Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Fourth Evaluation Report

April 2022

Acumen, LLC: Yilun Bao, Tom DeLeire, Bingyan Fan, Daekun Heo, Mariusz Kolczykiewicz, Josh Oh, Lois Olinger, Kristy Piccinini, Dimitra Politi, Yuchen Qian, Kamila Saldanha, Edward Sung, Anqi Wang, Amy Windham, Lucy Yao

Westat, Inc.: Douglas Bedell, Willow Burns, Susan Hassell, Angelina Lee, Lauren Mercincavage, Kevin Neipp, Allison Newsom, Jennifer Nooney, Shannon Reefer, Natalie Teixeira

Submitted to:
Center for Medicare & Medicaid Innovation (CMMI)
Centers for Medicare & Medicaid Services (CMS)
7500 Security Blvd.
Mail Stop: WB-06-05
Baltimore, MD 21244-1850

Contracting Officer's Representative: Caroline Ly
Contract Number: HHSM-500-2014-00027I, HHSM-500-T0005

Submitted by:
Acumen, LLC
500 Airport Blvd., Suite 365
Burlingame, CA 94010-1936

Project Director: Dimitra Politi

ACKNOWLEDGEMENTS

The authors would like to thank our colleagues Paul Fanelli and Jason Wu for their help with reviewing, editing, and formatting this report. We are also grateful for the support we received from the CMS Evaluation and Model Teams, especially the guidance we received from our project officers, Caroline Ly and Thomas Shaffer. We would also like to thank the individuals from the Enhanced MTM Model participating organizations and other stakeholders who contributed information presented in this report.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ACRONYMS

Acronym	Definition
ACSC	Ambulatory Care Sensitive Condition
ADE	Adverse Drug Event
ADT	Admission, Discharge, and Transfer
AES	Actuarially Equivalent Standard
AMR	Annual Medication Review
BA	Basic Alternative
BCBS FL	Blue Cross Blue Shield of Florida
BCBS NPA	Blue Cross Blue Shield Northern Plains Alliance
CDC	Centers for Disease Control and Prevention
CHF	Congestive heart failure
CI	Confidence interval
ClearStone	ClearStone Solutions, Inc.
CME	Common Medicare Environment
CMR	Comprehensive Medication Review
CMS	Centers for Medicare & Medicaid Services
COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus disease 2019
CWF	Common Working File
DiD	Difference-in-differences
DME	Durable Medical Equipment
DTP	Drug-therapy problem
E&M	Evaluation and Management
ED	Emergency department
EDB	Enrollment Database
EHR	Electronic Health Record
Enhanced MTM	Enhanced Medication Therapy Management
ESRD	End-stage renal disease
FDA	Food and Drug Administration
FMR	Follow-up Medication Review
GMMS	Genoa Medication Management Systems
HCC	Hierarchical Condition Categories
HCPCS	Healthcare Common Procedure Coding System
HIE	Health Information Exchange
HPMS	Health Plan Management System
HRR	Hospital Referral Region
ICD	International Classification of Diseases
IP	Inpatient
IVR	Interactive voice response
LIPS	Low-Income Premium Subsidy
LIS	Low-income subsidy
LTC	Long-term care
MA-PD	Medicare Advantage Prescription Drug Plan
MARx	Medicare Advantage and Prescription Drug Plan System
MBSF	Master Beneficiary Summary File
MDS	Minimum Data Set
Med Use	Medication Utilization
MME	Morphine milligram equivalents
MMP	Medicare-Medicaid Plan
MSA	Medication Safety Alert

Acronym	Definition
MSR	Medication Safety Review
MTC	Medication Therapy Counseling
MTM	Medication Therapy Management
NA	Not Applicable
NDA	Non-Disclosure Agreement
ONE	Opioid and Naloxone Education
OP	Outpatient
PAC	Pharmacy Advisor Counseling
PB	Physician/Carrier
PBM	Pharmacy Benefit Manager
PBP	Plan Benefit Package
PBPM	Per-beneficiary per-month
PDC	Proportion of Days Covered
PDE	Part D Drug Event
PDP	Prescription Drug Plan
PHE	Public Health Emergency
PMAP	Provider Medication Action Plan
PQA	Pharmacist Quality Alliance
SilverScript/CVS	SilverScript Insurance Company/CVS Health
SNF	Skilled Nursing Facility
SNOMED CT	Systematized Nomenclature of Medicine – Clinical Terms
SPCM	Specialty Pharmacy Care Management
SSI	SilverScript Insurance Company
STD	Standard deviation
SUPD	Statin Use in Persons with Diabetes
TC	Transaction Code
TMR	Targeted Medication Review
TRHC	Tabula Rasa HealthCare
UnitedHealth	UnitedHealth Group
US Dollar	United States Dollar
WellCare	WellCare Health Plans

[This page is intentionally left blank.]

EXECUTIVE SUMMARY

The Enhanced Medication Therapy Management Model ("the Model") was launched by the Centers for Medicare & Medicaid Services (CMS) to test whether providing Part D Prescription Drug Plan (PDP) sponsors with programmatic flexibilities and payment incentives can improve therapeutic outcomes and reduce Medicare expenditures. The Enhanced MTM Model's five-year performance period began on January 1, 2017.

Background

Medication therapy management (MTM) describes a range of services intended to optimize medication use and prevent medication-related issues. In the traditional MTM program, CMS requires that Medicare Part D plan benefit packages (PBPs) provide a uniform set of MTM services to beneficiaries who meet specific criteria. These criteria include the presence of multiple chronic conditions, use of multiple Part D-covered medications, and the likelihood of incurring high drug expenditures.[1] Provision of all MTM services is funded from a portion of the sponsor's annual bid, so expansions beyond the minimum requirements may increase beneficiary premiums.[2] As a result, traditional MTM services generally fulfill only basic Part D compliance requirements.

The Model adds four key innovations that are not available under the traditional MTM program:[3]

(i) **Additional MTM flexibility:** Participating sponsors can design their own Enhanced MTM interventions and tailor them to meet the needs of their specific beneficiary populations. Sponsors can determine the parameters used to identify the beneficiaries targeted to receive services and the types of MTM services provided.

(ii) **Prospective payments for Model implementation costs:** CMS provides monthly payments on a per-beneficiary per-month (PBPM) basis to cover the administrative costs of service provision under the Model. Payment amounts are calculated prospectively

[1] CMS sets the core targeting criteria, but PDPs can choose certain elements of their implementation. For example, PDPs may choose which chronic conditions satisfy the multiple chronic condition criterion, but cannot require that beneficiaries have more than three of these conditions to be eligible for MTM.

[2] Medicare's payments to PDPs are determined through a competitive bidding process. Sponsors submit bids each year to Medicare to offer Part D coverage. Medicare covers a portion of the cost of standard coverage based on the annual bids, and premium payments paid by beneficiaries cover the remaining portion.

[3] For further information, please refer to: "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: First Evaluation Report" (October 2019), https://downloads.cms.gov/files/mtm-firstevalrpt.pdf.

based on sponsors' projections of their Enhanced MTM implementation costs, and take into account the projected size of their targeted population.

(iii) **Retrospective performance-based payments:** Performance-based payments are provided to incentivize sponsors to improve beneficiary outcomes and reduce downstream expenditures. They are awarded contingent on reductions in Medicare Parts A and B expenditures for participating PBP enrollees relative to a benchmark. If a sponsor qualifies for a performance-based payment, Medicare delivers a fixed $2 PBPM amount through an increase in its contribution to the PBP's Part D premium. This premium subsidy makes plans more price-competitive by decreasing the premium paid by beneficiaries.

(iv) **Data reporting:** Participating sponsors are required to submit monthly beneficiary-level eligibility data in the Medicare Advantage Prescription Drug data transaction system (MARx) to document which beneficiaries qualify to receive Enhanced MTM services. Quarterly Encounter Data document Enhanced MTM activities and services provided to beneficiaries, using Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT) codes.

