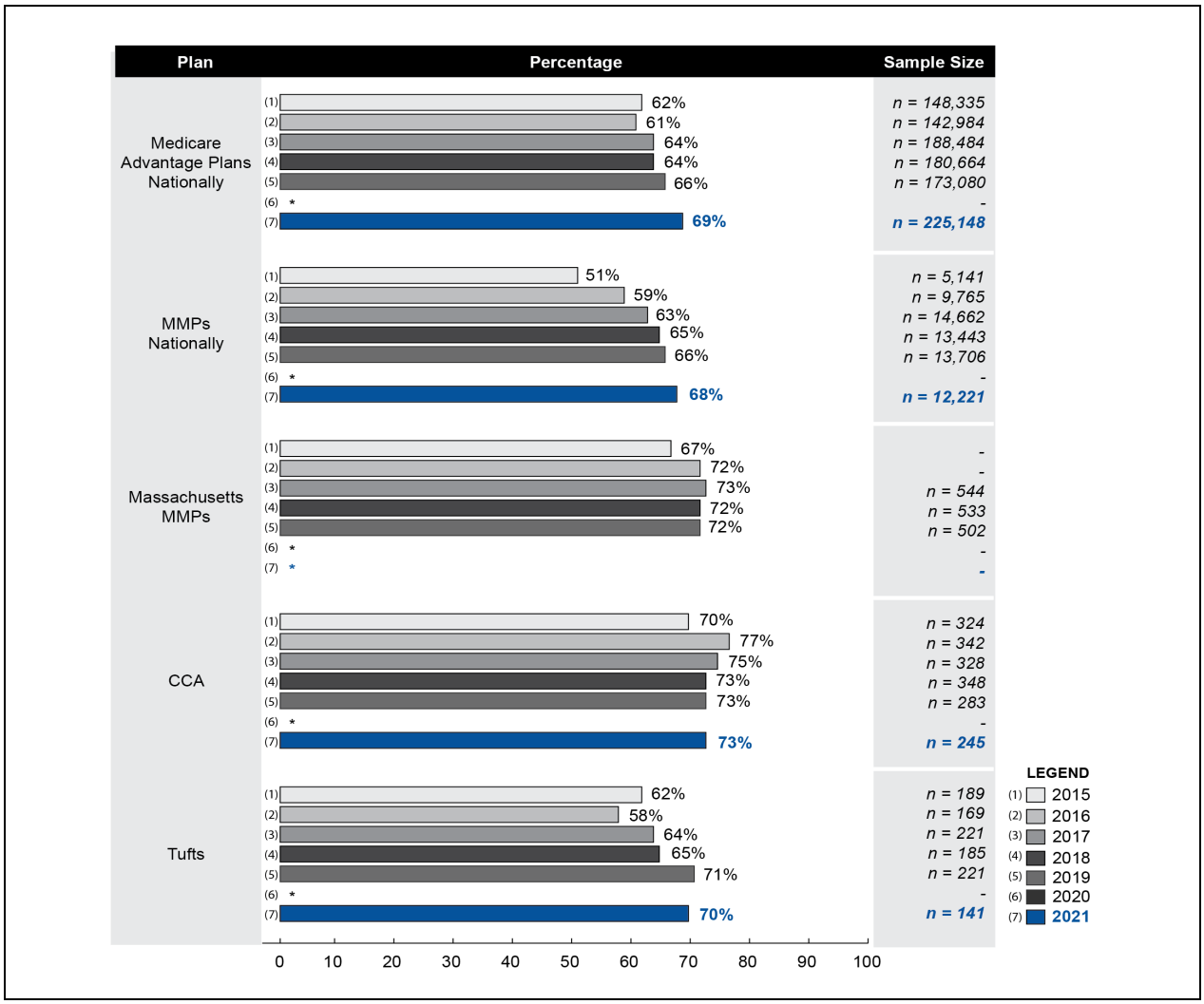
For beneficiary experience, we draw on findings from the CAHPS survey, stakeholder interviews, and One Care Quality of Life Surveys. For beneficiary protections, we draw on stakeholder interviews and several sources for data on complaints and appeals, and critical incident and abuse reports. See ***Appendix A*** for a full description of these data sources.

4.1 Impact of the Demonstration on Beneficiaries

CMS collects information about Medicare beneficiaries' experiences with, and ratings of, Medicare Advantage (MA-only) plans and Medicare Advantage Prescription Drug (MA-PD) plans through surveys of beneficiaries who have been enrolled in their plans for 6 months or longer. These surveys are conducted annually by the plans, including MMPs. ***Figure 4-1*** shows that beneficiaries' ratings of their satisfaction with their MMP varied from year to year but increased overall for both MMPs from 2015 to 2021.[24] Data are not available from 2020 but beneficiary satisfaction remained relatively unchanged for both MMPs from 2019 to 2021.

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

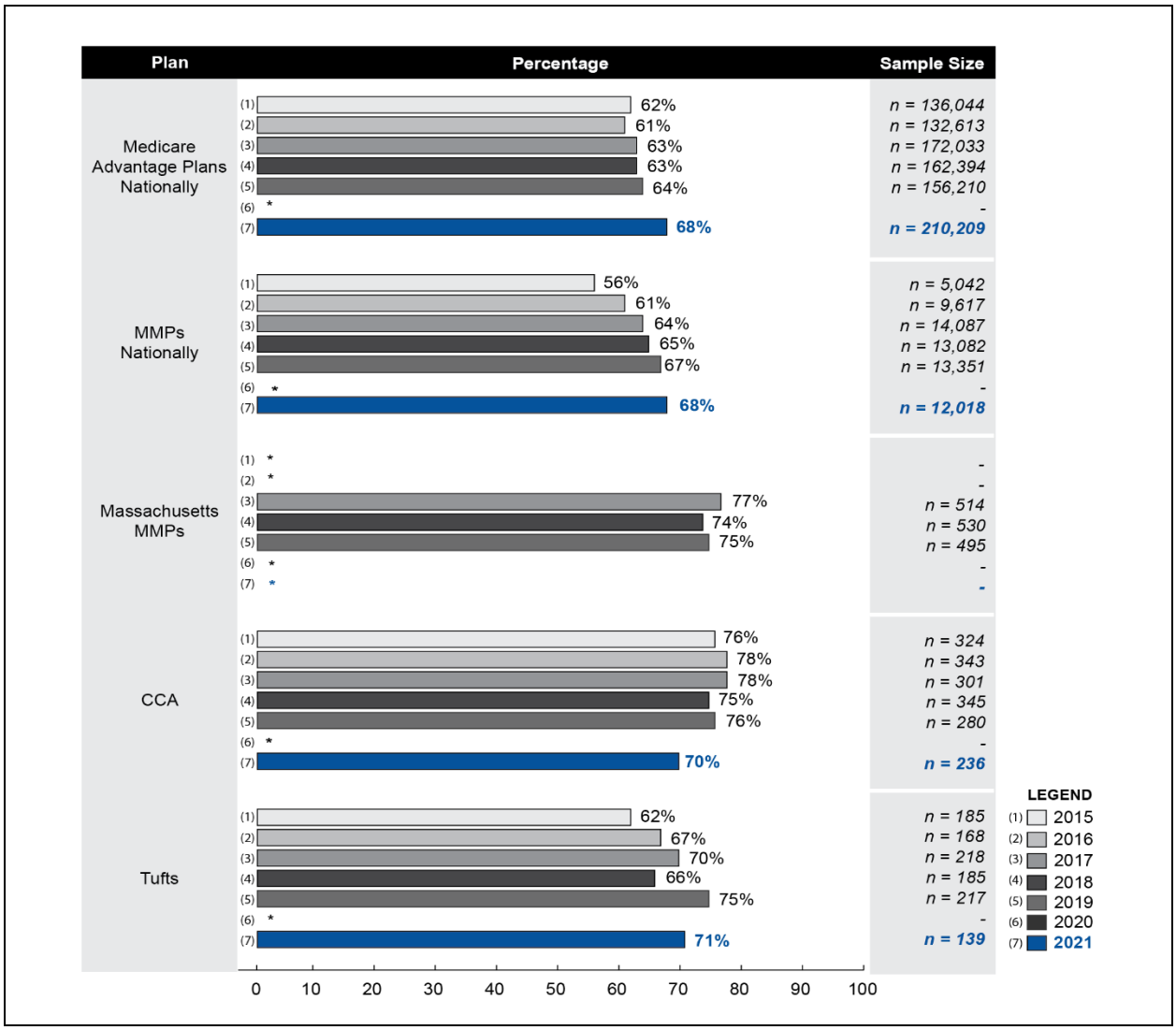
Figure 4-1
Massachusetts One Care beneficiary overall satisfaction, 2015–2021: Percentage of beneficiaries rating their health plan as a 9 or 10



* = data not available; - = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; CCA = Commonwealth Care Alliance; MMP = Medicare-Medicaid Plan.
NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require MMPs to collect CAHPS data for 2020.
SOURCE: CAHPS data for 2015–2021. 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?"

As shown in ***Figure 4-2***, in 2021, the percentage of beneficiaries who rated their prescription drug plan a 9 or a 10 decreased, as compared to prior years, for one MMP, and increased overall for the other MMP.

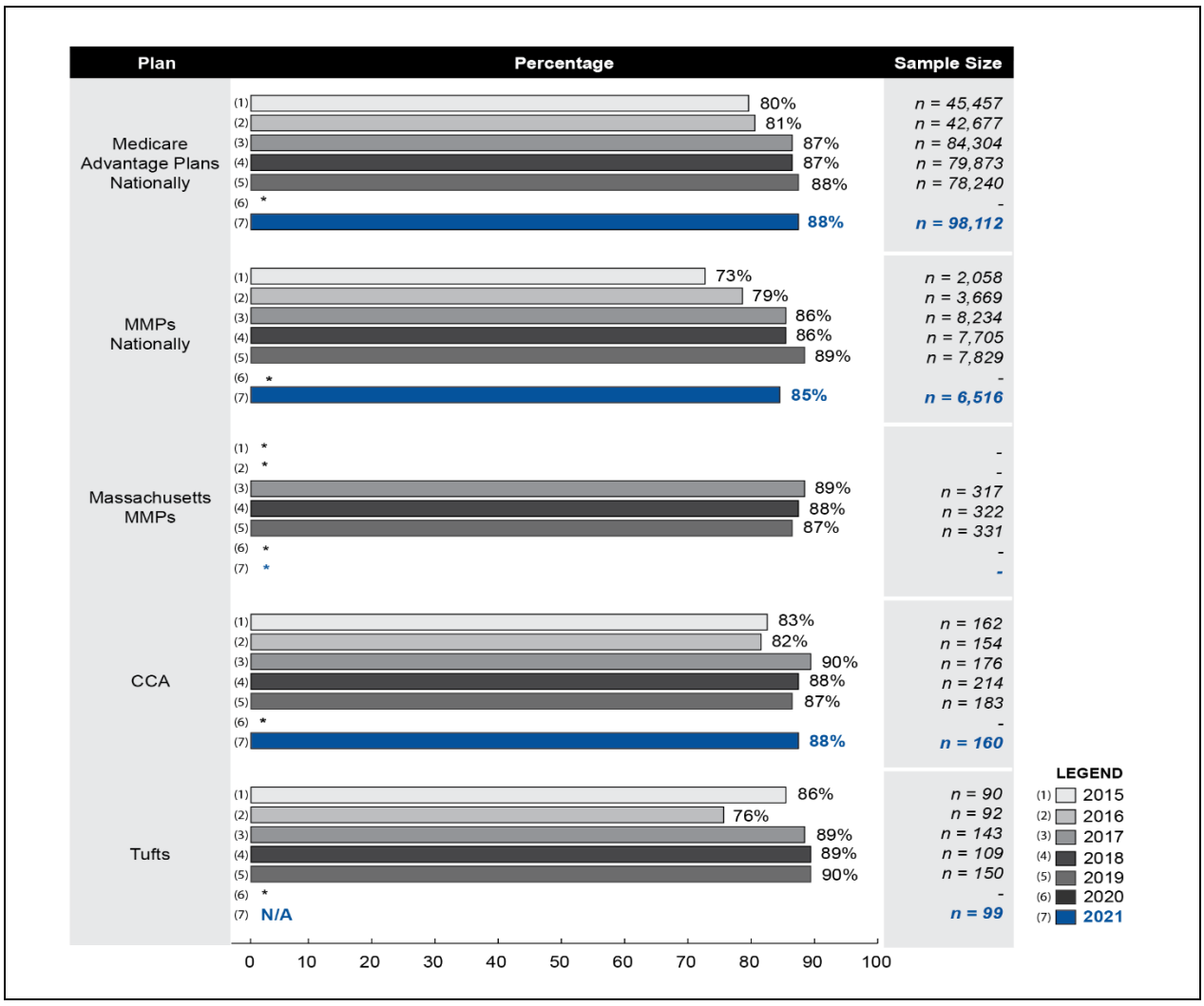
Figure 4-2
Massachusetts One Care beneficiary overall satisfaction, 2015–2021: Percentage of beneficiaries rating their prescription drug plan as a 9 or 10



* = data not available; - = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; CCA = Commonwealth Care Alliance; MMP = Medicare-Medicaid Plan.
NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require MMPs to collect CAHPS data for 2020.
SOURCE: CAHPS data for 2015–2021. 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 4-3***, from 2015 to 2021, the percentage of beneficiaries who reported that their health plan usually or always gave them the information they needed generally increased to the most recent data point or year for which there are data for the MMP.

Figure 4-3
Massachusetts One Care beneficiary experience with care coordination, 2015–2021: Percentage of beneficiaries reporting that their health plan usually or always gave them information they needed



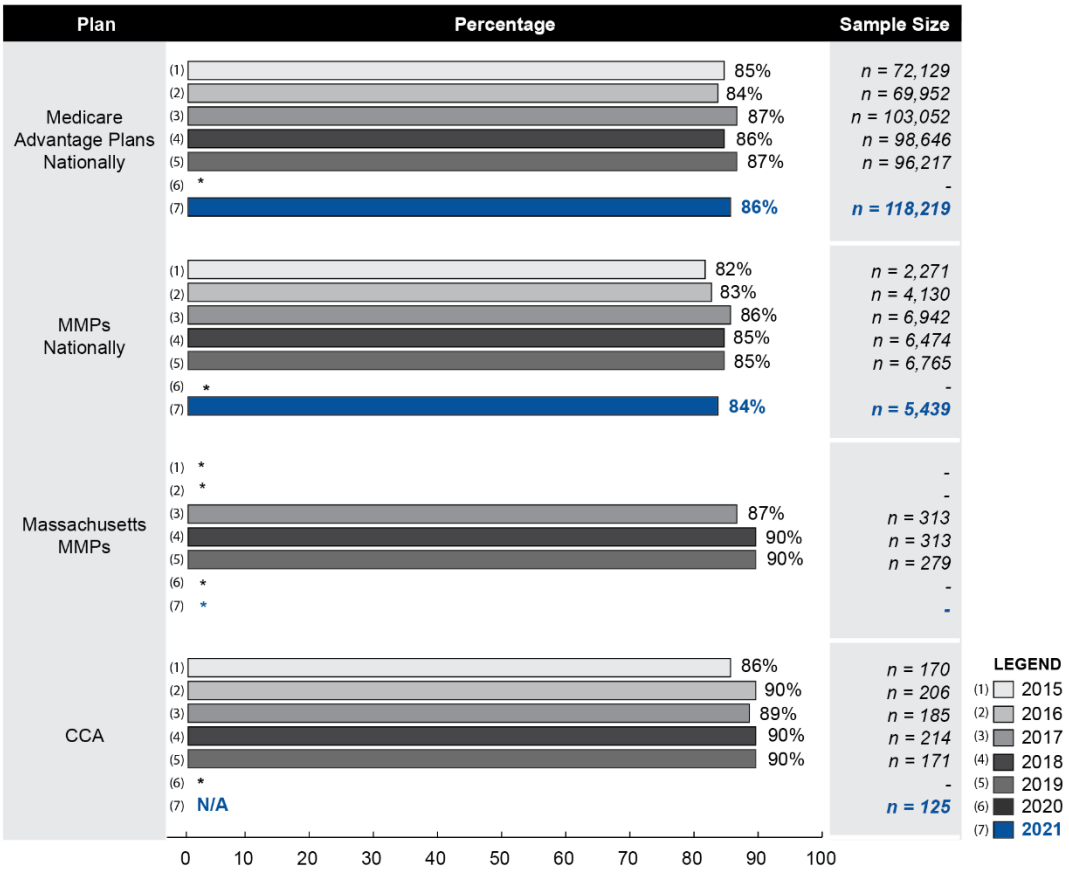
* = data not available; - = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; CCA = Commonwealth Care Alliance; MMP = Medicare-Medicaid Plan; N/A = "Suppressed," i.e., when too few members provided responses (new as of 2019), or when the results have very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

NOTE: In response to the COVID-19 Public Health Emergency, CMS did not require MMPs to collect CAHPS data for 2020.

SOURCE: CAHPS data for 2015-2021. 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?"

As shown in ***Figure 4-4***, the percentage of CCA respondents who reported that their personal doctors were usually or always informed about care from specialists was equal or close to 90 percent during the demonstration to date. Data are not reported for Tufts because either too few beneficiaries answered the question or the score had very low reliability.

Figure 4-4
Massachusetts One Care beneficiary experience with care coordination, 2015–2021: Percentage of beneficiaries reporting that in the past 6 months their personal doctors were usually or always informed about care received from specialists



* = data not available; - = sample size data not available; CAHPS = Consumer Assessment of Healthcare Providers and Systems; CCA = Commonwealth Care Alliance; 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.

NOTES: Tufts does not appear in the chart because either too few beneficiaries answered the question or the score had very low reliability. In response to the COVID-19 Public Health Emergency, CMS did not require MMPs to collect CAHPS data for 2020.

SOURCE: CAHPS data for 2015-2021. 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?"

To get feedback from One Care enrollees on their perceptions of their physical and mental health, quality of life, and satisfaction with their services, EOHHS has conducted Quality of Life Surveys for One Care, administered by UMMS, beginning in 2015. In November 2021,

UMMS presented findings from 2017 through 2019 to the Implementation Council.[25] Questions were asked about beneficiary perceptions of physical and mental health, life satisfaction, need for help with daily tasks, and satisfaction with services. We show selected survey findings for 2019 in ***Table 4-1***.

Table 4-1
Selected findings from 2019 Quality of Life Survey for One Care

Theme	Findings
Physical and mental/ emotional health status	More than one-half of respondents rated their physical or mental/emotional health as fair or poor.
Need for help at home and in the community	Less than one-half (46%) needed help with daily tasks at home like dressing, bathing, and cooking, whereas a majority (67%) needed help doing things in the community like shopping, working, and socializing.
Receiving and satisfaction with help at home and in the community	Of those needing help at home or in the community, most (88% and 78% respectively) said they were getting some or all of the help they needed. The majority respondents receiving help at home or in the community were satisfied or very satisfied with their services.
Life satisfaction and purpose	Majorities of respondents agreed or strongly agreed their life had purpose (70%), that they enjoyed life (59%), or that they had an upbeat and positive attitude (60%).
Relationships with providers and access to medical care and transportation	Large majorities of respondents strongly agreed or agreed they had good relationships with their providers (84%), could easily get medical services they needed (78%), and could easily get transportation they needed (71%).

UMMS noted no significant changes in these findings from 2017 and 2018. However, in 2019, 60 percent of respondents strongly agreed or agreed that they felt in control of their lives. This was a significant change from prior years, with the percent of respondents declining over time.

4.2 Beneficiary Protections

4.2.1 Grievances, Appeals, Complaints, and Critical Incidents

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. Beneficiaries can also contact the ombudsman program with any complaints, who can work with the beneficiary and the MMP to address concerns or questions. Grievances are resolved at the MMP level.

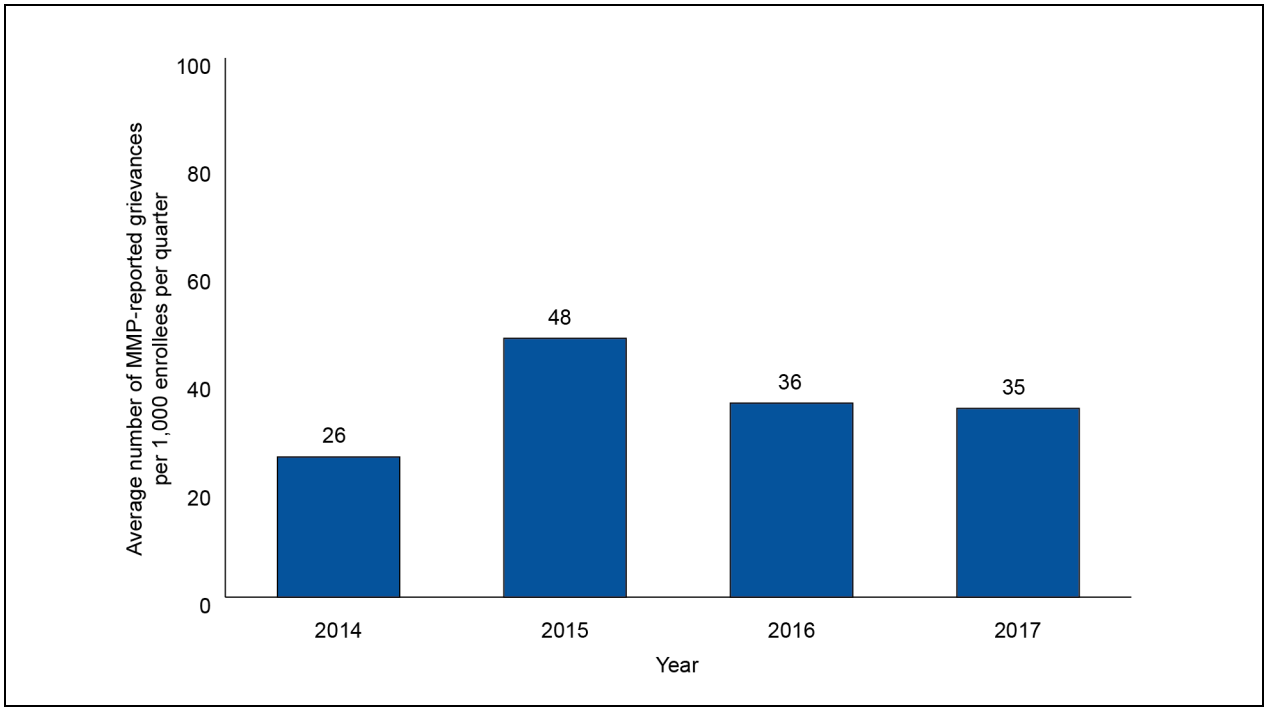
MMPs are required to track and report grievance data. ***Figure 4-5*** and ***Figure 4-6*** present the average number of grievances filed with the MMPs. Because the way that plan-reported

[25] Survey results were presented to the Implementation Council at its September 14, 2021, meeting. The full summary can be viewed at: https://www.mass.gov/doc/implementation-council-quality-of-life-survey-report-9-14-21-0/download (as obtained July 7, 2022).

grievance data were analyzed changed in 2018, we report the data from these two time periods separately.

As shown in ***Figure 4-5***, the average number of MMP-reported grievances per 1,000 enrollees per quarter varied from 26 to 48 in 2014 through 2017.

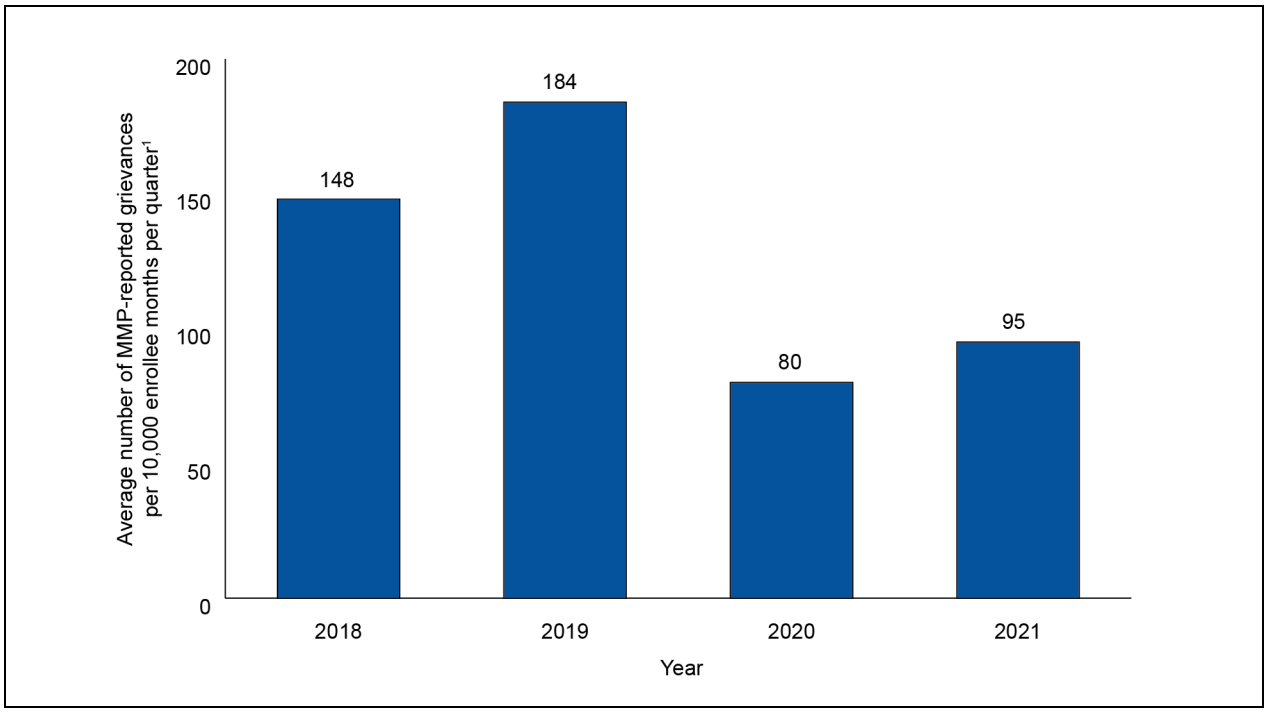
Figure 4-5
Massachusetts One Care average number of MMP-reported grievances per 1,000 enrollees per quarter, 2014–2017



MMP = Medicare-Medicaid Plan.

As shown in ***Figure 4-6***, in 2018 through 2021, the average number of MMP-reported grievances per 10,000 enrollee months per quarter varied from 80 to 184. The number of grievances decreased in 2020 compared to 2019. Site visit findings related to transportation, a common area of complaint, are consistent with this trend. As noted in previous evaluation reports, issues with transportation services tended to represent a significant portion of complaints. In January 2019, one MMP switched its transportation vendor, which caused an uptick in the number of grievances. MMPs and My Ombudsman reported that grievances about transportation initially declined in 2020 during the PHE. They reported seeing an overall decrease in grievances at the outset of the PHE.

Figure 4-6
Massachusetts One Care average number of MMP-reported grievances per 10,000 enrollee months per quarter, 2018–2021

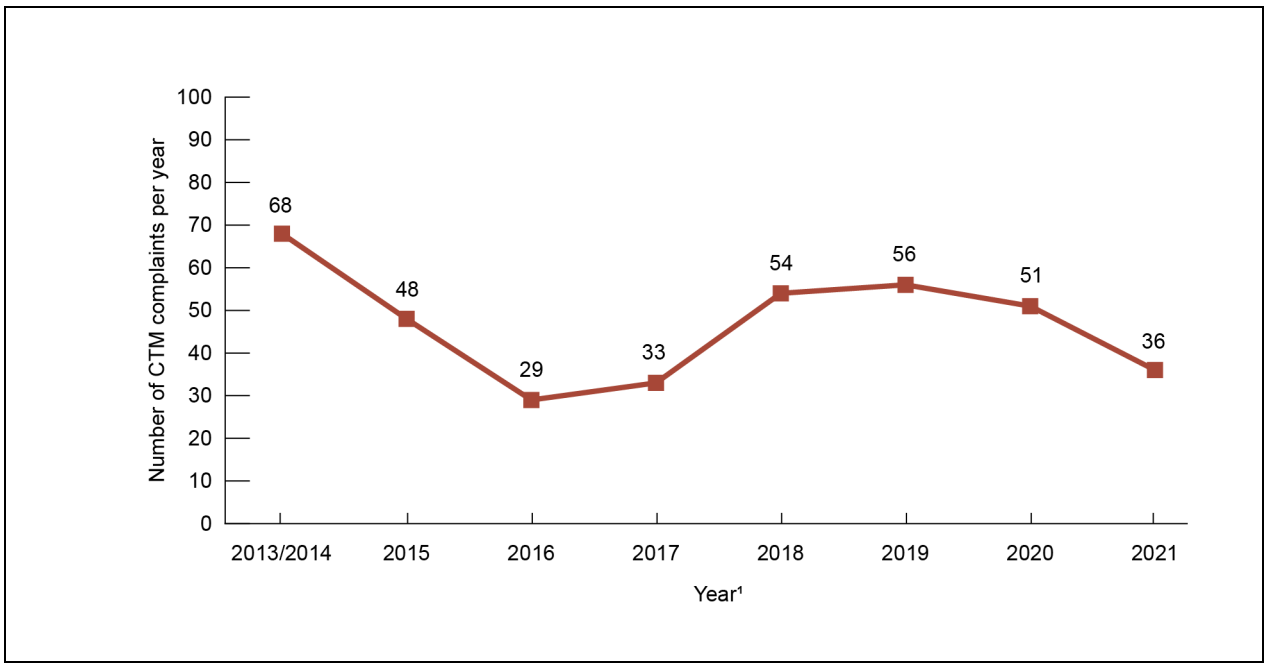


MMP = Medicare-Medicaid Plan.
[1] The way that plan-reported grievance data were analyzed changed in 2018. In 2015 through 2017, data were analyzed per 1,000 enrollees per quarter. Beginning in 2018, data were analyzed per 10,000 enrollee months per quarter.

Figure 4-7 shows total complaints reported to the Complaint Tracking Module (CTM) by MassHealth or through 1-800-Medicare in 2013–2021. CTM complaints varied over the course of the demonstration. The highest number of complaints during the demonstration period were in the benefits, access, and quality of care[26] category, followed by complaints in the enrollment and disenrollment[27] category.

[26] This category is defined as "Beneficiary has difficulty securing Part D prescriptions, beneficiary has difficulty finding a network provider/pharmacy, beneficiary has concerns about the quality of care they have received, or beneficiary has concerns about a denied claim."
[27] This category is defined as "Beneficiary is experiencing an enrollment issue that may require reinstatement or enrollment change."

Figure 4-7
Massachusetts One Care number of CTM complaints per year, 2013–2021

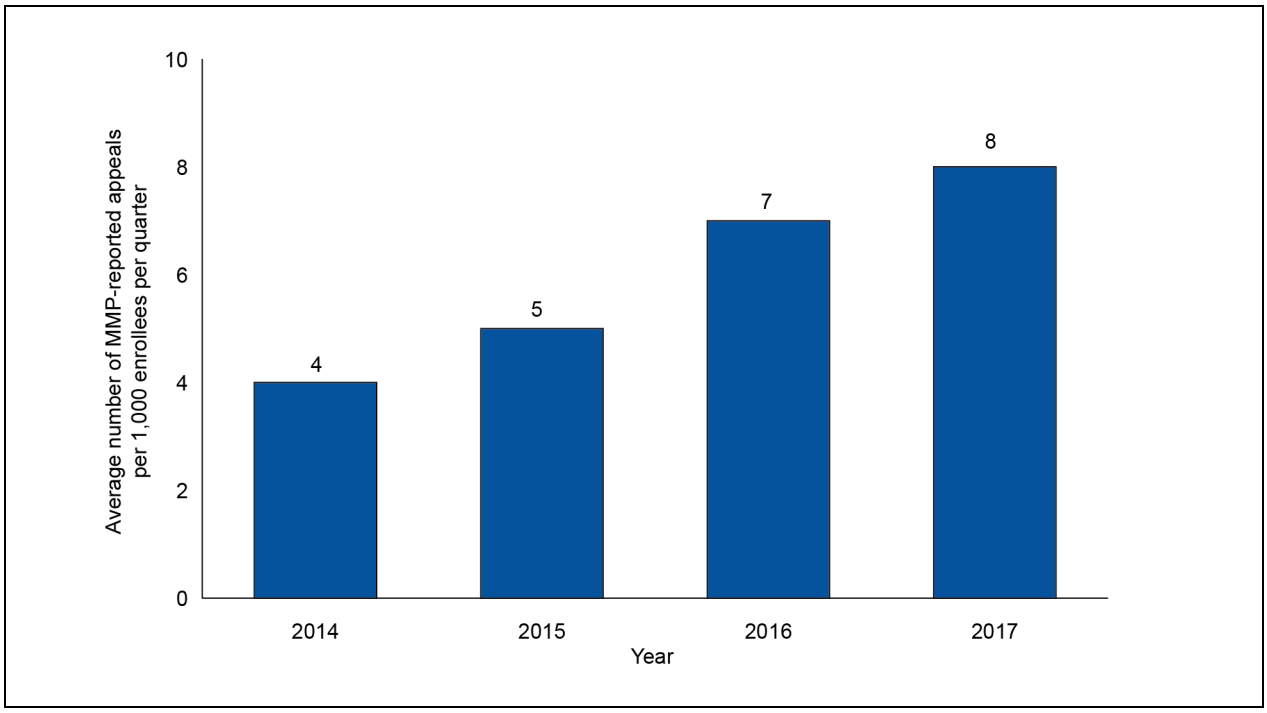


CTM = Complaint Tracking Module.
[1] Because the demonstration began in October 2013, CTM data for 2013 and 2014 were reported together.

Enrollees also have the right to appeal an MMP's decision to deny, terminate, suspend, or reduce services. The first level of appeal is filed directly with the MMP. If the MMP denies an appeal involving Medicare-only services, or a service that could be covered by Medicare or Medicaid (i.e., an "overlap" service), the MMP automatically forwards the appeal to the Medicare Independent Review Entity (IRE) for the second level of appeal.

Figure 4-8 and ***Figure 4-9*** present the average number of MMP-reported appeals. Because the way that plan-reported appeals data were analyzed changed in 2018, we report the data from these two time periods separately. As shown in ***Figure 4-8***, the average number of MMP-reported appeals per 1,000 enrollees per quarter remained very low (ranging from 4 to 8) from 2014 through 2017, although they did increase each year.

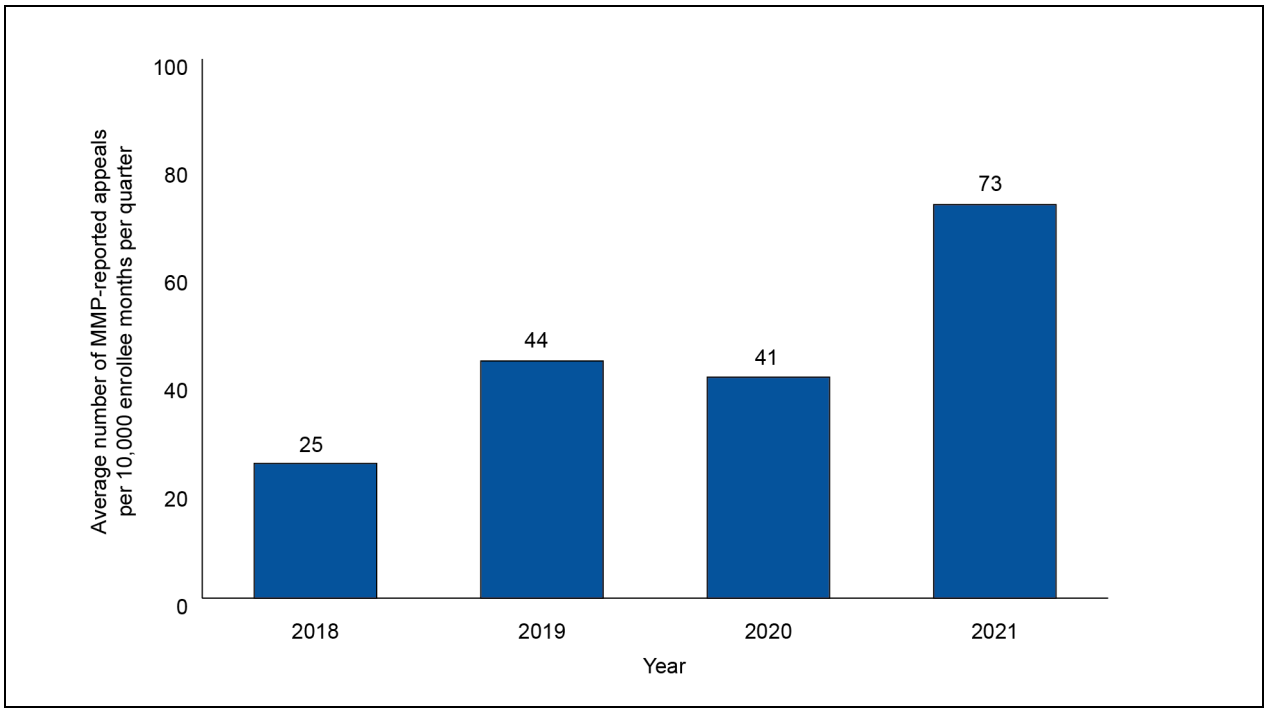
Figure 4-8
Massachusetts One Care average number of MMP-reported appeals per 1,000 enrollees per quarter, 2014–2017



MMP = Medicare-Medicaid Plan.

As shown in ***Figure 4-9,*** the average number of MMP-reported appeals per 10,000 enrollee months per quarter increased from 25 in 2018 to 73 in 2021. One MMP noted that home care hours were a common reason for appeal.

Figure 4-9
Massachusetts One Care average number of MMP-reported appeals per 10,000 enrollee months per quarter, 2018–2021

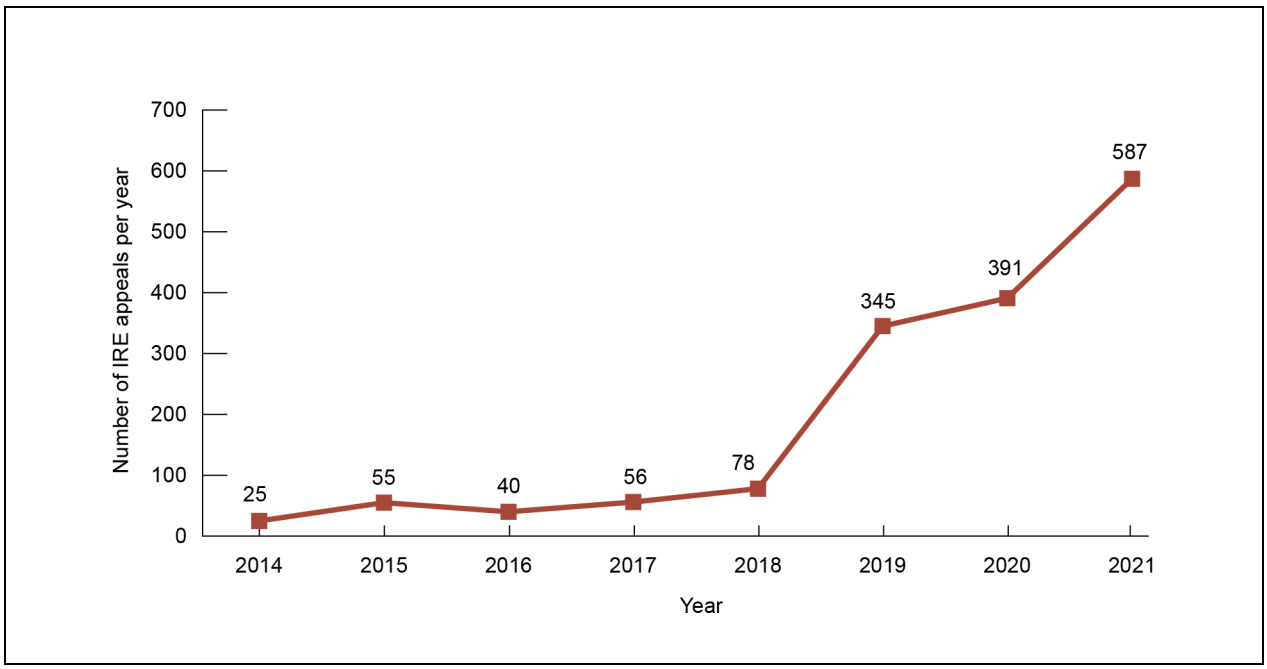


MMP = Medicare-Medicaid Plan.
[1] The way that plan-reported appeals data were analyzed changed in 2018. In 2015 through 2017, data were analyzed per 1,000 enrollees per quarter. Beginning in 2018, data were analyzed per 10,000 enrollee months per quarter.