This Fourth Evaluation Report updates estimates of the Model's impacts on medical expenditures for beneficiaries enrolled in participating PBPs to include information from the fourth year of implementation (2020).[4] In addition, this report presents impacts for two beneficiary subpopulations who are more likely to be targeted and may benefit more from Enhanced MTM relative to other beneficiaries: (i) beneficiaries from underserved populations, specifically those who qualify for the low-income subsidy (LIS), and (ii) medically complex beneficiaries, specifically those with chronic conditions (e.g., diabetes) or drug-therapy problems (DTPs). A cumulative assessment of Model implementation through 2020 is also provided, including a discussion of changes in Enhanced MTM interventions and a presentation of Enhanced MTM eligibility and service receipt over time. Finally, this report discusses the effects of the COVID-19 public health emergency (PHE) on Model implementation in Model Year 4.

Who Are the Enhanced MTM Model Sponsors?

Six Part D sponsors ("sponsors") participated in the Model from Model Year 1 through Model Year 4. The six sponsors are SilverScript Insurance Company/CVS Health (SilverScript/CVS), Humana, Blue Cross Blue Shield Northern Plains Alliance (BCBS NPA), UnitedHealth Group (UnitedHealth), WellCare Health Plans (WellCare), and Blue Cross Blue

[4] The expenditure analyses conducted for the Enhanced MTM Fourth Evaluation Report focus on Medicare Parts A and B expenditures.

Shield of Florida (BCBS FL). The Model was tested in five of the 34 Medicare Part D PDP Regions: Arizona, Louisiana, Florida, the Upper Midwest and Northern Plains (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wyoming), and Virginia. All sponsors, except BCBS NPA and BCBS FL, participated in all five test PDP regions and operated one PBP in each PDP region.

Beneficiary enrollment across participating sponsors' Enhanced MTM PBPs remained stable at about 1.9 million through the first three Model Years and decreased to about 1.7 million in Model Year 4 (ES Table 1).[5] For most individual sponsors, enrollment decreased between 0.2 and 13.6 percent in Model Year 4, with the exception of WellCare. These enrollment decreases were driven by new market entries and benchmark status changes for non-Enhanced MTM plans in two PDP regions (Upper Midwest and Northern Plains, and Florida), which shifted enrollment away from Enhanced MTM-participating plans. Enrollment in WellCare plans increased by 11.7 percent in Model Year 4. This increase was driven by changes in plans' benchmark status. WellCare's Virginia PBP, a benchmark plan, benefited from the automatic enrollment of LIS recipients, after two non-Enhanced MTM PBPs in Virginia lost their benchmark status. WellCare's Model-participating PBP in Florida also gained benchmark status in Model Year 4, making this plan newly eligible for automatic enrollment of LIS recipients.[6]

ES Table 1: Total Enrollment across PBPs Participating in Enhanced MTM Decreased in Model Year 4

Sponsors	Model Year 1 (2017) Enrollment	Model Year 2 (2018) Enrollment	Model Year 3 (2019) Enrollment	Model Year 4 (2020) Enrollment	Change, 2017-2018 (%)	Change, 2018-2019 (%)	Change, 2019-2020 (%)
All Sponsors	***1,878,104***	***1,867,500***	***1,851,735***	***1,672,477***	***-0.6***	***-0.8***	***-9.7***
SilverScript/CVS	794,182	1,002,916	986,835	852,880	26.3	-1.6	-13.6
Humana	457,433	287,528	255,604	226,697	-37.1	-11.1	-11.3
BCBS NPA	241,498	239,962	219,298	199,224	-0.6	-8.6	-9.2
UnitedHealth	175,930	134,273	206,163	192,719	-23.7	53.5	-6.5
WellCare	155,077	150,184	132,527	148,098	-3.2	-11.8	11.7
BCBS FL	64,631	60,859	55,977	55,887	-5.8	-8.0	-0.2

Source: Common Medicare Environment (CME). Enrollment numbers only include beneficiaries in Enhanced MTM–participating PBPs.

[5] These decreases in enrollment are consistent with Medicare-wide trends among stand-alone PDPs. See, for example: https://www.kff.org/medicare/issue-brief/key-facts-about-medicare-part-d-enrollment-premiums-and-cost-sharing-in-2021. The enrollment decreases are more pronounced among these Enhanced MTM-participating plans than the wider stand-alone PDP market, for the reasons listed in the rest of the paragraph.

[6] Changes in enrollment for individual sponsors between Model Year 1 (2017) and Model Year 3 (2019) are discussed in the Third Evaluation Report. "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

What Are the Enhanced MTM Interventions?

Each sponsor offered multiple Enhanced MTM interventions to address specific needs in its beneficiary population. Enhanced MTM interventions are composed of a unique combination of sponsor-specific beneficiary targeting criteria and a corresponding set of Enhanced MTM outreach and services offered to eligible beneficiaries. The targeting criteria used to determine beneficiary eligibility for Model interventions clustered around five categories: (i) medication utilization; (ii) high Medicare Parts A, B, and/or D expenditures; (iii) presence of one or more chronic conditions; (iv) recent discharge from the hospital; and (v) vaccine status.[7] Sponsors offered a variety of services for each specific Enhanced MTM intervention. Examples of these services include medication reconciliation, comprehensive medication review (CMR), targeted medication review (TMR), case/disease management, tailored education, and medication adherence counseling. Sponsors (or their vendors) provided these services to their beneficiaries via phone, in-person, and automated methods (e.g., interactive voice response).

How Did Enhanced MTM Interventions Change in Model Year 4?

Three out of six sponsors made changes to their Enhanced MTM intervention offerings, beneficiary targeting criteria, or services in Model Year 4. These changes generally reflected sponsors' individual learnings from their implementation rather than coalescing around common approaches.

In terms of intervention offerings, BCBS NPA added an intervention in Model Year 4 focused on assessing potential risk factors among beneficiaries with newly prescribed opioid medications. In the same year, BCBS NPA discontinued its Specialty Drug intervention and BCBS FL discontinued its Low-Risk, High-Cost intervention after these sponsors' internal analyses found them to be ineffective.

With regard to beneficiary targeting criteria, three sponsors (Humana, BCBS FL, and BCBS NPA) changed their beneficiary targeting criteria related to risk scores in an effort to better identify and intervene with high-risk beneficiaries who could potentially benefit the most from Enhanced MTM services.

Changes to Enhanced MTM services (e.g., CMRs) were made by some sponsors (Humana, BCBS NPA, and BCBS FL) in Model Year 4 to address broader beneficiary needs and socioeconomic barriers that affect the management of chronic conditions, beyond medication-related issues. For example, Humana removed its CMR entirely after finding that it did not

[7] SilverScript/CVS's HealthTag intervention was the only Enhanced MTM intervention that targeted beneficiaries primarily based on vaccination status (specifically influenza, shingles, or pneumonia vaccination status).

produce medical savings and replaced it with a new chronic condition management and education service.

How Did the COVID-19 Public Health Emergency (PHE) Impact Model Implementation in Model Year 4?

According to sponsors, the COVID-19 PHE affected their ability to deliver Enhanced MTM services, especially those delivered in community pharmacies. Community pharmacies encountered additional challenges with providing Enhanced MTM services due to staffing shortages, transitioning from in-person to telephonic services, and competing priorities. Call centers, which also deliver Enhanced MTM services, were largely unaffected.

Overall, compared to previous Model Years, sponsors that offered CMRs reported providing more CMRs in Model Year 4. These sponsor reports align with service receipt rates produced for the evaluation using Encounter Data. Sponsors attributed higher CMR receipt rates to system-wide effects of stay-at-home orders on beneficiaries during the COVID-19 PHE. Beneficiaries were more likely to be at home to receive services by telephone, unable to see their usual providers, and be more comfortable with alternatives to in-person care.

Key Findings

Did the Model Reduce Medicare Expenditures?

There was no statistically significant cumulative change in Medicare Parts A and B expenditures. In the fourth year of Model implementation there was an estimated increase in gross Medicare Parts A and B expenditures for beneficiaries enrolled in Enhanced MTM plans, which was small and not statistically significant (ES Table 2). Despite higher rates of eligibility and receipt of CMR and TMR services in Model Year 4 (2020) relative to Model Year 3 (2019), there continue to be no significant impacts on gross expenditures in the fourth year of the five-year Model.