Figure 4-10 shows the total number of MMP-reported appeals reported to the IRE in 2014 through 2021. The number of appeals reported to the IRE per year increased over the course of the demonstration to date, from 25 to 587. Of the 1,577 MMP-reported appeals reported to the IRE in 2014 through 2021, 75 percent of the MMP decisions were upheld, 17 percent were overturned or partially overturned, 8 percent were dismissed, and the remainder (1 percent) were withdrawn. The most common category of appeals referred to the IRE was for issues related to practitioner services.[28]

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

Figure 4-10
Massachusetts One Care number of IRE appeals per year, 2014–2021



IRE = Independent Review Entity.

MMPs are also required to report to CMS the number of critical incidents and abuse reports for members receiving LTSS.[29] From 2014 through 2021, the number of critical incidents and abuse reports remained very low, ranging from zero to eight reports per 1,000 enrollees per quarter.

4.2.2 Ombudsman Services

Ombudsman services for demonstration enrollees are provided by My Ombudsman, which also provides services to all enrollees in a MassHealth managed care or integrated care program. My Ombudsman is affiliated with the Disability Policy Consortium, a non-profit organization run by and for people with disabilities. In early 2020, My Ombudsman staff included a deaf and hard of hearing ombudsman who used American Sign Language, and ombudsmen who spoke Spanish, Portuguese, French, Cantonese and Mandarin. Eighty percent

[29] A critical incident is any actual or alleged event or situation that creates a significant risk of substantial or serious 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; rape or sexual assault; corporal punishment or striking of an individual; unauthorized use or the use of excessive force in the placement of bodily restraints on an individual; and use of bodily or chemical restraints on an individual which is not in compliance with Federal or State laws and administrative regulations. https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/MMPInformationandGuidance/MMPReportingRequirements

of staff were people with disabilities, many who had been or were in a MassHealth program, and the organization considered itself a peer support service.

My Ombudsman responds to inquiries and complaints about One Care. My Ombudsman cannot represent beneficiaries at appeal hearings and can provide only limited assistance, such as helping an enrollee gather documentation from a provider or requesting a reassessment from an MMP in cases where home care hours were at issue.

Of course [as the ombudsman] we have information about complaints and inquiries, some of the concerns about the plans …this is the slice of information we provide. It's valuable information but we also have many people, that if they didn't have One Care, it would have very serious implications for their health…It's an extraordinarily valuable resource despite the fact that we hear these complaints about these services and have to mediate these issues, where we play a valuable role.

—My Ombudsman [2020]

With the onset of the PHE, the top priority was to ensure that ombudsman services remained accessible to beneficiaries. Because the organization already had flexible remote work policies in place prior to the PHE, it was able to effectively transition to remote work without interruption in any services. The PHE prevented delivery of walk-in services, but walk-in services were infrequent even before the PHE.

Outreach activities also transitioned away from in-person events during the PHE. My Ombudsman postponed its plans to conduct office hours in various CBOs across the Commonwealth, an approach that had been successfully piloted in 2019. Instead of in-person outreach activities, My Ombudsman focused on improving its website, and developing member-friendly materials that were accessible for people with different health literacy levels.

My Ombudsman reported that during 2019, one of the main areas of beneficiary grievance and appeal related to access to benefits, which often included home care hours. Other areas of complaint related to care coordination and transportation. For 2020, the Ombuds reported areas of complaint and inquiry included not being able to reach a care coordinator; home care staffing shortages; transportation (which declined initially during the PHE); help with out-of-network services; and questions about health and safety and infection control practices.

SECTION 5

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 nursing facility (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 Massachusetts demonstration in demonstration years 1–6 (October 1, 2013–December 31, 2019) on service utilization and quality of care outcomes among Massachusetts demonstration eligible beneficiaries.

For this analysis, we used an intent-to-treat (ITT) approach that included all fee-for-service (FFS) Medicare-Medicaid beneficiaries eligible for the demonstration, not just those who actually enrolled in the MMPs. The ITT framework alleviates concerns of selection bias, supports generalizability of the results across the demonstration eligible population, and mimics the real-world implementation of the demonstration. In the analyses presented in this section, enrolled beneficiaries account for approximately 26 percent[30] of all eligible beneficiaries (including FFS beneficiaries and MMP enrollees) in demonstration year 6.

We used a quasi-experimental difference-in-differences (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, Area Health and Resource Files, and the American Community Survey. 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 group 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.

[30] The enrollment percentages reported in this section may be different than what was reported in ***Section 3.2, Eligibility and Enrollment*** because of the timing for completion and submitting the finder file versus the SDRS, and those reported in ***Section 6, Demonstration Impact on Cost Savings*** because of the exclusion of beneficiaries enrolled in Medicare Advantage.

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 had specific impacts on these two special populations. We present the demonstration effects separately for the LTSS users and for non-LTSS users, as well as for those with and without SPMI. We also discuss any interaction effect (the difference between the two effects). This section only describes demonstration DinD impact estimates that are statistically significant with 95 percent confidence intervals. Estimates that are not statistically significant are not discussed. We re-scaled the monthly and annual DinD estimates to reflect percentage points (for binary outcomes) and frequency per 1,000 beneficiary months (for count outcomes) for ease of interpretation. For a complete list of DinD estimates with 95 and 90 percent confidence intervals, see ***Appendix E***.

5.2 Demonstration Impact on Service Utilization Among Eligible Beneficiaries

Overall, the demonstration was associated with a 9.2 percent increase in the monthly number of physician visits and a decrease of 14.9 percent in the annual probability of any long-stay NF use, relative to the comparison group. However, the demonstration was also associated with an increase of 7.9 percent in the monthly probability of any skilled nursing facility (SNF) admission and an increase of 5.5 percent in any inpatient admission, relative to the comparison group. There were no demonstration impacts on the monthly probability of any emergency department (ED) visit.

5.2.1 Cumulative Impact Over Demonstration Years 1–6

The demonstration is intended to increase use of outpatient care and HCBS, while decreasing inpatient care, ED visits, and long-stay NF use through improvements in access to the full range of medical, behavioral health and LTSS, and improvements in quality of care and care coordination.

Table 5-1 shows the cumulative impacts of the demonstration on select service utilization measures. Monthly physician evaluation and management (E&M) visits increased more than the comparison group, whereas the probability of any long-stay NF use decreased more in the demonstration group, relative to the comparison group, which were favorable findings for the demonstration. However, counter to the goals of the demonstration, there was an increase in the probability of any SNF use and any inpatient admission, relative to the comparison group. There was no demonstration effect on the probability of ED visits.

- While the probability of inpatient hospitalizations fell for both the demonstration and comparison groups, the decrease in the comparison group was larger. The cumulative effect of the demonstration on the probability of any inpatient hospitalization was a 0.18 percentage point increase, relative to the comparison group. This is a 5.5 percent

relative increase over the probability of any inpatient admission in the comparison group during the demonstration period (3.28 percent).[31]

- The cumulative effect of the demonstration on the monthly number of physician visits was an increase of 87.19 visits per 1,000 beneficiaries, relative to the comparison group. The rate of E&M visits increased in both groups, though the increase was greater in the demonstration group than in the comparison group. This monthly increase represents a relative difference of 9.2 percent of the predicted number of physician visits in the comparison group during the demonstration period (950.46 per 1,000 beneficiaries). The annualized increase in the number of physician visits was 1,046.28 visits (not shown) per year per 1,000 beneficiaries (derived by 87.19*12) relative to the comparison group.
  - Similar to what was described in the Fourth Evaluation Report, this increase was expected and is consistent with the care coordination activities and improvements described by MMPs and Commonwealth officials in previous reports.[32] These findings also correspond with the One Care MMP performance on HEDIS measures for ambulatory outpatient visits described in ***Section 3.6.3, Quality of Care***.
- Although the probability of any SNF admissions was lower in the predemonstration period for the demonstration group and it decreased for both the demonstration and comparison groups during the demonstration period, the decrease in the comparison group was larger. Thus, the demonstration effect was an increase in the probability of any SNF admissions by 0.04 percentage points relative to the comparison group. That change translates to a 7.9 percent increase in the demonstration group relative to the probability for the comparison group during the demonstration period (0.48 percent).[33]
- The probability of any long-stay NF use decreased over the course of the demonstration in both the demonstration and comparison groups, with a more rapid decrease in the demonstration group. The demonstration group reduced the probability of any long-stay NF use by 0.54 percentage points relative to the comparison group, which is equivalent to a 14.9 percent decrease in use relative to that for the comparison group during the demonstration period (3.60 percent).
  - Caution should be used when interpreting the results on long-stay NF use. Approximately 1 percent of the total eligible population in Massachusetts had any long-stay NF use during the demonstration period (see ***Appendix E, Table E-6***).

[31] ***Appendix E, Table E-4*** suggests the trends in the rate of inpatient use in the demonstration group and comparison group were not parallel during the predemonstration period. To test the robustness of our results, we ran a supplemental model controlling for the differences in trends between the two groups during the predemonstration period. The results of this supplemental model were not meaningfully different than the main analysis results presented here.

[32] See the Third Evaluation Report.

[33] ***Appendix E, Table E-4*** suggests the trends in the rate of SNF use in the demonstration group and comparison group were not parallel during the predemonstration period. To test the robustness of our results, we ran a supplemental model controlling for the differences in trends between the two groups during the predemonstration period. The results of this supplemental model were not meaningfully different than the main analysis results presented here.

Among the enrolled population, less than 1 percent had any long-stay NF use in any year during the demonstration period (data not shown). As such, it may not be reasonable to attribute the decrease in long-stay NF use as an effect of the Massachusetts demonstration because of this low prevalence.

There are a number of possible explanations to these mixed results. Increases in inpatient and SNF use may in part be explained by care coordinator turnover from 2014 through 2019 where turnover was approximately 25 and 17 percent in 2018 and 2019, respectively (see ***Section 3.3.2, Care Planning and Care Coordination, Table 3-6***). Similar to what was reported in the Fourth Evaluation Report, stakeholders also identified structural issues (such as communication challenges among providers about a beneficiary's behavioral health needs) that had made it difficult to fully integrate services and communication across plans and providers. These may have posed challenges in coordinating care for those with chronic conditions or reducing acute and post-acute admissions.[34]

Furthermore, these results may be impacted by the service use and health characteristics of the demonstration enrolled population. The ITT evaluation design mitigates selection bias due to voluntary enrollment in the demonstration. However, if the demonstration enrolls beneficiaries who have lower service utilization rates and lower mortality than beneficiaries who are eligible but not enrolled, then such favorable selection may impact the likelihood of observing any favorable demonstration impacts on these measures. To determine whether these characteristics are evident in the demonstration enrolled group, we conducted the following supplemental analyses:

- A cohort analysis comparing predemonstration utilization outcome trends among beneficiaries who were enrolled at any point during demonstration year 1 to beneficiaries who were eligible but never enrolled in demonstration year 1.
- A cross-sectional analysis of mortality rates among the enrolled, eligible but not enrolled, and the comparison group during the entire study period.

Findings from these supplemental analyses are included in ***Appendix G***, which indicate that the demonstration year 1 enrolled cohort had similar inpatient and SNF use during the predemonstration period compared to the cohort that was eligible but never enrolled in demonstration year 1. Enrolled beneficiaries had slightly lower rates of mortality during the demonstration period than the eligible but not enrolled group. These findings do not provide conclusive evidence that there were differences in service use and health characteristics between those who enrolled and those who did not.

[34] See ***Section 3.3, Care Coordination*** of the Third Evaluation Report.

Table 5-1
Cumulative demonstration impact on select service utilization measures in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Group	Adjusted mean for predemonstration period	Adjusted mean for demonstration period	Regression-adjusted DinD estimate (95% confidence interval)	Relative difference (%)	*p*-value
Monthly probability of any inpatient admission (%)	Demonstration	3.45	3.24	0.18** (0.07, 0.29)	5.5	0.0014
	Comparison	3.71	3.28			
Monthly probability of any ED visit (%)	Demonstration	6.43	6.41	0.00 (–0.21, 0.22)	NS	0.9809
	Comparison	6.69	6.67			
Monthly number of physician E&M visits per 1,000 beneficiaries	Demonstration	907.52	1,065.03	87.19*** (47.19, 127.18)	9.2	<0.0001
	Comparison	886.98	950.46			
Monthly probability of any SNF admission (%)	Demonstration	0.51	0.44	0.04* (0.01, 0.07)	7.9	0.0068
	Comparison	0.62	0.48			
Annual probability of any long-stay NF use (%)	Demonstration	3.61	2.18	–0.54*** (–0.77, –0.30)	–14.9	<0.0001
	Comparison	4.19	3.60			

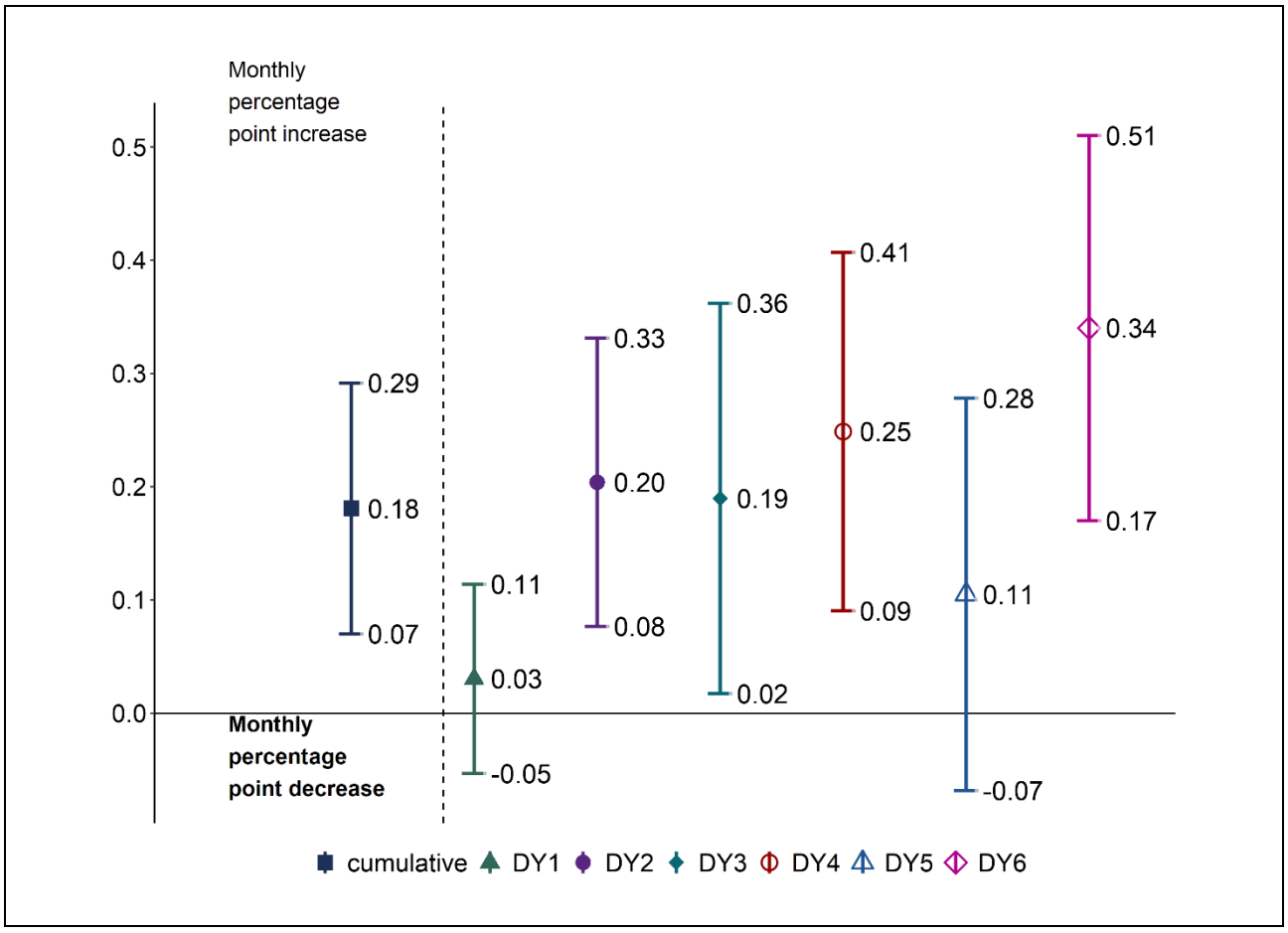
*p < 0.05; **p < 0.01; ***p < 0.001
DinD = difference-in-differences; ED = emergency department; E&M = evaluation and management; NF = nursing facility; NS = not statistically significant; SNF = skilled nursing facility.
NOTES: The adjusted mean is the regression-adjusted predicted probability or number 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. 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.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data, and Minimum Data Set data.

5.2.2 Demonstration Impact in Each Demonstration Year

Figures 5-1 through 5-5 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 the Massachusetts demonstration was associated with an increase in the number of physician visits and a decrease in the probability of any long-stay NF use in all demonstration years relative to the comparison group, which are favorable findings. However, the demonstration was also associated with an increase in the probability of any monthly inpatient admission in demonstration years 2, 3, 4, and 6, and in the probability of any monthly SNF admission in demonstration years 2, 4, and 6, relative to the comparison group, which are unfavorable findings.

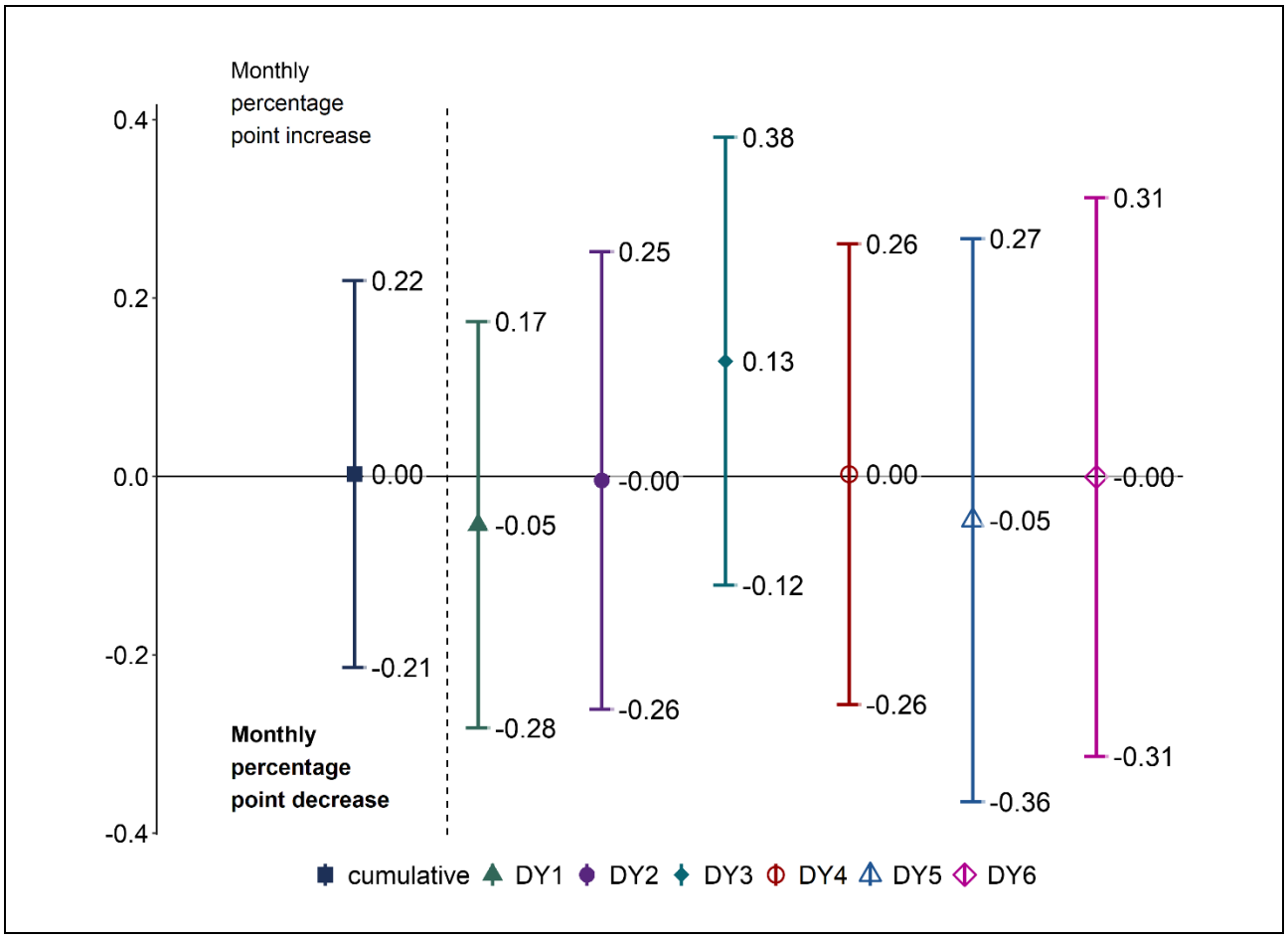
- The Massachusetts demonstration was associated with an increase in the monthly probability of any inpatient admissions during demonstration year 2 by 0.20 percentage points per beneficiary, by 0.19 percentage points in year 3, by 0.25 percentage points in year 4, and by 0.34 percentage points in year 6, relative to the comparison group (see ***Figure 5-1***).
- The Massachusetts demonstration was associated with an increase in the monthly number of physician E&M visits in demonstration years 1 through 6 by 71.0, 84.2, 98.4, 94.8, 85.5, and 91.7 visits per 1,000 beneficiaries, respectively, relative to the comparison group (see ***Figure 5-3***). These favorable annual findings are consistent with the cumulative findings.
- The Massachusetts demonstration was associated with an increase in the monthly probability of any SNF admissions in demonstration years 2, 3, and 4 by 0.05, 0.06, and 0.06 percentage points, respectively, relative to the comparison group (see ***Figure 5-4***).
- The demonstration was associated with a decrease in the annual probability of any long-stay NF use in demonstration years 1 through 6, relative to the comparison group, by 0.22, 0.50, 0.67, 0.54, 0.64, and 0.62 percentage points, respectively (see ***Figure 5-5***). The low prevalence of long-stay NF use in the demonstration group, described earlier in this section, suggests caution should be used when interpreting these results.

Figure 5-1
Cumulative and annual demonstration effects on inpatient admissions in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



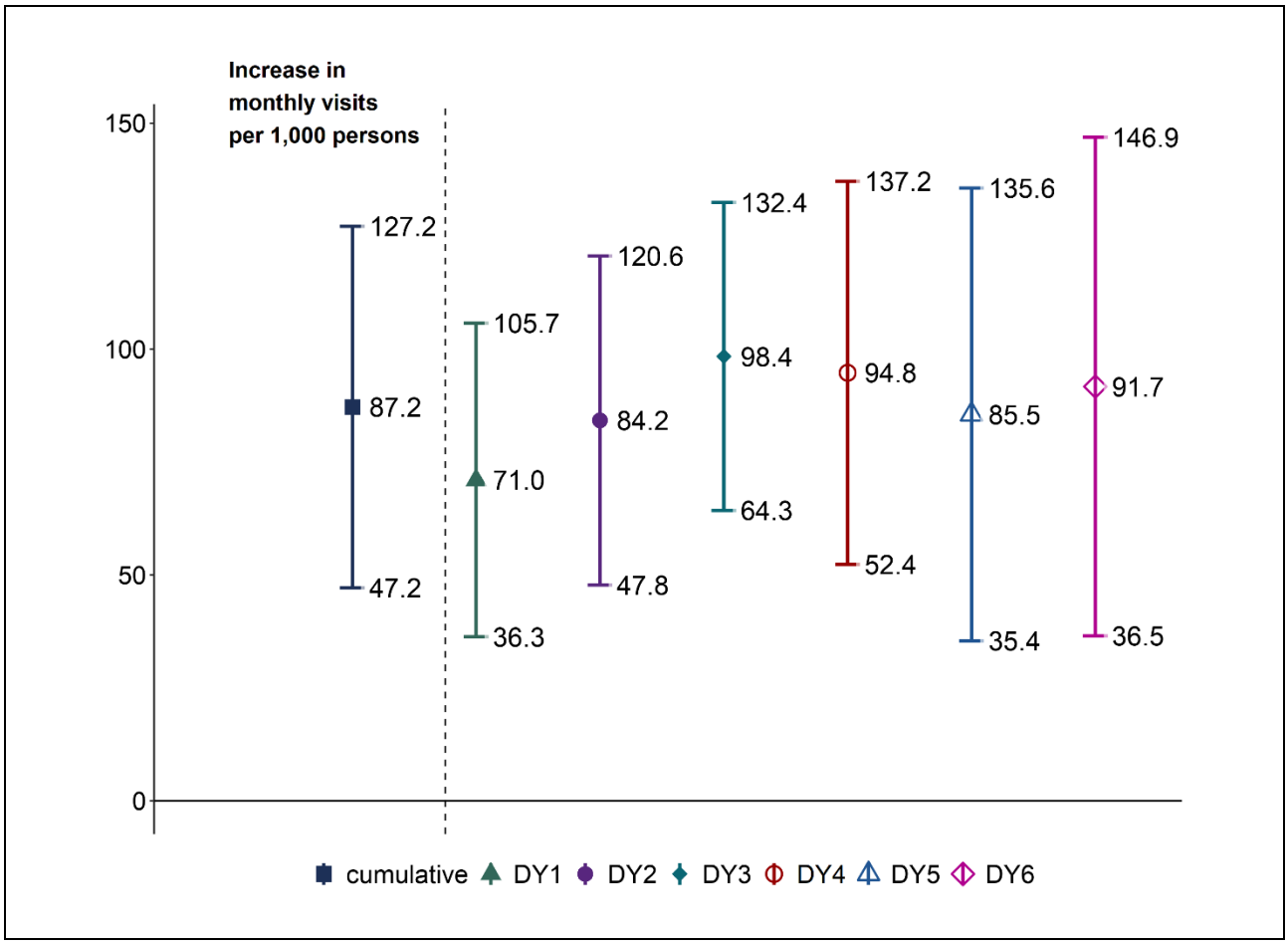
DY = demonstration year.
NOTES: 95 percent confidence intervals are shown. The expected direction of effect (Increase or Decrease) is in **bold**.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

Figure 5-2
Cumulative and annual demonstration effects on ED visits in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



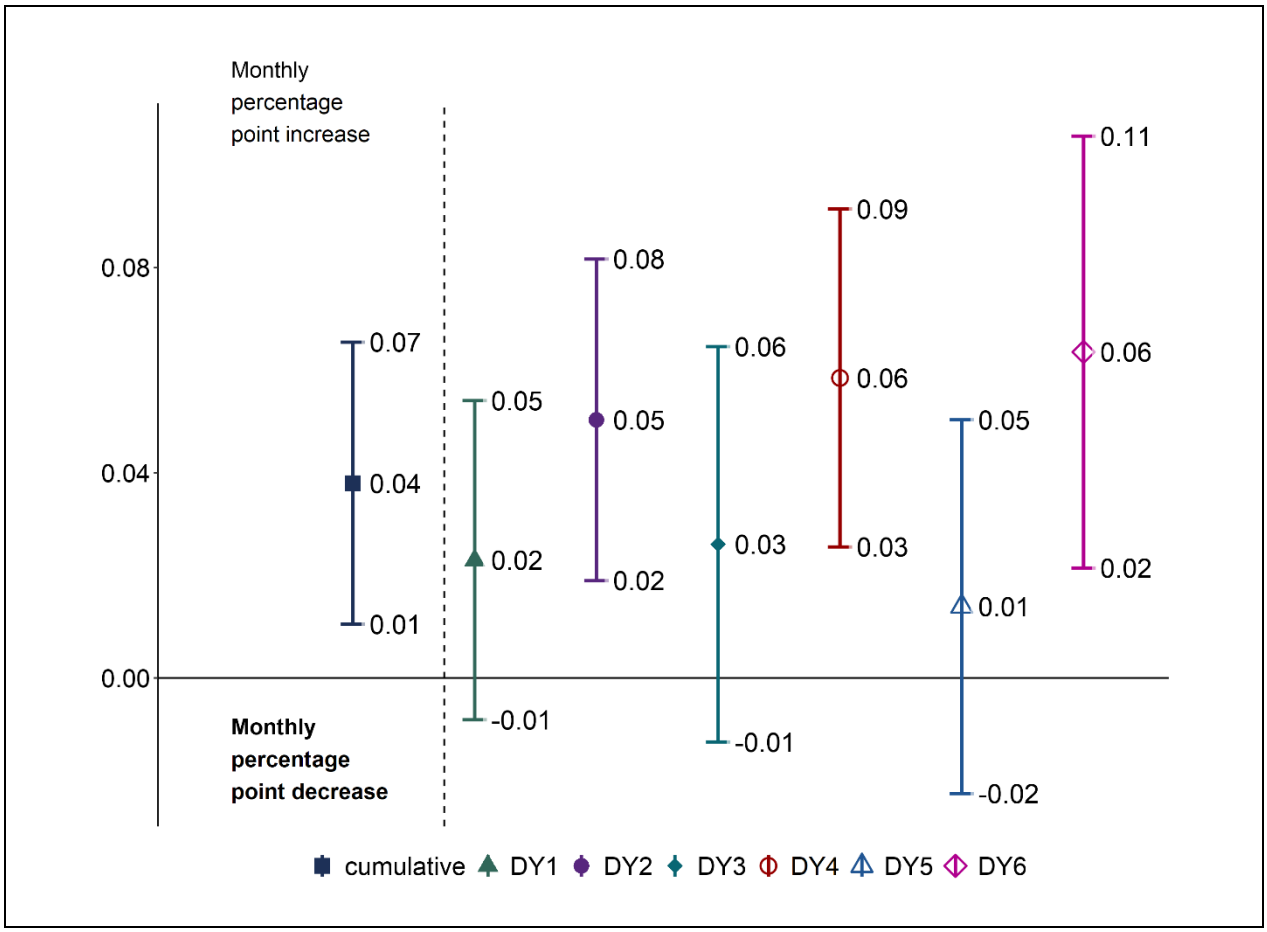
DY = demonstration year; ED = emergency department.
NOTES: 95 percent confidence intervals are shown. The expected direction of effect (Increase or Decrease) is in **bold**.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

Figure 5-3
Cumulative and annual demonstration effects on physician E&M visits in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



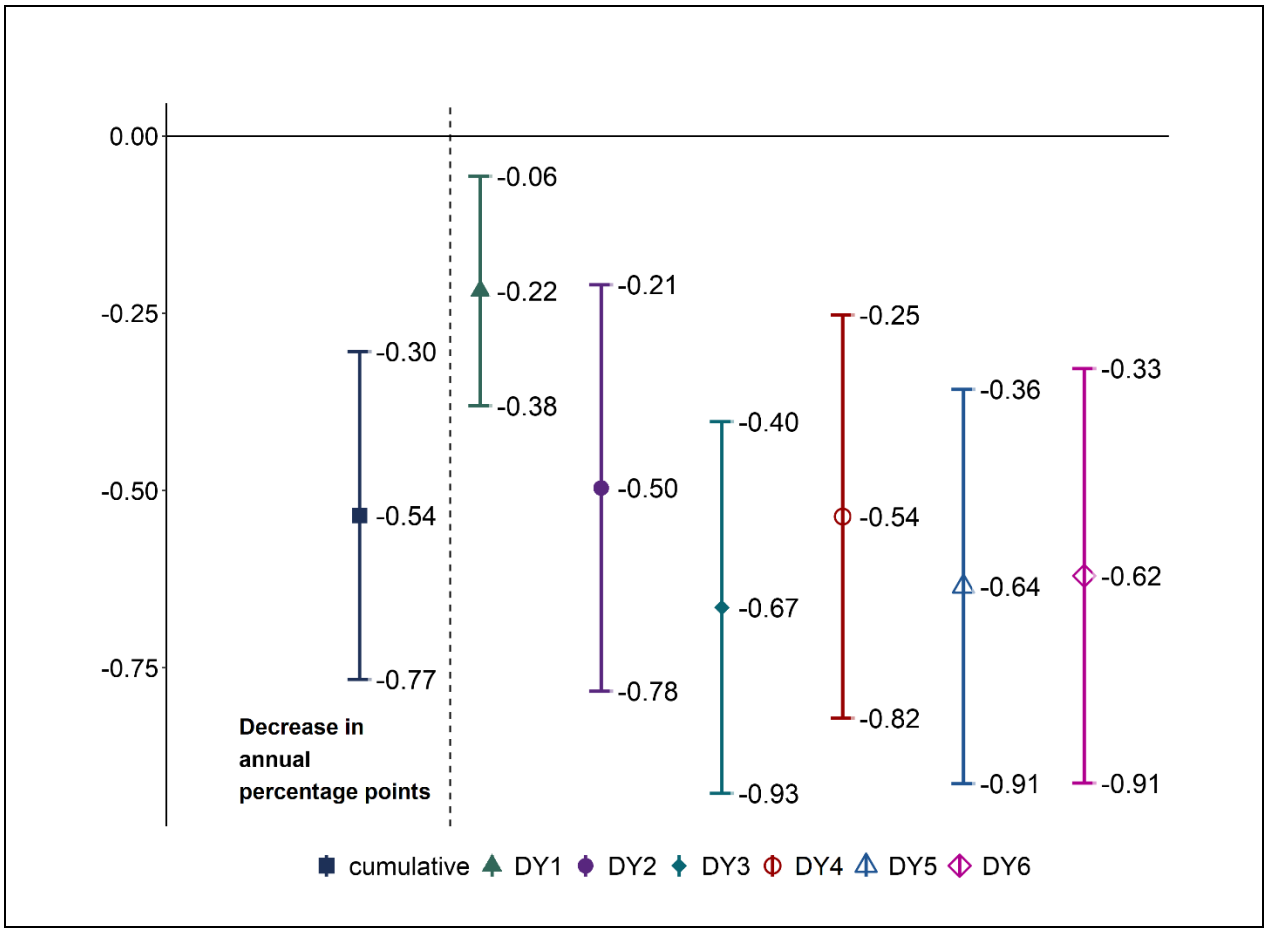
DY = demonstration year; E&M = evaluation and management.
NOTES: 95 percent confidence intervals are shown. The expected direction of effect (Increase or Decrease) is in **bold**.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

Figure 5-4
Cumulative and annual demonstration effects on SNF admissions in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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

Figure 5-5
Cumulative and annual demonstration effects on long-stay NF use in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



DY = demonstration year; NF = nursing facility.
NOTES: 95 percent confidence intervals are shown. The expected direction of 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 demonstration was associated with an increase in the monthly probability of overall and chronic ambulatory care sensitive condition (ACSC) admissions by 6.8 percent and 11.4 percent, respectively, relative to the comparison group. Additionally, the number of all-cause 30-day readmissions increased by 5.3 percent in the demonstration group, relative to the comparison group. There were no demonstration impacts on the number of preventable ED visits or the probability of 30-day follow-up after mental health discharge.

5.3.1 Cumulative Impact Over Demonstration Years 1–6

The Massachusetts demonstration is expected to improve quality of care, as a result of care coordination and increased access to needed services. Over the first 6 years of the demonstration, there were increases in the monthly probability of overall and chronic ACSC admissions and in the number of all-cause 30-day readmissions relative to the comparison group. ***Table 5-2*** illustrates the cumulative impact and adjusted means for these and other quality of care measures.

- The Massachusetts demonstration was associated with a 0.03 percentage point increase in the monthly probability of overall ACSC admissions and chronic ACSC admissions, relative to the comparison group. This represents a 6.8 percent increase for overall ACSC admissions relative to the comparison group during the demonstration period (0.44 percent) and a 11.4 percent increase for chronic ACSC admissions in the demonstration group relative to the comparison group during the demonstration period (31 percent). Although the monthly probability of having any ACSC admission (overall) decreased for both the demonstration and comparison groups during the demonstration period, the decrease for the comparison group was greater. The probability of any ACSC admission (chronic) did not change in the demonstration group during the demonstration period, whereas it decreased in the comparison group.[35]
- The number of all-cause 30-day readmissions increased in the demonstration group relative to the comparison group by 13.54 readmissions per 1,000 discharges. This is a 5.3 percent relative increase over the number of all-cause 30-day readmissions in the comparison group during the demonstration period (255.28 readmissions per 1,000 discharges).
- These findings are similar to what was reported in the Fourth Evaluation Report. Care coordinator turnover, described earlier in this section**,** as well as structural challenges, such as communicating about a beneficiary's behavioral health needs among different providers, were barriers to fully integrating services and communication across plans and providers. These barriers may have made it difficult to manage beneficiaries with chronic conditions in an outpatient setting, or coordinate services post-discharge.

[35] ***Appendix E, Table E-6*** suggests the trends in the rate of ACSC admissions (overall and chronic) in the demonstration and comparison groups were not parallel during the pre-demonstration period. To test the robustness of our results, we ran a supplemental model controlling for the differences in trends between the two groups during the predemonstration period. The results of this supplemental model were not meaningfully different than the main analysis results presented here.

Table 5-2
Cumulative demonstration impact on select quality of care measures in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Group	Adjusted mean for predemonstration period	Adjusted mean for demonstration period	Regression-adjusted DinD estimate (95% confidence interval)	Relative difference (%)	*p*-value
Monthly number of preventable ED visits per 1,000 beneficiaries	Demonstration	37.51	37.09	0.06 (−1.62, 1.74)	NS	0.9436
	Comparison	40.67	40.16			
Monthly probability of any ACSC admission, overall (%)	Demonstration	0.45	0.41	0.03* (0.00, 0.06)	6.8	0.0354
	Comparison	0.51	0.44			
Monthly probability of any ACSC admission, chronic (%)	Demonstration	0.30	0.30	0.03** (0.01, 0.06)	11.4	0.0098
	Comparison	0.34	0.31			
Probability of 30-day follow-up after mental health discharge (%)	Demonstration	59.12	52.78	−1.94 (−4.39, 0.50)	NS	0.1190
	Comparison	51.35	46.85			
Number of all-cause 30-day readmissions per 1,000 discharges	Demonstration	255.56	261.20	13.54** (5.17, 21.91)	5.3	0.0015
	Comparison	262.87	255.28			

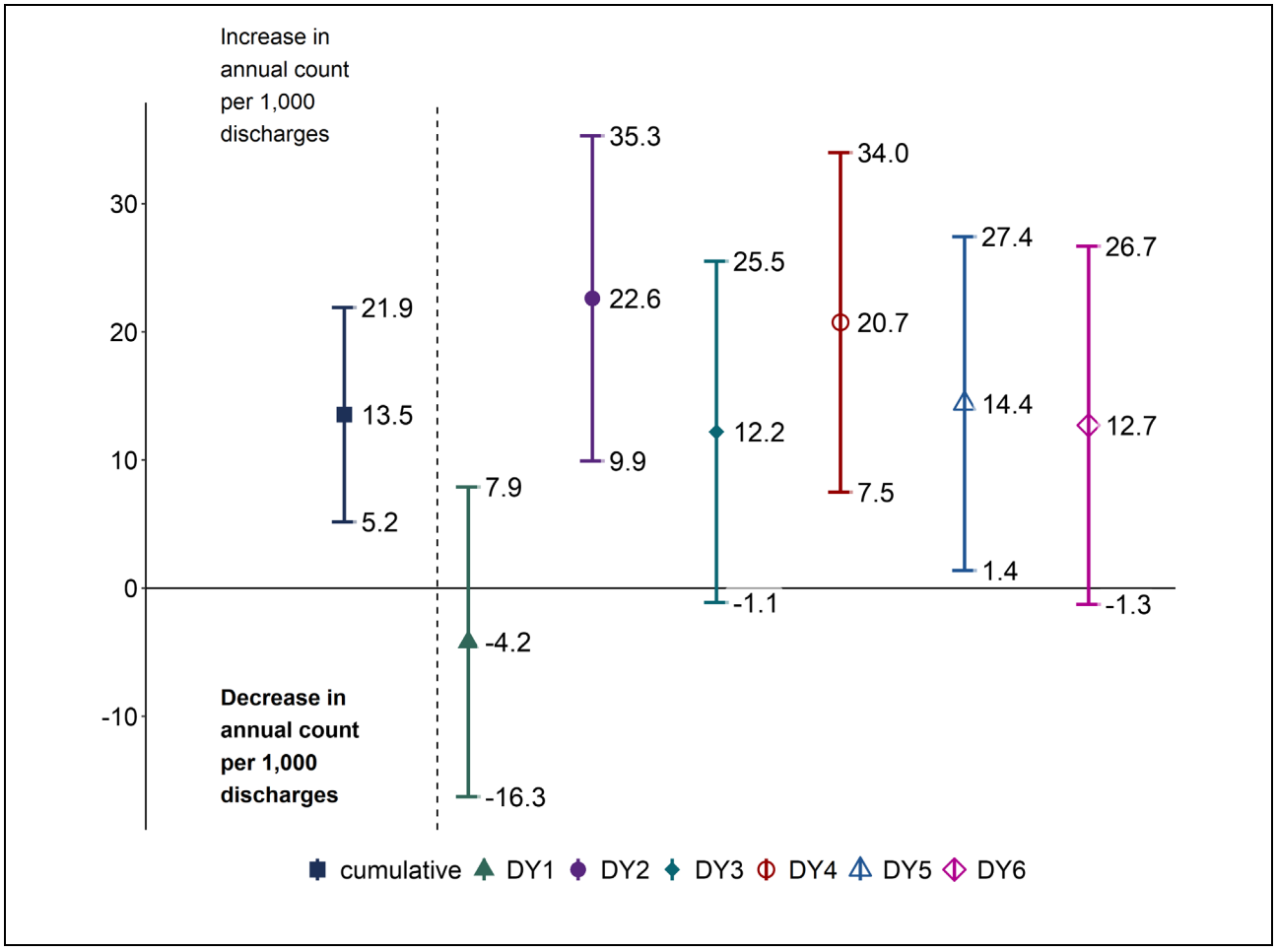
*p < 0.05; **p < 0.01; ***p < 0.001
ACSC = ambulatory care sensitive condition; DinD = difference-in-differences; ED = emergency department; NS = not statistically significant.
NOTES: The adjusted mean is the regression-adjusted predicted probability or number of events for the predemonstration and demonstration 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. 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.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

5.4 Demonstration Impact in Each Demonstration Year

Figures 5-6 through ***5-10*** 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, respectively, with cumulative impacts also shown as points of comparison. These annual impact estimates indicate that the Massachusetts demonstration was associated with an increase in the probability of overall ACSC admissions in demonstration year 6 and in the probability of chronic ACSC admissions in demonstration years 1 and 6. The demonstration was also associated with an increase in the number of all-cause 30-day readmissions in demonstration years 2, 4, and 5 and a decrease in the probability of 30-day follow-up after mental health discharge in demonstration years 5 and 6.

- The demonstration was associated with an annual increase in the number of 30-day readmissions in demonstration years 2, 4, and 5 by 22.6, 20.7, and 14.4 readmissions per 1,000 discharges per year, respectively, relative to the comparison group, among beneficiaries with any index discharge during the year (see ***Figure 5-6***).

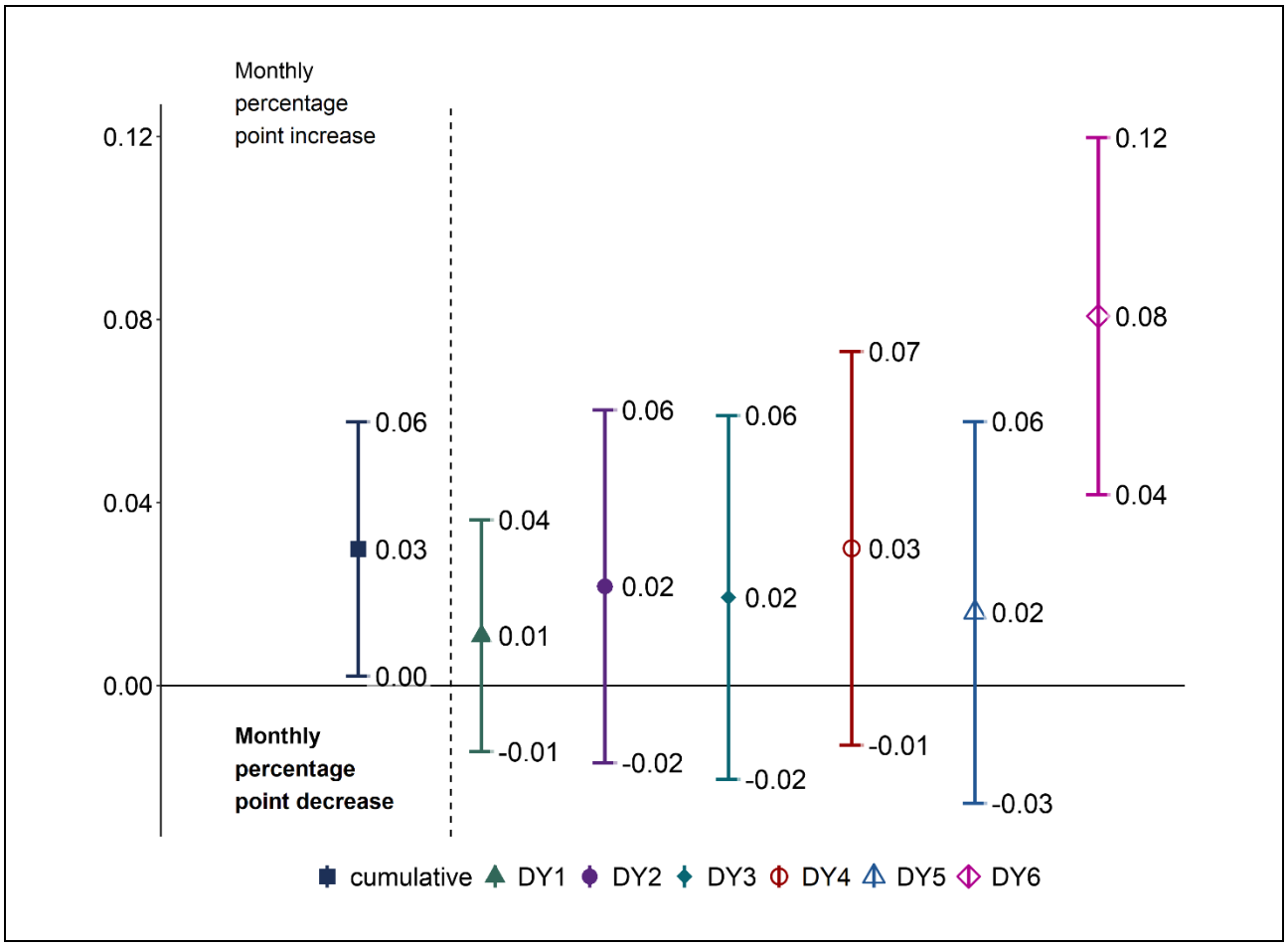
Figure 5-6
Cumulative and annual demonstration effects on 30-day readmissions in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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

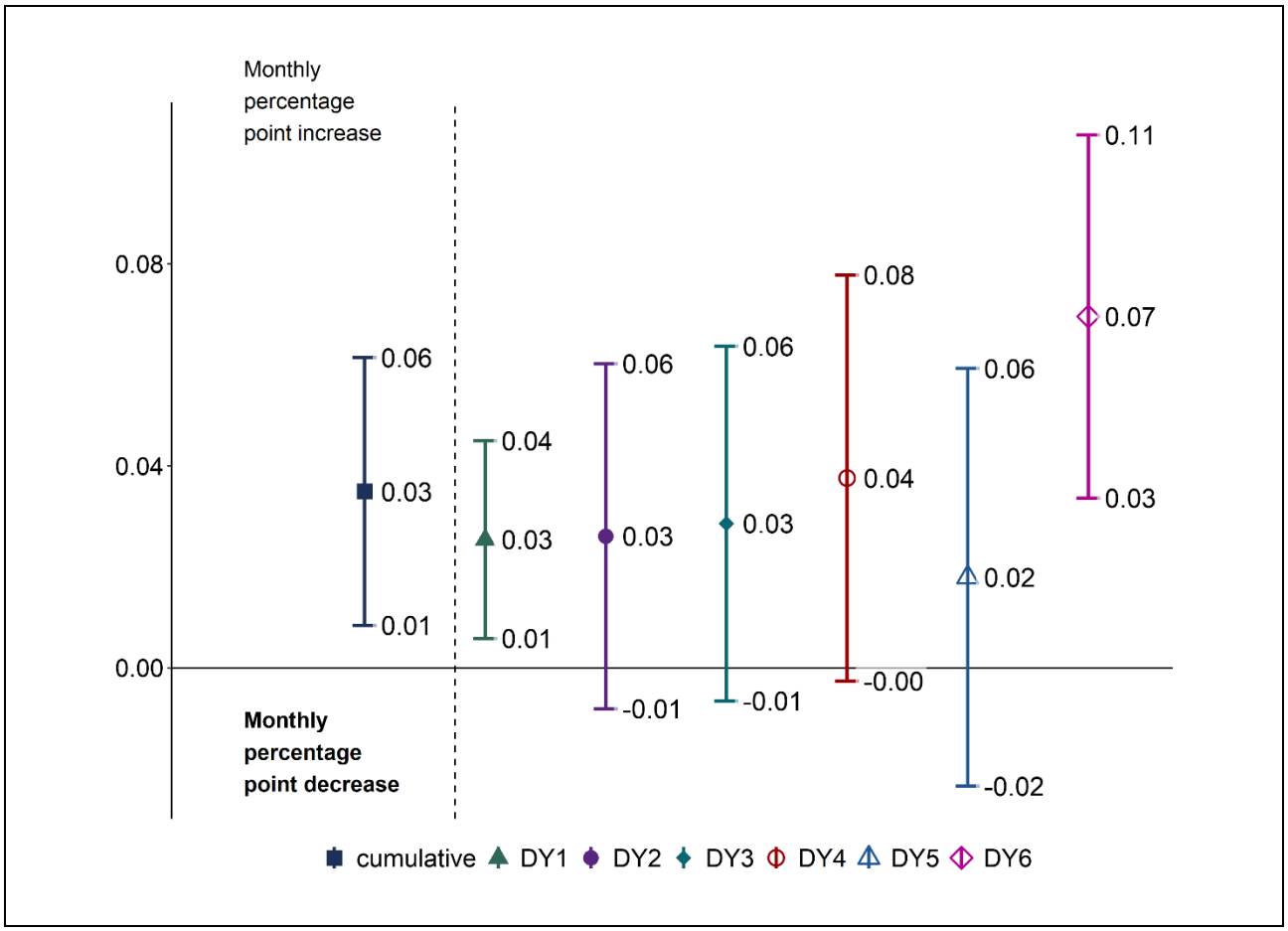
- In demonstration year 6, the monthly probability of any overall ACSC admission increased by 0.08 percentage points in the demonstration group, relative to the comparison group. The monthly probability of any chronic ACSC admission increased by 0.03 and 0.07 percentage points in demonstration years 1 and 6, respectively, relative to the comparison group (see ***Figure 5-7*** and ***Figure 5-8***).

Figure 5-7
Cumulative and annual demonstration effects on ACSC admissions (overall) in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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

Figure 5-8
Cumulative and annual demonstration effects on ACSC admissions (chronic) in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

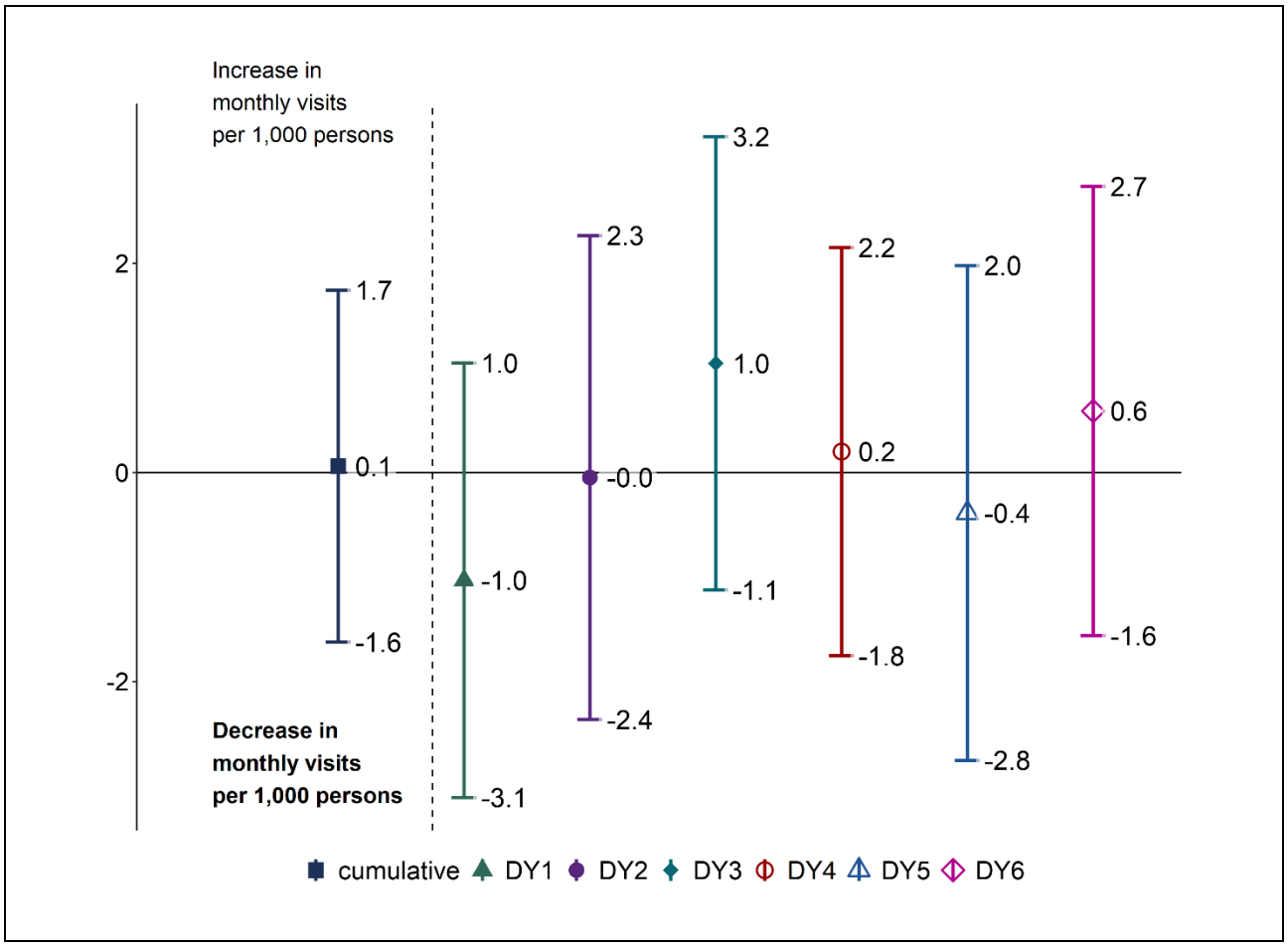


ACSC = ambulatory care sensitive condition; DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of effect (Increase or Decrease) is in **bold**.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data.

- The monthly probability of a 30-day follow-up after a mental health discharge in the demonstration group decreased in demonstration years 5 and 6 by 4.00 and 3.73 percentage points, respectively, relative to the comparison group (see ***Figure 5-10***).
  - The overall trend in the rate of 30-day mental health follow-up was decreasing in both the demonstration and comparison groups from demonstration year 1 to demonstration 6 (see ***Appendix E, Table E-7***). Although there was not a cumulative demonstration impact on 30-day mental health follow-up, annual impact estimates suggest that the there was a greater decrease in the demonstration group during the later years of the demonstration period. These decreases are unexpected and are in contrast to efforts by MMPs which had implemented Quality Improvement activities focused on behavioral health needs in 2018 through 2020 (see ***Section 3.6, Quality of Care***).

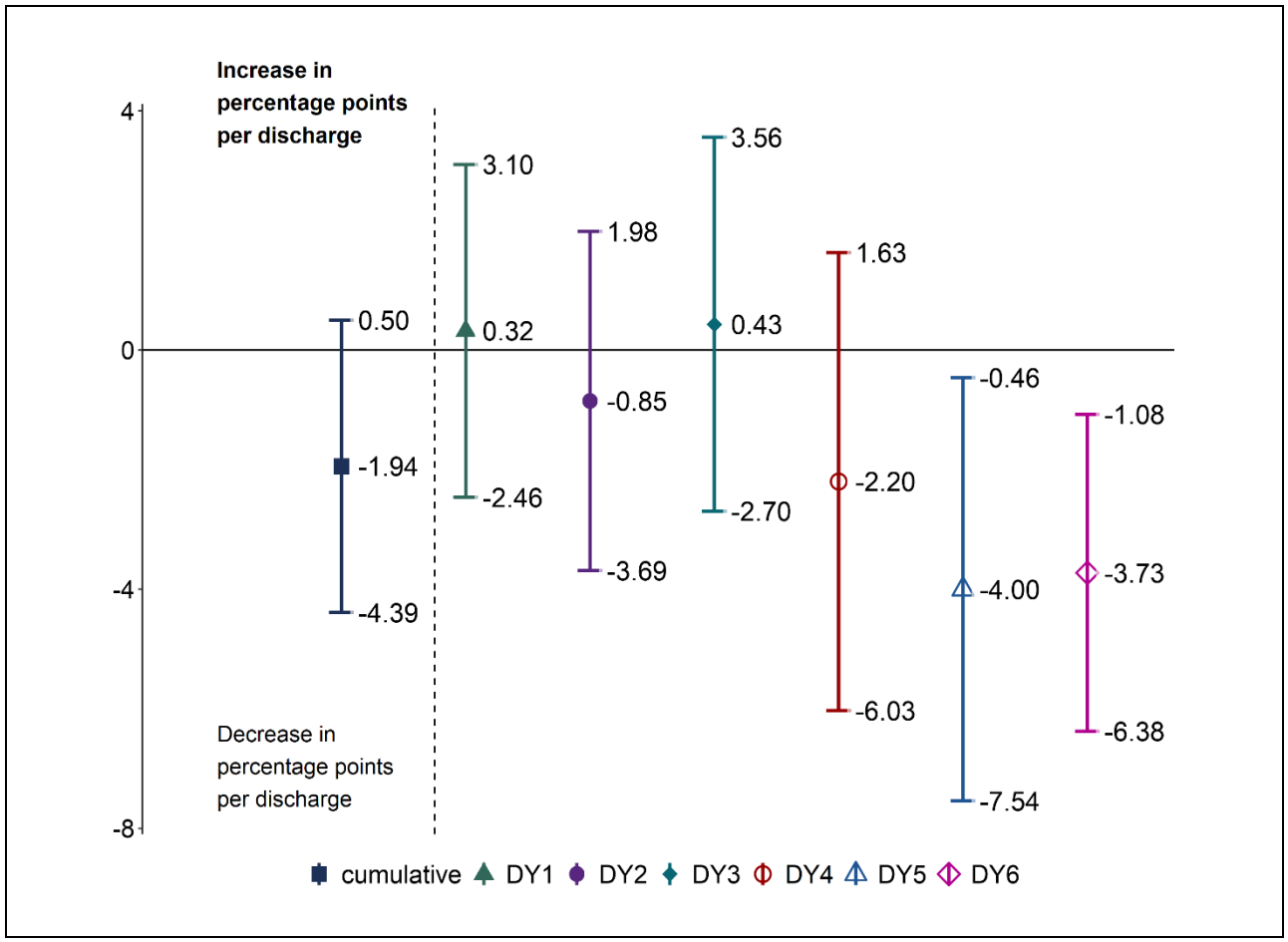
There was no statistically significant effect on the number of preventable ED visits in any demonstration year (see ***Figure 5-9***).

Figure 5-9
Cumulative and annual demonstration effects on preventable ED visits in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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

Figure 5-10
Cumulative and annual demonstration effects on 30-day follow-up post mental health discharge in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



DY = demonstration year.
NOTE: 95 percent confidence intervals are shown. The expected direction of 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 utilization and quality of care measures for the demonstration eligible population and for demonstration enrollees (i.e., beneficiaries who enrolled in MMPs).

5.5 Demonstration Impact on Special Populations

During demonstration years 1 through 6, the demonstration impacted the LTSS population less favorably than the non-LTSS population. The demonstration effect for LTSS users was an increase in the monthly probability of any inpatient admission and any SNF admission, relative to the demonstration effect for non-LTSS users. The demonstration was also associated with an increase in the monthly number of preventable ED visits and in the annual number all-cause 30-day readmissions for LTSS users, relative to the demonstration effect among non-LTSS users.

The demonstration effect for beneficiaries with SPMI was slightly less favorable than among the non-SPMI population, with an increase in the number of all-cause 30-day readmissions relative to the demonstration effect for those without SPMI.

Among the key goals of the 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 those with an SPMI, compared to those not in these special populations (see group definitions in ***Appendix D***). However, the special population analyses indicate that the demonstration impacts were less favorable for LTSS users and beneficiaries with SPMI, relative to the demonstration impacts among non-LTSS users and those without SPMI (see ***Tables E-2*** and ***E-3*** in ***Appendix E***). Caution should be used when interpreting the results for LTSS users, who comprise less than 1 percent of the demonstration eligible population.

See ***Tables E-5*** 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 results by racial and ethnic groups among the eligible population for select utilization measures: inpatient admissions, ED (non-admit), physician E&M visits, outpatient therapy (physical therapy, occupational therapy, and speech therapy), and hospice use (see ***Figures E-1, E-2,*** and ***E-3*** in ***Appendix E***).

5.5.1 Beneficiaries Receiving Long-Term Services and Supports

As indicated in ***Table D-1*** in ***Appendix D***, less than 1 percent of the demonstration eligible population in demonstration year 6 had any LTSS use. The demonstration impacted service utilization measures for those with LTSS use differently than for those with no LTSS use (see ***Table 5-3***). The cumulative demonstration effect for beneficiaries with LTSS use was a 1.54 percentage point increase in the monthly probability of any inpatient admission and a 1.40 percentage point increase in the monthly probability of any SNF admission, relative to the demonstration effect for beneficiaries without LTSS use. In addition, the demonstration effect for beneficiaries with LTSS use was an increase of 8.50 preventable ED visits per 1,000

beneficiaries per month and an increase of 93.61 all-cause 30-day readmissions per 1,000 discharges, relative to the demonstration effect among beneficiaries with no LTSS use.

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

Table 5-3
Cumulative demonstration effect on service utilization and quality of care measures, beneficiaries with LTSS use versus those without LTSS use in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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						
Monthly probability of any inpatient admission (%)	LTSS	1.66	25.4	0.0007	0.70, 2.63	1.54**
	Non-LTSS	0.13	4.4	0.0184	0.02, 0.23	
Monthly probability of any ED visit (%)	LTSS	0.45	NS	0.3848	−0.57, 1.48	0.50
	Non-LTSS	−0.04	NS	0.7054	−0.25, 0.17	
Monthly number of physician E&M visits per 1,000 beneficiaries	LTSS	98.92	NS	0.3893	−126.26, 324.10	8.65
	Non-LTSS	90.26	10.4	<0.0001	50.06, 130.46	
Monthly probability of any SNF admission (%)	LTSS	1.39	38.1	<0.0001	0.81, 1.97	1.40***
	Non-LTSS	–0.01	NS	0.2299	–0.03, 0.01	
Quality of Care Measures						
Monthly number of preventable ED visits per 1,000 beneficiaries	LTSS	8.28	32.7	0.0147	1.63, 14.93	8.50**
	Non-LTSS	−0.22	NS	0.7976	−1.90, 1.46	
Monthly probability of any ACSC admission, overall (%)	LTSS	0.08	NS	0.5515	−0.19, 0.35	0.05
	Non-LTSS	0.03	7.9	0.0075	0.01, 0.05	
Monthly probability of any ACSC admission, chronic (%)	LTSS	0.18	NS	0.0777	−0.02, 0.39	0.15
	Non-LTSS	0.03	12.2	0.0039	0.01, 0.05	
Probability of 30-day follow-up after mental health discharge (%)	LTSS	−0.96	NS	0.8857	−14.02, 12.10	1.41
	Non-LTSS	−2.37	−5.0	0.0488	−4.72, −0.01	
Number of all-cause 30-day readmissions per 1,000 discharges	LTSS	99.85	30.1	0.0022	35.90, 163.79	93.61**
	Non-LTSS	6.23	NS	0.2060	−3.43, 15.90	

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

5.5.2 Beneficiaries with Serious and Persistent Mental Illness

As indicated in ***Table D-1*** in ***Appendix D***, 64.6 percent of the demonstration eligible population in demonstration year 6 had an SPMI. The demonstration impacted those with SPMI differently than those without SPMI (see ***Table 5-4***) on one measure. The demonstration effect for those with SPMI on the number of all-cause 30-day readmissions was an increase of 18.02 readmissions per 1,000 discharges, relative to the demonstration effect for those without SPMI.

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

Table 5-4
Cumulative demonstration effect on service utilization and quality of care measures, beneficiaries with SPMI versus those without SPMI in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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						
Monthly probability of any inpatient admission (%)	SPMI	0.14	NS	0.1088	−0.03, 0.31	0.13
	Non-SPMI	0.00	NS	0.9179	−0.06, 0.07	
Monthly probability of any ED visit (%)	SPMI	−0.19	NS	0.2835	−0.53, 0.15	−0.14
	Non-SPMI	−0.05	NS	0.6620	−0.25, 0.16	
Monthly number of physician E&M visits per 1,000 beneficiaries	SPMI	69.82	5.8	0.0052	20.83, 118.80	30.11
	Non-SPMI	39.71	5.9	0.0002	18.91, 60.51	
Monthly probability of any SNF admission (%)	SPMI	0.04	5.9	0.0436	0.00, 0.08	0.03
	Non-SPMI	0.01	NS	0.2875	−0.01, 0.03	
Quality of Care Measures						
Monthly number of preventable ED visits per 1,000 beneficiaries	SPMI	−0.14	NS	0.9163	−2.85, 2.56	0.46
	Non-SPMI	−0.61	NS	0.4322	−2.12, 0.91	
Monthly probability of any ACSC admission, overall (%)	SPMI	0.03	NS	0.1540	−0.01, 0.08	0.03
	Non-SPMI	0.00	NS	0.9382	−0.02, 0.02	
Monthly probability of any ACSC admission, chronic (%)	SPMI	0.03	NS	0.1316	−0.01, 0.08	0.02
	Non-SPMI	0.02	NS	0.0797	−0.00, 0.03	

(continued)

Table 5-4 (continued)
Cumulative demonstration effect on service utilization and quality of care measures, beneficiaries with SPMI versus those without SPMI in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Special population	Demonstration effect relative to comparison group	Relative difference (%)	p-value	95% confidence interval	Difference in demonstration effect (SPMI versus non-SPMI)
Number of all-cause 30-day readmissions per 1,000 discharges	SPMI	16.91	6.0	0.0028	5.80, 28.01	18.02*
	Non-SPMI	−1.11	NS	0.8593	−13.37, 11.15	

*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 SPMI; the difference-in-differences estimate is reported in ***Table 5-2***.
SOURCE: RTI International analysis of Medicare fee-for-service claims and encounter data

SECTION 6

Demonstration Impact on Cost Savings

The demonstration was associated with an increase of $36.98, PMPM, in Medicare Parts A and B costs among eligible beneficiaries over the first 6 demonstration years, relative to the comparison group.

The demonstration was also associated with an increase of $129.02, PMPM, in Medicaid costs among eligible beneficiaries over the first 6 demonstration years, relative to the comparison group.

6.1 Methods Overview

As part of the capitated financial alignment model, Massachusetts, CMS, and MMPs entered into a three-way contract to provide services to MMP enrollees. MMPs receive three separate blended, risk-adjusted prospective capitated payments for Medicare Parts A and B, Medicare Part D, and Medicaid services. The first two payments are from the Medicare program, and the third comes from the State. CMS and Massachusetts developed the capitation payments that account for the services provided and adjust 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 on the FAI website.[36]

This section presents the Medicare Parts A and B cost savings analysis for demonstration years 1 to 6 (October 2013 to December 2019). This section also presents the Medicaid cost savings analysis for demonstration years 1 to 6.

We used an ITT analytic framework that includes beneficiaries eligible for the demonstration rather than only those who enrolled. The ITT framework alleviates concerns of selection bias, supports generalizability of the results among the demonstration eligible population, and mimics the real-world implementation of the demonstration. For this analysis, enrolled beneficiaries account for approximately 26 percent of all eligible beneficiaries (including FFS beneficiaries, MMP enrollees, and Medicare Advantage enrollees) in demonstration year 6.[37] The remaining 74 percent of those in the demonstration group are beneficiaries who are eligible for an MMP but not enrolled (non-enrollees). Descriptive results obtained under the ITT framework are provided in ***Appendix F*** (see ***Table F-3***). Results from a separate analysis, using a more restricted definition of MMP enrollees and their comparison group counterparts, are included in ***Appendix F*** (see ***Table F-18***).

To evaluate the Medicare cost implications of the demonstration, RTI performed a DinD analysis of Medicare Parts A and B expenditures that compares demonstration eligible

[36] For the MOU, see Memorandum of Understanding (MOU) (cms.gov); for the three-way contract (original), see Contract Between United States Department of Health and Human Services Centers for Medicare & Medicaid Services In Partnership with The Commonwealth of Massachusetts (Effective January 1, 2022) (cms.gov).

[37] The enrollment percentages reported in this section may be different than what was reported in ***Section 3.2, Eligibility and Enrollment*** because of the timing for completion and submitting the finder file versus the SDRS; and they may be different from those reported in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care*** because of the inclusion of beneficiaries enrolled in Medicare Advantage.

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. The comparison group methodology is identical to the service utilization analyses (see ***Appendix C*** for details).

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 evaluate the Medicaid cost implications of the demonstration, RTI performed a DinD analysis of Medicaid expenditures using the same regression methodology as was used for the Medicare cost analysis.[38] The demonstration group included in Medicaid cost analysis was a subset of that in Medicare cost analysis, with enrollees in 1915(c) waivers excluded (see details in ***Appendix F***). The comparison group was also a subset of that used in Medicare cost analysis, with individuals from the States of Mississippi, Pennsylvania, and Wisconsin removed due to Medicaid data quality issues (see details in ***Appendix F***). Separate weights were calculated for the comparison group used in Medicaid cost analysis. 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. Unless otherwise specified in ***Appendix F***, the analysis of Medicaid expenditures followed the methodology of the Medicare cost savings analysis.

6.2 Demonstration Impact on Medicare Parts A and B Costs

Table 6-1 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 for monthly expenditure increased from the predemonstration period to the demonstration period in both the demonstration and comparison groups. The cumulative DinD estimate of $36.98 PMPM, which amounts to a relative difference of 3.64 percent of the adjusted mean expenditure for the comparison group during the demonstration period, is statistically significant ($p < 0.05$). This suggests that overall, the Massachusetts demonstration was associated with statistically significant increases in Medicare Parts A and B costs relative to the comparison group.

In addition, we estimated the effect of the demonstration in each demonstration year. As shown in ***Figure 6-1*** the demonstration was not associated with statistically significant changes in Medicare Parts A and B costs in demonstration years 1 and 2. However, in demonstration years 3-6 the results were statistically significant, indicating the demonstration was associated with an increase in costs to the Medicare program during those years, relative to the comparison group.

[38] 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***.

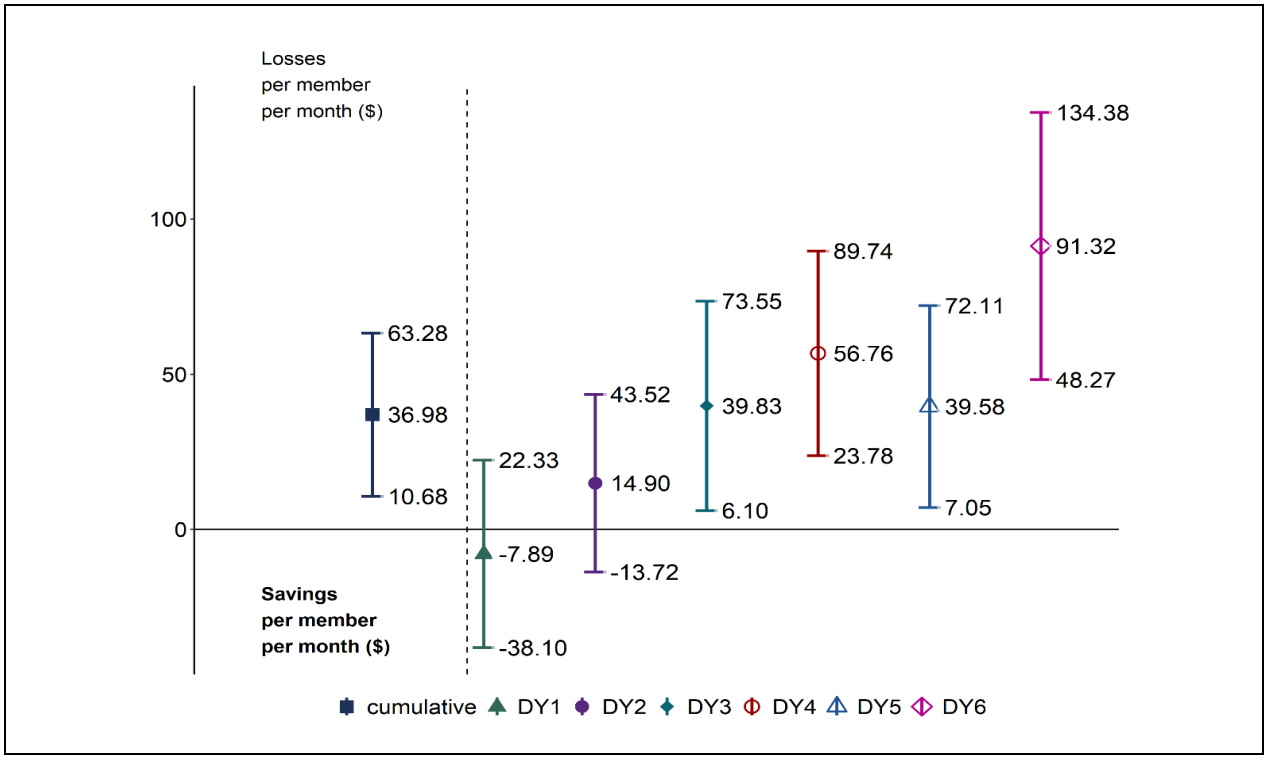
There are some caveats to these findings. These estimates rely on an ITT analytic framework, which means beneficiaries who are eligible but not enrolled are included in this analysis. Part D payments were not included in this analysis and thus are not captured in these estimates, and the capitated rates included for enrollees in MMPs or Medicare Advantage plans are not the actual amount the plan paid for the services.

Table 6-1
Cumulative demonstration impact on monthly Medicare Parts A and B costs in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Group	Adjusted mean for predemonstration period ($)	Adjusted mean for demonstration period ($)	Adjusted coefficient DinD ($)	Relative difference (%)	*p*-value
Demonstration	941.12	993.05	36.98	3.64	0.0058
Comparison	1,000.88	1,016.09			

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0150_final.log)

Figure 6-1
Cumulative and annual demonstration effects on monthly Medicare Parts A and B costs in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0140_GLM.log)

To help understand these results, we conducted additional descriptive analyses comparing MMP rates with the expected FFS expenditures that would have otherwise occurred for the enrolled population. The extent to which the MMP capitated payment rates are set higher or lower relative to what CMS would have paid under traditional FFS Medicare could affect the impact estimates. We found that MMP rates were higher than enrollee's anticipated FFS experience in demonstration year 2 and mostly lower than enrollees' anticipated FFS experience in demonstration year 6. However, this finding alone is not sufficient for the demonstration to achieve cost savings given the low enrollment in MMPs. We also conducted an analysis of spending and hierarchical conditions category (HCC) characteristics among the enrolled population during the predemonstration period. We found that enrollees had lower cost and were healthier than the demonstration eligible but never enrolled beneficiaries. The details of these analyses are provided in ***Appendix G***, along with an interpretation and discussion of the results.

6.3 Demonstration Impact on Medicaid Costs

Table 6-2 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. Note that both the demonstration group and the comparison group in the Medicaid cost analysis are subsets of the demonstration and comparison groups used in the Medicare cost analysis, with Mississippi, Pennsylvania, and Wisconsin omitted from the comparison group. Medicaid-specific propensity weights balance the characteristics of the demonstration group and the comparison group (see ***Section C.7*** in ***Appendix C***). The adjusted mean monthly expenditure increased from the predemonstration period to the demonstration period in the demonstration group, with a smaller relative increase in the comparison group. The cumulative DinD estimate of $129.02 PMPM, which amounts to a relative difference of 6.61 percent of the adjusted mean expenditure for the comparison group during the demonstration period, is statistically significant ($p < 0.001$). This suggests that overall, the Massachusetts demonstration was associated with statistically significant increases in Medicaid costs relative to the comparison group.

Table 6-2
Cumulative demonstration effect on Medicaid costs for eligible beneficiaries in Massachusetts, demonstration years 1-6, October 1, 2013–December 31, 2019

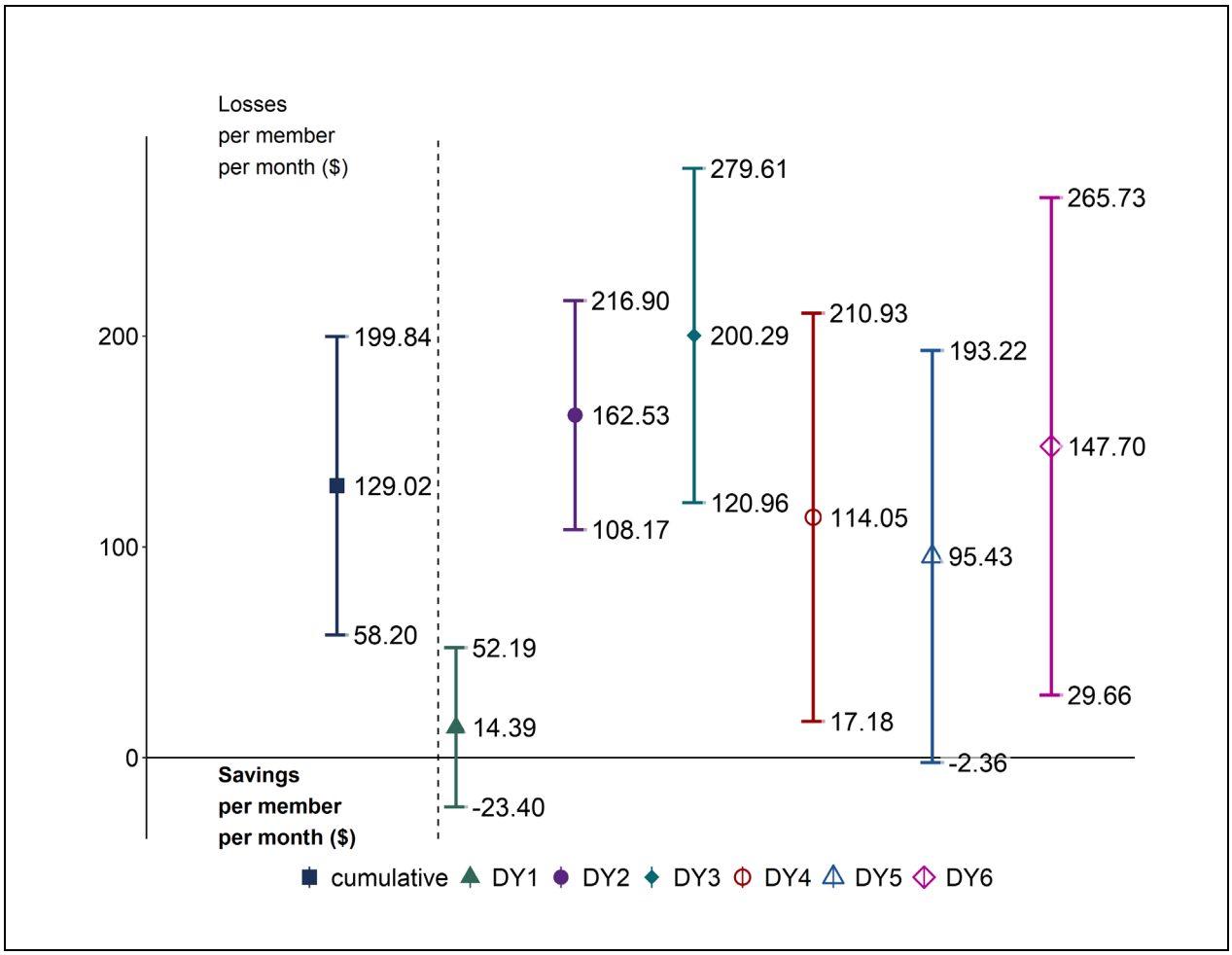
Group	Adjusted mean for predemonstration period ($)	Adjusted mean for demonstration period ($)	Adjusted coefficient DinD ($)	Relative difference (%)	*p*-value
Demonstration	702.22	916.54	129.02	6.61	<0.001
Comparison	1,767.86	1,952.17			

DinD = difference-in-differences.
NOTE: Demonstration group does not include enrollees in 1915(c) waivers. Comparison group does not include Mississippi, Pennsylvania, or Wisconsin.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)/Medicaid/Syntax/30_Regression.do)

In addition, we estimated the effect of the demonstration in each of the 6 demonstration years. As shown in ***Figure 6-2***, the demonstration had a statistically significant effect in demonstration years 2, 3, 4 and 6 (as shown by the confidence intervals above $0) indicating

increases in Medicaid costs in the demonstration group relative to the comparison group in each of those years. The coefficients in each of the 6 demonstration years varied in magnitude, with the highest effect in demonstration year 3. Note that these estimates rely on the ITT analytic framework, exclude Medicaid prescription drug costs, and are reliant upon the completeness and the accuracy of the Medicaid cost data included in the T-MSIS.