Estimated changes in expenditures by service delivery setting are qualitatively similar to those reported in prior evaluation reports.[8] There were moderate decreases in expenditures for hospital inpatient services and institutional post-acute care, partially offset by increases in expenditures for emergency department, outpatient non-emergency, and ancillary services.

ES Table 2: There Were No Significant Impacts on Gross Medicare Expenditures

	Cumulative	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Parts A and B Expenditures (Per-Beneficiary Per-Month Estimate in $)					
Difference-in-Differences (DiD)	- $1.16	- $3.95	- $0.52	- $0.38	$0.97
95% Confidence Interval	(-6.56, 4.25)	(-10.38, 2.49)	(-7.71, 6.68)	(-7.73, 6.98)	(-6.91, 8.86)

Notes: The unit of observation is a beneficiary-month. Number of Enhanced MTM observations: 72,138,205 (1,571,806 beneficiaries). Number of comparison observations: 142,112,219 (3,423,484 beneficiaries). Negative estimates represent decreases in expenditures and positive estimates represent increases in expenditures.

Overall, through the fourth year of Model implementation, there is limited evidence of significant Model impacts on total Medicare Parts A and B expenditures for enrollees of Model-participating plans. The estimates suggest that there is no additional benefit of the Model's interventions and services relative to the traditional MTM program in terms of reductions in downstream expenditures.

[8] See, for example, the Enhanced MTM Model Third Evaluation Report, "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

How Did the Model Impact Expenditures Net of Medicare Model-Related Payments?

The Model has generated net losses for Medicare in each of the four Model Years, but these estimates were not statistically different from zero. Estimated impacts on gross Medicare Parts A and B expenditures were combined with Model prospective payments and performance-based payments to produce estimates of net impacts on Medicare expenditures ("net expenditures") (ES Table 3). In Model Year 4, and cumulatively over the Model's four years, Model-related payments by CMS to sponsors continued to exceed estimated Model impacts on Medicare Parts A and B expenditures. Through the first four years of implementation, the Model has generated a non-significant net increase of $3.45 PBPM in expenditures after accounting for Model-related payments to sponsors. The total estimated net loss across all four Model Years was $270.75 million, but this estimate was not statistically significant.

ES Table 3: Impacts on Net Medicare Expenditures Were Not Statistically Significant Through Model Year 4

Time Period	Number of Beneficiary-months [N]	Change in Gross Medicare Expenditures PBPM in $ (95% CI) [A]	Model Payments		**Change in Net Expenditures**		
			Prospective Payments PBPM in $ [B]	Performance-based Payments PBPM in $ [C]	**PBPM in $ (95% CI)** [D=A+B+C]	**Total Annual in $million (95% CI)** [N*D]	**P-value**
Cumulative	78,433,364	-1.16 (-6.56, 4.25)	3.55	1.06	3.45 (-1.95, 8.86)	270.75 (-152.79, 695.08)	0.211
Model Year 1 (2017)	20,254,028	-3.95 (-10.38, 2.49)	3.11	1.12	0.28 (-6.15, 6.72)	5.62 (-124.61, 136.06)	0.933
Model Year 2 (2018)	20,090,552	-0.52 (-7.71, 6.88)	3.90	1.17	4.55 (-2.64, 11.75)	91.45 (-53.00, 236.10)	0.215
Model Year 3 (2019)	19,916,637	-0.38 (-7.73, 6.98)	3.52	0.89	4.03 (-3.32, 11.39)	80.28 (-66.11, 226.86)	0.283
Model Year 4 (2020)	18,172,147	0.97 (-6.91, 8.86)	3.70	1.05	5.72 (-2.16, 13.61)	103.99 (-39.20, 247.37)	0.155

Notes: PBPM: per-beneficiary per-month; CI: confidence interval. PBPM changes in net expenditures [D] are calculated as the sum of the estimated change in gross Medicare expenditures [A] and Medicare prospective payments [B] and performance-based payments [C] to sponsors. Negative net expenditures estimates represent net savings and positive estimates represent net losses to the Medicare program. Changes in net expenditures for Model Years 1, 2, and 3 slightly differ from those reported in the Enhanced MTM Model Second and Third Evaluation Reports due to minor updates in the sample populations and updated data sources. The total annual estimate may deviate from the [N*D] manual calculation due to rounding.

How Did the Model Impact Beneficiaries from Underserved Populations?

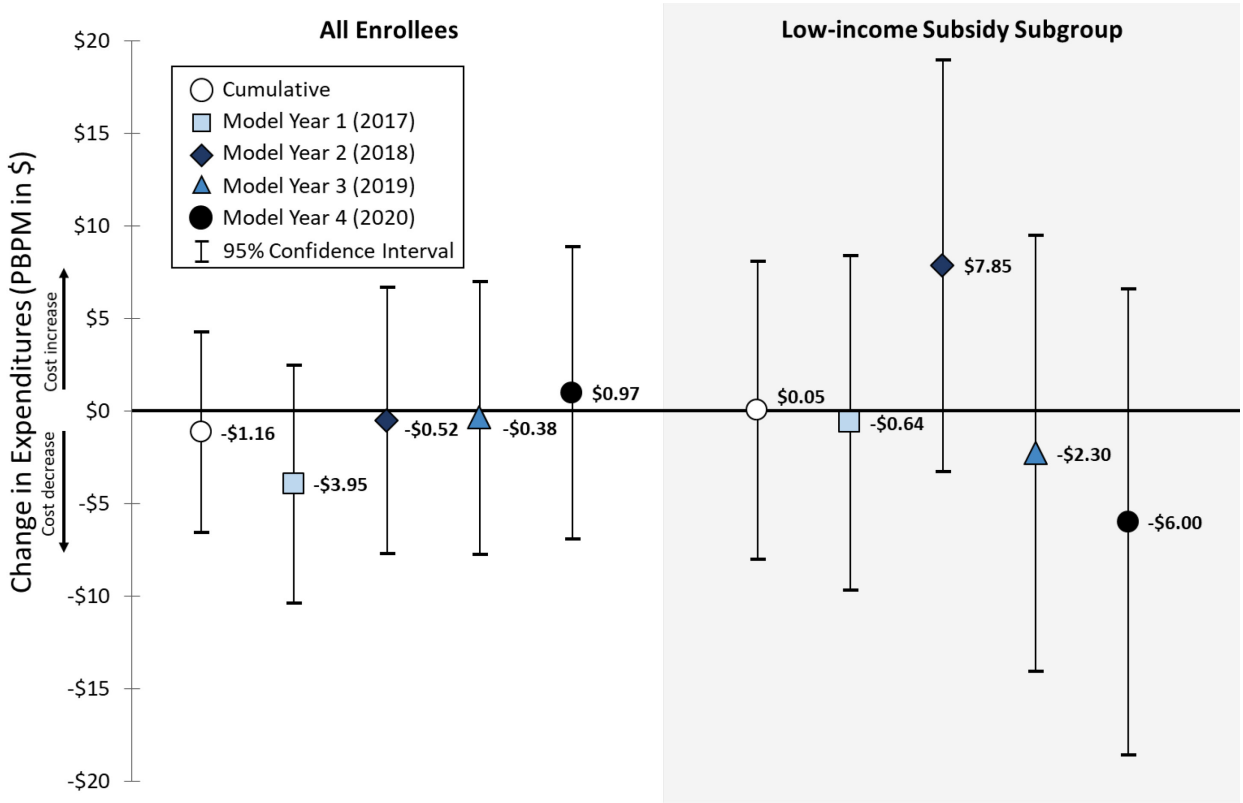
This report assessed impacts on beneficiaries from underserved populations, specifically those who qualify for the low-income subsidy (LIS). LIS-eligible beneficiaries tend to incur higher-than-average medical expenditures, and are thus more likely to be eligible for Enhanced MTM interventions than the overall population of plan enrollees ("all enrollees"). Additionally, many Enhanced MTM services have more frequent beneficiary outreach relative to traditional MTM services. This higher frequency could promote the successful engagement of LIS beneficiaries and induce behavioral change to enable better management of their chronic conditions. Furthermore, LIS beneficiaries are expected to benefit from specific Model services that focus on removing financial and other barriers to medication optimization.

Despite the Model's anticipated impacts on the subgroup of LIS beneficiaries, analytic findings suggest that LIS beneficiaries did not benefit more from Enhanced MTM relative to the wider population of participating plan enrollees. Specifically, the Model did not impact total Medicare Parts A and B expenditures for the LIS subgroup. These findings are consistent with findings for all beneficiaries enrolled in Model-participating plans (ES Figure 1). Estimated impacts on setting-specific expenditures for LIS-eligible beneficiaries were also similar to findings for the all-enrollee cohort. Specifically, there were expenditure decreases in the inpatient and institutional post-acute care settings, which were offset by increases in the outpatient setting (including emergency department [ED] expenditures).

Although LIS-eligible beneficiaries were more likely to be eligible for Enhanced MTM services, they were less likely to receive Enhanced MTM services relative to the average plan enrollee. Only around 22 percent of LIS beneficiaries received "significant services," compared with about 30 percent of all beneficiaries enrolled in participating plans.[9] These findings are consistent with sponsor reports that it is more difficult to reach LIS beneficiaries for participation in Enhanced MTM services.

[9] "Significant services" are tailored services intended to address specific beneficiary needs. Sponsors also offered non-significant services, which included general, non-tailored outreach (e.g., welcome letters and educational newsletters). This report focuses on the provision of significant services.

ES Figure 1: Estimated Changes in Part A and Part B Expenditures for the LIS Subgroup Were Consistent with Those for All Enrollees, and Not Statistically Significant



Notes: * p-value < 0.10; ** p-value < 0.05; *** p-value < 0.01.

Eligible Black or Other race beneficiaries were more likely to be eligible for Enhanced MTM, but less likely to receive Enhanced MTM services than White beneficiaries. The report assessed differences in eligibility and service receipt across three racial subgroups (White, Black, or Other race[10]). White beneficiaries represented about 78 percent of plan enrollees, Black beneficiaries represented about 12 percent, and 10 percent of beneficiaries belonged to the Other racial group. Eligibility rates were highest for beneficiaries in the Black or Other racial subgroups, but service receipt rates were highest among White beneficiaries. There were similar differences in eligibility and CMR service receipt by racial subgroup among traditional MTM beneficiaries included in the evaluation's comparison group. There is substantial overlap between LIS beneficiaries and beneficiaries in the Black or Other race categories. Although most LIS beneficiaries are White, about 88 percent of Black beneficiaries and 80 percent of beneficiaries of Other race qualified for LIS.

[10] The "Other" category includes Asian, Hispanic, North American Native, Other, and Unknown categories.

How Did the Model Impact Medically Complex Beneficiaries?

Enhanced MTM services may have a larger impact for medically complex beneficiaries compared to the overall population of enrollees in participating plans for three reasons. First, sponsors expanded their targeting criteria to include more medically complex beneficiaries in their Enhanced MTM interventions, relative to the traditional MTM program. Second, medically complex beneficiaries have higher rates of healthcare utilization and medical expenditures compared to the overall population. There is thus an even greater opportunity to improve health and reduce expenditures for medically complex beneficiaries, especially those related to ambulatory care-sensitive conditions, through receipt of Model services. Third, Enhanced MTM services may be more targeted toward the specific needs of medically complex beneficiaries, increasing the likelihood for successful service completion.[11] This may lead to further behavioral change for disease management and optimization of medication regimens, with beneficial impacts on downstream expenditures and related healthcare utilization.

This evaluation investigated Model impacts on three subgroups of medically complex beneficiaries: (i) beneficiaries with two or more chronic conditions, (ii) beneficiaries with diabetes, and (iii) beneficiaries with drug-therapy problems (DTPs).[12] Among beneficiaries targeted for Enhanced MTM based on medication utilization, almost all were targeted due to DTPs. In addition, all sponsors had at least one intervention that targeted beneficiaries based on the presence of chronic conditions. Diabetes, specifically, was a chronic condition targeted by many sponsors for their Enhanced MTM interventions.

There were no significant changes in Medicare Parts A and B expenditures cumulatively across the four Model Years for beneficiaries with two or more chronic conditions, beneficiaries with diabetes, and beneficiaries with DTPs (ES Figure 2). As expected, medically complex beneficiaries were more likely to be eligible for Enhanced MTM and more likely to receive significant services than the all-enrollee cohort. However, the Model did not differentially impact expenditures of medically complex beneficiaries relative to the overall population of beneficiaries enrolled in Model-participating plans. Estimated changes in utilization and expenditures by service delivery setting were mostly similar to the findings for all-enrollee analyses. In addition, decreases in inpatient expenditures and admissions related to

[11] Analyses from this evaluation found that, in most cases, significant service receipt rates among eligible medically complex beneficiaries were over 40 percent, and the rate of eligible medically complex beneficiaries receiving significant services was 4 to 9 percentage points higher than the rate for all eligible beneficiaries.

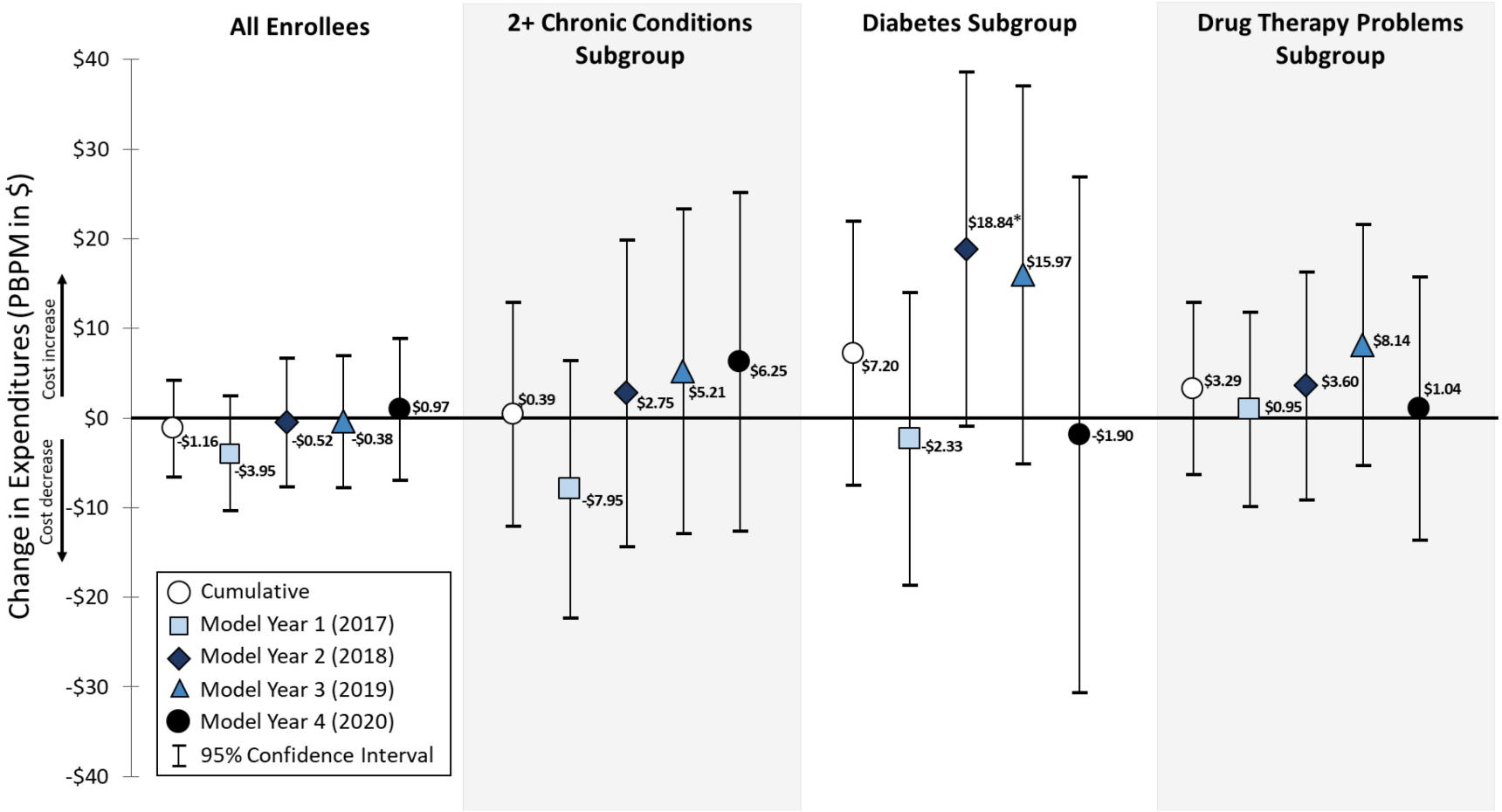
[12] Chronic conditions include diabetes, ischemic heart disease, stroke, atrial fibrillation, heart failure, asthma, chronic obstructive pulmonary disease, chronic lung disorder, osteoporosis, osteoarthritis, and rheumatoid arthritis. DTPs include poor medication adherence, drug-drug interactions, and taking high doses of a certain medication.