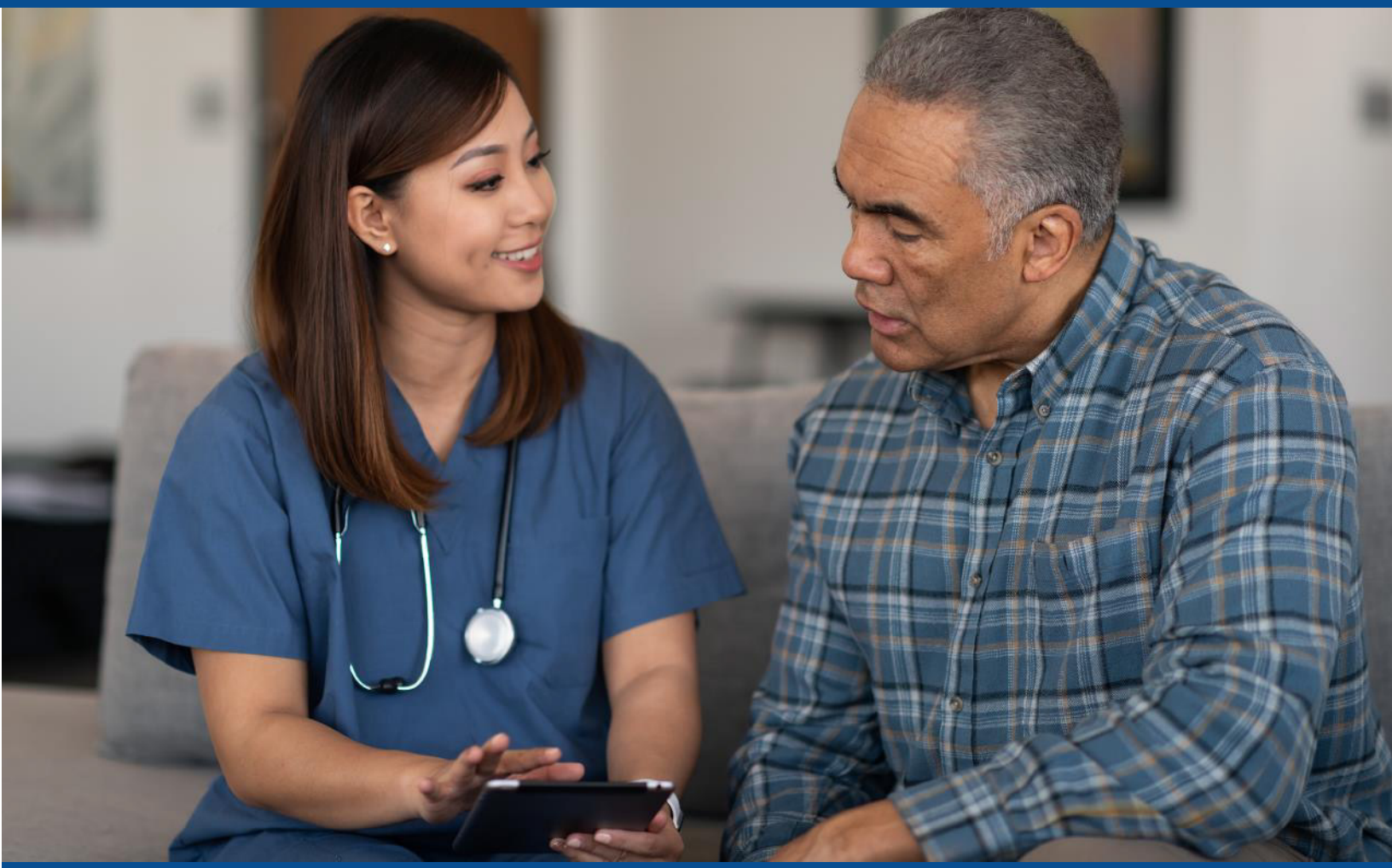
Figure 6-2
Cumulative and annual demonstration effects on monthly Medicaid costs in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019



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 demonstration group does not include enrollees in 1915(c) waivers. The comparison group does not include Mississippi, Pennsylvania, or Wisconsin.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)/medicaid/Syntax/30_Regression.do)

SECTION 7

Conclusions



7.1 Implementation Successes, Challenges, and Lessons Learned

CMS and EOHHS launched One Care on October 1, 2013, as the first capitated demonstration under the FAI. Although one MMP withdrew in 2015, the demonstration continued to increase enrollment and extend its geographic coverage. A third MMP entered the demonstration as of January 1, 2022, providing beneficiaries with a choice of at least two MMPs in 10 of the 12 counties where One Care was offered. One Care is offered in all mainland (non-island) counties of the Commonwealth.

One Care was designed as an innovative and person-centered model of care to serve a complex population, many with LTSS and behavioral health needs. It is the only demonstration under the FAI that limits enrollment to dually eligible beneficiaries aged 21 to 64 at the time of enrollment. Although perspectives and opinions have differed about the degree of implementation success in achieving some of its goals, EOHHS, MMPs, and stakeholders agree that One Care's design and model of integrated care best meets the needs of the population served by the demonstration.

The demonstration's care model—notably, care coordination—serves as the centerpiece of the demonstration. Although EOHHS and MMPs have refined aspects of the care model based on lessons learned in serving this population, the Implementation Council has continued to seek improvements to ensure beneficiaries' experiences align with the demonstration's principles of delivering member-centered, coordinated, and culturally competent care. In part, EOHHS, MMPs, and stakeholders have expressed differing perspectives over time on One Care's effectiveness at balancing growth and scalability with innovation and person-centered services. To address some of these concerns, MassHealth launched a comprehensive CMFI in January 2022 to reinforce the original goals of One Care and ensure fidelity to the principles of delivering member-centered, culturally competent care.

One Care has been characterized by robust and meaningful stakeholder engagement beyond what EOHHS generally experienced in its other programming. The demonstration design embedded a formal structure for ongoing stakeholder voice, and EOHHS has supported that role by funding dedicated staffing for the council and having EOHHS staff regularly participate in meetings. As discussed in previous evaluation reports, the work of Implementation Council has shaped demonstration design and implementation. EOHHS, CMS, and the MMPs expressed an interest in continuing this stakeholder engagement model in whatever form the demonstration takes on in the future.

Although the State noted that demonstration efforts over the last several years had been impacted by the PHE, EOHHS continued its efforts to seek innovative ways to improve the delivery of care to dual-eligible beneficiaries. With the issuance by CMS of its Final Rule Contract Year 2023 Policy and Technical Changes to the Medicare Advantage and Medicare Prescription Drug Benefit Programs in April 2022, as of June 2022 EOHHS was evaluating the implications for One Care, the Duals Demonstration 2.0, and options for moving forward.

7.2 Demonstration Impact on Service Utilization and Costs

Over the course of the demonstration through CY 2019, there were mostly consistent, unfavorable changes in service utilization and quality of care measures among Massachusetts demonstration eligible beneficiaries relative to the comparison group. Specifically, the probability of inpatient admission, SNF admission, and ACSC admission (overall and chronic), and the number of all-cause 30-day readmissions increased among the demonstration group relative to the comparison group. On the other hand, there was a favorable increase in physician E&M visits, relative to the comparison group. In addition, we found a greater decrease in long-stay NF use in the demonstration group, relative to the comparison group; however, we do not think it is reasonable to attribute this relative decrease to the demonstration because long-stay NF users represented less than 1 percent of those enrolled in the demonstration.

The increase in physician E&M visits is consistent with the care coordination activities and improvements described by MMPs and Commonwealth officials in previous reports. However, there are a number of possible explanations for the other generally unfavorable results. Increases in inpatient and SNF use may in part be explained by care coordinator turnover from 2014 through 2019. Similar to what was reported in the Fourth Evaluation Report, stakeholders also identified structural issues, such as barriers to communicating behavioral health information across providers, that made it difficult to fully integrate services across plans and providers. In turn, this may have posed challenges to coordinating care for those with chronic conditions, or reducing acute and post-acute admissions, and providing follow-up services after a mental health related discharge. These findings also correspond with the One Care MMP performance on HEDIS measures for ambulatory outpatient visits described in ***Section 3.6.3, Quality of Care***. Finally, approximately one-quarter of eligible beneficiaries were enrolled in the demonstration[39], thus favorable demonstration impacts may have been diluted by the utilization patterns of the eligible non-enrolled population.

The Massachusetts demonstration impacted some outcomes for beneficiaries with LTSS use and SPMI differently than those without LTSS use and SPMI. The demonstration effects for beneficiaries with LTSS use were unfavorable increases in the probability of inpatient admissions, number of all-cause 30-day readmissions, number of preventable ED visits, and probability SNF admission, relative to the demonstration effects for the non-LTSS population. Although these impacts are statistically significant, it is important to note that those with LTSS use represent less than 1 percent of the demonstration eligible sample, thus these findings are likely not attributable to the demonstration. Those with SPMI represent about 65 percent of the demonstration eligible sample, and the demonstration effect among these beneficiaries was an unfavorable increase in the number of all-cause 30-day readmissions relative to the demonstration effect for those without SPMI. The lack of any evidence showing favorable impacts for the SPMI population, or on 30-day mental health follow-up, may reflect the challenges MMPs had in fully integrating behavioral health services for beneficiaries.

[39] The enrollment percentages reported in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care*** may be different than what was reported in ***Section 3.2, Eligibility and Enrollment*** because of the timing for completion and submitting the finder file versus the SDRS, and those reported in ***Section 6, Demonstration Impact on Cost Savings*** because of the exclusion of beneficiaries enrolled in Medicare Advantage.

The cumulative cost analysis found a statistically significant cost increase of $36.98, PMPM, to the Medicare program over the first 6 demonstration years among demonstration eligible beneficiaries, relative to the comparison group. The analysis of individual demonstration years also found increased Medicare Parts A and B costs in 4 of the 6 demonstration years evaluated. Several factors could explain why savings have not materialized. The analysis of the demonstration's impact on Medicare costs used an ITT approach that included all eligible beneficiaries, not only those enrolled in the MMPs, to alleviate concerns about selection bias in enrollment that could not be replicated in the comparison group. Enrollees represented only about one-quarter of all demonstration eligible beneficiaries, thus making the eligible but not enrolled population substantially larger than the enrolled population. As such, the spending among the eligible but not enrolled could obscure any savings achieved among the enrolled population. Additionally, savings percentages to the MMP capitated rate were not applied during the first three demonstration periods, limiting the demonstration's capacity to decrease Medicare and Medicaid costs. Even so, once savings percentages were applied starting in demonstration year 4 (CY 2017), our results indicated increases in Medicare and Medicaid costs during each demonstration year even after the application of savings percentages.

Our findings also indicate increased Medicaid costs associated with the Massachusetts demonstration. The results of the Medicaid cost savings analyses indicate a statistically significant increase of $129.02, PMPM, cumulatively over the first 6 demonstration years among the demonstration eligible population, relative to the comparison group.

7.3 Summary

One Care, the first capitated demonstration under the FAI, was the only demonstration that focused eligibility on dually eligible beneficiaries under the age of 65. Over the course of the demonstration, Massachusetts has remained committed to delivering integrated and person-centered care to this population. One Care was implemented with a high degree of fidelity to the model design, and through passive enrollment and increased geographic coverage, enrollment reached to approximately 31,500 dually eligible beneficiaries, about one-quarter of all demonstration eligible beneficiaries, as of December 31, 2021. Although one of the three original MMPs dropped out of the demonstration in 2015, an additional MMP entered the demonstration in 2022.

The demonstration's integration of Medicare and Medicaid services provided enrollees a single card and point of contact; zero copays and access to other flexible benefits; care coordination; and integrated primary, specialty, LTSS, and behavioral health care. Stakeholder engagement has been a critical component of the One Care demonstration from its inception, and a robust level of engagement has continued through the demonstration. The Implementation Council, a beneficiary-driven council, has continued to monitor One Care to promote delivery of enrollee-centered, coordinated, and culturally competent care.

Despite these implementation successes, the demonstration has not resulted in favorable reductions in hospitalization, ED visits, Medicare or Medicaid spending, or improvements in quality of care. Our impact analyses on service use, quality of care, and costs through CY 2019 show that the Massachusetts demonstration resulted in favorable increases in physician E&M visits among demonstration eligible beneficiaries. Although this finding is favorable, increases in

physician E&M visits, perhaps as a result of broader care coordination activities by the MMPs, did not result in improvements on quality care measures such as ACSC hospitalizations or preventable ED visits, or favorable decreases in all-cause hospitalization and ED visits. With approximately one-quarter of the eligible population enrolled in the demonstration, it is possible that any improvements in quality of care or favorable reductions in hospitalizations and ED visits may have been diluted by the utilization patterns of the eligible but not enrolled population. Additionally, there was some mixed evidence that those who enrolled in the MMPs were healthier than those who were eligible but did not enroll; this would make it more difficult for the demonstration to have favorable impacts.

Similarly, our analyses show the demonstration was associated with increased Medicare and Medicaid costs, relative to the comparison group. The enrollment of relatively healthier and lower-cost beneficiaries in the MMPs limits the potential impact of the demonstration on cost savings. Moreover, savings percentages were not applied to the MMP capitated rate during the first 3 demonstration years, which would limit the demonstration's capacity to decrease Medicare or Medicaid spending. That said, savings percentages were applied to later demonstration years (CYs 2017, 2018, and 2019); but our results did not show favorable reductions in spending during those years.

Despite the lack of favorable demonstration effects on service use, spending, and quality of care measures based on the impact analysis results, beneficiary satisfaction in the demonstration has been high. Results from CAHPS surveys show that most respondents reported a high degree of satisfaction with their health and drug plans over the course of the demonstration. Furthermore, the Commonwealth remains committed to an integrated model of care for dually eligible beneficiaries, in part due to experience with One Care, and has leveraged the demonstration's enrollee-centered care principles into other reforms. Following the end of the demonstration, EOHHS anticipates transitioning to a FIDE-SNP platform and, as required by CMS, has submitted a transition plan dated September 30, 2022, outlining key policy and operational consideration and timelines. EOHHS continues to work closely with CMS and stakeholders to carry forward the integration and innovation achieved through One Care, including its goals of improving access to care, providing culturally competent care, and maintaining avenues for robust stakeholder engagement.

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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 Massachusetts in 2020 and 2021. The team interviewed the following individuals: Commonwealth officials from MassHealth (Massachusetts' Medicaid program) responsible for policy development, operations, contract management and quality oversight of One Care; officials from the Centers for Medicare & Medicaid Services' (CMS's) regional and central offices; One Care Medicare-Medicaid plan (MMP) representatives; representatives from community-based organizations, including Independent Living Centers, Recovery Learning Communities, and Aging Services Access Points; stakeholders from the Implementation Council; and representatives providing ombudsman services.

Surveys. Medicare requires all Medicare Advantage plans, including One Care MMPs, 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 2015-2021 survey questions, although CMS did not require MMPs to collect CAHPS data for 2020 because of the COVID-19 Public Health Emergency. 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 Medicare Advantage plans are available for core CAHPS survey questions.

EOHHS, through the University of Massachusetts Medical Schools (UMMS), administered Quality of Life Surveys to a random sample of enrollees in One Care. In this report, we include a summary of results from 2017-2019. The survey was administered annually in English and Spanish using a two-wave mail protocol with up to 5 telephone follow-ups for non-respondents. The survey response rates were 38.9 percent (584 respondents) in 2017, 36.7 percent (551 respondents) for 2018, and 29.9 percent (440 respondents) for 2019. Respondents were compared to non-respondents and weights were applied to adjust for significant differences on specific variables to create weights to be used to ensure the results reflected the One Care population as a whole.

EOHHS, through the University of Massachusetts Medical Schools (UMMS), also administered a survey to a random sample of One Care members who had voluntarily disenrolled from the demonstration. The survey was administered annually between March and May in the years 2017-2019 using a two-wave mail protocol with up to 5 telephone follow-ups for non-respondents. The survey response rates were 24 percent (n=272) in 2017, 27 percent (n=239) in 2018, and 31 percent (n=182) in 2019. UMMS researchers noted that survey results did not reflect the experiences and perspectives of members of the broader One Care population.

Demonstration data. The RTI evaluation team reviewed data provided quarterly by Massachusetts through the State Data Reporting System (SDRS). These reports include eligibility, enrollment, opt-out, and disenrollment data, and information reported by Massachusetts 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 One Care plans and submitted to CMS' implementation contractor, NORC[40,41]. Data reported to NORC include core quality measures that all Medicare-Medicaid Plans are required to report, as well as State-specific measures that One Care plans are required to report. Due to reporting inconsistencies, plans 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[42]; and other publicly available materials on the Massachusetts One Care website.[43] The RTI evaluation team routinely reviewed available minutes and presentations from Implementation Council meetings.[44]

Conversations with CMS and Massachusetts EOHHS officials. To monitor demonstration progress, the RTI evaluation team engages in periodic phone conversations with the Massachusetts Executive Office of Health and Human Services (EOHHS) 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 One Care plans to EOHHS, and reported separately to CMS' implementation contractor, NORC[45], through Core Measure 4.2; (2) complaints received by EOHHS 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 EOHHS and NORC, for Core Measure 4.2, and to the Medicare Independent Review Entity (IRE). This report also includes critical incidents and abuse data reported by One Care MMPs to EOHHS 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 plans.

Service utilization data. Evaluation report analyses used data from many sources. First, the Commonwealth 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

[40] Data are reported for 2015–2021.
[41] The technical specifications for reporting requirements are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements.
[42] https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/FinancialModelstoSupportStatesEffortsinCareCoordination.html
[43] https://www.mass.gov/one-care
[44] https://www.mass.gov/service-details/one-care-implementation-council
[45] The technical specifications for reporting requirements are in the Medicare-Medicaid Capitated Financial Alignment Model Core Reporting Requirements document.

CMS data systems for both demonstration and comparison group members. Third, these administrative data were merged with Medicare claims and encounter data, MMP Medicaid encounter data, as well as the Minimum Data Set.

Cost savings data. Two primary data sources were used to support the savings analyses, capitation payments and Medicare claims. Medicare capitation payments paid to One Care 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 (May 2022). Quality withholds were applied to the capitation payments (quality withholds are not reflected in the MARx data) and quality withhold repayments for demonstration years 1 through 6. Based on data provided by CMS, risk corridor payments and recoupments were applied for demonstration years 1 through 3 but not demonstration years 4 through 6. 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 beneficiaries. Early years of the predemonstration and demonstration periods used the Medicaid Statistical Information Statistics (MSIS) Medicaid Analytic eXtract (MAX), whereas later years used the Transformed-Medicaid Statistical Information Statistics (T-MSIS) Analytic Files (TAF). The transition year varied by State with all Medicaid programs fully transitioning to TAF by January 1, 2016.

Appendix B

Massachusetts One Care MMP Performance on Select HEDIS Quality Measures for 2015–2020

Table B-1 reports 2015 through 2020 HEDIS performance data for Massachusetts One Care 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 2015 and 2020.

Commonwealth Care Alliance (CCA) improved over time on measures for adult body mass index (BMI) assessment, effective acute phase antidepressant treatment, and emergency department visits per 1,000 members.

Tufts improved over time on emergency department visits per 1,000 members, but worsened performance over time on breast cancer screening.

Table B-1
Massachusetts One Care MMP performance on select HEDIS quality measures for 2015–2020[1] by MMP

Measure	National MA Plan Mean	CCA					Tufts				
	(2020)	(2015)	(2016)	(2017)	(2018)	(2020)	(2015)	(2016)	(2017)	(2018)	(2020)
Adults' access to preventive/ ambulatory health services	93.7	97.5	97.3	97.3	97.8	96.4	96.0	95.8	94.5	95.6	93.9
Adult BMI assessment[2]	N/A	77.9 G	87.8 G	94.4 G	95.3 G	—	92.2	93.3	98.3	95.0	—
Blood pressure control[3]	62.6	61.1	64.3	69.7	72.0	58.4	64.1	67.4	68.3	74.2	42.8
Breast cancer screening	68.9	83.1	75.5	75.9	73.6	66.5	N/A	71.6 R	66.9 R	66.0 R	63.6 R
Colorectal cancer screening	69.2	46.2	50.9	70.3	71.3	72.5	57.5	57.3	55.3	58.7	55.9
Disease modifying anti-rheumatic drug therapy in rheumatoid arthritis	77.6	84.3	84.4	87.8	83.4	81.1	N/A	N/A	N/A	N/A	N/A
Follow-up after hospitalization for mental illness (30 days)[4]	49.6	72.1	78.7	80.6	72.1	71.2	76.6	79.5	78.3	78.3	67.1
Antidepressant medication management											
Effective acute phase treatment[5]	78.2	56.6 G	57.9 G	60.9 G	63.4 G	72.1 G	83.1	75.5	79.3	85.4	65.2
Effective continuation phase treatment[6]	63.0	45.3	44.5	46.1	51.4	59.1	74.7	65.5	75.0	78.1	52.3
Care for older adults											
Advance care planning	N/A	17.4	42.2	51.1	69.1	46.1	N/A	N/A	N/A	20.5	11.1
Medication review	N/A	65.2	89.3	81.9	89.0	76.3	N/A	N/A	N/A	18.0	6.2
Functional status assessment	N/A	78.3	71.9	77.5	86.5	85.9	N/A	N/A	N/A	18.0	11.1
Pain assessment	N/A	80.4	83.5	85.5	90.8	87.3	N/A	N/A	N/A	18.0	6.2

(continued)

Table B-1 (continued)
Massachusetts One Care MMP performance on select HEDIS quality measures for 2015–2020[1] by MMP

Measure	National MA Plan Mean	CCA					Tufts				
	(2020)	(2015)	(2016)	(2017)	(2018)	(2020)	(2015)	(2016)	(2017)	(2018)	(2020)
Comprehensive diabetes care											
Received Hemoglobin A1c (HbA1c) testing	91.7	93.2	91.5	93.2	92.9	84.2	88.8	92.0	92.9	94.1	83.7
Poor control of HbA1c level (>9.0%) (higher is worse)	28.0	58.2	45.5	45.5	40.9	53.5	29.7	33.1	27.0	27.6	48.5
Good control of HbA1c level (<8.0%)	62.3	35.0	45.5	46.0	48.9	37.2	62.0	59.9	62.0	61.1	42.6
Received eye exam (retinal)	67.9	66.2	67.4	69.6	72.0	62.5	63.1	68.6	79.3	75.3	59.2
Received medical attention for nephropathy	94.1	93.7	93.9	93.9	92.7	89.3	93.7	93.2	92.7	94.3	89.3
Blood pressure control (<140/90 mm Hg)	64.4	60.8	67.6	72.0	75.9	59.9	69.7	67.4	70.3	74.7	47.5
Initiation and engagement of alcohol and other drug (AOD) dependence treatment											
Initiation of AOD treatment[7]	33.5	43.3	43.1	45.8	41.6	40.6	40.0	47.9	45.4	42.6	41.0
Engagement of AOD treatment[8]	5.2	11.3	12.7	15.4	12.0	11.5	13.2	15.6	17.0	14.5	10.4
Plan all-cause readmissions (Observed-to-expected ratio[9])											
Age 18-64	1.08	1.00	0.93	0.85	0.88	1.00	1.08	1.08	0.87	0.90	1.36
Age 65+	1.12	0.80	0.69	0.76	N/A	0.99	N/A	N/A	N/A	N/A	1.44
Ambulatory care (per 1,000 members[10])											
Outpatient visits	N/A	12,192.0	12,572.5	12,219.7	11,223.3	—	9,581.0	9,389.3	9,170.9	9,668.2	—
Emergency department visits (higher is worse)	N/A	1,418.6 G	1,350.2 G	1,299.3 G	1,257.9 G	—	1,446.3 G	1,308.9 G	1,163.2 G	1,086.2 G	—

(continued)

Table B-1 (continued)
Massachusetts One Care MMP performance on select HEDIS quality measures for 2015–2020[1] by MMP

— = not available, where the plan did not provide HEDIS data for this measure; AOD = alcohol and other drug; BMI = body mass index; CCA = Commonwealth Care Alliance; 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 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] In response to the COVID-19 Public Health Emergency, CMS did not require Medicare plans (including MMPs) to submit HEDIS 2020 data covering the 2019 measurement year. Therefore, we omitted a column for the 2019 measurement year.

[2] Adult BMI assessment was retired from HEDIS in 2020. Therefore, MMPs did not provide HEDIS data for this measure for the 2020 measurement year.

[3] 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.

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

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

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

[7] 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.

[8] 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.

[9] 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.

[10] Measures for Outpatient visits and Emergency department visits (both within Ambulatory Care per 1,000 members) were retired from HEDIS in 2019. Therefore, MMPs did not provide HEDIS data for these measures for the 2020 measurement year.

NOTES: 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". Values of N/A appearing for plan all-cause readmissions (18-64 and 65+) in the Preliminary Fourth Evaluation Report have been updated in the current report to provide the actual result. Detailed descriptions of HEDIS measures presented can be found in the RTI Aggregate Evaluation Plan.

SOURCE: RTI analysis of 2015 through 2020 HEDIS measures.

Appendix C

Comparison Group Methodology for Massachusetts Demonstration Years 5 and 6

This appendix presents the comparison group selection and assessment results for the Financial Alignment Initiative (FAI) demonstration in the Commonwealth of Massachusetts.

Results for comparison group selection and assessment analyses are prepared for each demonstration year. The preliminary Fourth Evaluation Report for the fourth demonstration year was published in September 2021. This appendix describes the comparison group identification methodology for the fifth and sixth performance years of One Care in Massachusetts (January 1, 2018–December 31, 2019) and notes any major changes in the results since the previous evaluation reports. Results for the sixth demonstration year are provided in detail here; results for the fifth demonstration year are nearly identical to those for the sixth demonstration year and are omitted to conserve space.

C.1 Demonstration and Comparison Group Characteristics

The Massachusetts demonstration area consists of three large urban Metropolitan Statistical Areas (MSAs) (Boston-Cambridge-Newton; Worcester; and Springfield) plus one Rest-of-State area containing rural areas. The comparison area is composed of 115 counties in 24 MSAs. These geographic areas have not changed since the First Evaluation Report, with one exception. In past evaluation reports, beneficiaries residing in Bristol County were considered part of the comparison group. Beginning in 2019, One Care expanded into Bristol County necessitating a reassignment of beneficiaries residing in Bristol County from the comparison group to the demonstration group. While this is a relatively small number of beneficiaries, such a reassignment raises concerns of misclassification bias. Instead of reassigning, we opted to exclude the small number of beneficiaries residing in Bristol County from the analyses (roughly 13,500 beneficiaries).

Beneficiaries who are ineligible for the demonstration include those 65 and older at the time of enrollment, have Medicare as a secondary payor, not enrolled in Medicare Part A and Part B, reside in an intermediate care facility, enrolled in PACE, receiving a retiree drug subsidy, or enrolled in an employer group waiver plan. 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. We apply these exclusion criteria to the State finder file in the demonstration period to ensure comparability with the comparison group and the demonstration group during the predemonstration period. Additionally, the State excluded beneficiaries receiving services under a 1915(c) waiver, which applies to the demonstration group in the demonstration period.

Medicare Advantage enrollees are eligible and may opt-in to the Massachusetts demonstration. This report includes the Medicare Advantage population in the cost savings analysis, described in ***Appendix F***. However, due to concerns of the completeness and accuracy of Medicare Advantage encounter data for years prior to 2016, RTI excluded the Medicare Advantage population 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 Medicare Advantage during the study period and included in the cost savings analysis but excluded from

the service use analysis. The prevalence of beneficiaries ever enrolled in Medicare Advantage ranges from 6.5 to 15.1 percent in the demonstration group, and from 36.9 to 41.2 percent in the comparison group across the study period.

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	Pre-demonstration year 1	Pre-demonstration year 2	DY 1	DY 2	DY 3	DY 4	DY 5	DY 6
Demonstration								
Initial count of beneficiaries	1,265,033	1,384,613	1,539,363	1,325,374	1,399,111	1,339,866	1,306,352	1,257,883
Count of beneficiaries with Medicare Advantage	175,801	209,721	207,868	190,396	206,602	131,092	109,320	82,326
Percentage of beneficiaries with Medicare Advantage	13.9%	15.1%	13.5%	14.4%	14.8%	9.8%	8.4%	6.5%
Comparison								
Initial count of beneficiaries	2,208,952	2,402,188	3,066,676	2,624,711	2,801,339	2,467,615	2,427,829	2,442,285
Count of beneficiaries with Medicare Advantage	901,324	988,957	1,247,319	1,072,920	1,148,448	979,165	948,090	902,296
Percentage of beneficiaries with Medicare Advantage	40.8%	41.2%	40.7%	40.9%	41.0%	39.7%	39.1%	36.9%

DY = demonstration year.

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 study period, (4) removing beneficiaries with missing Hierarchical Condition Category (HCC) risk scores, and (5) removing beneficiaries who died before the beginning of each analytic period. After applying these exclusions, the sample size of demonstration group beneficiaries was 108,915 and 118,991 in predemonstration year 1 and predemonstration year 2, respectively. The number of demonstration group beneficiaries in the 6 demonstration years ranged between 106,363 and 119,495. The number of beneficiaries in the comparison group ranged between 191,077 and 242,217 across the predemonstration and demonstration years.

C.2 Propensity Score Estimates

RTI's methodology examines initial differences between the demonstration and comparison groups in each analysis period to produce propensity scores, a rating of how likely a beneficiary is to be part of the demonstration group based on certain characteristics. Weights are calculated based on these scores and applied to the data to improve comparability between the two groups. Comparability is evaluated in terms of individual beneficiary characteristics and the overall distributions of propensity scores.

A propensity score (PS) is the predicted probability that a beneficiary is a member of the demonstration group conditional on a set of observed variables. Our PS models include a combination of beneficiary-level and region-level characteristics measured at the ZIP code (ZIP Code Tabulation Area) level.

The logistic regression coefficients and z-values for the covariates included in the propensity model for One Care demonstration year 6 are shown in ***Table C-2***, and the magnitudes of the group differences for all variables prior to PS weighting are shown in ***Table C-3***. The largest relative differences are that demonstration eligible beneficiaries are less likely to be Black and more likely to be Hispanic, are more likely to be participating in other Medicare shared savings programs,[46]and have fewer months of non-MMP Medicare Advantage plan enrollment in demonstration year 6 than beneficiaries in the comparison group. In addition, there are ZIP code level group differences associated with rates of marriage, college education, self-care limitation, and unemployment among non-seniors, as well as differences associated with distances to the nearest hospital and the nearest nursing facility. These results are very similar those of prior demonstration years.

C.3 Propensity Score Overlap

The distributions of PSs by group for demonstration year 6 are shown in ***Figure C-1*** before and after propensity score weighting. Estimated scores for both the demonstration group and comparison group topped out at around 0.95. The unweighted comparison group (dashed line) is characterized by a spike in predicted probabilities in the range from 0.01 to 0.10. Inverse probability of treatment weighting pulls the distribution of weighted comparison group propensity scores (dotted line) very close to that of the demonstration group (solid line) across the range of propensity scores.

Any beneficiaries with estimated propensity scores less than the smallest estimated value in the demonstration group are removed from the comparison group. This resulted in the removal of only 1,928 and 2,077 beneficiaries from the comparison group in demonstration years 5 and 6, respectively.

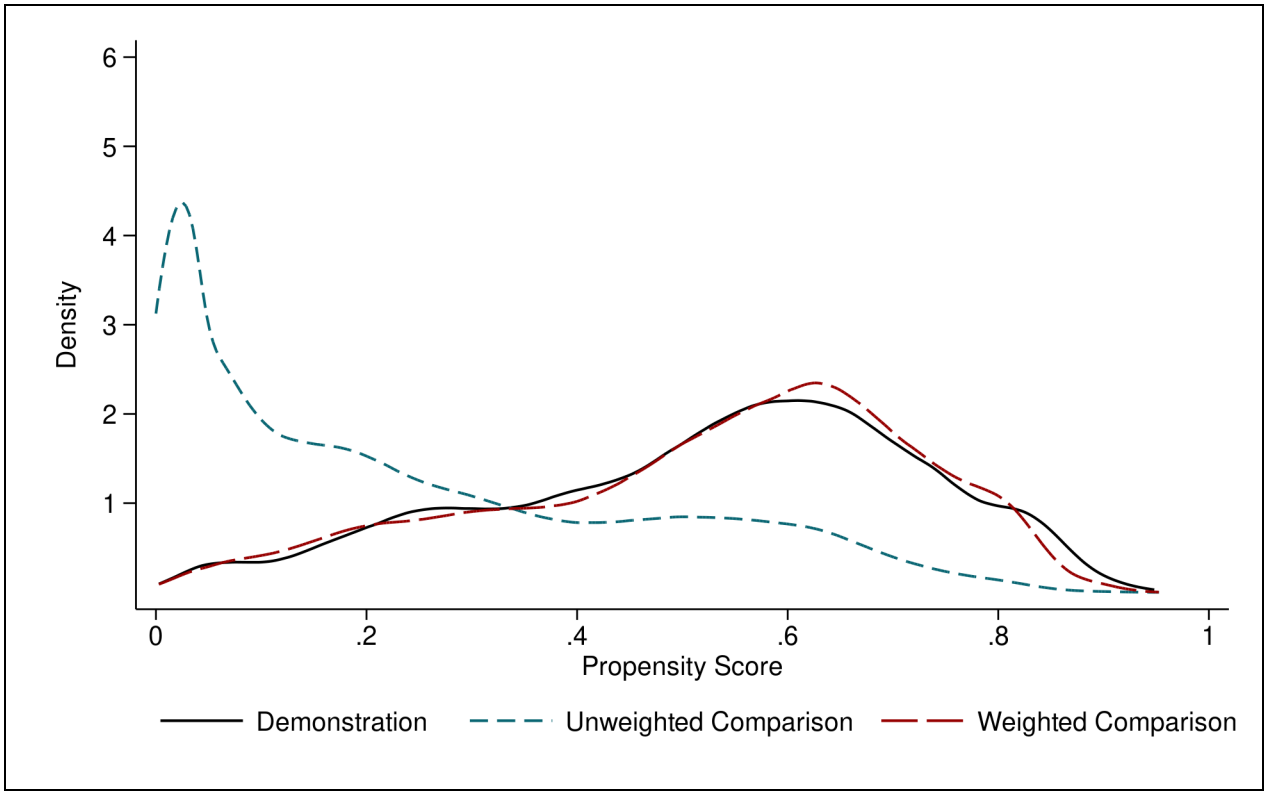
[46] Participation in other shared savings programs is labeled as "other MDM," which is defined as having any record in CMS's Master Data Management (MDM) files.

Table C-2
Logistic regression estimates for Massachusetts propensity score models in demonstration year 6, January 1, 2019–December 31, 2019

Characteristic	Demonstration Year 6		
	Coefficient	Standard error	z-score
Age (years)	0.023	0.000	54.93
Died during year (0/1)	−0.245	0.033	−7.52
Female (0/1)	−0.097	0.009	−10.43
Black (0/1)	−1.514	0.013	−119.24
Hispanic (0/1)	0.911	0.020	46.09
Disability as original reason for entitlement (0/1)	1.036	0.025	41.61
ESRD (0/1)	−0.323	0.033	−9.92
Share of months eligible during year	0.600	0.018	33.39
Share of months Medicare Advantage plan enrollment during year	−2.986	0.023	−130.11
HCC risk score	−0.044	0.007	−6.40
Other MDM participation (0/1)	0.085	0.009	9.05
MSA (0/1)	0.027	0.027	0.99
% of pop. living in married household	−0.010	0.001	−18.91
% of households w/member >= 60 yrs.	−0.010	0.001	−14.88
% of households w/member < 18 yrs.	0.017	0.001	25.62
% of non-seniors with college education	0.018	0.000	44.75
% of non-seniors with self-care limitation	−0.046	0.003	−15.70
% of non-seniors who are unemployed	−0.045	0.002	−26.46
Distance to nearest hospital (mi.)	0.001	0.002	0.64
Distance to nearest nursing facility (mi.)	−0.256	0.003	−74.50
Intercept	−1.490	0.063	−23.79

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 Massachusetts demonstration and comparison groups, weighted and unweighted, in demonstration year 6, January 1, 2019–December 31, 2019



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.

Table C-3
Massachusetts dually eligible beneficiary covariate means by group before and after weighting by propensity score—demonstration year 6: January 1, 2019–December 31, 2019

Characteristic	Demonstration group mean	Comparison group mean	PS-weighted comparison group mean	Unweighted standardized difference	Weighted standardized difference
Age (years)	51.205	50.181	51.199	0.090	0.000
Died during year (0/1)	1.658	2.270	1.678	0.044	0.002
Female (0/1)	52.338	53.157	51.684	0.016	0.013
Black (0/1)	12.474	38.037	12.117	0.616	0.011
Hispanic (0/1)	10.075	3.258	8.965	0.276	0.038
Disability as original reason for entitlement (0/1)	97.296	93.395	96.972	0.186	0.019
ESRD (0/1)	1.517	3.040	1.565	0.102	0.004
Share of months eligible during year	0.884	0.836	0.878	0.179	0.023
Share of months Medicare Advantage plan enrollment during year	0.027	0.267	0.028	0.757	0.005
HCC score	1.001	1.004	1.000	0.004	0.002
Other MDM participation (0/1)	41.347	25.710	42.198	0.336	0.017
MSA (0/1)	97.895	94.180	98.155	0.191	0.019
% of pop. living in married household	65.468	60.910	66.675	0.264	0.075
% of households w/member >= 60	38.532	39.695	38.690	0.147	0.020
% of households w/member < 18	30.083	30.001	30.098	0.011	0.002
% of non-seniors with college education	34.470	26.819	35.296	0.442	0.045
% of non-seniors with self-care limitation	2.035	2.660	1.979	0.303	0.032
% of non-seniors who are unemployed	5.873	7.310	5.734	0.348	0.041
Distance to nearest hospital (mi.)	4.153	5.179	4.211	0.254	0.017
Distance to nearest nursing facility (mi.)	2.598	3.596	2.647	0.426	0.030

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

The group means and standardized differences for all beneficiary characteristics are shown for demonstration year 6 in ***Table C-3***. The column of unweighted standardized differences indicates that most of these variables were not balanced prior to weighting. Fifteen variables had unweighted standardized differences exceeding 0.10 in absolute value: percentages

of beneficiaries who are Black, Hispanic, with disability as original reason for entitlement, with ESRD, participating in other Medicare shared savings programs (other MDM), or residing in an MSA; share of months eligible during the year; share of months enrolled in a non-MMP Medicare Advantage plan during the year; percentage of population living in a married household; percentage of households with a member 60 years of age or older; percentage of non-seniors with a college education, self-care limitation, or unemployed; and the distances (in miles) to the nearest hospital and nursing facility.