ambulatory care-sensitive conditions (ACSCs) for medically complex beneficiaries were comparable to the all-enrollee cohort.

In each Model Year, estimated changes in expenditures were generally small and not statistically significant, except for a marginally significant increase of $18.84 PBPM (or 1.27 percent change from baseline) for the diabetes subgroup in Model Year 2 (ES Figure 2). This estimated increase was only statistically significant at the 10 percent level and did not persist in later Model Years. Enhanced MTM eligibility and service receipt rates for the diabetes subgroup, which were similar to the other two subgroups of medically complex beneficiaries across all Model Years, could not explain this significant increase in Model Year 2. The Model also did not improve medication adherence for the diabetes subgroup; statin use among diabetics increased slightly.

Overall, findings suggest that the three select subgroups of medically complex beneficiaries do not benefit more from Enhanced MTM than the wider population of plan enrollees.

ES Figure 2: Estimated Changes in Expenditures for Medically Complex Subgroups by Model Year Were Also Generally Small (< 1 Percent Change from Baseline) and Not Statistically Significant



Notes: * p-value < 0.10; ** p-value < 0.05; *** p-value < 0.01.

Conclusions and Next Steps

The Model has not produced net savings for Medicare as of the fourth year of implementation. As sponsors continued to refine their Enhanced MTM interventions, a higher proportion of beneficiaries enrolled in Model-participating plans have become eligible for and received MTM services relative to beneficiaries enrolled in plans offering traditional MTM. However, there is little evidence that these increases in beneficiary eligibility and service receipt have decreased medical expenditures relative to the traditional MTM program. Estimates of the Model impact's on Medicare Parts A and B expenditures were small and not statistically different from zero. This report's additional investigations of Model impacts on expenditures and outcomes measuring health and healthcare utilization for LIS-eligible and medically complex beneficiaries produced similar findings, suggesting that these two subpopulations did not benefit more from Enhanced MTM relative to the wider population of participating plan enrollees. Low service receipt rates may have contributed to the lack of impact for LIS beneficiaries; however, there was also no evidence of impacts for medically complex beneficiaries despite higher service receipt rates among that subpopulation.

The next and final evaluation report will provide a comprehensive assessment of the implementation and impacts of the five-year Model. Insights on lessons learned from the implementation over the lifespan of the Model will also be presented in the final evaluation report to inform efforts to optimize MTM programs in the future by policymakers and stakeholders.

1 INTRODUCTION

The Centers for Medicare & Medicaid Services (CMS) launched the five-year Enhanced Medication Therapy Management (MTM) Model ("the Model") in 2017. The Model tests whether giving Medicare Part D Prescription Drug Plan (PDP) sponsors ("sponsors") flexibilities and payment incentives for the provision of MTM services to beneficiaries leads to improvements in therapeutic outcomes while reducing Part A and B Medicare expenditures. This Fourth Evaluation Report covers the first four years of Model implementation (January 1, 2017 – December 31, 2020), and presents Model impacts on Medicare expenditures, as well as an assessment of Model implementation.

The term "Medication Therapy Management" describes a range of services, intended to optimize medication use and to detect and prevent medication-related issues. Usually provided by pharmacists, MTM services include medication reviews, the provision of related education and advice to patients, and collaboration with patients and their prescribers to develop patient-centered plans for optimal therapeutic outcomes. Previous research suggests that MTM services have the potential to improve adherence to prescribed medications, increase drug safety and, through these mechanisms, improve health, reduce adverse events, and lower expenditures for individuals with chronic illness.[13,14]

In the traditional MTM program, CMS sets minimum requirements for identifying beneficiaries who are eligible to receive MTM services.[15] The traditional MTM program's eligibility criteria target Part D enrollees who have multiple chronic diseases, take multiple Part D drugs, and are likely to incur annual expenditures for covered Part D drugs that exceed a predetermined level, as described in Title 42 of the Code of Federal Regulations § 423.153(d).[16] Sponsors are required to offer certain MTM services to all eligible beneficiaries, including

[13] Barry A. Bunting, Benjamin H. Smith, and Susan E. Sutherland, "The Asheville Project: clinical and economic outcomes of a community-based long-term medication therapy management program for hypertension and dyslipidemia." *Journal of the American Pharmacists Association* 48, no. 1 (2008): 23-31, https://doi.org/10.1331/JAPhA.2008.07140.

[14] Saranrat Wittayanukorn, Salisa C. Westrick, Richard A. Hansen, Nedret Billor, Kimberly Braxton-Lloyd, Brent I. Fox, and Kimberly B. Garza, "Evaluation of medication therapy management services for patients with cardiovascular disease in a self-insured employer health plan." *Journal of Managed Care & Specialty Pharmacy* 19, no. 5 (2013): 385-395, http://www.doi.org/10.18553/jmcp.2013.19.5.385.

[15] Under Title 42 of the Code of Federal Regulations § 423.153(d), a Medicare Part D sponsor must establish an MTM program. Medicare Part D plans that are required to offer MTM include stand-alone PDPs, Medicare Advantage Prescription Drug plans (MA-PDs), and Medicare-Medicaid Plans (MMPs).

[16] CMS sets the core targeting criteria, but PDPs can choose certain elements of their implementation. For example, PDPs may select the chronic conditions that satisfy the multiple chronic condition criterion. Sponsors may also choose whether to target beneficiaries with at least two or three chronic conditions, but cannot require that beneficiaries have more than three of these conditions.

annual comprehensive medication reviews (CMRs) and quarterly targeted medication reviews (TMRs). Sponsors have the option to expand their targeting criteria to include additional beneficiaries for these services and to offer additional services to eligible beneficiaries.[17] However, the management and provision of all MTM services are considered administrative costs and funded from a part of the sponsor's annual bid.[18] Thus, expansions beyond the minimum requirements may increase beneficiary premiums. In 2016, before the start of the Model, about a quarter of Part D sponsors employed optional expanded targeting criteria, and less than a quarter provided optional additional services under traditional MTM.[19]

In January 2017, CMS launched the five-year Enhanced MTM Model across five PDP regions. The participants are six sponsors operating eligible stand-alone PDPs, offering basic prescription drug coverage.[20] The Model's four key innovative components are described below:[21]

(1) Additional flexibility gives sponsors significant latitude in intervention design. Unlike in traditional MTM, there are no minimum required targeting criteria or services, allowing sponsors to implement interventions tailored to their populations.[22] For example, sponsors may offer different services based on beneficiaries' risk profiles, instead of offering a uniform set of services to all targeted beneficiaries.