The results of PS weighting for Massachusetts demonstration year 6 are illustrated in the far-right column (weighted standardized differences) in ***Table C-3***. Propensity weighting reduced the standardized differences below the threshold level of 0.10 in absolute value for all the covariates in our model. We found the same results for demonstration year 5.

C.5 Weights for Enrollee-only Analyses

We also applied our weighting methodology to the demonstration's enrollee-only population (approximately 21 percent of the eligible demonstration population)[47] to produce weights for use in the impact analyses on cost savings among the demonstration enrollee 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 6-year demonstration period as well as at least 3 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 2-year demonstration period and the 6-year predemonstration period.

As was the case among all eligible beneficiaries, the unweighted values of several covariates differed substantially between the demonstration and comparison group among enrollees in each predemonstration 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. Compared to the methodology used to produce weights for all eligible beneficiaries, we applied two additional exclusions when calculating weights for the analyses of service utilization. The first is the explicit exclusion of beneficiaries who were ever enrolled in a Medicare Advantage plan. Due to concerns of the completeness and accuracy of Medicare Advantage encounter data for years prior to 2016, RTI excluded the Medicare Advantage population from the service utilization analyses. The second difference is the exclusion of beneficiaries who were ever enrolled in an MMP for which complete or valid encounter data is not available.

These exclusions reduced the yearly count of beneficiaries by roughly 22,000 in the demonstration group and by roughly 86,000 in the comparison group. The resulting

[47] The enrollment percentage reported here is different from the enrollment percentages cited elsewhere in this report because of the additional requirements for inclusion in the enrollee-only analysis (i.e., those with at least 3 months of enrollment during the 6-year demonstration period and at least 3 months of eligibility during the 2-year predemonstration period), as described later in the same paragraph.

demonstration group sample ranged between 82,807 and 95,202 beneficiaries each year; the comparison group sample ranged between 113,743 and 141,784 beneficiaries each year.

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

C.7 Weights for Medicaid Cost Analyses

A fourth set of weights was produced specifically for the analyses of Medicaid costs, with two main changes to the methodology used to produce weights for all eligible beneficiaries. Because of quality issues with the Medicaid data in Pennsylvania, Mississippi, and Wisconsin, RTI excluded the beneficiaries in those States from the comparison group. Additionally, beneficiaries receiving services under a 1915(c) waiver were excluded from the demonstration group in the predemonstration period. All covariates used in the calculation of weights in the Medicare cost analysis were used in the calculation of weights for the Medicaid cost analysis.

The unweighted standardized differences of several covariates differed substantially between the demonstration and comparison group in each predemonstration and demonstration year. After weighting, the standardized differences of most covariates were reduced to less than 0.10 in absolute value, the exceptions being the percentage of beneficiaries who are Hispanic, percentage of population living in a married household, percentage of non-seniors with self-care limitation or unemployed, and the distances to the nearest hospital and nursing facility. Standardized differences of these area-level variables were just above the threshold of 0.10, and the standardized difference of the Hispanic variable was 0.21, with Hispanics being underrepresented in the comparison group. The relative imbalance of these variables is a result of the necessary exclusion of Pennsylvania, Mississippi, and Wisconsin from the comparison group and is unlikely to produce measurable bias in Medicaid cost analyses.

C.8 Summary

The Massachusetts demonstration and comparison groups were initially distinguished by differences in eight individual-level covariates as well as seven area-level variables. However, PS weighting successfully reduced all covariate discrepancies below the generally accepted threshold for standardized differences. As a result, the weighted Massachusetts groups are adequately balanced with respect to all 20 of the variables we consider for comparability. Further analysis of the enrollee group and the service utilization group yielded similar results to the main analysis on the all eligible population presented in this appendix, whereas analysis for the Medicaid group resulted in balance on all covariates except the percentage of beneficiaries who are Hispanic and five area-level variables.

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 difference-in-differences (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 dually eligible beneficiaries 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. Given the design of the demonstration, some eligible beneficiaries enroll in the demonstration to receive the interventions whereas others do not enroll, even though they are eligible. 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 C***.

Medicare Advantage enrollees are eligible and may opt-in to the Massachusetts demonstration. This report includes the Medicare Advantage population in the cost savings analysis, described in ***Appendix F***. However, due to concerns on the completeness and accuracy of Medicare Advantage 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 or in an MMP throughout the study period. The prevalence of beneficiaries with any month of Medicare Advantage during a year, prior to exclusion, ranges from 6.5 to 15.1 percent in the demonstration group and from 36.9 to 41.2 percent in the comparison group across 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 long-term services and supports (LTSS); those with any behavioral health service use in the last 2 years for a serious and persistent mental illness (SPMI); demonstration enrollees; and groups by 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.
- ***LTSS.*** A demonstration eligible beneficiary with any use of institutional services during the observation year.
- ***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 (October 1, 2011, to September 30, 2013) and for the 6 demonstration years (October 1, 2013, to December 31, 2019) for both the demonstration and comparison groups.

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

Among the LTSS user demonstration population, which represents less than 1 percent of the demonstration eligible population, the majority were male (53.7 percent); otherwise, females were more prevalent across all other groups, ranging from 51.6 to 56.8 percent. Across all

groups, most beneficiaries were White (61.3 to 79.0 percent), had a 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 were 1.0 for all groups except LTSS users in the demonstration group, for which the average HCC score was 2.2.

Table D-1
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees	Demonstration group, LTSS users	Demonstration group, SPMI diagnosis
Weighted number of eligible beneficiaries	93,079	132,659	24,085	68,994	272	60,169
Demographic characteristics						
Age						
<=44	26.8	27.5	26.3	26.9	8.5	26.9
45+	73.2	72.5	73.7	73.1	91.5	73.1
Female						
No	47.8	48.4	47	48.1	53.7	43.2
Yes	52.2	51.6	53	51.9	46.3	56.8
Race/ethnicity						
White	67.6	70.7	61.3	69.8	79.0	69.5
African American	12.8	12.5	17.5	11.2	12.5	11.8
Hispanic	9.5	8.8	11.4	8.8	4.4	9.7
Asian	2.0	2.5	2.0	2.0	1.1	1.6
Other	8.1	5.5	7.8	8.2	3	7.4
Disability as reason for original Medicare entitlement						
No	2.1	2.3	0.9	2.5	1.1	0.9
Yes	97.9	97.7	99.1	97.5	98.9	99.1
ESRD status						
No	98.4	98.3	98.4	98.4	97.1	98.7
Yes	1.6	1.7	1.6	1.6	2.9	1.3
MSA						
No	2.3	2.0	0.9	2.7	4.4	2.3
Yes	97.7	98.0	99.1	97.3	95.6	97.7

(continued)

Table D-1 (continued)
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees	Demonstration group, LTSS users	Demonstration group, SPMI diagnosis
Participating in Shared Savings Program						
No	56.8	55.9	95.3	43.4	74.3	57.2
Yes	43.2	44.1	4.7	56.6	25.7	42.8
HCC score	1.0	1.0	1.0	1.0	2.2	1.0
Market characteristics						
Medicare spending per dual, ages 19+ ($)	16,912.5	18,337.2	16,782.4	16,958.0	17,083.9	16,920.2
MA penetration rate	0.2	0.2	0.2	0.2	0.2	0.2
Medicaid-to-Medicare fee index (FFS)	0.8	0.7	0.8	0.8	0.8	0.8
Medicaid spending per dual, ages 19+ ($)	22,426.6	22,353.5	22,445.1	22,420.1	22,435.8	22,422.9
Fraction of dually eligible beneficiaries using NF, ages 65+	0.2	0.3	0.2	0.2	0.2	0.2
Fraction of dually eligible beneficiaries using HCBS, ages 65+	0.1	0.1	0.1	0.1	0.1	0.1
Fraction of dual eligible beneficiaries using personal care, ages 19+	0	0	0	0	0	0
Fraction of dual eligible beneficiaries with Medicaid managed care, ages 19+	0.1	0.5	0.1	0.1	0.1	0.1
Population per square mile, all ages	1,343.3	1,130.2	1,292.5	1,361.0	1,380.7	1,349.3
Patient care physicians per 1,000 population	1.1	0.9	1.1	1.1	1.1	1.1

(continued)

Table D-1 (continued)
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees	Demonstration group, LTSS users	Demonstration group, SPMI diagnosis
Area characteristics						
% of pop. living in married households	65.9	66.9	62.4	67.1	70.4	66
% of non-seniors with college education	35.2	35.8	33.7	35.8	40.5	36
% of non-seniors with self-care limitations	2.0	1.9	2.2	1.9	1.6	2.0
% of non-seniors unemployed	5.8	5.7	6.2	5.7	5.3	5.7
% of household with individuals younger than 18	30	30.1	30	30.1	29.5	29.9
% of household with individuals older than 60	38.5	38.7	37.2	39	39.7	38.4
Distance to nearest hospital	4.1	4.2	3.6	4.3	4.1	4.1
Distance to nearest nursing facility	2.6	2.6	2.3	2.6	2.6	2.5

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.

There were some differences in area- and market-level characteristics. Those who were in the comparison group resided in counties with higher Medicare spending per dually eligible beneficiary ($18,337 versus $16,912 in the demonstration group) and lower population density (1,130 people per square mile versus 1,343 people per square mile in the demonstration group). Other area- and market-level characteristics were comparable.

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 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, ambulatory care sensitive condition (ACSC) admissions overall and chronic (Agency for Healthcare Research and Quality [AHRQ] Prevention Quality Indicator [PQI] #90 and PQI #92), and depression screening.

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.

- Nursing facility admission rate
- Percentage of long-stay nursing facility users
- Functional status of new long-stay nursing facility residents
- Percent of new long-stay nursing facility residents with severe cognitive impairment
- Percent of new long-stay nursing facility 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 probability of any inpatient admission	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, psychiatric, and long-term care hospital admissions.	We used the CLM_ACTV_CARE_FROM_DT to calculate the number of admissions occurring within the month. • Created a 0–1 indicator for the presence of at least one admission in the month.
Monthly probability of any ED visit	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. • Created a 0–1 indicator for the presence of at least one ED claim in the month.
Monthly number of physician E&M visits per 1,000 beneficiaries	The count of any E&M visit within the month, multiplied by 1,000, 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: – Office or Other Outpatient = 99201–99205 or 99211–99215 – Nursing Facility Services = 99304–99310, 99315, 99316, or 99318 – Domiciliary, Rest Home, or Custodial Care Services = 99324–99328, 99334–99337 or 99339-99340 – Home Services = 99341-99345 or 99347–99350 – Initial Medicare Visit = G0402 – Annual Wellness Visit = G0438, G0439 • Calculated the total number of physician office visits that occurred in the month.

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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
Monthly probability of any SNF admissions	The monthly probability of having any SNF admission within the month.	• Identified any SNF claims with a clam type code = 4018, 4021, or 4028. • Created a 0-1 indicator for the presence of at least one *admission* in the month using CLM_ACTV_CARE_FROM_DT.
Annual probability of any long-stay NF use	The annual probability of residing in an NF 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	The rate of risk-standardized readmission, defined as the percentage of enrollees who were readmitted within 30 days following a hospital discharge, and the number of risk-standardized readmissions that occur during the year.	For both the numerator and denominator, identified all acute inpatient stays with a discharge date during the measurement period. Beneficiaries are included only if eligible during the month(s) of admission and discharge and during the 30-day follow-up period. $\frac{\left(\frac{\sum_{ig} x_{ig}}{\sum_{ig} n_{ig}} * C\right)}{Prob_g} * 100$ Numerator: • C = the national average of 30-day readmission rate, 0.238. • x_{ig} = the total number of readmissions for individual *i* in group *g*. • n_{ig} = the total number of hospital admissions for individual i in group g. Denominator: $Prob_g$ = the annual average adjusted probability of readmission for individuals in group *g*. Multiply by 100 to get the final measure score.
Number of all-cause 30-day readmissions per 1,000 discharges	The annual count of the number of readmissions per beneficiary period, multiplied by 1,000.	Among beneficiaries with any index inpatient admission, defined above, a readmission is defined as the having any inpatient admission within 30-days of the index discharge date

(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
Monthly number of preventable ED visits per 1,000 beneficiaries	A continuous variable of weighted ED visits that occur during the month, multiplied by 1,000.	Numerator: Sum of the relative percentage 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: (1) Non-emergent (2) Emergent/primary care treatable (3) Emergent/ED care needed – preventable/avoidable (4) *Excluded* – Emergent/ED care needed – not preventable/avoidable Denominator: All demonstration eligible Medicare-Medicaid beneficiaries.
Probability of 30-day follow-up after mental health discharge (NQF #576)	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: • Visit with a mental health practitioner AND SPMI diagnosis • Visit to a behavioral health care facility • Visit to a non-behavioral health care facility with a diagnosis of mental illness Denominator: Discharges for an acute inpatient setting (including acute-care psychiatric facilities) for treatment of SPMI AND no readmission within 30 days. Beneficiaries are included only if eligible during both the month of the discharge and the 30-day follow-up period.
Monthly probability of any ACSC admission—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 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) Denominator: All demonstration eligible Medicare-Medicaid beneficiaries.

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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
Monthly probability of any ACSC admission—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 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) Denominator: All demonstration eligible Medicare-Medicaid beneficiaries.
Depression screening and follow-up	Number of depression screenings per eligible beneficiary per month.	Numerator: Demonstration eligible Medicare-Medicaid beneficiaries whose screening for clinical depression using an age-appropriate standardized tool: • Received a depression screening, tested positive and had a follow-up plan is identified by CLM_LINE_HCPCS_CD = 'G8431'. • Received a depression screening, tested positive and follow-up plan not required is identified by CLM_LINE_HCPCS_CD = 'G8510'. • Received a depression screening, tested positive and not eligible for follow-up plan is identified by CLM_LINE_HCPCS_CD = 'G8940'. • Received a depression screening, tested positive, no follow-up plan and reason not documented is identified by CLM_LINE_HCPCS_CD = 'G8511'. Denominator: All demonstration eligible Medicare-Medicaid beneficiaries.

ACSC = ambulatory care sensitive condition; AHRQ = Agency for Healthcare Research and Quality; ED = emergency department; E&M = evaluation and management; NF = nursing facility; PQI = Prevention Quality Indicator; SNF = skilled nursing facility; SPMI = serious and persistent mental illness.
[1] Definition derived from the Wagner School of Public Service, available at https://wagner.nyu.edu/faculty/billings/nyued-background.

D.1.10 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 C***. ***Appendix E*** 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 average adjusted probabilities for the overall eligible population are listed in ***Table D-3***.

Table D-3
Average adjusted probability of readmission by demonstration group

Demonstration group	Average adjusted probability of readmission
Predemonstration year 1	
Massachusetts	0.2257
Comparison	0.2421
Predemonstration year 2	
Massachusetts	0.2271
Comparison	0.2386
Demonstration year 1	
Massachusetts	0.2322
Comparison	0.2445
Demonstration year 2	
Massachusetts	0.2308
Comparison	0.2431
Demonstration year 3	
Massachusetts	0.2292
Comparison	0.2337
Demonstration year 4	
Massachusetts	0.2245
Comparison	0.2341

(continued)

Table D-3 (continued)
Average adjusted probability of readmission by demonstration group

Demonstration group	Average adjusted probability of readmission
Demonstration year 5	
Massachusetts	0.2239
Comparison	0.2352
Demonstration year 6	
Massachusetts	0.2259
Comparison	0.2338

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 post the demonstration start, *Demonstration* is an indicator of whether the beneficiary was in the demonstration group, and *PostYear * Demonstration* is an interaction term. *Demographics* and *Market* represent vectors of beneficiary and market characteristics, respectively.

Under this specification, the coefficient β_0 reflects the comparison group predemonstration period mean adjusted for demographic and market effects, β_1 reflects the average difference between post period and predemonstration period in the comparison group, β_2 reflects the difference in the demonstration group and comparison group at predemonstration, and β_3 is the overall average demonstration effect during the demonstration period. This last term is the DinD estimator and the primary policy variable of interest, but in all regression models, because of nonlinearities in the underlying distributions, post-regression 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-4 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-4
Logistic regression results on monthly inpatient admissions
(n = 18,238,953 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
Post period	−0.1305	0.0178	−7.31	<0.001
Demonstration group	−0.0768	0.0464	−1.65	0.098
Interaction of post period x demonstration group	0.0611	0.0193	3.17	0.002
Age (continuous)	0.0005	0.0014	0.37	0.709
Female	−0.0059	0.0149	−0.40	0.690
Black	−0.0446	0.0245	−1.82	0.069
Hispanic	−0.2579	0.0347	−7.44	<0.001
Asian	−0.6039	0.0709	−8.51	<0.001
Other race/ethnicity	−0.3484	0.0393	−8.87	<0.001
Disability as reason for Medicare entitlement	0.0396	0.0229	1.73	0.084
End-stage renal disease	1.5051	0.0299	50.26	<0.001
Participation in other Shared Savings Program	0.1259	0.0268	4.70	<0.001
Hierarchical Condition Category score	0.4421	0.0073	60.45	<0.001
Metropolitan statistical area residence	0.0132	0.0976	0.14	0.892
Medicare spending per dual, ages 19+	0.0000	0.0000	0.81	0.415
Medicaid spending per dual, ages 19+	0.0000	0.0000	0.13	0.900
Percent of population married	−0.0026	0.0008	−3.12	0.002
Medicare Advantage penetration rate	−0.0668	0.1412	−0.47	0.636
Fraction of dually elig. beneficiaries using nursing facility, ages 65+	0.2600	0.2591	1.00	0.316
Fraction of dually elig. beneficiaries using HCBS, ages 65+	0.6558	0.2649	2.48	0.013
Fraction of dual elig. beneficiaries using personal care, ages 19+	−1.0471	0.4681	−2.24	0.025

(continued)

Table D-4 (continued)
Logistic regression results on monthly inpatient admissions
(n = 18,238,953 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
Patient care physicians per 1,000 population	0.2014	0.2252	0.89	0.371
Percent of non-seniors with college education	−0.0008	0.0008	−0.96	0.336
Percent of non-seniors who are unemployed	0.0036	0.0018	1.98	0.047
Percent of non-seniors with self-care limitation	−0.0070	0.0072	−0.97	0.331
Distance to nearest hospital	−0.0026	0.0027	−0.97	0.331
Distance to nearest nursing facility	0.0025	0.0058	0.44	0.662
Percent of households with individuals younger than 18	−0.0050	0.0012	−4.33	<0.001
Percent of households with individuals older than 60	−0.0041	0.0011	−3.82	<0.001
Medicare-to-Medicaid fee index (FFS)	0.4014	0.4942	0.81	0.417
Intercept	−4.1856	0.4847	−8.64	<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 service utilization estimates cumulatively and for each demonstration year, for all measures and populations. We provide both the 95 and 90 percent confidence intervals for a clearer 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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Adjusted DinD estimate	Relative difference (%)	p-value	95% confidence interval	90% confidence interval
Monthly probability of any inpatient admission (%)					
Cumulative	0.18	5.5	0.0014	0.07, 0.29	0.09, 0.27
Demonstration year 1	0.03	NS	0.4770	–0.05, 0.11	–0.04, 0.10
Demonstration year 2	0.20	6.0	0.0017	0.08, 0.33	0.10, 0.31
Demonstration year 3	0.19	5.8	0.0311	0.02, 0.36	0.04, 0.33
Demonstration year 4	0.25	7.9	0.0021	0.09, 0.41	0.12, 0.38
Demonstration year 5	0.11	NS	0.2346	–0.07, 0.28	–0.04, 0.25
Demonstration year 6	0.34	11.1	<0.0001	0.17, 0.51	0.20, 0.48
Number of all-cause 30-day readmissions per 1,000 discharges					
Cumulative	13.54	5.3	0.0015	5.17, 21.91	6.52, 20.56
Demonstration year 1	–4.19	NS	0.4965	–16.28, 7.89	–14.34, 5.95
Demonstration year 2	22.61	8.9	0.0005	9.92, 35.31	11.96, 33.27
Demonstration year 3	12.20	NS	0.0726	–1.12, 25.51	1.02, 23.37
Demonstration year 4	20.75	8.5	0.0021	7.50, 33.99	9.63, 31.86
Demonstration year 5	14.41	5.8	0.0302	1.38, 27.43	3.48, 25.34
Demonstration year 6	12.71	NS	0.0747	–1.27, 26.69	0.98, 24.44
Monthly probability of any ACSC admission, overall (%)					
Cumulative	0.03	6.8	0.0354	0.00, 0.06	0.01, 0.05
Demonstration year 1	0.01	NS	0.3988	–0.01, 0.04	–0.01, 0.03
Demonstration year 2	0.02	NS	0.2704	–0.02, 0.06	–0.01, 0.05
Demonstration year 3	0.02	NS	0.3418	–0.02, 0.06	–0.01, 0.05
Demonstration year 4	0.03	NS	0.1715	–0.01, 0.07	–0.01, 0.07
Demonstration year 5	0.02	NS	0.4523	–0.03, 0.06	–0.02, 0.05
Demonstration year 6	0.08	19.6	<0.0001	0.04, 0.12	0.05, 0.11

(continued)

Table E-1 (continued)
Cumulative and annual demonstration impacts on service utilization and quality of care measures for eligible beneficiaries in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Adjusted DinD estimate	Relative difference (%)	p-value	95% confidence interval	90% confidence interval
Monthly probability of any ACSC admission, chronic (%)					
Cumulative	0.03	11.4	0.0098	0.01, 0.06	0.01, 0.06
Demonstration year 1	0.03	8.7	0.0111	0.01, 0.04	0.01, 0.04
Demonstration year 2	0.03	NS	0.1349	–0.01, 0.06	–0.00, 0.05
Demonstration year 3	0.03	NS	0.1109	–0.01, 0.06	–0.00, 0.06
Demonstration year 4	0.04	NS	0.0669	–0.00, 0.08	0.00, 0.07
Demonstration year 5	0.02	NS	0.3952	–0.02, 0.06	–0.02, 0.05
Demonstration year 6	0.07	23.0	0.0002	0.03, 0.11	0.04, 0.10
Monthly probability of any ED visit (%)					
Cumulative	0.00	NS	0.9809	–0.21, 0.22	–0.18, 0.18
Demonstration year 1	–0.05	NS	0.6414	–0.28, 0.17	–0.25, 0.14
Demonstration year 2	–0.00	NS	0.9724	–0.26, 0.25	–0.22, 0.21
Demonstration year 3	0.13	NS	0.3133	–0.12, 0.38	–0.08, 0.34
Demonstration year 4	0.00	NS	0.9849	–0.26, 0.26	–0.21, 0.22
Demonstration year 5	–0.05	NS	0.7606	–0.36, 0.27	–0.31, 0.22
Demonstration year 6	–0.00	NS	0.9970	–0.31, 0.31	–0.26, 0.26
Monthly number of preventable ED visits per 1,000 persons					
Cumulative	0.06	NS	0.9436	–1.62, 1.74	–1.35, 1.47
Demonstration year 1	–1.03	NS	0.3310	–3.11, 1.05	–2.77, 0.71
Demonstration year 2	–0.05	NS	0.9679	–2.36, 2.27	–1.99, 1.89
Demonstration year 3	1.04	NS	0.3452	–1.12, 3.21	–0.78, 2.86
Demonstration year 4	0.20	NS	0.8406	–1.75, 2.15	–1.44, 1.84
Demonstration year 5	–0.39	NS	0.7486	–2.75, 1.98	–2.37, 1.60
Demonstration year 6	0.59	NS	0.5916	–1.56, 2.74	–1.21, 2.39
Monthly probability of any SNF admission (%)					
Cumulative	0.04	7.9	0.0068	0.01, 0.07	0.01, 0.06
Demonstration year 1	0.02	NS	0.1479	–0.01, 0.05	–0.00, 0.05
Demonstration year 2	0.05	10.7	0.0017	0.02, 0.08	0.02, 0.08
Demonstration year 3	0.03	NS	0.1853	–0.01, 0.06	–0.01, 0.06
Demonstration year 4	0.06	12.6	0.0005	0.03, 0.09	0.03, 0.09
Demonstration year 5	0.01	NS	0.4544	–0.02, 0.05	–0.02, 0.04
Demonstration year 6	0.06	14.0	0.0031	0.02, 0.11	0.03, 0.10

(continued)

Table E-1 (continued)
Cumulative and annual demonstration impacts on service utilization and quality of care measures for eligible beneficiaries in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Measure	Adjusted DinD estimate	Relative difference (%)	p-value	95% confidence interval	90% confidence interval
Annual probability of any long-stay NF use (%)					
Cumulative	–0.54	–14.9	<0.0001	–0.77, –0.30	–0.73, –0.34
Demonstration year 1	–0.22	–6.4	0.0082	–0.38, –0.06	–0.35, –0.08
Demonstration year 2	–0.50	–14.2	0.0007	–0.78, –0.21	–0.74, –0.26
Demonstration year 3	–0.67	–17.3	<0.0001	–0.93, –0.40	–0.89, –0.45
Demonstration year 4	–0.54	–15.2	0.0002	–0.82, –0.25	–0.78, –0.30
Demonstration year 5	–0.64	–17.2	<0.0001	–0.91, –0.36	–0.87, –0.40
Demonstration year 6	–0.62	–17.3	<0.0001	–0.91, –0.33	–0.87, –0.38
Probability of 30-day follow-up after mental health discharge (%)					
Cumulative	–1.94	NS	0.1190	–4.39, 0.50	–4.00, 0.11
Demonstration year 1	0.32	NS	0.8218	–2.46, 3.10	–2.02, 2.66
Demonstration year 2	–0.85	NS	0.5555	–3.69, 1.98	–3.23, 1.53
Demonstration year 3	0.43	NS	0.7870	–2.70, 3.56	–2.19, 3.06
Demonstration year 4	–2.20	NS	0.2602	–6.03, 1.63	–5.41, 1.01
Demonstration year 5	–4.00	–8.9	0.0267	–7.54, –0.46	–6.97, –1.03
Demonstration year 6	–3.73	–8.3	0.0059	–6.38, –1.08	–5.95, –1.50
Monthly number of physician E&M visits per 1,000 persons					
Cumulative	87.19	9.2	<0.0001	47.19, 127.18	53.62, 120.75
Demonstration year 1	71.03	7.5	<0.0001	36.33, 105.74	41.91, 100.16
Demonstration year 2	84.22	8.9	<0.0001	47.80, 120.64	53.66, 114.78
Demonstration year 3	98.37	10.3	<0.0001	64.31, 132.43	69.79, 126.96
Demonstration year 4	94.75	10.0	<0.0001	52.35, 137.16	59.17, 130.34
Demonstration year 5	85.54	9.1	0.0008	35.44, 135.65	43.50, 127.59
Demonstration year 6	91.71	9.6	0.0011	36.52, 146.89	45.39, 138.02

ACSC = ambulatory care sensitive condition; ED = emergency department; E&M = evaluation and management; NS = not statistically significant; SNF = skilled nursing facility.
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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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								
Monthly probability of any inpatient admission (%)	Cumulative	LTSS users	1.66	25.4	0.0007	0.70, 2.63	0.85, 2.47	1.54**
		Non-LTSS users	0.13	4.4	0.0184	0.02, 0.23	0.04, 0.21	
	Demonstration year 1	LTSS users	1.01	12.8	0.0119	0.22, 1.79	0.35, 1.66	1.06*
		Non-LTSS users	–0.06	NS	0.2683	–0.16, 0.04	–0.14, 0.03	
	Demonstration year 2	LTSS users	1.92	31.4	0.0058	0.56, 3.29	0.78, 3.07	1.79*
		Non-LTSS users	0.13	4.6	0.0332	0.01, 0.26	0.03, 0.24	
	Demonstration year 3	LTSS users	2.50	43.2	<0.0001	1.43, 3.57	1.60, 3.39	2.37***
		Non-LTSS users	0.13	NS	0.1031	–0.03, 0.28	–0.00, 0.26	
	Demonstration year 4	LTSS users	1.83	NS	0.0758	–0.19, 3.86	0.13, 3.53	1.64
		Non-LTSS users	0.19	6.9	0.0163	0.03, 0.34	0.06, 0.32	
	Demonstration year 5	LTSS users	2.00	35.7	0.0306	0.19, 3.82	0.48, 3.52	1.91*
		Non-LTSS users	0.09	NS	0.2765	–0.07, 0.25	–0.04, 0.22	
	Demonstration year 6	LTSS users	0.98	NS	0.3496	–1.07, 3.03	–0.74, 2.70	0.68
		Non-LTSS users	0.30	11.0	<0.0001	0.16, 0.45	0.18, 0.42	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ED visit (%)	Cumulative	LTSS users	0.45	NS	0.3848	–0.57, 1.48	–0.41, 1.31	0.50
		Non-LTSS users	–0.04	NS	0.7054	–0.25, 0.17	–0.22, 0.14	
	Demonstration year 1	LTSS users	–0.22	NS	0.6354	–1.15, 0.70	–1.00, 0.55	–0.10
		Non-LTSS users	–0.12	NS	0.2904	–0.35, 0.11	–0.32, 0.07	
	Demonstration year 2	LTSS users	0.23	NS	0.7621	–1.24, 1.70	–1.01, 1.46	0.27
		Non-LTSS users	–0.05	NS	0.7184	–0.29, 0.20	–0.25, 0.16	
	Demonstration year 3	LTSS users	1.65	45.4	0.0050	0.50, 2.80	0.68, 2.62	1.59**
		Non-LTSS users	0.06	NS	0.6101	–0.18, 0.30	–0.14, 0.26	
	Demonstration year 4	LTSS users	0.33	NS	0.6409	–1.04, 1.69	–0.82, 1.47	0.36
		Non-LTSS users	–0.03	NS	0.7923	–0.27, 0.21	–0.23, 0.17	
	Demonstration year 5	LTSS users	1.23	NS	0.1526	–0.46, 2.91	–0.18, 2.64	1.30
		Non-LTSS users	–0.07	NS	0.6546	–0.36, 0.23	–0.31, 0.18	
	Demonstration year 6	LTSS users	–0.12	NS	0.8985	–1.92, 1.68	–1.63, 1.39	–0.10
		Non-LTSS users	–0.02	NS	0.8930	–0.34, 0.30	–0.29, 0.25	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly number of physician E&M visits per 1,000 persons	Cumulative	LTSS users	98.92	NS	0.3893	–126.26, 324.10	–90.06, 287.89	8.65
		Non-LTSS users	90.26	10.4	<0.0001	50.06, 130.46	56.53, 124.00	
	Demonstration year 1	LTSS users	104.22	NS	0.0952	–18.20, 226.63	1.48, 206.95	40.75
		Non-LTSS users	63.47	7.3	0.0004	28.37, 98.57	34.01, 92.92	
	Demonstration year 2	LTSS users	234.22	NS	0.1163	–58.05, 526.50	–11.06, 479.51	159.08
		Non-LTSS users	75.15	8.6	<0.0001	39.74, 110.56	45.43, 104.87	
	Demonstration year 3	LTSS users	216.72	NS	0.1316	–64.97, 498.42	–19.68, 453.13	119.54
		Non-LTSS users	97.18	11.1	<0.0001	62.33, 132.03	67.94, 126.42	
	Demonstration year 4	LTSS users	73.79	NS	0.6521	–247.00, 394.59	–195.42, 343.01	–26.70
		Non-LTSS users	100.49	11.7	<0.0001	57.88, 143.10	64.73, 136.25	
	Demonstration year 5	LTSS users	–48.73	NS	0.8019	–429.35, 331.90	–368.16, 270.70	–147.26
		Non-LTSS users	98.54	11.6	0.0002	47.49, 149.58	55.70, 141.38	
	Demonstration year 6	LTSS users	–158.23	NS	0.4715	–588.99, 272.52	–519.73, 203.27	–269.65
		Non-LTSS users	111.41	13.0	<0.0001	58.15, 164.68	66.71, 156.11	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any SNF admission (%)	Cumulative	LTSS users	1.39	38.1	<0.0001	0.81, 1.97	0.91, 1.87	1.40***
		Non-LTSS users	–0.01	NS	0.2299	–0.03, 0.01	–0.03, 0.00	
	Demonstration year 1	LTSS users	0.66	14.5	0.0260	0.08, 1.23	0.17, 1.14	0.67*
		Non-LTSS users	–0.01	NS	0.4216	–0.03, 0.01	–0.03, 0.01	
	Demonstration year 2	LTSS users	1.46	42.7	0.0004	0.66, 2.26	0.79, 2.13	1.45***
		Non-LTSS users	0.01	NS	0.3933	–0.01, 0.04	–0.01, 0.03	
	Demonstration year 3	LTSS users	2.14	69.6	0.0015	0.82, 3.47	1.03, 3.26	2.17**
		Non-LTSS users	–0.03	–14.5	0.0277	–0.06, –0.00	–0.05, –0.01	
	Demonstration year 4	LTSS users	1.66	47.5	0.0112	0.38, 2.95	0.59, 2.74	1.66*
		Non-LTSS users	0.01	NS	0.5463	–0.01, 0.03	–0.01, 0.02	
	Demonstration year 5	LTSS users	1.30	41.3	0.0045	0.40, 2.20	0.55, 2.06	1.33**
		Non-LTSS users	–0.03	NS	0.1072	–0.06, 0.01	–0.05, 0.00	
	Demonstration year 6	LTSS users	1.91	61.2	0.0472	0.02, 3.80	0.33, 3.50	1.94*
		Non-LTSS users	–0.03	NS	0.2109	–0.07, 0.01	–0.06, 0.01	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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								
Monthly number of preventable ED visits per 1,000 persons	Cumulative	LTSS users	8.28	32.7	0.0147	1.63, 14.93	2.70, 13.86	8.50**
		Non-LTSS users	–0.22	NS	0.7976	–1.90, 1.46	–1.63, 1.19	
	Demonstration year 1	LTSS users	4.94	NS	0.2891	–4.20, 14.09	–2.73, 12.62	6.61
		Non-LTSS users	–1.67	NS	0.1170	–3.75, 0.42	–3.41, 0.08	
	Demonstration year 2	LTSS users	3.34	NS	0.5586	–7.86, 14.54	–6.06, 12.74	3.68
		Non-LTSS users	–0.34	NS	0.7699	–2.60, 1.92	–2.24, 1.56	
	Demonstration year 3	LTSS users	14.41	81.7	0.0093	3.55, 25.27	5.30, 23.52	13.71**
		Non-LTSS users	0.70	NS	0.5257	–1.46, 2.87	–1.12, 2.52	
	Demonstration year 4	LTSS users	4.76	NS	0.3198	–4.62, 14.13	–3.11, 12.63	4.84
		Non-LTSS users	–0.08	NS	0.9289	–1.92, 1.75	–1.62, 1.46	
	Demonstration year 5	LTSS users	19.09	101.6	0.0039	6.12, 32.05	8.21, 29.97	19.34**
		Non-LTSS users	–0.25	NS	0.8293	–2.53, 2.03	–2.17, 1.66	
	Demonstration year 6	LTSS users	3.45	NS	0.5311	–7.35, 14.26	–5.61, 12.52	3.08
		Non-LTSS users	0.37	NS	0.7473	–1.87, 2.61	–1.51, 2.25	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ACSC admission, overall (%)	Cumulative	LTSS users	0.08	NS	0.5515	–0.19, 0.35	–0.14, 0.31	0.05
		Non-LTSS users	0.03	7.9	0.0075	0.01, 0.05	0.01, 0.05	
	Demonstration year 1	LTSS users	0.02	NS	0.8423	–0.18, 0.22	–0.15, 0.19	0.01
		Non-LTSS users	0.01	NS	0.5085	–0.02, 0.03	–0.01, 0.03	
	Demonstration year 2	LTSS users	0.04	NS	0.8502	–0.42, 0.50	–0.34, 0.43	0.02
		Non-LTSS users	0.02	NS	0.1711	–0.01, 0.06	–0.01, 0.05	
	Demonstration year 3	LTSS users	0.09	NS	0.6332	–0.27, 0.44	–0.21, 0.38	0.07
		Non-LTSS users	0.02	NS	0.2597	–0.01, 0.05	–0.01, 0.04	
	Demonstration year 4	LTSS users	0.09	NS	0.7508	–0.48, 0.67	–0.39, 0.58	0.06
		Non-LTSS users	0.03	NS	0.1135	–0.01, 0.07	–0.00, 0.06	
	Demonstration year 5	LTSS users	0.21	NS	0.4536	–0.34, 0.76	–0.25, 0.67	0.19
		Non-LTSS users	0.02	NS	0.3374	–0.02, 0.05	–0.01, 0.04	
	Demonstration year 6	LTSS users	0.01	NS	0.9144	–0.25, 0.28	–0.21, 0.23	–0.06
		Non-LTSS users	0.08	21.3	<0.0001	0.05, 0.11	0.05, 0.11	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ACSC admission, chronic (%)	Cumulative	LTSS users	0.18	NS	0.0777	–0.02, 0.39	0.01, 0.36	0.15
		Non-LTSS users	0.03	12.2	0.0039	0.01, 0.05	0.01, 0.05	
	Demonstration year 1	LTSS users	0.20	41.6	0.0449	0.00, 0.39	0.04, 0.36	0.18
		Non-LTSS users	0.02	NS	0.0933	–0.00, 0.03	0.00, 0.03	
	Demonstration year 2	LTSS users	0.01	NS	0.9252	–0.27, 0.30	–0.23, 0.25	–0.01
		Non-LTSS users	0.03	NS	0.0995	–0.01, 0.06	0.00, 0.05	
	Demonstration year 3	LTSS users	0.26	110.4	0.0014	0.10, 0.42	0.13, 0.39	0.23**
		Non-LTSS users	0.03	NS	0.1110	–0.01, 0.06	–0.00, 0.05	
	Demonstration year 4	LTSS users	0.10	NS	0.6831	–0.38, 0.58	–0.30, 0.50	0.06
		Non-LTSS users	0.03	NS	0.0536	–0.00, 0.07	0.01, 0.06	
	Demonstration year 5	LTSS users	0.31	NS	0.2158	–0.18, 0.81	–0.10, 0.73	0.30
		Non-LTSS users	0.02	NS	0.2939	–0.02, 0.05	–0.01, 0.05	
	Demonstration year 6	LTSS users	0.15	NS	0.2053	–0.08, 0.39	–0.05, 0.35	0.08
		Non-LTSS users	0.07	24.6	<0.0001	0.04, 0.10	0.04, 0.09	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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 30-day follow-up after mental health discharge (%)	Cumulative	LTSS users	–0.96	NS	0.8857	–14.02, 12.10	–11.92, 10.00	1.41
		Non-LTSS users	–2.37	–5.0	0.0488	–4.72, –0.01	–4.34, –0.39	
	Demonstration year 1	LTSS users	–11.63	NS	0.1616	–27.91, 4.65	–25.30, 2.04	–11.60
		Non-LTSS users	–0.03	NS	0.9853	–3.10, 3.04	–2.61, 2.55	
	Demonstration year 2	LTSS users	9.71	NS	0.6489	–32.08, 51.49	–25.36, 44.77	11.15
		Non-LTSS users	–1.45	NS	0.2930	–4.15, 1.25	–3.71, 0.82	
	Demonstration year 3	LTSS users	19.99	NS	0.2696	–15.50, 55.47	–9.79, 49.77	20.04
		Non-LTSS users	–0.05	NS	0.9735	–3.24, 3.14	–2.73, 2.62	
	Demonstration year 4	LTSS users	1.19	NS	0.9416	–30.56, 32.93	–25.45, 27.83	3.86
		Non-LTSS users	–2.67	NS	0.1517	–6.33, 0.98	–5.74, 0.39	
	Demonstration year 5	LTSS users	–12.11	NS	0.5786	–54.86, 30.63	–47.99, 23.76	–7.60
		Non-LTSS users	–4.52	–9.9	0.0081	–7.86, –1.18	–7.32, –1.71	
	Demonstration year 6	LTSS users	–16.50	NS	0.2889	–46.99, 13.99	–42.09, 9.09	–12.66
		Non-LTSS users	–3.84	–8.5	0.0044	–6.49, –1.20	–6.06, –1.62	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Number of all-cause 30-day readmissions per 1,000 discharges	Cumulative	LTSS users	99.85	30.1	0.0022	35.90, 163.79	46.18, 153.51	93.61**
		Non-LTSS users	6.23	NS	0.2060	–3.43, 15.90	–1.88, 14.34	
	Demonstration year 1	LTSS users	25.29	NS	0.6493	–83.70, 134.28	–66.18, 116.75	39.50
		Non-LTSS users	–14.22	NS	0.0958	–30.94, 2.51	–28.25, –0.18	
	Demonstration year 2	LTSS users	125.47	NS	0.0816	–15.73, 266.67	6.98, 243.97	106.65
		Non-LTSS users	18.82	8.2	0.0302	1.80, 35.84	4.54, 33.11	
	Demonstration year 3	LTSS users	170.04	60.1	0.0031	57.53, 282.56	75.62, 264.47	165.45**
		Non-LTSS users	4.59	NS	0.5329	–9.85, 19.04	–7.53, 16.72	
	Demonstration year 4	LTSS users	137.51	53.3	0.0055	40.43, 234.58	56.04, 218.98	126.51**
		Non-LTSS users	11.00	NS	0.1119	–2.56, 24.56	–0.38, 22.38	
	Demonstration year 5	LTSS users	56.13	NS	0.2749	–44.63, 156.89	–28.43, 140.69	49.47
		Non-LTSS users	6.66	NS	0.3681	–7.84, 21.16	–5.51, 18.83	
	Demonstration year 6	LTSS users	197.01	NS	0.0728	–18.19, 412.21	16.41, 377.61	189.47
		Non-LTSS users	7.54	NS	0.3356	–7.81, 22.89	–5.34, 20.42	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
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.
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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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								
Monthly probability of any inpatient admission (%)	Cumulative	SPMI	0.14	NS	0.1088	–0.03, 0.31	–0.00, 0.28	0.13
		Non-SPMI	0.00	NS	0.9179	–0.06, 0.07	–0.05, 0.06	
	Demonstration year 1	SPMI	–0.01	NS	0.9507	–0.17, 0.16	–0.14, 0.13	0.03
		Non-SPMI	–0.03	NS	0.4059	–0.11, 0.05	–0.10, 0.03	
	Demonstration year 2	SPMI	0.25	5.3	0.0317	0.02, 0.48	0.06, 0.44	0.26
		Non-SPMI	–0.01	NS	0.8385	–0.13, 0.10	–0.11, 0.08	
	Demonstration year 3	SPMI	0.13	NS	0.2611	–0.10, 0.37	–0.06, 0.33	0.10
		Non-SPMI	0.04	NS	0.5397	–0.08, 0.16	–0.06, 0.14	
	Demonstration year 4	SPMI	0.23	5.2	0.0384	0.01, 0.44	0.05, 0.40	0.21
		Non-SPMI	0.01	NS	0.7946	–0.09, 0.12	–0.07, 0.10	
	Demonstration year 5	SPMI	0.00	NS	0.9977	–0.28, 0.28	–0.23, 0.23	0.04
		Non-SPMI	–0.04	NS	0.4774	–0.14, 0.07	–0.13, 0.05	
	Demonstration year 6	SPMI	0.27	6.4	0.0436	0.01, 0.53	0.05, 0.49	0.16
		Non-SPMI	0.11	7.2	0.0190	0.02, 0.21	0.03, 0.19	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ED visit (%)	Cumulative	SPMI	–0.19	NS	0.2835	–0.53, 0.15	–0.47, 0.10	–0.14
		Non-SPMI	–0.05	NS	0.6620	–0.25, 0.16	–0.22, 0.12	
	Demonstration year 1	SPMI	–0.18	NS	0.2795	–0.51, 0.15	–0.46, 0.09	–0.12
		Non-SPMI	–0.06	NS	0.5680	–0.27, 0.15	–0.23, 0.11	
	Demonstration year 2	SPMI	–0.15	NS	0.4792	–0.55, 0.26	–0.48, 0.19	–0.10
		Non-SPMI	–0.05	NS	0.6880	–0.29, 0.19	–0.25, 0.15	
	Demonstration year 3	SPMI	–0.01	NS	0.9446	–0.38, 0.36	–0.32, 0.30	–0.07
		Non-SPMI	0.06	NS	0.6806	–0.21, 0.33	–0.17, 0.28	
	Demonstration year 4	SPMI	–0.16	NS	0.4309	–0.57, 0.24	–0.51, 0.18	–0.09
		Non-SPMI	–0.07	NS	0.5729	–0.33, 0.19	–0.29, 0.14	
	Demonstration year 5	SPMI	–0.31	NS	0.1849	–0.76, 0.15	–0.69, 0.07	–0.26
		Non-SPMI	–0.05	NS	0.7349	–0.33, 0.23	–0.29, 0.19	
	Demonstration year 6	SPMI	–0.25	NS	0.2384	–0.66, 0.16	–0.59, 0.10	–0.21
		Non-SPMI	–0.04	NS	0.8367	–0.41, 0.33	–0.35, 0.27	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly number of physician E&M visits per 1,000 persons	Cumulative	SPMI	69.82	5.8	0.0052	20.83, 118.80	28.71, 110.92	30.11
		Non-SPMI	39.71	5.9	0.0002	18.91, 60.51	22.25, 57.16	
	Demonstration year 1	SPMI	66.92	5.6	0.0120	14.73, 119.12	23.12, 110.72	30.98
		Non-SPMI	35.94	4.9	<0.0001	20.26, 51.63	22.78, 49.11	
	Demonstration year 2	SPMI	79.42	6.5	0.0018	29.64, 129.19	37.65, 121.18	44.41*
		Non-SPMI	35.00	5.0	0.0015	13.38, 56.63	16.86, 53.15	
	Demonstration year 3	SPMI	90.55	7.4	<0.0001	45.08, 136.02	52.39, 128.71	48.70**
		Non-SPMI	41.85	6.3	<0.0001	21.33, 62.37	24.63, 59.07	
	Demonstration year 4	SPMI	80.19	6.7	0.0032	26.90, 133.48	35.47, 124.91	41.62*
		Non-SPMI	38.57	6.1	0.0037	12.55, 64.60	16.73, 60.41	
	Demonstration year 5	SPMI	53.21	NS	0.0658	–3.48, 109.91	5.63, 100.79	8.11
		Non-SPMI	45.11	7.2	0.0100	10.80, 79.41	16.32, 73.90	
	Demonstration year 6	SPMI	55.84	NS	0.0783	–6.32, 118.00	3.67, 108.01	7.14
		Non-SPMI	48.71	7.8	0.0049	14.77, 82.65	20.22, 77.19	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any SNF admission (%)	Cumulative	SPMI	0.04	5.9	0.0436	0.00, 0.08	0.01, 0.08	0.03
		Non-SPMI	0.01	NS	0.2875	–0.01, 0.03	–0.01, 0.03	
	Demonstration year 1	SPMI	0.01	NS	0.6655	–0.04, 0.06	–0.03, 0.05	–0.01
		Non-SPMI	0.02	7.4	0.0270	0.00, 0.04	0.01, 0.04	
	Demonstration year 2	SPMI	0.06	8.7	0.0281	0.01, 0.12	0.02, 0.11	0.04
		Non-SPMI	0.02	NS	0.1537	–0.01, 0.04	–0.00, 0.04	
	Demonstration year 3	SPMI	0.04	NS	0.1739	–0.02, 0.09	–0.01, 0.08	0.04
		Non-SPMI	–0.01	NS	0.7042	–0.04, 0.03	–0.03, 0.02	
	Demonstration year 4	SPMI	0.07	10.5	0.0018	0.03, 0.12	0.03, 0.11	0.05*
		Non-SPMI	0.02	NS	0.2403	–0.01, 0.05	–0.01, 0.05	
	Demonstration year 5	SPMI	0.02	NS	0.5420	–0.04, 0.07	–0.03, 0.06	0.03
		Non-SPMI	–0.02	NS	0.4153	–0.05, 0.02	–0.05, 0.02	
	Demonstration year 6	SPMI	0.07	10.1	0.0304	0.01, 0.13	0.02, 0.12	0.05
		Non-SPMI	0.02	NS	0.1860	–0.01, 0.05	–0.01, 0.05	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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								
Monthly number of preventable ED visits per 1,000 persons	Cumulative	SPMI	–0.14	NS	0.9163	–2.85, 2.56	–2.41, 2.12	0.46
		Non-SPMI	–0.61	NS	0.4322	–2.12, 0.91	–1.88, 0.66	
	Demonstration year 1	SPMI	–0.82	NS	0.6273	–4.15, 2.50	–3.62, 1.97	0.83
		Non-SPMI	–1.66	NS	0.0877	–3.56, 0.25	–3.26, –0.06	
	Demonstration year 2	SPMI	–0.76	NS	0.6824	–4.38, 2.87	–3.80, 2.28	–0.74
		Non-SPMI	–0.02	NS	0.9877	–2.03, 2.00	–1.70, 1.67	
	Demonstration year 3	SPMI	1.26	NS	0.4342	–1.90, 4.43	–1.40, 3.92	1.27
		Non-SPMI	–0.01	NS	0.9923	–2.01, 1.99	–1.69, 1.67	
	Demonstration year 4	SPMI	0.32	NS	0.8410	–2.81, 3.45	–2.31, 2.95	1.15
		Non-SPMI	–0.83	NS	0.3516	–2.57, 0.91	–2.29, 0.63	
	Demonstration year 5	SPMI	–1.08	NS	0.5636	–4.76, 2.59	–4.17, 2.00	–0.48
		Non-SPMI	–0.60	NS	0.5990	–2.84, 1.64	–2.48, 1.28	
	Demonstration year 6	SPMI	0.08	NS	0.9567	–2.87, 3.04	–2.40, 2.56	0.16
		Non-SPMI	–0.07	NS	0.9519	–2.46, 2.32	–2.08, 1.93	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ACSC admission, overall (%)	Cumulative	SPMI	0.03	NS	0.1540	–0.01, 0.08	–0.01, 0.07	0.03
		Non-SPMI	0.00	NS	0.9382	–0.02, 0.02	–0.02, 0.02	
	Demonstration year 1	SPMI	0.01	NS	0.6248	–0.03, 0.05	–0.03, 0.05	0.01
		Non-SPMI	0.00	NS	0.8118	–0.03, 0.03	–0.02, 0.03	
	Demonstration year 2	SPMI	0.03	NS	0.4216	–0.04, 0.10	–0.03, 0.09	0.03
		Non-SPMI	–0.00	NS	0.8194	–0.04, 0.03	–0.04, 0.03	
	Demonstration year 3	SPMI	0.03	NS	0.3866	–0.03, 0.08	–0.02, 0.07	0.04
		Non-SPMI	–0.01	NS	0.5060	–0.06, 0.03	–0.05, 0.02	
	Demonstration year 4	SPMI	0.03	NS	0.4062	–0.04, 0.09	–0.03, 0.08	0.02
		Non-SPMI	0.01	NS	0.7566	–0.03, 0.04	–0.02, 0.03	
	Demonstration year 5	SPMI	0.01	NS	0.7349	–0.06, 0.08	–0.05, 0.07	0.02
		Non-SPMI	–0.01	NS	0.7151	–0.03, 0.02	–0.03, 0.02	
	Demonstration year 6	SPMI	0.09	16.7	0.0028	0.03, 0.15	0.04, 0.14	0.06*
		Non-SPMI	0.03	NS	0.0713	–0.00, 0.06	0.00, 0.05	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Monthly probability of any ACSC admission, chronic (%)	Cumulative	SPMI	0.03	NS	0.1316	–0.01, 0.08	–0.00, 0.07	0.02
		Non-SPMI	0.02	NS	0.0797	–0.00, 0.03	0.00, 0.03	
	Demonstration year 1	SPMI	0.02	NS	0.2181	–0.01, 0.05	–0.01, 0.05	–0.00
		Non-SPMI	0.02	9.7	0.0380	0.00, 0.05	0.00, 0.04	
	Demonstration year 2	SPMI	0.03	NS	0.2655	–0.02, 0.09	–0.02, 0.08	0.03
		Non-SPMI	0.01	NS	0.7092	–0.03, 0.04	–0.02, 0.03	
	Demonstration year 3	SPMI	0.03	NS	0.2748	–0.02, 0.09	–0.02, 0.08	0.03
		Non-SPMI	0.01	NS	0.6615	–0.02, 0.03	–0.02, 0.03	
	Demonstration year 4	SPMI	0.03	NS	0.3534	–0.03, 0.09	–0.02, 0.08	–0.00
		Non-SPMI	0.03	NS	0.0656	–0.00, 0.06	0.00, 0.06	
	Demonstration year 5	SPMI	0.01	NS	0.7259	–0.06, 0.08	–0.05, 0.07	0.01
		Non-SPMI	0.00	NS	0.7235	–0.02, 0.03	–0.02, 0.03	
	Demonstration year 6	SPMI	0.08	20.0	0.0067	0.02, 0.14	0.03, 0.13	0.05
		Non-SPMI	0.03	NS	0.0962	–0.00, 0.06	0.00, 0.05	

(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 Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

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)								
Number of all-cause 30-day readmissions per 1,000 discharges	Cumulative	SPMI	16.91	6.0	0.0028	5.80, 28.01	7.59, 26.23	18.02*
		Non-SPMI	–1.11	NS	0.8593	–13.37, 11.15	–11.40, 9.18	
	Demonstration year 1	SPMI	–0.12	NS	0.9908	–20.29, 20.05	–17.05, 16.81	11.32
		Non-SPMI	–11.44	NS	0.1645	–27.57, 4.69	–24.98, 2.10	
	Demonstration year 2	SPMI	32.12	11.3	<0.0001	16.34, 47.89	18.88, 45.35	32.25**
		Non-SPMI	–0.13	NS	0.9868	–16.07, 15.80	–13.50, 13.24	
	Demonstration year 3	SPMI	12.25	NS	0.1694	–5.23, 29.73	–2.42, 26.92	6.29
		Non-SPMI	5.96	NS	0.5043	–11.53, 23.45	–8.72, 20.64	
	Demonstration year 4	SPMI	20.98	7.7	0.0126	4.50, 37.46	7.15, 34.81	10.15
		Non-SPMI	10.83	NS	0.2871	–9.11, 30.78	–5.91, 27.57	
	Demonstration year 5	SPMI	19.84	7.4	0.0075	5.29, 34.39	7.63, 32.05	30.28*
		Non-SPMI	–10.44	NS	0.3703	–33.27, 12.39	–29.60, 8.72	
	Demonstration year 6	SPMI	14.28	NS	0.1501	–5.17, 33.73	–2.04, 30.61	9.59
		Non-SPMI	4.69	NS	0.7667	–26.32, 35.71	–21.33, 30.72	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
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.
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. 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 Massachusetts 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 (see ***Table E-5***) and NF-related measures derived from the MDS (see ***Table E-6***). These descriptive 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 (see ***Table E-4***). However, there were a few outcomes where some differences were apparent. For example, outpatient therapy use was higher for the comparison group relative to the demonstration group, whereas percent with use of ED services was higher in the demonstration group relative to the comparison group.

As with the service utilization measures, the Massachusetts demonstration eligible beneficiaries were similar to the comparison group in many, but not all, of the RTI quality of care and care coordination measures (see ***Table E-5***). Over the predemonstration and demonstration periods, the demonstration group had more preventable ED visits, 30-day all-cause readmissions, screenings for clinical depression, and a higher rate of 30-day follow-up visits after mental health discharges. On the other hand, admissions for overall ACSC diagnoses were generally more prevalent in the comparison group than in the demonstration group across most years. No clear pattern was evident for the number of admissions for chronic ACSC diagnoses.

Finally, across all years, the demonstration eligible 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 (see ***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 better functional status and a lower proportion of beneficiaries with severe cognitive impairment across all years. Generally, the demonstrations group had a higher proportion of beneficiaries with low level of care needs relative to the comparison group.

Table E-4
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Number of demonstration eligible beneficiaries		85,926	92,257	82,807	88,162	93,465	95,202	94,705	93,079
Number of comparison eligible beneficiaries		113,743	121,028	129,264	132,863	141,784	128,931	127,986	132,659
Institutional setting									
Inpatient admissions[1]	Demonstration								
% with use		3.7	3.5	3.4	3.4	3.2	3.2	3.0	3.2
Utilization per 1,000 user months		1,182.5	1,172.2	1,171.7	1,173.7	1,170.6	1,172.7	1,170.8	1,178.1
Utilization per 1,000 eligible months		43.3	41.0	39.4	39.3	37.6	37.1	35.1	37.1
Inpatient admissions[1]	Comparison								
% with use		3.7	3.8	3.6	3.4	3.3	3.2	3.2	3.1
Utilization per 1,000 user months		1,171.8	1,167.8	1,169.5	1,155.3	1,151.6	1,158.8	1,148.9	1,153.9
Utilization per 1,000 eligible months		43.6	44.6	41.8	39.0	37.9	36.7	36.3	35.5
Inpatient psychiatric	Demonstration								
% with use		0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.6
Utilization per 1,000 user months		1,082.8	1,082.6	1,079.0	1,076.2	1,083.0	1,097.9	1,095.0	1,094.7
Utilization per 1,000 eligible months		8.8	8.2	8.2	7.8	7.1	7.2	7.0	7.1
Inpatient psychiatric	Comparison								
% with use		0.7	0.8	0.7	0.6	0.6	0.6	0.6	0.5
Utilization per 1,000 user months		1,094.2	1,104.5	1,096.1	1,078.3	1,087.4	1,092.8	1,081.4	1,087.8
Utilization per 1,000 eligible months		7.9	8.5	8.0	6.6	6.4	6.0	6.0	5.7

(continued)

Table E-4 (continued)
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Inpatient non-psychiatric	Demonstration								
% with use		2.9	2.8	2.7	2.7	2.6	2.6	2.4	2.6
Utilization per 1,000 user months		1,170.4	1,160.7	1,160.7	1,164.6	1,159.1	1,156.4	1,159.1	1,164.8
Utilization per 1,000 eligible months		34.5	32.8	31.2	31.5	30.5	29.9	28.1	30.0
Inpatient non-psychiatric	Comparison								
% with use		3.1	3.1	2.9	2.8	2.8	2.7	2.7	2.6
Utilization per 1,000 user months		1,161.3	1,150.9	1,154.7	1,144.7	1,138.6	1,146.2	1,137.8	1,142.7
Utilization per 1,000 eligible months		35.7	36.1	33.7	32.5	31.5	30.6	30.3	29.8
Emergency department use (non-admit)	Demonstration								
% with use		7.5	7.4	7.5	7.6	7.4	7.1	7.0	6.9
Utilization per 1,000 user months		1,325.2	1,318.6	1,329.4	1,360.2	1,356.8	1,340.4	1,316.4	1,325.9
Utilization per 1,000 eligible months		99.5	97.4	100.0	102.9	100.5	95.3	92.6	91.8
Emergency department use (non-admit)	Comparison								
% with use		6.8	6.8	6.9	6.9	6.7	6.5	6.5	6.4
Utilization per 1,000 user months		1,341.1	1,325.8	1,341.4	1,311.5	1,296.5	1,293.0	1,309.6	1,295.9
Utilization per 1,000 eligible months		91.0	90.4	93.1	91.0	86.3	84.2	85.3	83.0

(continued)

Table E-4 (continued)
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Emergency department use (psychiatric)	Demonstration								
% with use		0.8	0.8	0.9	0.9	0.9	0.8	0.8	0.8
Utilization per 1,000 user months		1,275.9	1,329.8	1,355.4	1,419.1	1,401.1	1,377.8	1,335.4	1,342.4
Utilization per 1,000 eligible months		10.7	11.0	12.2	13.1	12.4	11.6	10.9	11.0
Emergency department use (psychiatric)	Comparison								
% with use		0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5
Utilization per 1,000 user months		1,257.6	1,257.5	1,260.2	1,245.3	1,178.5	1,183.1	1,215.4	1,212.4
Utilization per 1,000 eligible months		7.0	7.0	7.2	6.6	5.4	5.4	5.7	5.5
Observation stays	Demonstration								
% with use		0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9
Utilization per 1,000 user months		1,077.0	1,078.7	1,080.6	1,126.8	1,133.1	1,102.8	1,093.5	1,109.6
Utilization per 1,000 eligible months		7.5	8.1	8.3	8.9	10.0	8.7	8.9	9.4
Observation stays	Comparison								
% with use		0.6	0.6	0.7	0.7	0.8	0.7	0.7	0.7
Utilization per 1,000 user months		1,065.8	1,069.6	1,070.2	1,060.5	1,056.6	1,060.9	1,049.9	1,067.4
Utilization per 1,000 eligible months		6.0	6.7	7.7	7.7	7.9	7.9	7.6	7.8

(continued)

Table E-4 (continued)
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Skilled nursing facility	Demonstration								
% with use		0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4
Utilization per 1,000 user months		1,096.3	1,095.2	1,098.8	1,095.0	1,098.1	1,107.1	1,130.3	1,152.1
Utilization per 1,000 eligible months		4.4	4.6	4.0	4.0	4.0	4.1	3.7	4.2
Skilled nursing facility	Comparison								
% with use		0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Utilization per 1,000 user months		1,099.0	1,092.4	1,085.5	1,094.6	1,085.7	1,085.1	1,077.6	1,080.1
Utilization per 1,000 eligible months		6.0	6.9	5.5	5.2	5.6	5.0	5.1	4.9
Hospice	Demonstration								
% with use		0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Utilization per 1,000 user months		1,039.3	1,036.6	1,037.9	1,038.3	1,029.1	1,035.3	1,032.1	1,035.7
Utilization per 1,000 eligible months		2.0	2.0	1.3	1.2	1.2	1.3	1.2	1.2
Hospice	Comparison								
% with use		0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.3
Utilization per 1,000 user months		1,080.1	1,039.0	1,017.3	1,024.6	1,022.4	1,017.5	1,013.9	1,014.5
Utilization per 1,000 eligible months		3.0	3.0	2.5	2.6	2.2	2.6	3.0	3.1

(continued)

Table E-4 (continued)
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Non-institutional setting									
Primary care E&M visits	Demonstration								
% with use		42.8	49.9	52.9	52.6	53.0	52.8	52.7	53.0
Utilization per 1,000 user months		1,735.3	1,798.6	1,838.7	1,893.2	1,907.2	1,891.1	1,867.0	1,898.4
Utilization per 1,000 eligible months		742.6	897.3	971.8	995.3	1,010.6	997.7	983.6	1,005.7
Primary care E&M visits	Comparison								
% with use		44.1	49.9	51.2	51.8	51.9	51.1	50.7	50.8
Utilization per 1,000 user months		1,753.4	1,828.6	1,834.8	1,824.3	1,840.7	1,849.4	1,859.7	1,883.1
Utilization per 1,000 eligible months		773.5	911.8	939.8	945.6	954.6	944.6	942.0	956.8
Outpatient therapy (PT, OT, ST)	Demonstration								
% with use		2.5	2.5	2.4	2.4	2.5	2.6	2.7	2.5
Utilization per 1,000 user months		9,911.7	9,676.4	10,189.7	9,974.7	10,158.1	9,490.1	8,911.7	7,861.3
Utilization per 1,000 eligible months		248.6	240.6	242.1	242.4	257.8	245.8	236.8	196.0
Outpatient therapy (PT, OT, ST)	Comparison								
% with use		2.6	2.7	2.6	2.7	3.0	3.2	3.2	3.2
Utilization per 1,000 user months		14,677.7	14,259.8	16,131.5	16,036.1	16,823.6	16,037.2	15,467.0	13,705.2
Utilization per 1,000 eligible months		388.4	380.2	423.8	433.8	507.5	513.3	499.8	445.2

(continued)

Table E-4 (continued)
Proportion and utilization for institutional and non-institutional services for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Independent therapy (PT, OT, ST)	Demonstration								
% with use		1.2	1.2	1.3	1.4	1.5	1.5	1.6	1.7
Utilization per 1,000 user months		10,374.0	10,374.1	11,573.5	11,996.0	12,180.5	12,195.0	11,696.4	10,728.3
Utilization per 1,000 eligible months		127.4	129.4	154.6	169.6	184.4	187.1	181.9	186.8
Independent therapy (PT, OT, ST)	Comparison								
% with use		1.4	1.4	1.5	1.7	1.7	1.8	1.9	2.0
Utilization per 1,000 user months		11,414.8	12,129.8	13,853.6	14,132.3	14,116.5	14,187.5	13,770.5	12,751.5
Utilization per 1,000 eligible months		157.6	172.0	214.7	235.1	243.3	252.7	263.6	256.9
Other hospital outpatient services	Demonstration								
% with use		37.1	36.3	36.3	36.1	36.7	36.6	36.4	36.5
Utilization per 1,000 user months		—	—	—	—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—	—	—	—
Other hospital outpatient services	Comparison								
% with use		22.1	22.5	22.6	22.8	23.1	23.2	23.3	23.7
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 data

Table E-5
Quality of care and care coordination outcomes for the demonstration and comparison groups in Massachusetts, October 1, 2011–December 31, 2019

Quality and care coordination measures	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
30-day all-cause risk-standardized readmission rate (%)	Demonstration	19.7	19.7	19.0	19.7	19.0	19.9	19.5	19.5
	Comparison	18.2	18.6	17.9	17.2	17.8	17.4	17.6	17.8
Preventable ED visits per 1,000 persons	Demonstration	46.9	45.0	45.6	46.3	43.9	41.9	40.9	40.8
	Comparison	42.6	42.7	44.0	42.6	39.3	38.4	38.3	37.2
Rate of 30-day follow-up after hospitalization for mental illness (%)	Demonstration	60.6	60.3	61.5	57.9	52.4	49.6	49.6	50.0
	Comparison	50.9	53.1	53.8	50.5	43.7	43.6	44.9	44.8
Ambulatory care sensitive condition admissions per 1,000 eligible months—overall composite (AHRQ PQI # 90)	Demonstration	4.9	4.7	4.4	4.3	4.3	4.6	4.2	4.7
	Comparison	5.2	5.3	4.7	4.5	4.7	4.8	4.7	4.3
Ambulatory care sensitive condition admissions per 1,000 eligible months—chronic composite (AHRQ PQI # 92)	Demonstration	3.3	3.2	3.2	3.1	3.2	3.5	3.2	3.6
	Comparison	3.4	3.5	3.1	3.2	3.2	3.5	3.4	3.2
Screening for clinical depression per 1,000 eligible months	Demonstration	0.1	1.1	2.4	4.0	3.1	1.9	1.6	1.4
	Comparison	0.1	0.7	2.1	3.3	3.6	2.9	2.1	2.9

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 Massachusetts, October 1, 2011–December 31, 2019

Measures by setting	Group	Predemon-stration year 1	Predemon-stration year 2	Demonstra-tion year 1	Demonstra-tion year 2	Demonstra-tion year 3	Demonstra-tion year 4	Demonstra-tion year 5	Demonstra-tion year 6
Annual NF utilization									
Number of demonstration beneficiaries	Demonstration	75,720	81,431	71,789	77,653	82,431	83,306	82,766	81,876
New long-stay NF admissions per 1,000 eligible beneficiaries		3.8	3.1	3.8	2.4	3.0	3.0	2.7	2.8
Number of comparison beneficiaries	Comparison	97,397	103,668	108,537	112,818	119,803	109,700	108,474	112,806
New long-stay NF admissions per 1,000 eligible beneficiaries		5.4	6.1	5.2	4.5	4.5	4.4	4.6	3.8
Number of demonstration beneficiaries	Demonstration	77,264	83,131	72,599	78,408	83,154	84,040	83,445	82,523
Long-stay NF users as % of eligible beneficiaries		2.2	2.1	1.3	1.1	1.0	1.0	1.0	1.0
Number of comparison beneficiaries	Comparison	101,780	107,905	112,110	116,701	124,450	113,592	112,442	116,978
Long-stay NF users as % of eligible beneficiaries		4.5	4.2	3.4	3.5	3.9	3.6	3.8	3.7
Characteristics of new long-stay NF residents at admission									
Number of admitted demonstration beneficiaries	Demonstration	288	251	272	185	251	253	221	231
Number of admitted comparison beneficiaries	Comparison	525	633	562	502	545	485	496	430
Functional status (RUG-IV ADL scale)	Demonstration	6.9	7.6	6.7	7.4	7.2	7.2	7.4	7.7
Functional status (RUG-IV ADL scale)	Comparison	8.2	8.5	8.5	8.8	9.0	9.2	9.1	8.8
Percent with severe cognitive impairment	Demonstration	17.2	15.8	13.6	17.2	14.1	11.8	13.9	13.4
Percent with severe cognitive impairment	Comparison	27.6	34.9	26.9	24.7	26.2	32.1	29.4	25.6
Percent with low level of care need	Demonstration	2.6	3.4	3.6	1.8	2.3	3.9	2.9	3.4
Percent with low level of care need	Comparison	4.3	1.7	2.2	2.6	0.7	0.9	0.7	1.4

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 eligible but not enrolled (non-enrollees), for each service by demonstration year, to help understand the utilization experience over time.

Non-enrollees generally had higher utilization than the demonstration enrollees across most service settings (see ***Table E-7***). However, emergency department use (both non-admit and psych) was higher for demonstration enrollees compared to non-enrollees. For the quality of care and care coordination measures, non-enrollees had a higher probability of both overall and chronic ACSC admissions and screening for clinical depression (see ***Table E-8***).

Table E-7
Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in Massachusetts, October 1, 2013–December 31, 2019

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
Number of demonstration enrollees		11,822	10,690	12,608	17,578	21,422	24,056
Number of demonstration non-enrollees		70,977	77,472	80,852	77,598	73,201	68,994
Institutional setting							
Inpatient admissions[1]	Enrollees						
% with use		2.8	3.1	2.3	2.4	2.1	3.0
Utilization per 1,000 user months		1,160.7	1,162.2	1,136.8	1,137.1	1,140.7	1,157.2
Utilization per 1,000 eligible months		32.8	36.5	25.9	27.8	23.4	35.1
Inpatient admissions[1]	Non-enrollees						
% with use		3.4	3.4	3.3	3.3	3.2	3.1
Utilization per 1,000 user months		1,172.2	1,175.5	1,173.5	1,176.3	1,175.2	1,180.8
Utilization per 1,000 eligible months		39.6	39.6	39.0	38.4	37.4	36.8
Inpatient psychiatric	Enrollees						
% with use		0.6	0.7	0.6	0.6	0.5	0.7
Utilization per 1,000 user months		1,089.5	1,079.1	1,095.4	1,091.6	1,083.0	1,094.9
Utilization per 1,000 eligible months		7.0	7.1	6.6	6.0	5.3	7.4
Inpatient psychiatric	Non-enrollees						
% with use		0.8	0.7	0.6	0.7	0.6	0.6
Utilization per 1,000 user months		1,076.1	1,074.3	1,081.7	1,098.9	1,095.5	1,093.0
Utilization per 1,000 eligible months		8.1	7.9	7.0	7.2	7.1	6.7
Inpatient non-psychiatric	Enrollees						
% with use		2.3	2.5	1.7	1.9	1.6	2.4
Utilization per 1,000 user months		1,136.7	1,152.2	1,118.6	1,118.1	1,127.0	1,139.8
Utilization per 1,000 eligible months		25.7	29.4	19.2	21.8	18.1	27.7
Inpatient non-psychiatric	Non-enrollees						
% with use		2.7	2.7	2.7	2.7	2.6	2.6
Utilization per 1,000 user months		1,162.6	1,166.6	1,162.6	1,160.8	1,163.9	1,168.9
Utilization per 1,000 eligible months		31.5	31.7	31.9	31.2	30.3	30.1

(continued)

Table E-7 (continued)
Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in Massachusetts, October 1, 2013–December 31, 2019

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
Emergency department use (non-admit)	Enrollees						
% with use		7.7	8.8	8.6	8.4	8.0	8.0
Utilization per 1,000 user months		1,329.3	1,575.9	1,563.6	1,492.4	1,429.0	1,414.6
Utilization per 1,000 eligible months		102.6	138.3	134.2	124.9	114.0	113.0
Emergency department use (non-admit)	Non-enrollees						
% with use		7.3	7.4	7.2	6.8	6.7	6.5
Utilization per 1,000 user months		1,320.4	1,321.3	1,321.3	1,299.8	1,278.8	1,284.0
Utilization per 1,000 eligible months		96.8	97.3	94.8	87.9	85.2	82.8
Emergency department use (psychiatric)	Enrollees						
% with use		1.0	1.2	1.1	1.2	1.1	1.1
Utilization per 1,000 user months		1,313.0	1,657.4	1,537.7	1,500.8	1,438.5	1,405.2
Utilization per 1,000 eligible months		13.7	20.2	17.1	17.4	15.9	15.2
Emergency department use (psychiatric)	Non-enrollees						
% with use		0.8	0.9	0.8	0.8	0.7	0.7
Utilization per 1,000 user months		1,353.2	1,372.4	1,376.5	1,329.3	1,292.8	1,310.0
Utilization per 1,000 eligible months		11.4	11.9	11.5	10.1	9.3	9.2
Observation stays	Enrollees						
% with use		0.6	0.9	1.3	1.0	1.0	1.1
Utilization per 1,000 user months		1,066.6	1,408.1	1,413.6	1,263.2	1,215.5	1,189.9
Utilization per 1,000 eligible months		6.4	12.7	18.1	12.6	12.2	13.6
Observation stays	Non-enrollees						
% with use		0.8	0.8	0.8	0.7	0.7	0.7
Utilization per 1,000 user months		1,080.3	1,077.6	1,071.6	1,060.2	1,051.4	1,067.9
Utilization per 1,000 eligible months		8.3	8.2	8.7	7.8	7.9	7.9

(continued)

Table E-7 (continued)
Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in Massachusetts, October 1, 2013–December 31, 2019

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
Skilled nursing facility	Enrollees						
% with use		0.3	0.4	0.5	0.5	0.4	0.5
Utilization per 1,000 user months		1,104.4	1,108.4	1,100.0	1,100.7	1,228.3	1,252.8
Utilization per 1,000 eligible months		3.3	4.3	5.0	5.0	4.6	6.4
Skilled nursing facility	Non-enrollees						
% with use		0.4	0.4	0.4	0.3	0.3	0.3
Utilization per 1,000 user months		1,097.8	1,092.7	1,098.2	1,111.7	1,101.7	1,099.6
Utilization per 1,000 eligible months		4.1	4.0	3.9	3.9	3.5	3.4
Hospice	Enrollees						
% with use		0.0	0.0	0.1	0.0	0.1	0.1
Utilization per 1,000 user months		1,000.0	1,133.3	1,000.0	1,049.4	1,074.8	1,065.3
Utilization per 1,000 eligible months		0.4	0.4	0.5	0.5	0.8	0.9
Hospice	Non-enrollees						
% with use		0.1	0.1	0.1	0.1	0.1	0.1
Utilization per 1,000 user months		1,039.0	1,034.1	1,030.9	1,034.1	1,025.5	1,028.8
Utilization per 1,000 eligible months		1.5	1.3	1.3	1.4	1.3	1.4
Non-institutional setting							
Primary care E&M visits	Enrollees						
% with use		49.7	51.2	51.1	51.0	54.3	54.8
Utilization per 1,000 user months		1,969.8	2,311.1	2,388.2	2,152.8	2,010.8	2,091.6
Utilization per 1,000 eligible months		979.2	1,182.8	1,219.3	1,097.8	1,091.0	1,146.6
Primary care E&M visits	Non-enrollees						
% with use		53.0	52.7	53.2	52.9	52.2	52.3
Utilization per 1,000 user months		1,823.5	1,834.2	1,841.1	1,839.1	1,826.1	1,831.0
Utilization per 1,000 eligible months		967.3	967.4	980.1	973.5	952.8	958.0

(continued)

Table E-7 (continued)
Proportion and utilization of institutional and non-institutional services for demonstration enrollees and non-enrollees in Massachusetts, October 1, 2013–December 31, 2019

Measures by setting	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
Outpatient therapy (PT, OT, ST)	Enrollees						
% with use		1.5	2.0	2.1	2.0	2.4	2.3
Utilization per 1,000 user months		5,202.4	6,785.3	6,896.7	6,858.6	7,066.0	6,043.4
Utilization per 1,000 eligible months		77.3	136.5	142.4	140.0	167.6	139.7
Outpatient therapy (PT, OT, ST)	Non-enrollees						
% with use		2.5	2.5	2.6	2.7	2.7	2.6
Utilization per 1,000 user months		10,629.9	10,343.0	10,593.6	9,928.9	9,337.4	8,414.2
Utilization per 1,000 eligible months		264.6	257.4	274.9	267.7	255.5	215.1
Independent therapy (PT, OT, ST)	Enrollees						
% with use		1.1	1.1	1.1	1.0	1.3	1.6
Utilization per 1,000 user months		10,176.1	17,098.5	15,283.3	14,062.6	12,221.5	11,822.3
Utilization per 1,000 eligible months		115.8	180.6	175.7	146.8	153.6	194.2
Independent therapy (PT, OT, ST)	Non-enrollees						
% with use		1.3	1.5	1.6	1.6	1.6	1.8
Utilization per 1,000 user months		11,764.4	11,485.6	11,861.9	11,961.2	11,578.5	10,415.8
Utilization per 1,000 eligible months		157.1	168.2	185.9	195.3	190.5	185.1
Other hospital outpatient services	Enrollees						
% with use		27.9	31.9	33.5	34.2	33.9	34.9
Utilization per 1,000 user months		—	—	—	—	—	—
Utilization per 1,000 eligible months		—	—	—	—	—	—
Other hospital outpatient services	Non-enrollees						
% with use		36.6	36.7	36.9	36.9	36.8	36.9
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 data.

Table E-8
Quality of care and care coordination outcomes for demonstration enrollees and non-enrollees in Massachusetts, October 1, 2013–December 31, 2019

Quality and care coordination measures	Group	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
30-day all-cause risk-standardized readmission rate (%)	Enrollees	19.8	19.2	17.5	17.4	19.2	19.5
	Non-enrollees	18.9	18.7	18.6	19.1	18.9	19.0
Preventable ED visits per 1,000 persons	Enrollees	47.0	62.1	59.7	53.4	50.9	50.2
	Non-enrollees	44.2	43.8	41.3	38.9	37.6	36.8
Rate of 30-day follow-up after hospitalization for mental illness (%)	Enrollees	63.4	61.6	51.0	40.7	43.6	45.3
	Non-enrollees	61.2	57.1	52.5	51.6	50.9	52.0
Ambulatory care sensitive condition admissions per 1,000 eligible months—overall composite (AHRQ PQI # 90)	Enrollees	4.1	4.7	2.9	3.6	2.9	4.5
	Non-enrollees	4.3	4.2	4.5	4.7	4.5	4.6
Ambulatory care sensitive condition admissions per 1,000 eligible months—chronic composite (AHRQ PQI # 92)	Enrollees	3.1	3.6	2.4	2.9	2.2	3.6
	Non-enrollees	3.1	3.0	3.3	3.6	3.4	3.5
Screening for clinical depression per 1,000 eligible months	Enrollees	0.5	0.6	0.6	0.2	0.5	0.4
	Non-enrollees	2.7	4.4	3.4	2.3	2.0	1.6

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.