(2) Sponsors receive prospective payments from CMS for administrative expenses. Prospective payment amounts are designed to cover Model-related administrative costs for their projected target population and their CMS-approved targeting approaches. As

[17] CMRs are interactive medication reviews and consultations with beneficiaries to assess their medication use for medication-related problems, resulting in a standardized written summary. TMRs are performed to assess specific actual or potential medication-related problems, which may result in a follow-up intervention with beneficiaries and/or their prescribers.

[18] Medicare's payments to PDPs are determined through a competitive bidding process. Sponsors submit bids each year to Medicare to offer Part D coverage. Medicare covers a portion of the cost of standard coverage based on the annual bids, and premium payments paid by beneficiaries cover the remaining portion.

[19] "2016 Medicare Part D Medication Therapy Management (MTM) Programs Fact Sheet: Summary of 2016 MTM Programs" (May 4, 2016), https://www.cms.gov/Medicare/Prescription-Drug-Coverage/PrescriptionDrugCovContra/Downloads/CY2016-MTM-Fact-Sheet.pdf. A supplemental investigation also found about a quarter of stand-alone PDPs employed expanded targeting criteria in 2016.

[20] Eligible stand-alone PDPs are those that offer basic prescription drug coverage in the form of the defined standard benefit, actuarially equivalent standard benefits, or basic alternative benefits. Plan benefit packages that offer enhanced alternative coverage are not eligible for participation in the Enhanced MTM Model.

[21] For additional details about the differences between the traditional MTM program and the Enhanced MTM Model, please see the "Evaluation of the Part D Enhanced Medication Therapy (MTM) Model: First Evaluation Report," (October 2019), https://downloads.cms.gov/files/mtm-firstevalrpt.pdf.

[22] The Model also offers participating PDPs an opportunity to receive PBP enrollee Medicare Parts A and B claims data from CMS. This information can be leveraged for targeting and service provision.

mentioned above, administrative expenses for traditional MTM are funded as a component of the plan's bid.

(3) Sponsors receive performance-based payments from CMS, contingent on reductions in Medicare Parts A and B expenditures relative to a benchmark. Performance-based payments are intended to incentivize MTM activities that result in improvements in beneficiary outcomes and thus reductions in downstream Medicare Parts A and B expenditures (e.g., via a reduction in drug-related adverse events). Sponsors receive these payments contingent on expenditure reductions of at least 2 percent for beneficiaries enrolled in participating Plan Benefit Packages (PBPs), relative to a benchmark.[23] The performance-based payments come in the form of a $2 PBPM premium subsidy, enabling sponsors to be more price-competitive. The traditional MTM program does not offer performance-based payments.

(4) Sponsors have additional data reporting requirements for the Model. Sponsors are required to submit monthly beneficiary-level eligibility data in the Medicare Advantage Prescription Drug data transaction system (MARx). Sponsors are also required to submit quarterly Encounter Data, which document the details of Enhanced MTM services provided to beneficiaries in a flexible manner using Systematized Nomenclature of Medicine – Clinical Terms (SNOMED CT) codes.[24,25] The traditional MTM program requires stand-alone PDPs to only report MTM beneficiary-level data focused on MTM eligibility and the provision of required MTM services (CMRs and TMRs) on an annual basis to CMS.

The remainder of this introductory section provides background information on participating sponsors (Section 1.1), a high-level overview of the evaluation questions addressed by this Fourth Evaluation Report (Section 1.2), and a description of the report's contents (Section 1.3).

[23] The benchmark is determined based on expected Medicare Parts A and B expenditures in the absence of the Model. These expenditures are based on information from a comparison group of enrollees who are not exposed to the Model. Performance-based payments are awarded with a two-year delay, and take the form of an increase in Medicare's contribution to plans' Part D premium (i.e., an increase in the direct subsidy component of the Part D payment), thus decreasing the plan premium paid by beneficiaries, and improving PDPs' competitive market position.

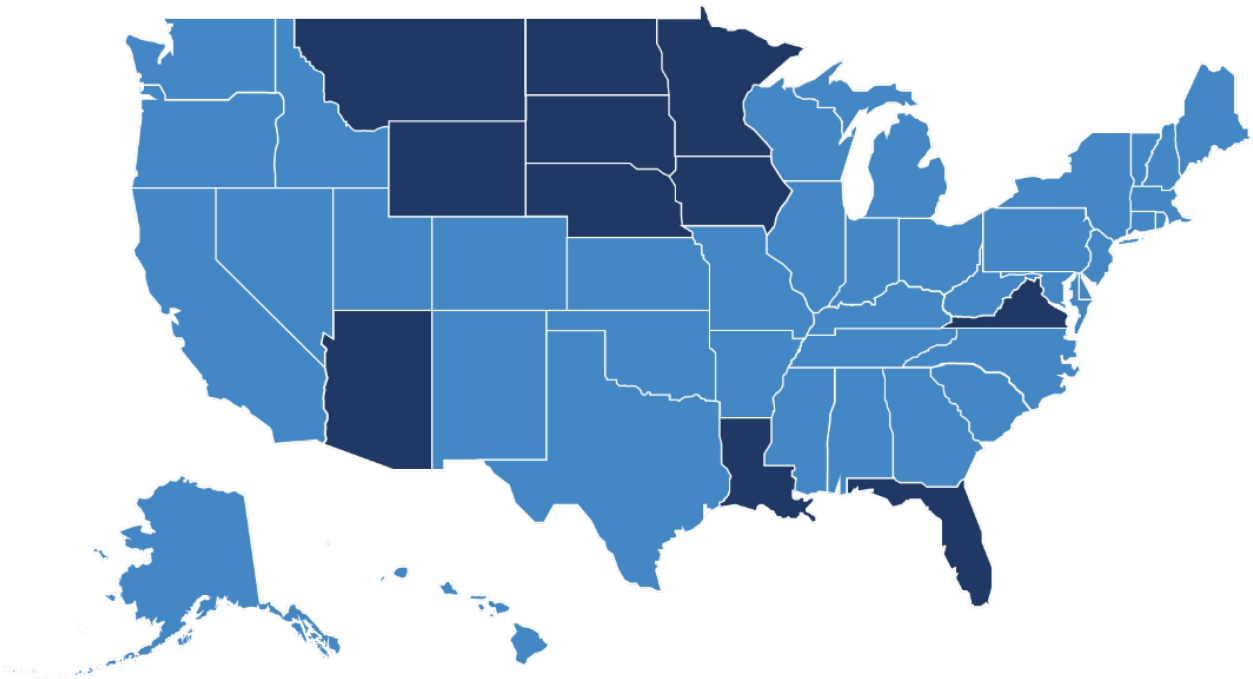
[24] These eligibility data are stored in MARx Transaction Code (TC) 91 files.

[25] SNOMED CT is a medical coding system designed to capture and represent detailed clinical content to describe a broad range of healthcare-related activities and support information exchange in multiple healthcare settings. More information can be found at: SNOMED International, "SNOMED CT Starter Guide" (2017). https://confluence.ihtsdotools.org/download/attachments/28742871/doc_StarterGuide_Current-en-US_INT_20170728.pdf.

1.1 Who Are the Enhanced MTM Model Participants?

Six sponsors participate in the Model, operating 22 PBPs across five PDP regions (Figure 1.1). The six sponsors are SilverScript Insurance Company/CVS Health (SilverScript/CVS), Humana, Blue Cross Blue Shield Northern Plains Alliance (BCBS NPA), UnitedHealth Group (UnitedHealth), WellCare Health Plans (WellCare), and Blue Cross Blue Shield of Florida (BCBS FL). All sponsors except BCBS FL and BCBS NPA are active in all five participating PDP regions, which include Arizona, Louisiana, Florida, the Upper Midwest and Northern Plains (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wyoming), and Virginia.[26]

Figure 1.1: The Enhanced MTM Model Covers Five Medicare Part D PDP Regions



Notes: The five PDP regions in the Model include: Arizona, Louisiana, Florida, the Upper Midwest and Northern Plains (Iowa, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Wyoming), and Virginia.

Overall beneficiary enrollment remained stable at about 1.9 million through the first three Model Years, but decreased to about 1.7 million in Model Year 4 (Table 1.1). As discussed in the Third Evaluation Report, between Model Year 1 (2017) and Model Year 3 (2019), individual sponsors' enrollment varied due to changes in PBP benchmark status, premiums, or PBP consolidation.[27] In Model Year 4 (2020), enrollment in SilverScript/CVS, Humana, BCBS NPA, UnitedHealth, and BCBS FL decreased relative to the previous year, with decreases ranging

[26] There are 34 PDP regions in total.

[27] "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

from 0.2 percent (BCBS FL) to 13.6 percent (SilverScript/CVS). These decreases in enrollment are consistent with Medicare-wide trends among stand-alone PDPs, although they are more pronounced among these Enhanced MTM-participating plans than the wider stand-alone PDP market.[28] These enrollment decreases were driven by the entry of new plans that did not participate in the Model, and by benchmark status changes among plans in two PDP regions: the Upper Midwest and Northern Plains, and Florida. In both of these regions, new Clear Spring Health plans with benchmark status entered the market in 2020. Additionally, another non-Enhanced MTM plan (operated by Cigna) in Florida gained benchmark status in 2020. As a result, enrollment among Enhanced MTM-participating plans in these regions decreased.

Unlike other sponsors, WellCare's enrollment increased in Model Year 4 by 11.7 percent. WellCare's Virginia PBP, a benchmark plan, benefited from automatic enrollment of low-income subsidy (LIS) recipients after two non-participating PBPs in Virginia lost benchmark status. WellCare's Model-participating PBP in Florida also gained benchmark status in Model Year 4, making this plan newly eligible for automatic enrollment of LIS recipients. Appendix B.9 provides details on Enhanced MTM PBPs' benchmark status, premiums, and enrollment.

Despite experiencing the largest decrease in enrollment in Model Year 4, SilverScript/CVS accounted for about half (51 percent) of the Model's enrollee population and continued to be the Model's largest sponsor. The Model's smallest sponsor was BCBS FL, with about 3 percent of enrolled beneficiaries.

Table 1.1: Total Modelwide Enrollment in Participating PBPs Decreased in Model Year 4

Sponsors	Model Year 1 (2017) Enrollment	Model Year 2 (2018) Enrollment	Model Year 3 (2019) Enrollment	Model Year 4 (2020) Enrollment	Change, 2017-2018 (%)	Change, 2018-2019 (%)	Change, 2019-2020 (%)
All Sponsors	***1,878,104***	***1,867,500***	***1,851,735***	***1,672,477***	***-0.6***	***-0.8***	***-9.7***
SilverScript/CVS	794,182	1,002,916	986,835	852,880	26.3	-1.6	-13.6
Humana	457,433	287,528	255,604	226,697	-37.1	-11.1	-11.3
BCBS NPA	241,498	239,962	219,298	199,224	-0.6	-8.6	-9.2
UnitedHealth	175,930	134,273	206,163	192,719	-23.7	53.5	-6.5
WellCare	155,077	150,184	132,527	148,098	-3.2	-11.8	11.7
BCBS FL	64,631	60,859	55,977	55,887	-5.8	-8.0	-0.2

Source: Common Medicare Environment (CME). Enrollment numbers only include beneficiaries in Enhanced MTM-participating contract PBPs. Enrollment numbers for each Model Year include beneficiaries ever enrolled in an Enhanced MTM-participating PBP during the specified Model Year.

[28] See, for example: https://www.kff.org/medicare/issue-brief/key-facts-about-medicare-part-d-enrollment-premiums-and-cost-sharing-in-2021/.

1.2 How Is the Enhanced MTM Model Expected to Improve Outcomes?

The Enhanced MTM Model builds on traditional MTM by offering participating sponsors financial incentives and regulatory flexibilities for beneficiary targeting and provision of MTM services. These Model features provide potential pathways through which the Model could improve health outcomes and decrease downstream medical expenditures beyond traditional MTM. As the First Evaluation Report demonstrated, the prospective payments to participating sponsors facilitate the provision of Enhanced MTM services to more enrollees.[29] In addition, the Model's flexibilities allow for interventions that offer services tailored to the specific needs of targeted beneficiaries. Performance-based payments provide an additional incentive for sponsors to focus specifically on interventions that curb medical expenditures, such as transitions-of-care interventions that could decrease hospital readmissions.

Figure 1.2 presents the Model's theory of change and describes the main pathways through which the Model is expected to impact beneficiary health outcomes and medical expenditures.[30] The **Model's characteristics**, listed in the top panel, include flexibilities and payments to enable MTM-related **sponsor activities**. Specifically, sponsors design interventions tailored to their enrollees' needs, with expanded eligibility criteria and services. These services may be beneficiary- or prescriber-facing, depending on the content of the service. For example, sponsors offer beneficiary-facing adherence consultations to identify, resolve, and/or prevent medication adherence issues, or consultations focused on chronic condition management to provide education tailored to a beneficiary's needs (e.g., management of diabetes). Targeted medication reviews, which are similar to those offered in traditional MTM, may be either beneficiary- or prescriber-facing. In addition, plans typically reach out to prescribers after service completion to provide recommendations on potential medication changes or other adjustments to a beneficiary's medication regimen.

These sponsor activities yield **expected Model outputs**. Sponsors' expanded eligibility criteria are expected to result in more beneficiaries who could benefit from MTM becoming eligible for services and receiving outreach. As a result, more beneficiaries are expected to engage in services intended to identify and correct medication issues and gaps in care, promote high adherence to medications, and/or help them overcome behavioral obstacles to the proper

[29] Among Model-participating plans, in 2016, prior to Model implementation, 7.9 percent of enrollees were eligible for traditional MTM. In 2017, after Enhanced MTM implementation began, 71.7 percent of enrollees were eligible for Enhanced MTM. For more details, see: "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: First Evaluation Report" (October 2019), https://downloads.cms.gov/files/mtm-firstevalrpt.pdf.

[30] The Third Evaluation Report discusses the Model's theory of change in additional detail, including a more detailed version of this figure. See "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