Table E-9 presents unadjusted descriptive statistics for the demonstration enrollees for services traditionally paid by Medicaid, to help understand the Medicaid utilization experience over time. Nursing home and dental services are excluded from analysis due to encounter data deemed incomplete. LTSS nursing facility service use derived from MMP-submitted Medicaid encounters is excluded from analysis in all FAI States because CMS and RTI decided it was not possible to reliably create this measure because we could not correctly identify all LTSS NF stays. Instead, each evaluation report includes an analysis of LTSS NF use using MDS data. Second, CMS and RTI also decided that dental and nonemergency medical transportation services in Massachusetts were either incomplete or had unexplained variation, precluding the use of those encounter data for analysis. Finally, one Massachusetts MMP plan, Fallon, was excluded from the analyses because its encounter data was deemed incomplete.

Table E-9
Medicaid use for demonstration enrollees in Massachusetts, October 1, 2013–December 31, 2019

Measure	Demonstration year 1	Demonstration year 2	Demonstration year 3	Demonstration year 4	Demonstration year 5	Demonstration year 6
Personal care						
Users as percentage of enrollees per enrollee month (%)	6.76%	9.01%	10.33%	10.47%	11.32%	13.10%
Service days per enrollee month	1.73	2.26	2.59	2.66	2.58	3.54
Service days per user month	25.65	25.13	25.05	25.40	22.82	27.05
Other HCBS services						
Users as percentage of enrollees per enrollee month (%)	12.79%	18.16%	15.29%	13.03%	12.60%	15.26%
Service days per enrollee month	1.84	3.02	2.48	1.99	1.95	2.36
Service days per user month	14.43	16.64	16.23	15.31	15.51	15.44
Behavioral health services						
Users as percentage of enrollees per enrollee month (%)	32.72%	35.40%	35.45%	37.09%	36.16%	38.79%
Service days per enrollee month	1.68	2.06	2.23	2.27	2.40	2.70
Service days per user month	5.14	5.82	6.28	6.12	6.64	6.96

E.1 Service Use by Demographic Characteristics of Eligible Beneficiaries

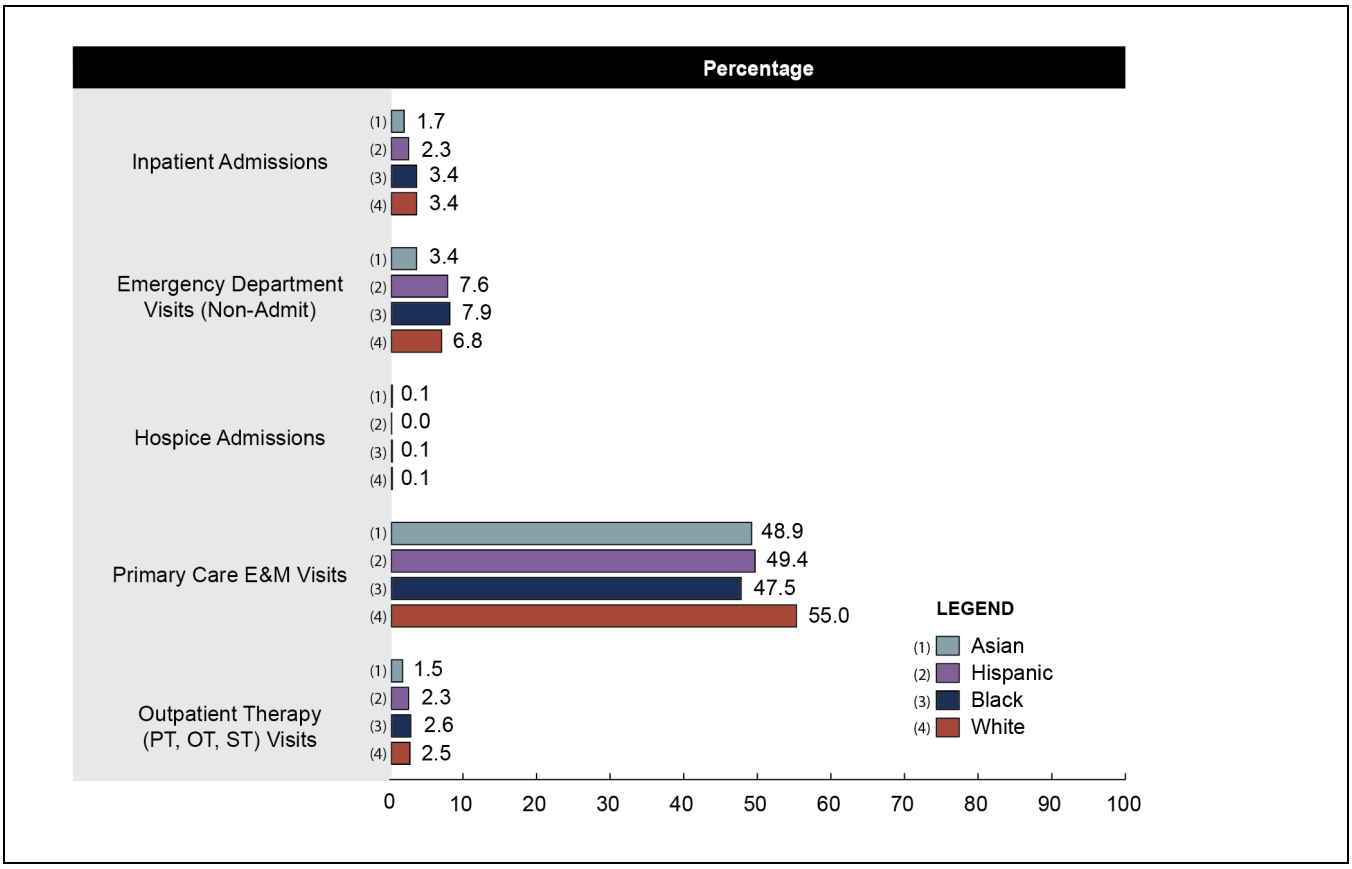
To examine any differences in racial and ethnic groups, ***Figures E-1, E-2***, and ***E-3*** provide month-level results for five settings of interest for eligible beneficiaries: inpatient admissions, ED visits (non-admit), hospice admissions, primary care E&M visits, and outpatient therapy (physical 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. Inpatient use was highest among African American and White beneficiaries. African American and Hispanic beneficiaries had a slightly higher ED use relative to other racial categories, whereas primary care use was higher among White beneficiaries. Outpatient therapy use was similar for White, African American, and Hispanic beneficiaries, and lowest among Asian beneficiaries.

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

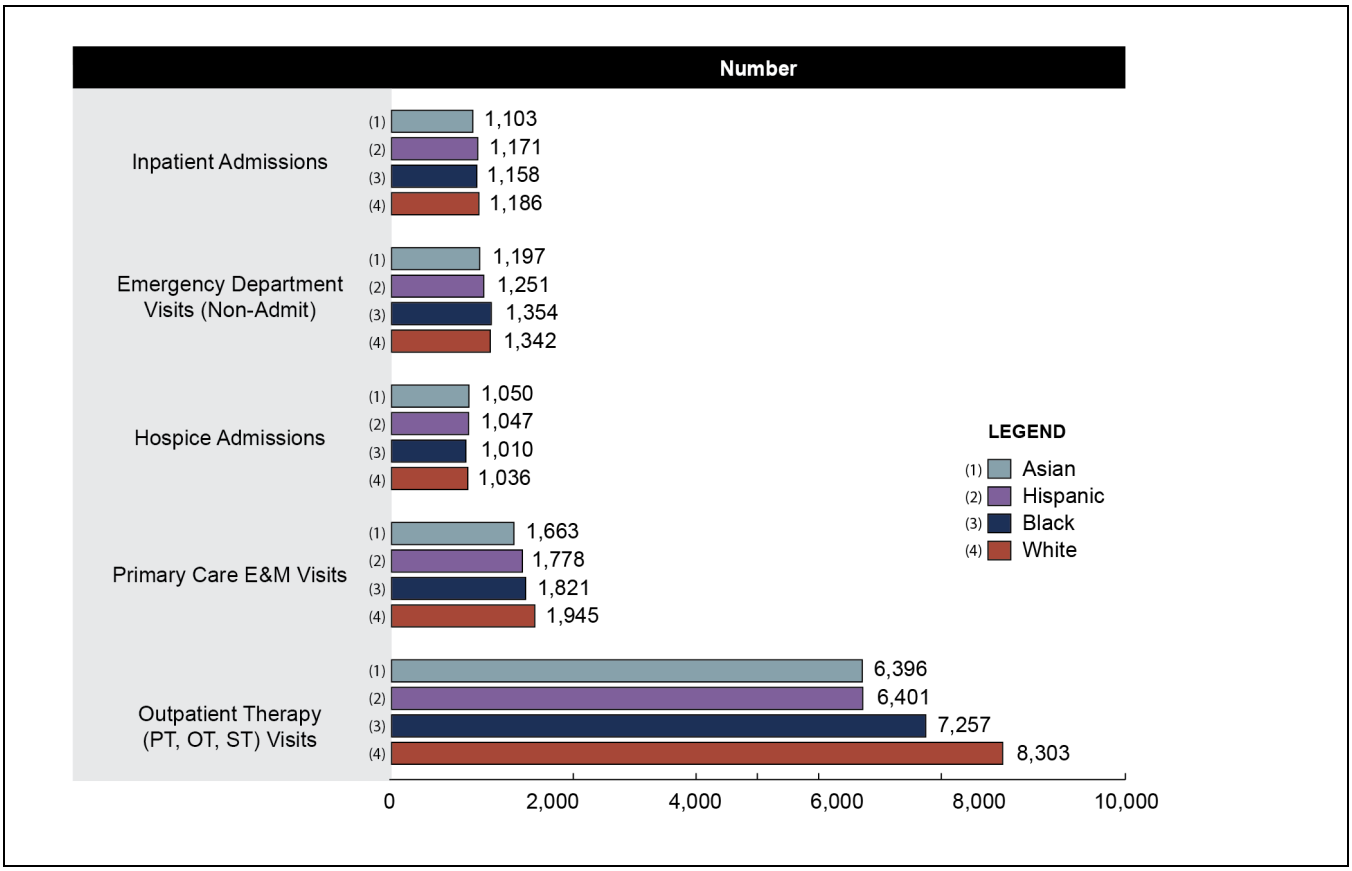
Figure E-3 presents counts of services across all Massachusetts demonstration eligible beneficiaries regardless of having any use of the respective services. African American beneficiaries had more ED visits relative to the other racial groups. Both African American and White beneficiaries had more inpatient admissions relative to Hispanic and Asian beneficiaries. White beneficiaries had more primary care E&M and outpatient therapy visits relative to the other racial groups. Hospice admissions were very low among all groups.

Figure E-1
Percent with use of selected Medicare services among Massachusetts demonstration eligible beneficiaries, January 1, 2019–December 31, 2019



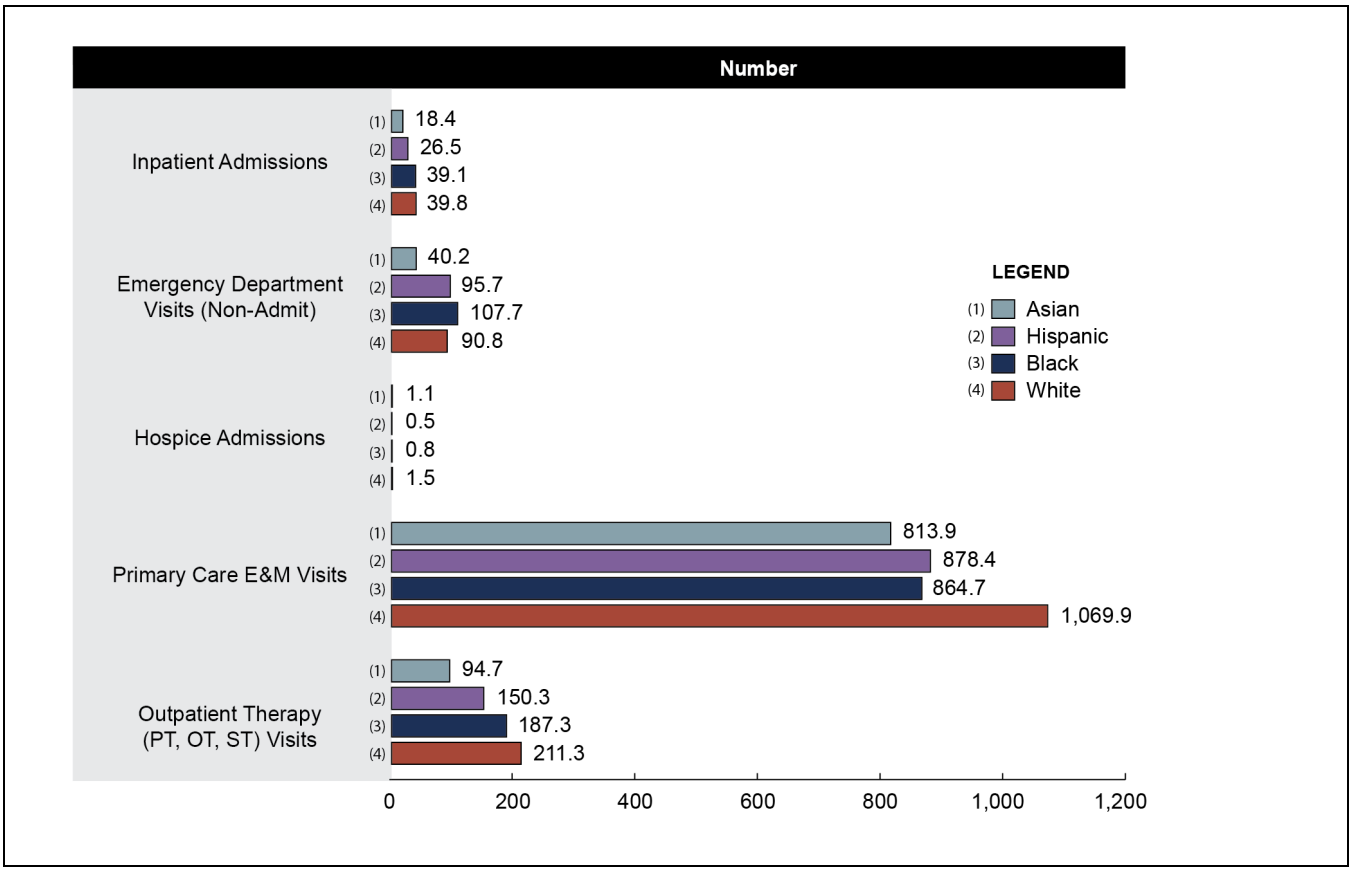
Source: RTI analysis of Medicare FFS claims and encounter data.
E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

Figure E-2
Service use per 1,000 user months among Massachusetts demonstration eligible beneficiaries, January 1, 2019–December 31, 2019



Source: RTI analysis of Medicare FFS claims and encounter data.
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 Massachusetts demonstration eligible beneficiaries, January 1, 2019–December 31, 2019



Source: RTI analysis of Medicare FFS claims and encounter data.
E&M = evaluation and management; OT = occupational therapy; PT = physical therapy; ST = speech therapy.

Appendix F

Cost Savings Methodology and Supplemental Tables

F.1 Cost Savings Methodology

To identify the demonstration group, RTI used quarterly files on demonstration eligible beneficiaries submitted by Massachusetts. Comparison group beneficiaries were identified through a two-step process. First, we identified comparison areas based on market characteristics. Second, we applied all available 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 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 F-1***. We obtained capitation payments paid to participating plans during the demonstration period, and payments to Medicare Advantage 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 (May 2022). Final risk corridor payments were only incorporated into the dependent variable construction for demonstration years 1, 2, and 3, because data were not available for demonstration years 4 through 6. We also used Medicare FFS claims to calculate expenditures for eligible beneficiaries who were not enrolled in an MMP or Medicare Advantage plan. These FFS claims included all Medicare Parts A and B services.

Table F-1
Data sources for monthly Medicare expenditures

Group	Predemonstration period October 1, 2011–September 30, 2013	Demonstration period October 1, 2013–December 31, 2019
Demonstration	Medicare FFS MA capitation	Capitation rate for enrollees MA capitation for non-enrollees Medicare FFS for non-enrollees
Comparison	Medicare FFS MA capitation	Medicare FFS MA capitation

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

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, 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.

F.1.1 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-2*** summarizes each adjustment and the application of the adjustments to FFS expenditures or to the capitation rate.

Table F-2
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%.
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 0.93% for CY 2012, 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, 0.82% for CY 2018, and 0.84% for CY 2019.

(continued)

Table F-2 (continued)
Adjustments to Medicare expenditures variable

Data source	Adjustment description	Reason for adjustment	Adjustment detail
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 0.89% for CY 2014, 0.89% for CY 2015, 0.97% for CY 2016, 0.81% for CY 2017, 0.82% for CY 2018, and 0.84% for CY 2019. Reduced the FFS portion of the capitation rate by an additional 1.89% for CY 2014 1.71% for CY 2015, 1.84% for CY 2016, 1.74% for CY 2017, 1.77% for CY 2018, and 1.94% for CY 2019 to account for the disproportional share of bad debt attributable to MMP 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.
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.

(continued)

Table F-2 (continued)
Adjustments to Medicare expenditures variable

Data source	Adjustment description	Reason for adjustment	Adjustment detail
Capitation rate (MMP)	Quality withhold	Quality withholds are not reflected in the capitation rates in the MARx data system. A 1% quality withhold was applied in the first demonstration year, 0% was applied in the second demonstration year, a 1% quality withhold was applied in the third demonstration year, a 1.25% quality withhold was applied in the fourth demonstration year, a 1.50% quality withhold was applied in the fifth demonstration year, and a 1.75% quality withhold was applied in the sixth demonstration year	Final quality withhold repayments for CY 2014, CY 2015, CY 2016, and CY 2017, CY 2018, CY 2019 were incorporated into the dependent variable construction.
Capitation rate (MMP)	Risk Corridor	Risk corridor payment or recoupments are based on reconciliation after application of high-cost risk pool or risk adjustment methodologies.	Final risk corridor payments and recoupments were incorporated into the dependent variable construction for demonstration years 1, 2, and 3.*

CY = calendar year; FFS = fee-for-service; MA = Medicare Advantage; MARx = Medicare Advantage and Part D Inquiry System; MMP = Medicare-Medicaid Plan.
* Risk corridor payments and recoupments for demonstration years 4–6 were not available at the time of analysis for this report.

The capitation payments in MARx reflect the savings assumptions applied to the Medicare components of the rate (0 percent for the first 6 months in demonstration year 1 and then 1 percent savings for the remaining months, 0 percent for the second and third demonstration years, 0.25 percent for the fourth demonstration year, and 0.50 percent for the fifth and sixth demonstration years), but do not reflect the quality withhold amounts.

For the Medicaid analysis, no adjustments were made to the 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 separately for the demonstration group and the comparison group, and within those groups separately for each year.

F.1.2 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:
  - Age
  - Sex
  - Race/ethnicity
  - Enrolled in another Medicare shared saving program
  - End-stage renal disease status
  - Disability as reason for Medicare entitlement
  - Medicare Advantage status
- Area-level variables included in both the Medicare and Medicaid savings models were:
  - Medicare spending per dually eligible beneficiary age 19 or older
  - Medicare Advantage penetration rate
  - Medicaid-to-Medicare FFS fee index for all services
  - Medicaid spending per dually eligible beneficiary age 19 or older
  - Proportion of dually eligible beneficiaries using
    - Nursing facilities age 65 or older
    - HCBS age 65 or older
    - Personal care, age 65 or older
  - Physicians per 1,000 population
  - 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 non-seniors with college degree
  - Unemployment rate among non-seniors
  - Percentage of non-seniors with self-care limitation
  - MSA
  - Distance to nearest hospital
  - Distance to nearest nursing home
- Demographic variables included only in the Medicaid model were:
  - Medicaid eligibility (medically needy, aged, disabled, and missing)
  - Proportion of dually eligible beneficiaries using
    - Medicaid managed care age 19 or older

F.1.3 Populations Analyzed

The population analyzed for the Cost Savings outcome include all demonstration eligible beneficiaries, as well as demonstration enrollees. ***Table F-3*** presents descriptive statistics of select characteristics for four population subgroups in demonstration year 6: all demonstration eligible beneficiaries, the comparison group, all MMP enrollees, and all non-MMP enrollees.

The most prevalent age group among the comparison and demonstration groups was age 64 and younger, with 94.6 and 94.4 percent respectively. For demonstration group enrollees, age 64 and younger remained the most prevalent age group at 95.2 percent. All four groups were predominantly White (ranging from 54.7 to 72.3 percent) with African American being the next highest percentage (ranging from 11.4 to 38.9). Among the comparison population, there was a relatively higher percentage of African Americans (38.9 percent) compared to the other groups (ranging from 11.4 to 17.2 percent).

Across all groups, just over one-half of beneficiaries were female (51.7 to 53.1 percent); the vast majority had disability as the primary reason for Medicare entitlement, did not have ESRD, and resided 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 those with scores of 2 are predicted to have twice the average annual cost. The average HCC score was 1.0 among all groups.

Table F-3
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees
Weighted number of eligible beneficiaries	106,713	208,929	27,593	79,120
Demographic characteristics				
Age				
64 and younger	94.4	94.6	95.2	94.2
65 to 74	5.6	5.4	4.8	5.8
75 and older	0.0	0.0	0.0	0.0
Female				
No	47.7	48.3	46.9	47.9
Yes	52.3	51.7	53.1	52.1

(continued)

Table F-3 (continued)
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees
Race/ethnicity				
White	67.7	53.4	62.0	69.6
African American	12.5	38.0	16.7	11.0
Hispanic	10.1	3.3	12.1	9.4
Asian	2.0	1.1	1.9	2.0
Other	7.8	4.2	7.4	8.0
Disability as reason for original Medicare entitlement				
No	2.7	3.0	0.9	3.4
Yes	97.3	97.0	99.1	96.7
ESRD status				
No	98.6	98.5	98.7	98.6
Yes	1.4	1.5	1.3	1.4
MSA				
No	2.1	1.8	0.9	2.5
Yes	97.9	98.2	99.2	97.5
Participating in Shared Savings Program				
No	64.2	60.2	95.5	53.3
Yes	35.8	39.8	4.5	46.7
HCC score	1.0	1.0	1.0	1.0
Market characteristics				
Medicare spending per dual, ages 19+ ($)	16,843.59	18,306.68	16,693.34	16,895.98
MA penetration rate	0.2	0.2	0.2	0.2
Medicaid-to-Medicare fee index (FFS)	0.8	0.7	0.8	0.8
Medicaid spending per dual, ages 19+ ($)	22,461.65	22,282.17	22,486.7	22,452.9
Fraction of dually eligible beneficiaries using NF, ages 65+	0.2	0.3	0.2	0.2
Fraction of dually eligible beneficiaries using HCBS, ages 65+	0.1	0.1	0.1	0.1
Fraction of dually eligible beneficiaries using personal care, ages 19+	0.0	0.0	0.0	0.0
Fraction of dually eligible beneficiaries with Medicaid managed care, ages 19+	0.1	0.5	0.1	0.1
Population per square mile, all ages	1,290.6	1,124.5	1,225.3	1,313.3
Patient care physicians per 1,000 population	1.1	0.9	1.0	1.1

(continued)

Table F-3 (continued)
Characteristics of eligible beneficiaries in demonstration year 6 by group

Characteristics	Demonstration group	Comparison group	Demonstration group, enrollees	Demonstration group, non-enrollees
Area characteristics				
% of pop in Medicare Advantage	2.7	2.8	NA	3.6
% of pop. living in married households	65.5	66.7	62.0	66.7
% of adults with college education	34.5	35.3	32.6	35.1
% of adults with self-care limitations	2.0	2.0	2.3	1.9
% of adults unemployed	5.9	5.7	6.3	5.7
% of household with individuals younger than 18	30.1	30.1	30.1	30.1
% of household with individuals older than 60	38.5	38.7	37.3	38.9
Distance to nearest hospital	4.2	4.2	3.7	4.3
Distance to nearest nursing facility	2.6	2.6	2.4	2.7

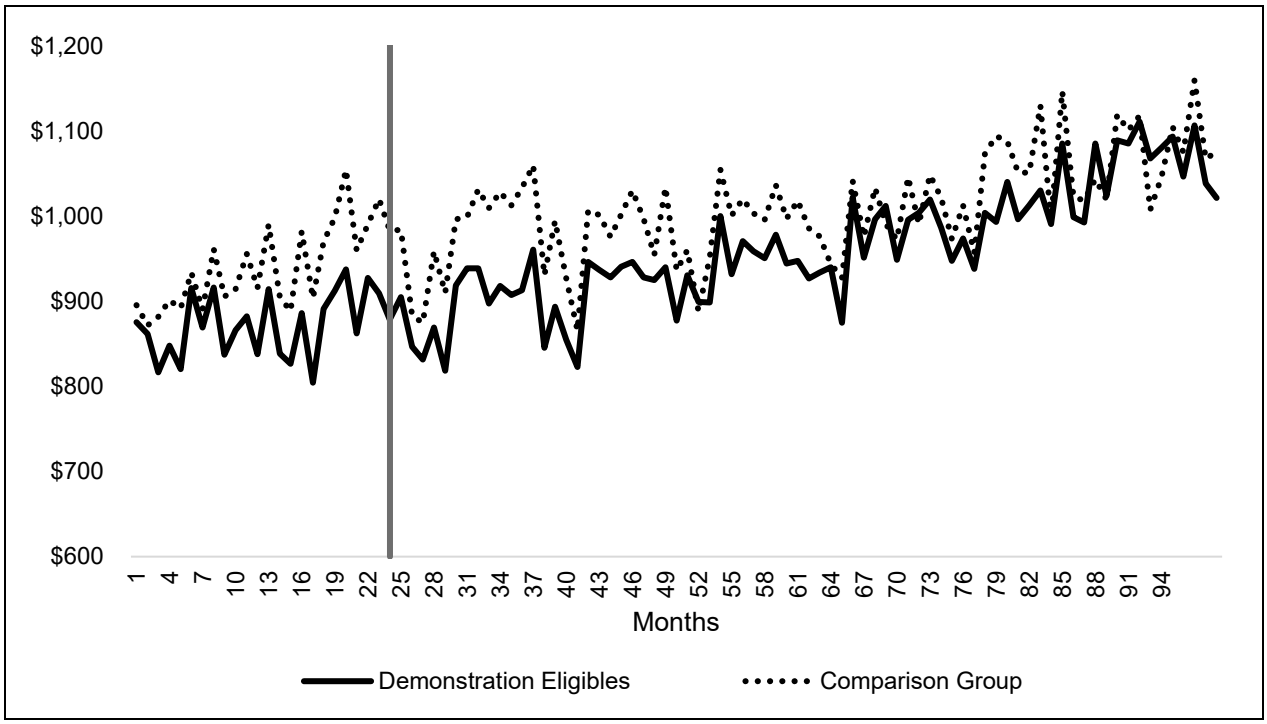
ESRD = end-stage renal disease; FFS = fee-for-service; HCBS = home and community-based services; HCC = Hierarchical Condition Category; NF = nursing facility; MA = Medicare Advantage; MSA = metropolitan statistical area.
NOTE: Analysis conducted on demonstration eligible FFS population and Medicare-Medicaid Plan enrollees.

F.2 Medicare Descriptive 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 might not have been parallel trends in the predemonstration period.[48]

[48] As a sensitivity analysis, we also estimated a version of the DinD model which adjusted for differences in predemonstration trends. The results of the sensitivity analysis were not statistically significantly different from the main results reported in ***Table F-16***, although in the sensitivity analysis, the demonstration was associated with an increase in costs in demonstration periods 2 thru 6, compared to the increase in demonstration periods 3 thru 6 in the main results.

Figure F-1
Mean monthly Medicare expenditures (weighted), predemonstration and demonstration periods, demonstration and comparison group, October 2011–December 2019



SOURCE: RTI Analysis of Massachusetts demonstration eligible and comparison group Medicare data (program: MA_DY6_trendfigures.log).

The DinD values in ***Tables F-4 through F-15,*** 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 ***Section 6, Demonstration Impact on Cost Savings,*** and ***Table F-16*** represent the most accurate adjusted impact on Medicare costs.

Tables F-4 through F-9 show the mean monthly Medicare expenditures for the demonstration group and comparison group in the predemonstration and each demonstration period, unweighted. The unweighted tables show an increase in mean monthly Medicare expenditures during demonstration years 1–6 for the demonstration group. Additionally, the unweighted tables show an increase in Medicare expenditures during demonstration years 1–6 for the comparison group. None of the unweighted DinD effects are statistically significant.

The weighted tables (see ***Tables F-10 through F-15***) display a similar pattern with both the demonstration group and the comparison group showing an increase in demonstration years 1–6. In demonstration years 4 and 6, the weighted DinD effects are positive and statistically significant.

Table F-4
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 1, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 1 (October 2013–December 2014) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$894.18 ($871.51, $916.85)	$20.28 (−$4.9, $45.45)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,075.57 ($1,038.18, $1,112.96)	$34.69 ($23.37, $46)
DinD	N/A	N/A	−$14.41 (−$37.78, $8.97)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-5
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 2, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 2 (January 2015–December 2015) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$915.28 ($892.24, $938.33)	$41.38 ($20.55, $62.21)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,082.65 ($1,043.09, $1,122.21)	$41.76 ($26.25, $57.28)
DinD	N/A	N/A	−$0.39 (−$23.34, $22.57)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-6
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 3, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 3 (January 2016–December 2016) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$945.39 ($926.29, $964.48)	$71.48 ($39.12, $103.85)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,107.08 ($1,053.13, $1,161.03)	$66.20 ($35.14, $97.25)
DinD	N/A	N/A	$5.28 (−$35.40, $45.97)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-7
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 4, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 4 (January 2017–December 2017) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$975.11 ($952.9, $997.32)	$101.21 ($72.07, $130.34)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,130.98 ($1,071.24, $1,190.72)	$90.10 ($52.58, $127.61)
DinD	N/A	N/A	$11.11 (−$33.24, $55.46)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-8
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 5, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 5 (January 2018–December 2018) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$1,004.96 ($980.56, $1,029.36)	$131.05 ($105.21, $156.9)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,188.27 ($1,124.23, $1,252.31)	$147.39 ($103.33, $191.44)
DinD	N/A	N/A	−$16.33 (−$65.14, $32.47)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-9
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 6, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 6 (January 2019–December 2019) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$1,071.27 ($1,044.2, $1,098.35)	$197.37 ($167.3, $227.44)
Comparison	$1,040.88 ($1,008.73, $1,073.04)	$1,237.37 ($1,174.08, $1,300.67)	$196.49 ($151.79, $241.19)
DinD	N/A	N/A	$0.88 (−$50.01, $51.77)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-10
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 1, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 1 (October 2013–December 2014) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$894.18 ($871.51, $916.85)	$20.28 (−$4.9, $45.45)
Comparison	$942.35 ($903.28, $981.43)	$982.13 ($937.01, $1,027.24)	$39.77 ($18.21, $61.34)
DinD	N/A	N/A	−$19.50 (−$49.22, $10.22)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-11
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 2, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 2 (January 2015–December 2015) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$915.28 ($892.24, $938.33)	$41.38 ($20.55, $62.21)
Comparison	$942.35 ($903.28, $981.43)	$974.86 ($940.62, $1,009.09)	$32.50 ($12.33, $52.67)
DinD	N/A	N/A	$8.87 (−$17.44, $35.19)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-12
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 3, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 3 (January 2016–December 2016) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$945.39 ($926.29, $964.48)	$71.48 ($39.12, $103.85)
Comparison	$942.35 ($903.28, $981.43)	$994.70 ($958.67, $1,030.73)	$52.35 ($26.29, $78.41)
DinD	N/A	N/A	$19.13 (−$17.89, $56.15)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-13
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 4, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 4 (January 2017–December 2017) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$975.11 ($952.9, $997.32)	$101.21 ($72.07, $130.34)
Comparison	$942.35 ($903.28, $981.43)	$997.74 ($962.5, $1,032.99)	$55.39 ($32.39, $78.39)
DinD	N/A	N/A	$45.82 ($12.83, $78.80)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-14
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 5, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 5 (January 2018–December 2018) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$1,004.96 ($980.56, $1,029.36)	$131.05 ($105.21, $156.9)
Comparison	$942.35 ($903.28, $981.43)	$1,054.02 ($1,004.29, $1,103.75)	$111.67 ($85.43, $137.9)
DinD	N/A	N/A	$19.39 (−$14.2, $52.98)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

Table F-15
Mean monthly Medicare expenditures for demonstration group and comparison group, predemonstration period and demonstration year 6, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 6 (January 2019–December 2019) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$873.90 ($843.93, $903.87)	$1,071.27 ($1,044.2, $1,098.35)	$197.37 ($167.3, $227.44)
Comparison	$942.35 ($903.28, $981.43)	$1,078.89 ($1,038.49, $1,119.28)	$136.53 ($109.98, $163.09)
DinD	N/A	N/A	$60.84 ($24.85, $96.82)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0160.log)

F.3 Medicare Regression Results

Table F-16 shows the main results from the DinD analysis for demonstration years 1–6 and for the entire demonstration period, controlling for beneficiary demographics and market characteristics. Relative to the comparison group, the demonstration was associated with statistically significant cost increases to the Medicare program during demonstration years 3 through 6, although it was not associated with a statistically significant increase in Medicare costs during demonstration years 1 and 2. The cumulative impact estimate over all 6 demonstration years was statistically significant suggesting that overall the demonstration was associated with increases in Medicare costs of $36.98 per member per month (PMPM).

Table F-16
Cumulative and annual demonstration effects on Medicare Parts A and B costs in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Period	Adjusted coefficient DinD ($)	*p*-value	95% confidence interval ($)	90% confidence interval ($)
Demonstration Year 1 (October 2013–December 2014)	−7.89	0.6089	(−38.10, 22.33)	(−33.24, 17.47)
Demonstration Year 2 (January 2015– December 2015)	14.90	0.3075	(−13.72, 43.52)	(−9.11, 38.92)
Demonstration Year 3 (January 2016– December 2016)	39.83	0.0206	(6.10, 73.55)	(11.52, 68.13)
Demonstration Year 4 (January 2017– December 2017)	56.76	0.0007	(23.78, 89.74)	(29.08, 84.44)
Demonstration Year 5 (January 2018– December 2018)	39.58	0.0171	(7.05, 72.11)	(12.28, 66.88)
Demonstration Year 6 (January 2019– December 2019)	91.32	<0.001	(48.27, 134.38)	(55.19, 127.46)
Cumulative (Demonstration Years 1–6, October 2013–December 2019)	36.98	0.0058	(10.68, 63.28)	(14.91, 59.05)

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0140_GLM.log)

Table F-17 provides an illustrative example of the generalized linear model output for each covariate on mean monthly Medicare expenditures across the entire demonstration period.

Table F-17
Generalized linear model results on monthly Medicare expenditures

(n = 27,042,640 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
Demonstration group	−0.0616	0.0306	−2.01	0.044
Post period	0.0151	0.0119	1.27	0.203
Interaction of post period x demonstration group	0.0386	0.0144	2.69	0.007
Age (continuous)	0.0196	0.0009	22.11	0.000
Asian	−0.4707	0.0670	−7.03	0.000
Black	−0.0108	0.0192	−0.56	0.574
Female	0.0582	0.0154	3.78	0.000
Hispanic	−0.1757	0.0309	−5.69	0.000
Other race/ethnicity	−0.2029	0.0444	−4.57	0.000
Disability as reason for Medicare entitlement	0.1227	0.0139	8.84	0.000

(continued)

Table F-17 (continued)
Generalized linear model results on monthly Medicare expenditures
(n = 27,042,640 person months)

Independent variables	Coefficient	Standard error	z-value	*p*-value
End-stage renal disease	2.0407	0.0218	93.65	0.000
Metropolitan statistical area residence	0.0718	0.0559	1.29	0.199
Participation in other Shared Savings Program	0.1115	0.0177	6.31	0.000
Medicare Advantage status	0.1130	0.0150	7.54	0.000
Patient care physicians per 1,000 population	−0.1538	0.1337	−1.15	0.250
Medicare Advantage penetration rate	−0.1597	0.0981	−1.63	0.104
Medicaid-to-Medicare fee index (FFS)	0.4463	0.3362	1.33	0.184
Medicaid spending per dual	0.0000	0.0000	−0.94	0.345
Medicare spending per dual	0.0000	0.0000	1.66	0.098
Fraction of duals using HCBS, ages 65+	−0.4580	0.1894	−2.42	0.016
Fraction of duals using nursing facility, ages 65+	−0.1595	0.1726	−0.92	0.355
Percent of adults with college education	0.0001	0.0007	0.18	0.855
Percent of adults with self-care limitation	−0.0043	0.0030	−1.43	0.154
Percent of households with individuals older than 60	−0.0010	0.0013	−0.73	0.463
Percent of households with individuals younger than 18	−0.0025	0.0010	−2.59	0.010
Percent of population married	−0.0016	0.0009	−1.90	0.058
Percent of adults who are unemployed	−0.0036	0.0012	−3.04	0.002
Distance to nearest hospital	−0.0010	0.0018	−0.55	0.580
Distance to nearest nursing facility	0.0057	0.0039	1.46	0.144
Intercept	5.5607	0.3258	17.07	0.000

FFS = fee-for-service; HCBS = home and community-based services.

Table F-18 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 (October 1, 2013–December 31, 2019) and at least 3 months of eligibility in the predemonstration period (October 1, 2011–September 30, 2013), analogous to the criteria for identifying enrollees. The results indicate statistically significant additional costs associated with enrollees. This enrollee subgroup 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-18
Cumulative and annual demonstration effects on Medicare Parts A and B costs among enrolled beneficiaries in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Period	Adjusted coefficient DinD ($)	*p*-value	95% confidence interval ($)	90% confidence interval ($)
Demonstration Year 1 (October 2013–December 2014)	76.13	<0.001	(44.86, 107.39)	(49.89, 102.37)
Demonstration Year 2 (January 2015– December 2015)	84.71	<0.001	(49.23, 120.20)	(54.93, 114.49)
Demonstration Year 3 (January 2016– December 2016)	121.25	<0.001	(78.69, 163.82)	(85.53, 156.97)
Demonstration Year 4 (January 2017– December 2017)	158.50	<0.001	(118.20, 198.80)	(124.68, 192.32)
Demonstration Year 5 (January 2018– December 2018)	150.85	<0.001	(112.37, 189.34)	(118.56, 183.15)
Demonstration Year 6 (January 2019– December 2019)	235.30	<0.001	(182.47, 288.13)	(190.96, 279.64)
Cumulative (Demonstration Years 1–6, October 2013–December 2019)	130.20	<0.001	(103.89, 156.50)	(108.12, 152.27)

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicare claims (program: ma_dy6_0170_Enrollee4.log)

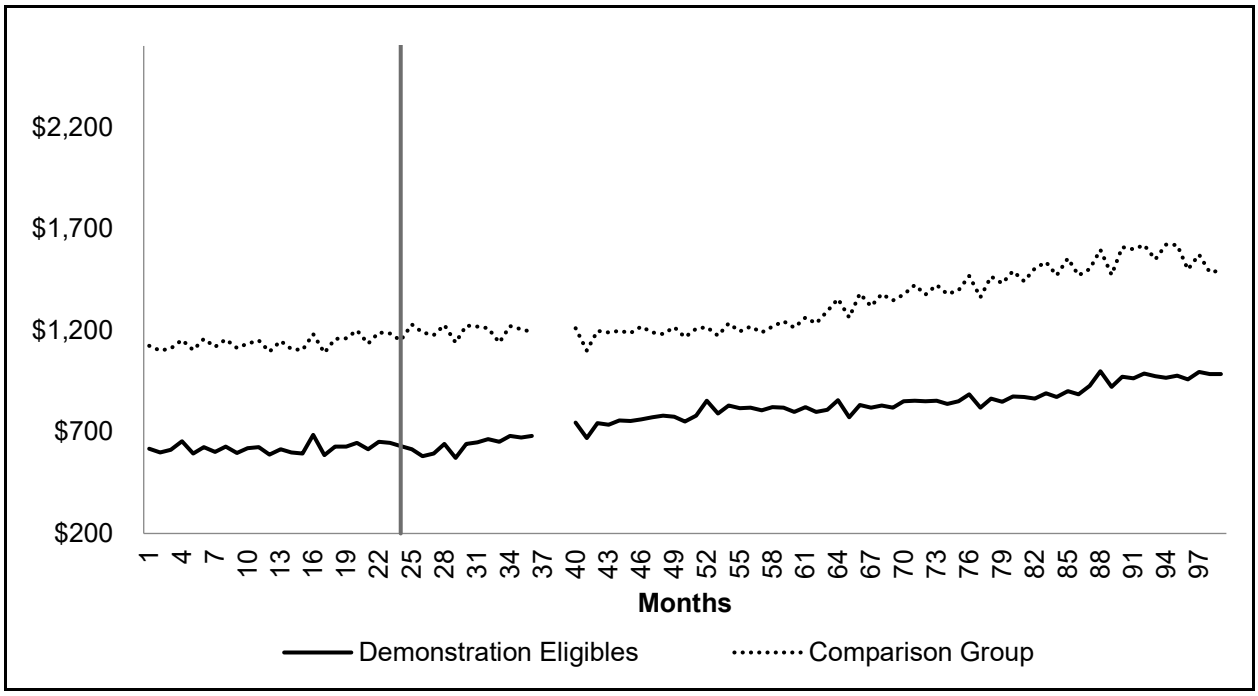
F.4 Medicaid Results

Using the Medicaid data, we also 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 values were winsorized by State and year and by demonstration/comparison group status. ***Figure F-2*** show the weighted plots, suggesting parallel trends in the predemonstration period.

The comparison group in this figure is a subset of the Medicare comparison group, with beneficiaries in Mississippi, Pennsylvania, and Wisconsin excluded. In Mississippi, our analysis of the data indicated that there are significant discontinuities in the Medicaid costs when the data transitions from MSIS to T-MSIS. In Pennsylvania, the total monthly beneficiary payments in the Other Services file are classified by the DQAtlas as being unusable (2016–2018); our analysis of the data confirmed that a large fraction of the Other Services capitated payment amounts are negative among the FAI comparison group in Pennsylvania. In Wisconsin, the DQAtlas reports that the total monthly beneficiary payments in the Long-Term Care file are unusable in 2014–2019 and the payments in the OT file are unusable in 2015–2016: our analysis of the Wisconsin data confirmed that the majority of capitated payments in the OT file for our population are missing in both 2015 and 2016. Due to missing capitated payments in the Massachusetts data around the state's transition from MSIS to T-MSIS (October 1, 2014), the

months of October through December of 2014 were omitted from demonstration year 1, as shown in ***Figure F-2***.

Figure F-2
Mean monthly Medicaid expenditures (weighted), predemonstration and demonstration periods, demonstration and comparison groups, October 2011–December 2019



SOURCE: RTI Analysis of Massachusetts demonstration eligible and comparison group Medicaid data (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\60_Trends.do).

The DinD values in ***Tables F-19*** through ***F-24*** represent the overall impact on Medicaid 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 ***Section 6, Demonstration Impact on Cost Savings*** and ***Table F-31*** represent the most accurate adjusted impact on Medicaid costs.

Tables F-25 through ***F-30*** show the mean monthly Medicaid expenditures for the demonstration group and comparison group in the predemonstration and each demonstration period, unweighted. The unweighted tables show that monthly Medicaid expenditures for the demonstration group increased in each demonstration period compared to the previous demonstration period. Additionally, the unweighted tables show that monthly Medicaid expenditures for the comparison group increased in demonstration year 1 relative to the

predemonstration period, dropped slightly in demonstration year 2 and then increased throughout demonstration years 3 through 6. The DinD estimate is negative and statistically significant in demonstration year 1; positive and statistically significant in demonstration years 2 and 3; and otherwise insignificant. The weighted tables display a similar pattern for both the increases in Medicaid expenditures in the demonstration group and the comparison group over all demonstration periods (see ***Tables F-25*** through ***F-30***). However, the DinD estimate is negative and statistically significant in demonstration years 1, 4, 5, and 6; and it is positive and statistically significant in demonstration year 2.

Table F-19
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 1, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 1 (October 2013–September 2014) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$637.23 ($590.87, $683.59)	$16.66 ($−18.04, $51.36)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,197.60 ($987.15, $1,408.04)	$58.54 ($31.59, $85.48)
DinD	N/A	N/A	−$41.88 ($−80.87, $−2.88)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-20
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 2, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 2 (January 2015–December 2015) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$752.31 ($708.27, $796.35)	$131.74 ($69.58, $193.90)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,188.52 ($989.75, $1,387.29)	$49.46 ($22.46, $76.47)
DinD	N/A	N/A	$82.28 ($24.99, $139.57)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-21
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 3, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 3 (January 2016–December 2016) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$815.71 ($765.32, $866.09)	$195.14 ($99.12, $291.15)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,224.84 ($1,019.06, $,1430.61)	$85.78 ($57.19, $114.36)
DinD	N/A	N/A	$109.36 ($26.2, $192.52)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-22
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 4, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 4 (January 2017–December 2017) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$835.28 ($773.27, $897.3)	$214.71 ($104.11, $325.31)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,368.53 ($1,137.98, $,1599.08)	$229.47 ($184.9, $274.04)
DinD	N/A	N/A	−$14.76 ($−115.22, $85.71)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-23
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 5, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 5 (January 2018–December 2018) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$875.08 ($805.01, $945.15)	$254.51 ($148.53, $360.49)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,474.88 ($1,226.6, $1,723.16)	$335.82 ($275.69, $395.94)
DinD	N/A	N/A	−$81.30 ($−186.22, $23.61)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-24
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 6, unweighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 6 (January 2019–December 2019) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$973.55 ($892.14, $1,054.97)	$352.98 ($239.38, $466.59)
Comparison	$1,139.06 ($941.91, $1,336.21)	$1,560.38 ($1,324.98, $1,795.77)	$421.32 ($364.27, $478.36)
DinD	N/A	N/A	−$68.33 (−$176.86, $40.20)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-25
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 1, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 1 (October 2013–September 2014) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$637.23 ($590.87, $683.59)	$16.66 ($−18.04, $51.36)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$1,792.76 ($1,434.72, $2,150.81)	$99.27 ($7.28, $191.26)
DinD	N/A	N/A	−$82.61 ($−178.77, $13.56)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-26
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 2, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 2 (January 2015–December 2015) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$752.31 ($708.27, $796.35)	$131.74 ($69.58, $193.90)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$1,720.95 ($1,372.68, $2,069.22)	$27.46 (−$34.40, $89.32)
DinD	N/A	N/A	$104.28 ($24.44, $184.13)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-27
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 3, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 3 (January 2016–December 2016) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$815.71 ($765.32, $866.09)	$195.14 ($99.12, $291.15)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$1,849.38 ($1,480.51, $2,218.26)	$155.89 ($81.20, $230.58)
DinD	N/A	N/A	$39.24 (−$68.79, $147.27)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-28
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 4, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 4 (January 2017–December 2017) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$835.28 ($773.27, $897.30)	$214.71 ($104.11, $325.31)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$2,072.60 ($1,659.03, $2,486.17)	$379.11 ($249.01, $509.21)
DinD	N/A	N/A	−$164.40 (−$322.71, −$6.09)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-29
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 5, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 5 (January 2018–December 2018) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$875.08 ($805.01, $945.15)	$254.51 ($148.53, $360.49)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$2,229.68 ($1,791.91, $2,667.45)	$536.19 ($383.42, $688.95)
DinD	N/A	N/A	−$281.68 (−$457.00, −$106.35)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-30
Mean monthly Medicaid expenditures for demonstration group and comparison group, predemonstration period and demonstration year 6, weighted

Group	Predemonstration period (October 2011–September 2013) (95% confidence intervals)	Demonstration year 6 (January 2019–December 2019) (95% confidence intervals)	Difference (95% confidence intervals)
Demonstration	$620.57 ($567.08, $674.06)	$973.55 ($892.14, $1,054.97)	$352.98 ($239.38, $466.59)
Comparison	$1,693.49 ($1,349.52, $2,037.46)	$2,308.59 ($1,887.49, $2,729.69)	$615.10 ($454.90, $775.29)
DinD	N/A	N/A	−$262.12 (−$446.97, −$77.26)

DinD = difference-in-differences; N/A = not applicable.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\20_Descriptives.log)

Table F-31 shows the Medicaid results from the DinD analysis for demonstration years 1–6 and for the entire demonstration period, controlling for beneficiary demographics and market characteristics.

Table F-31
Cumulative and annual demonstration effects on Medicaid costs in Massachusetts, demonstration years 1–6, October 1, 2013–December 31, 2019

Period	Adjusted coefficient DinD ($)	p-value	95% confidence interval ($)	90% confidence interval ($)
Demonstration Year 1 (October 2013–September 2014)	14.39	0.455	(−23.40, 52.19)	(−17.33, 46.11)
Demonstration Year 2 (January 2015–December 2015)	162.53	<0.001	(108.17, 216.90)	(116.91, 208.16)
Demonstration Year 3 (January 2016–December 2016)	200.29	<0.001	(120.96, 279.61)	(133.71, 266.86)
Demonstration Year 4 (January 2017–December 2017)	114.05	0.021	(17.18, 210.93)	(32.75, 195.35)
Demonstration Year 5 (January 2018–December 2018)	95.43	0.058	(−2.36, 193.22)	(13.37, 177.49)
Demonstration Year 6 (January 2019–December 2019)	147.70	0.014	(29.66, 265.73)	(48.64, 246.75)
Cumulative (Demonstration Years 1–6, October 2013–December 2019)	129.02	< 0.001	(58.20, 199.84)	(69.59, 188.45)

DinD = difference-in-differences.
SOURCE: RTI analysis of Medicaid claims (program: Massachusetts 5th Annual Report (DY6)\medicaid\Syntax\30_Regression.log)

No adjustments were 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 Medicaid spending per dually eligible beneficiary age 19 or older, the proportion of dually eligible beneficiaries using nursing facilities, the proportion of dually eligible beneficiaries using HCBS, the proportion of dually eligible beneficiaries using Medicaid managed care, and the proportion of dually eligible beneficiaries using personal care. Differences in Medicaid eligibility across States are accounted for using the Medicaid eligibility categories as controls in the regressions.

Appendix G

Supplemental Analyses

G.1 Service Utilization Supplemental Analyses

Improved care coordination, a cornerstone of the State's MMP demonstration efforts, is expected to impact service utilization patterns by increasing access to primary care and reducing hospitalizations and emergency care. To better understand the generally unfavorable demonstration impact results described in ***Section 5***, ***Demonstration Impact on Service Utilization and Quality of Care***, RTI conducted the following descriptive analyses:

- A cohort analysis comparing the predemonstration trends of select service utilization outcomes among beneficiaries who were enrolled at any point during demonstration year 1 with beneficiaries who were eligible but never enrolled (ENE) in demonstration year 1.
- A cross-sectional analysis of mortality rates among enrolled beneficiaries and eligible but not enrolled beneficiaries during the entire study period.

These analyses provide more context for the DinD results reported in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care***, by illustrating the predemonstration service utilization and risk profile of the beneficiaries who enrolled in the demonstration, relative to the demonstration eligible population who did not enroll. If the demonstration enrolls beneficiaries who have lower service utilization rates in the predemonstration period than beneficiaries who are ENE, then this favorable selection into enrollment may decrease the likelihood of observing any desired demonstration impact on high-cost measures such as inpatient admissions and skilled nursing facility (SNF) admissions. This analysis does not, however, explain statistically significant unfavorable increases in these measures.

G.1.1 Pre-enrollment Cohort Analysis

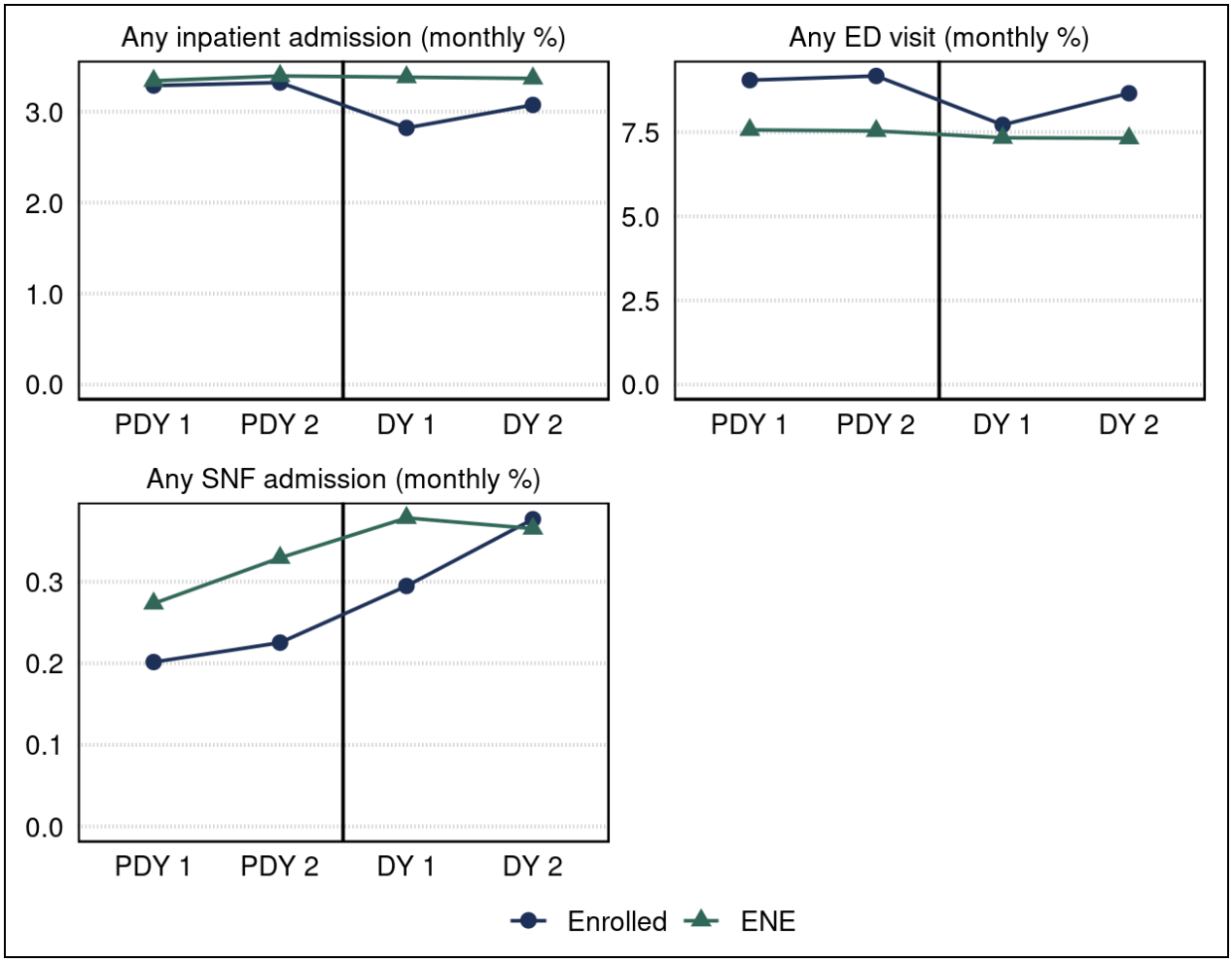
The purpose of this analysis was to compare the predemonstration utilization experience of Medicare FFS beneficiaries who enrolled in an MMP during demonstration year 1 with the utilization experience of those who were ENE in demonstration year 1. The measures we analyzed include any inpatient admission, any ED use, and any SNF admission as described in ***Appendix D.*** The analysis included individuals who were eligible during demonstration year 1. Enrolled and ENE cohorts were defined by determining whether a beneficiary was enrolled at any point during demonstration year 1. ***Figure G-1*** shows the trends for the enrolled and ENE groups in 2 predemonstration years and the first 2 demonstration years. The number of beneficiary months and utilization rates are presented in ***Table G-1***.

- The pre-enrollment rates of inpatient and SNF use among the enrolled and ENE were similar, though somewhat lower among the enrolled cohort. There was a small decline in inpatient use during demonstration year 1 among the enrolled cohort and similar increases in SNF use among both the enrolled and ENE.
- The monthly probability of any non-admit ED use was higher in the enrolled cohort than the ENE cohort in the predemonstration and demonstration periods. The decline in ED use among the enrolled from predemonstration to demonstration periods may

reflect the impact of the demonstration. These differences show mixed evidence of favorable selection; beneficiaries who enrolled in MMPs had greater ED use but similar inpatient and SNF use compared to the ENE cohort.

- Favorable selection into the MMPs may impact the likelihood or extent of observing a favorable demonstration impact on these measures. The enrolled population in demonstration year 1 already had a relatively low monthly inpatient and SNF admission rate during the predemonstration period; further reductions may be more difficult to achieve through the demonstration.

Figure G-1
Monthly percent and count of service utilization among eligible months by demonstration year 1 enrollment in Massachusetts, October 1, 2011–December 31, 2015



DY = demonstration year; ED = emergency department; ENE = eligible but never enrolled; PDY = predemonstration year; SNF = skilled nursing facility.

Table G-1
Service utilization by demonstration year 1 enrollment in Massachusetts, October 1, 2011–December 31, 2015

Period	N (beneficiary months)		Any inpatient admission (monthly %)		Any ED visit (monthly %)		Any SNF admission (monthly %)	
	Enrolled	ENE	Enrolled	ENE	Enrolled	ENE	Enrolled	ENE
PDY 1	108,179	603,018	3.29	3.34	9.05	7.57	0.20	0.27
PDY 2	122,936	674,728	3.32	3.39	9.17	7.54	0.23	0.33
DY 1	100,763[1]	901,119	2.82	3.38	7.72	7.33	0.29	0.38
DY 2	110,729[2]	720,083	3.07	3.37	8.66	7.32	0.38	0.37

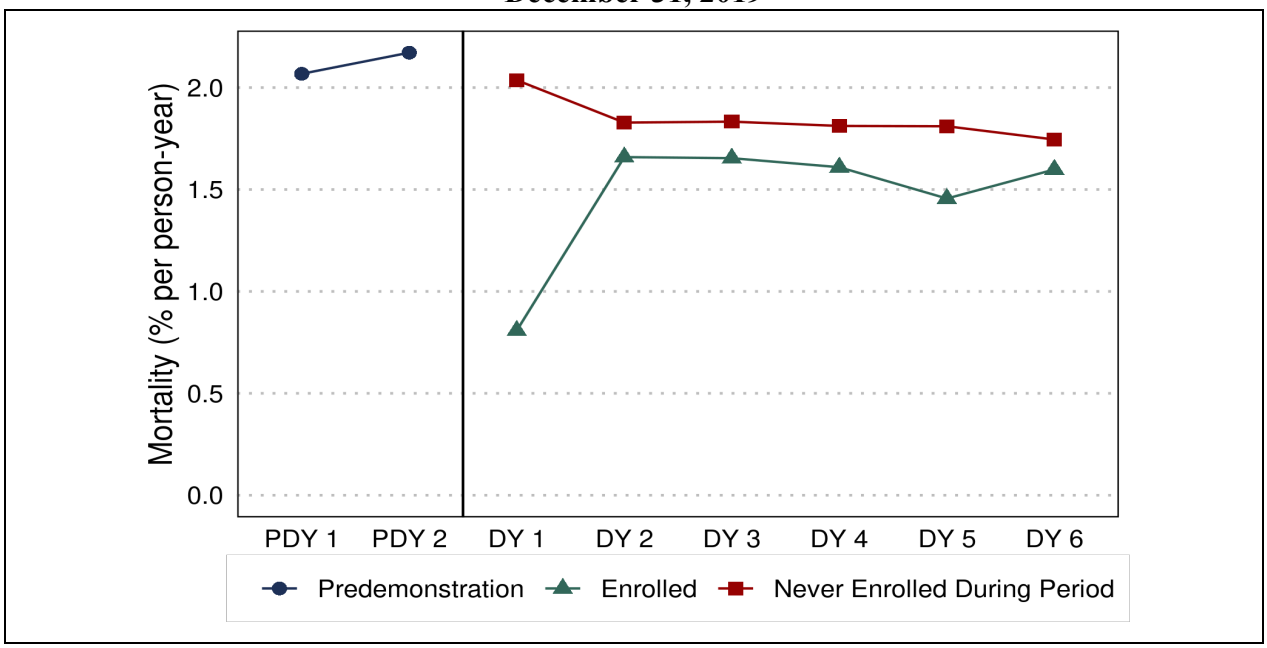
DY = demonstration year; ED = emergency department; ENE = eligible but never enrolled; PDY = predemonstration year; SNF = skilled nursing facility.
[1] N includes enrolled months among beneficiaries who enrolled in a Medicare-Medicaid Plan during DY 1.
[2] This number is a subset of DY 1 enrollees.
SOURCE: RTI analysis of Massachusetts demonstration eligible Medicare administrative claims and encounter data.

G.1.2 Mortality Analysis

This descriptive analysis examines mortality rates to provide additional insight into differences in health characteristics between enrolled and non-enrolled beneficiaries in the demonstration group. These differences can help understand the DinD results described in ***Section 5, Demonstration Impact on Service Utilization and Quality of Care***. A lower mortality rate observed among the enrolled population, relative to the demonstration eligible but not enrolled population, would suggest favorable selection into demonstration enrollment and lower the likelihood of observing favorable demonstration effects. Demonstration group eligible beneficiaries are categorized into three groups: predemonstration, enrolled during a demonstration period, and never enrolled during a demonstration period**.** Enrollment categories are based on period-level indicators, so the same beneficiary's observations may be categorized differently over time based on enrollment during a given period. ***Figure G-2*** and ***Table G-2*** show the annualized mortality rate for each group, defined as the number of beneficiaries who died during a given period divided by the number of person-years (months alive divided by 12) during the period.

- Beneficiaries who enrolled in MMPs during the demonstration period have lower mortality rate in demonstration year 1 than the eligible not enrolled. In demonstration years 2–6 the mortality rate was only slightly lower than the eligible not enrolled population.
- These findings provide modest (see ***Figure G-1***) evidence to support that there was favorable selection in the MMPs. Favorable selection may make it less likely to observe favorable demonstration effects because a healthier enrolled population may be less likely to meaningfully benefit from greater care coordination and access to care.

Figure G-2
Mortality rate among enrolled and not enrolled in Massachusetts, October 1, 2011–December 31, 2019



PDY = predemonstration year; DY = demonstration year.
NOTES: Mortality rates are not easily interpretable during the first demonstration year due to increased demonstration enrollment through the first demonstration year. Beneficiaries who enroll late in DY 1 are included in the mortality rate's denominator for the entire period, whereas the non-enrolled group does not select for beneficiaries who survive longer. By DY 2, the mortality rate is more comparable between the enrolled and non-enrolled beneficiaries.

Table G-2
Monthly percent of beneficiaries who died during the predemonstration and demonstration periods, October 1, 2011–December 31, 2019

Period	Predemonstration		Demonstration: Enrolled		Demonstration: Never Enrolled During Period	
	N	Died (%)	N	Died (%)	N	Died (%)
PDY 1	1,021,491	2.07	—	—	—	—
PDY 2	1,096,462	2.17	—	—	—	—
DY 1	—	—	176,739	0.81	1,052,467	2.04
DY 2	—	—	127,314	1.66	922,183	1.83
DY 3	—	—	150,216	1.65	962,448	1.83
DY 4	—	—	209,538	1.61	923,948	1.81
DY 5	—	—	255,553	1.46	872,387	1.81
DY 6	—	—	286,809	1.60	821,726	1.75

DY = demonstration year; PDY = predemonstration year; — = not applicable.
NOTE: The N includes the number of alive months during the year among demonstration eligible beneficiaries. Mortality rates are reported as percentages per beneficiary-year.
SOURCE: RTI analysis of Medicare fee-for-service claims and encounter data.

G.2 Cost Savings

The FAI required that certain savings percentages be applied to the MMP capitated rate to ensure that the demonstration would result in a decrease in Medicare Parts A and B spending. However, our findings from an impact analysis indicate that the demonstration resulted in an increase in Medicare costs among eligible beneficiaries in the demonstration group, relative to the comparison group, from demonstration year 3 to demonstration year 6, despite the application of savings percentages in the capitation rate for MMP enrollees. To better understand these results, we conducted three analyses:

1. We calculated and compared a normalized county-based FFS standardized rate with the actual MMP rate to determine whether the MMP Medicare Parts A and B capitated rate was set higher than what would otherwise have been spent in Medicare FFS.[49] Specifically, using observed FFS expenditure data available from CMS, we calculated FFS county rates by taking county-level per capita costs and dividing it by the average risk score for each county.[50] In this way, we obtained a county-level rate for a person whose risk is 1.0 that can be used for comparison with the MMP rate. If the MMP rates were set higher than what would have been observed under FFS, then this would help explain in part why the Massachusetts demonstration resulted in increased Medicare costs.

2. We compared the predemonstration spending history among those who enrolled in demonstration year 1 and those who were ENE. If enrolled beneficiaries are less expensive than those who never enrolled during the predemonstration period, then this would provide additional evidence of favorable selection into the enrolled group.

3. We compared the predemonstration risk score profiles among those who enrolled in demonstration year 1 and those who were ENE. If enrolled beneficiaries have lower average risk scores than those who never enrolled during the predemonstration period, then this would provide additional evidence of favorable selection into the enrolled group.

G.2.1 Rate-setting comparison

Table G-3 provides an example of how RTI calculated the normalized county rate using observed FFS Parts A and B expenditures from 2015 (demonstration year 2) for Essex County, Massachusetts. First, using observed FFS expenditure data available from CMS, we summed Part A and Part B per capita costs and then we divided the amount by the county-level risk score.[51]

[49] The analysis is focused on FFS as over 95 percent of the beneficiaries who enrolled were previously in FFS.
[50] FFS Data (2015–2020). Available at: https://www.cms.gov/Medicare/Health-Plans/MedicareAdvtgSpecRateStats/FFS-Data.
[51] Note that because the Part A total per capita costs in the actuary file includes both Part A only beneficiaries and those with both Part A and Part B, we raised the RTI rate by 3 percent to reflect the exclusion of Part A only beneficiaries in managed care (see column C, ***Tables G-4 and G-5***).

Table G-3
Example of RTI normalized county rate calculations for 2015 (demonstration year 2), Essex County, Massachusetts

County	Part A total per capita[1]	Part B total per capita[1]	Part A + Part B	Risk score[2]	RTI normalized FFS rate
Essex, MA	420.54	428.18	848.72	1.076465	788.43

FFS = fee-for-service.
[1] FFS15.xlsx file found in the download titled *FFS DATA 2015 (ZIP)* from FFS Data (2015-2020) | CMS.
[2] Medicare FFS County 2021 Web.xlsx files found in the download titled *FFS DATA 2018 (ZIP)* from FFS Data (2015-2020) | CMS.

Table G-4
Comparison of MMP rates to observed FFS spending, 2015 (demonstration year 2)

County	Enrollment (bene-months)[1]	Percent enrollment (of total eligible bene-months)[1]	RTI normalized FFS rate	Final MMP rate after application of 0% savings	MMP rate as % of RTI Normalized FFS rate
	A	B	C	D	E
Essex	11,422	6.1%	788.43	877.53	111.3%
Franklin	982	0.5%	706.43	751.55	106.4%
Hampden	48,937	25.9%	752.82	777.23	103.2%
Hampshire	5,058	2.7%	735.16	771.06	104.9%
Middlesex	16,403	8.7%	811.81	876.39	108.0%
Norfolk	6,648	3.5%	850.77	896.93	105.4%
Plymouth	4,961	2.6%	878.00	934.70	106.5%
Suffolk	44,553	23.6%	827.06	928.86	112.3%
Worcester	49,649	26.3%	836.27	858.01	102.6%
Weighted Average[2]	—	—	805.64	857.07	106.3%
Total	188,613	—	—	—	—

FFS = fee-for-service; MMP = Medicare-Medicaid Plan; — = not applicable.
[1] As reflected in RTI's DinD impact analysis sample.
[2] Numbers in column A are used as the weights.

Table G-5
Comparison of MMP rates to observed FFS spending, 2019 (demonstration year 6)

County	Enrollment (bene-months)[1]	Percent enrollment (of total eligible bene-months)[1]	RTI normalized FFS rate	Final MMP rate after application of 0.5% savings	MMP rate as % of RTI Normalized FFS rate
	A	B	C	D	E
Essex	28,310	10.3%	882.66	888.52	100.7%
Franklin	2,169	0.8%	811.25	800.16	98.6%
Hampden	69,523	25.3%	825.90	816.66	98.9%
Hampshire	3,449	1.3%	824.42	819.41	99.4%
Middlesex	44,680	16.2%	897.18	891.28	99.3%
Norfolk	15,721	5.7%	924.83	942.75	101.9%
Plymouth	15,372	5.6%	958.05	984.21	102.7%
Suffolk	52,896	19.2%	907.67	893.20	98.4%
Worcester	42,911	15.6%	929.38	875.56	94.2%
Weighted Average[2]	—	—	888.10	876.57	98.7%
Total	275,031	—	—	—	—

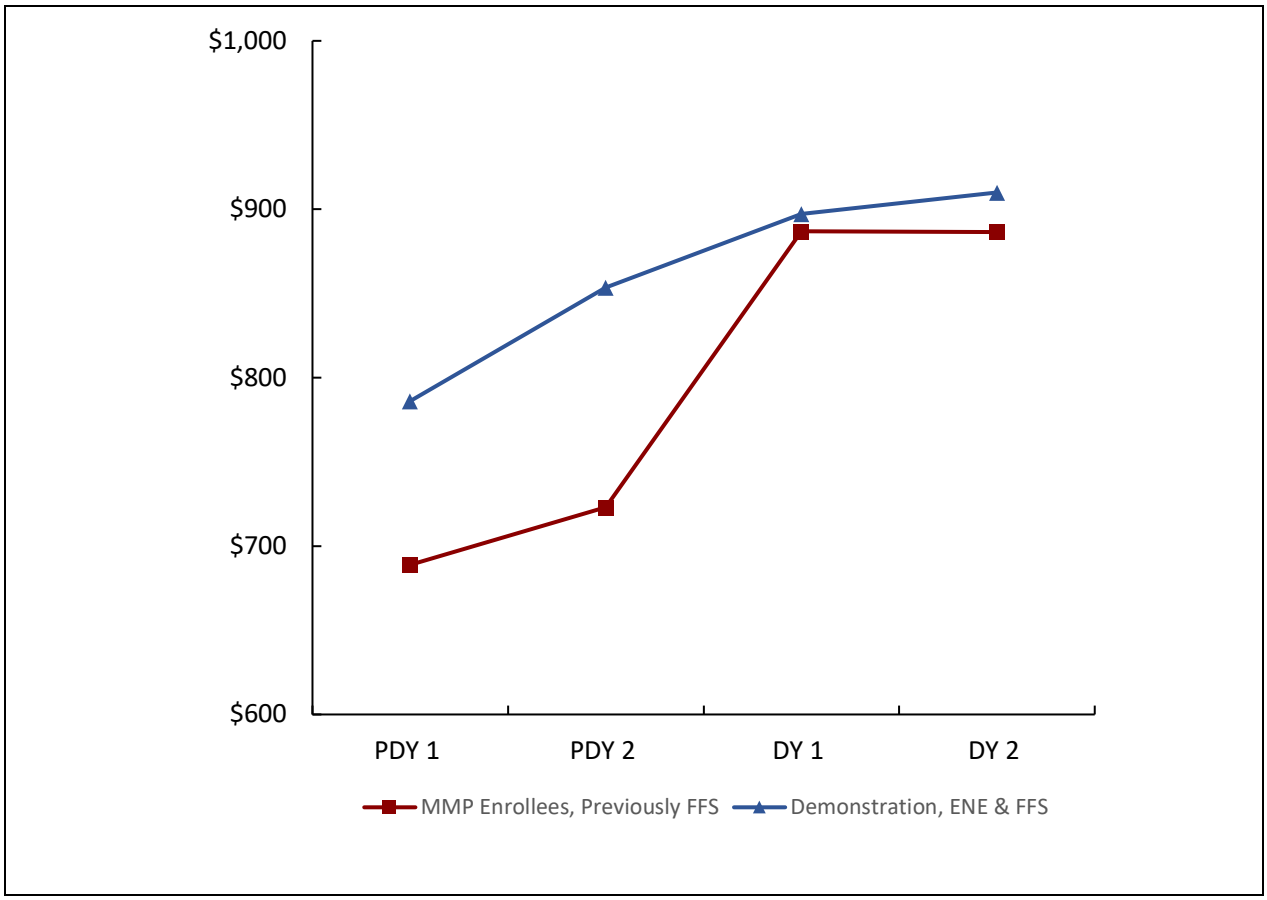
FFS = fee-for-service; MMP = Medicare-Medicaid Plan; — = not applicable.
[1] As reflected in RTI's DinD impact analysis sample.
[2] Numbers in column A are used as the weights.

On a composite basis, the MMP capitation rates were not comparable to the RTI normalized FFS rate for demonstration year 2 (overall, the weighted average MMP rate is 106.3 percent) although they were comparable in demonstration year 6 (98.7 percent). All of the demonstration year 2 MMP rates are higher than the RTI normalized FFS rate (***Table G-4***, column E), whereas most of the demonstration year 6 MMP rates are lower than the RTI normalized FFS rate (***Table G-5***, column E). These findings suggest that MMP rate-setting does not explain the increased costs as indicated by the DinD estimates for the demonstration group as a whole.

G.2.2 Pre-enrollment Cohort Analysis

Our analysis of predemonstration trends found that FFS beneficiaries with lower predemonstration FFS expenditures were more likely to enroll in an MMP plan. ***Figure G-4*** illustrates that the demonstration year 1 enrolled population was less costly during the predemonstration period than its ENE counterpart. Together with the results of the predemonstration utilization analysis shown in ***Section G.1, Service Utilization Supplemental Analyses***, these findings provide some additional evidence of favorable selection into the MMPs at the start of the demonstration; however, favorable selection into the MMPs does not explain the increase in Medicare spending among all demonstration eligible beneficiaries described in ***Section 6, Demonstration Impact on Cost Savings***.

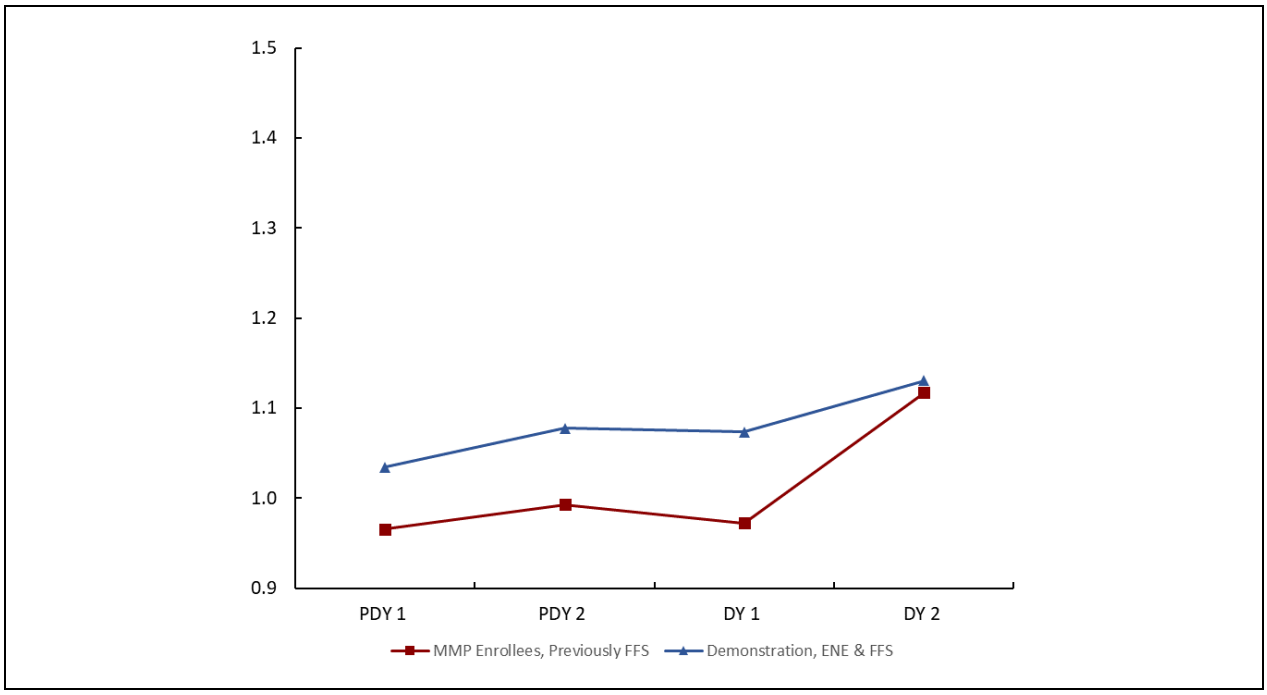
Figure G-4
Average Medicare Parts A and B costs PMPM from predemonstration period through demonstration year 2, for enrolled and ENE cohorts



DY = demonstration year; ENE= eligible not enrolled; FFS = fee-for-service; MMP = Medicare-Medicaid Plan; PDY = predemonstration year; PMPM = per member per month.
NOTES: The number of observations for DY 2 represents a subset of DY 1 enrollees. PDY 1 is from October 20121 through September 2012; PDY 2 is from October 2011 through September 2013; DY 1 is from October 2013 through December 2014; DY 2 is from January 2015 through December 2015.
SOURCE: RTI analysis of Massachusetts pre-enrollment trends.

There are additional factors that may explain our DinD cost savings analysis findings. For instance, more thorough diagnostic coding could raise MMP payments, which could increase average payments faster in the demonstration group relative to the comparison group, although we do not have the data to support this hypothesis. ***Figure G-5*** illustrates that risk scores for the enrollees are lower than the average risk scores of the ENEs, providing more definitive evidence of favorable selection in the demonstration than what was presented in ***Figure G–1***, and reinforces findings illustrated in ***Figure G-4***. Favorable selection can occur for multiple reasons. Plans may purposefully target healthier beneficiaries, and/or sicker beneficiaries may decide not to enroll in the demonstration either by opting out of passive enrollment or disenrolling once they had enrolled.

Figure G-5
Average risk score from predemonstration period through demonstration year 2, for enrolled and ENE cohorts



DY = demonstration year; ENE= eligible not enrolled; FFS = fee-for-service; MMP = Medicare-Medicaid Plan; PDY = predemonstration year; PMPM = per member per month.
NOTE: PDY 1 is from October 20121 through September 2012; PDY 2 is from October 2011 through September 2013; DY 1 is from October 2013 through December 2014; DY 2 is from January 2015 through December 2015.
SOURCE: RTI analysis of Massachusetts pre-enrollment trends.

Finally, although the factors described here are at play for the enrollee population, the FFS eligible but not enrolled beneficiaries are not affected by the savings percentages built into the MMP capitated rates. Moreover, the MMP capitated rates did not include any savings percentages through the first 3 demonstration years, limiting the demonstration's capacity for decreasing total Medicare and Medicaid spending during those years. In addition, our analysis used an ITT approach to alleviate concerns about selection bias in enrollment that could not be replicated in the comparison group, and included all eligible beneficiaries, not only those enrolled in an MMP. The eligible but not enrolled population was about three times larger than the enrolled population (which was about 26 percent). As such, the spending among the eligible but not enrolled population could obscure any savings achieved among the enrolled population. Moreover, Medicare spending in the comparison group increased at a slower rate than in the demonstration group. There may be unobservable characteristics influencing a different rate of change in Medicare spending in the comparison group relative to the demonstration group.

Although the supplemental analyses presented here shed light on the favorable selection of relatively healthier and lower-cost beneficiaries in MMP enrollment and help frame why favorable demonstration impacts may be difficult to observe, they do not pinpoint the drivers of Medicare cost increases and the unfavorable service utilization outcomes among eligible beneficiaries in the demonstration group relative to the comparison group.