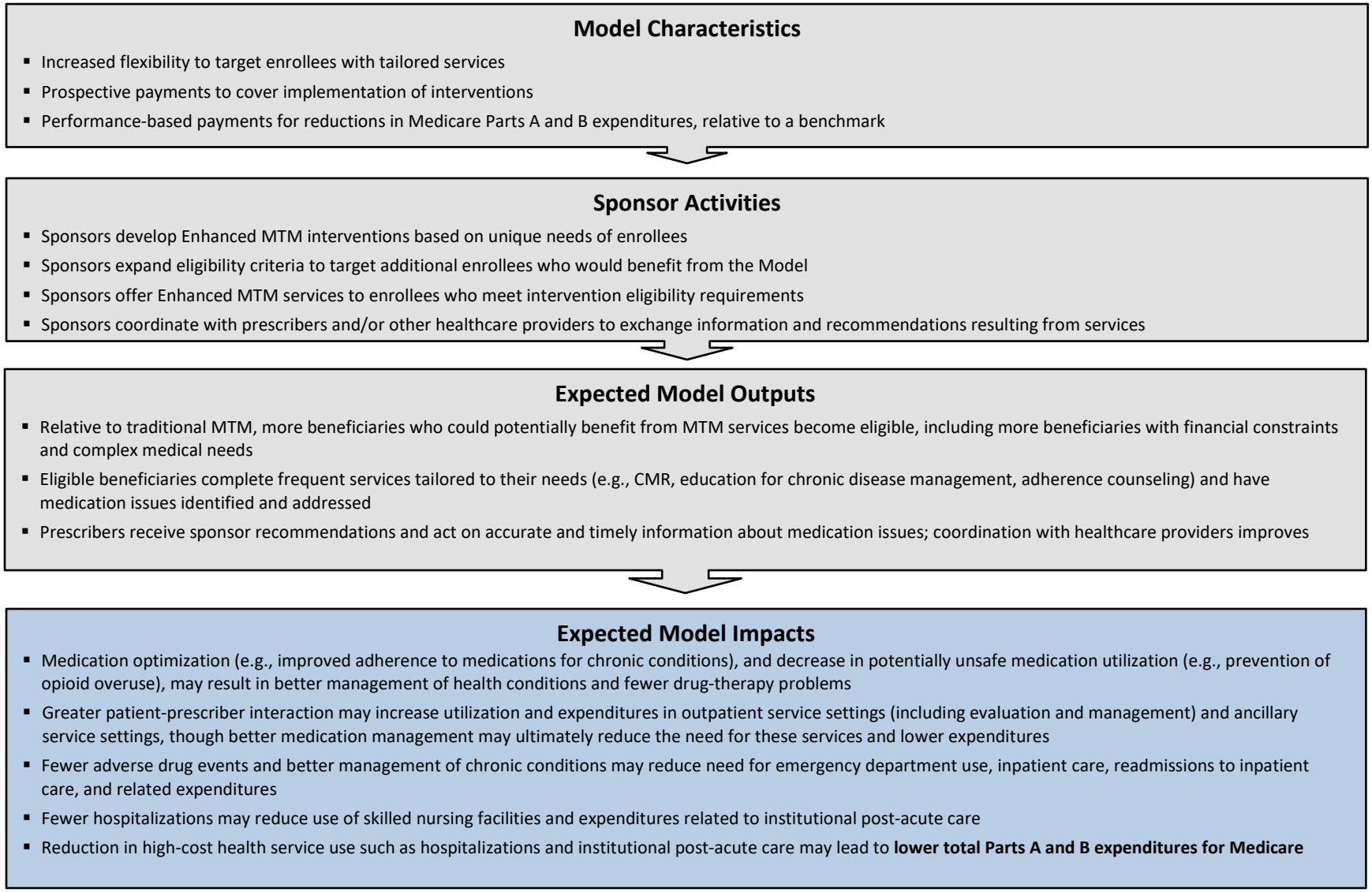
management of chronic conditions. In addition, the prescriber-facing services offered by plans (e.g., TMRs or transitions-of-care services), and the recommendations provided to prescribers after service completion lead to increased communication between plans, their affiliated pharmacists, and prescribers. These increased interactions between pharmacists and prescribers may, in turn, improve care coordination across healthcare settings.

As a result, the Model is theorized to yield downstream **expected Model impacts** on health outcomes, health service use, and related expenditures. For example, addressing beneficiaries' gaps in care is expected to decrease potentially unsafe medication use, such as overutilization of opioids and potentially dangerous drug combinations, decreasing the occurrence of adverse drug events and improving health outcomes for enrollees in Model-participating plans. Improved management of chronic conditions may lead to a reduction in preventable disease flare-ups. Additionally, Enhanced MTM services may encourage interactions between beneficiaries and their providers. For example, a beneficiary may be advised to see their doctor more often and discuss their medication regimens, or seek emergency care if they are experiencing medication-related problems or side effects. Overall, the Model is expected to reduce the need for high-cost health services use, leading to decreases in downstream utilization of such services and related expenditures. For example, fewer complications from the mismanagement of chronic conditions could lead to fewer preventable hospitalizations and lower related expenditures. Ultimately, the Model is expected to lead to overall decreases in medical expenditures.

Prior evaluation reports have not found significant Model impacts on total medical expenditures for beneficiaries enrolled in participating plans.[31] The lack of significant findings suggests that the Model may not impact total medical expenditures for the entire plan enrollee population relative to the traditional MTM program. However, it is possible that certain beneficiary subpopulations targeted by the sponsors can benefit from the Model. The previous analyses of beneficiaries enrolled in participating plans produce average impacts on the entire enrollee population, and may fail to detect significant impacts on these subpopulations. The next section discusses potential Model impacts on beneficiary subpopulations in more detail.

[31] There have been Model impacts on setting-specific expenditures, largely consistent with the Model's theory of action. Specifically, prior evaluation reports found decreases in expenditures for inpatient and institutional post-acute care services that were offset by increases in expenditures for outpatient and ancillary services. There have been limited impacts on intermediate outcomes related to medication use and patient safety. For more details, please see the Third Evaluation Report: "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

Figure 1.2: Enhanced MTM Evaluation Theory of Change: Potential Pathways for Expected Outcomes



1.2.1 *Impacts on Two Beneficiary Subpopulations*

This Fourth Evaluation Report assesses Model impacts on two beneficiary subpopulations: beneficiaries from underserved populations, and beneficiaries with medically complex profiles. Specifically, the report focuses on beneficiaries who qualify for the low-income subsidy (LIS) as a subgroup of beneficiaries from underserved populations. The subpopulation of beneficiaries with medically complex profiles includes three beneficiary subgroups: beneficiaries with two or more chronic conditions, beneficiaries with diabetes, and beneficiaries with drug-therapy problems. These subgroups were chosen because, due to their characteristics and the targeting parameters of sponsors' Enhanced MTM interventions, they were more likely to be eligible for Enhanced MTM services relative to other participating-plan enrollees. Thus, if the Model benefits the beneficiaries targeted by the sponsors, analyses that focus on these subgroups would be able to detect these impacts.

The Model's theory of change, which outlines potential pathways for the Model's impacts on medication use and downstream healthcare utilization, is the same for these beneficiary subgroups as for the overall enrollee population, as shown in Figure 1.2. However, the Model could have a larger impact on these subgroups relative to the overall enrollee population for two reasons. First, these beneficiaries are more likely to be eligible for Enhanced MTM based on their medical needs and expected benefit from services, even though they may not be eligible for the traditional MTM program. Second, the tailored design and increased frequency of Enhanced MTM services may foster improved beneficiary engagement for these subgroups, and offer additional value relative to traditional MTM, and additional gains relative to the overall Enhanced MTM enrollee population.

Beneficiaries Who Qualify for LIS

Beneficiaries who qualify for LIS tend to incur higher-than-average medical expenditures (see Section 4.3.1). However, these beneficiaries are not targeted for MTM services under traditional MTM unless they satisfy all eligibility requirements (i.e., have multiple chronic diseases, take multiple Part D drugs, and are likely to incur annual costs for covered Part D drugs that exceed a predetermined threshold). Beneficiaries who qualify for LIS receive subsidies of varying amounts to help cover premiums and co-pays, but may still need to pay substantial out-of-pocket costs for prescription drugs (especially if they do not qualify for the full subsidy). In that case, personal financial constraints may prevent beneficiaries from filling medications for their health conditions, resulting in fewer medication fills and cost-related non-adherence to

necessary drug therapies.[32] These fewer medication fills may prevent beneficiaries from reaching the annual drug spending threshold (set at $4,255 in 2020) that qualifies beneficiaries for traditional MTM interventions. Plans participating in the Enhanced MTM Model have the flexibility to directly target these beneficiaries for services. As shown later in this report, beneficiaries who qualify for LIS are more likely to be eligible for Enhanced MTM interventions than the overall population of plan enrollees (see Section 4.2.1). They are also more likely to be eligible for MTM services relative to LIS-eligible enrollees in plans that offer traditional MTM.

Increased eligibility for MTM services may result in increased service uptake, improved health outcomes, and reduced downstream healthcare utilization and related expenditures for LIS beneficiaries relative to other plan enrollees. As discussed in prior evaluation reports, Enhanced MTM sponsors have reported that LIS beneficiaries tend to be more challenging to reach and engage with for service provision. Many Enhanced MTM services have more frequent beneficiary outreach than traditional MTM services. In this context, the increased frequency of Enhanced MTM services may promote the successful engagement of LIS beneficiaries and induce further behavioral change for the management of chronic conditions. Additionally, some Enhanced MTM sponsors have introduced supplementary services, such as referrals to community services or social workers. These supplementary services specifically address financial and other constraints typically faced by LIS-eligible beneficiaries, which may prevent them from optimizing their medication regimens.

Medically Complex Beneficiaries

Medically complex beneficiaries are a second subpopulation of interest for this evaluation report. Medically complex beneficiaries, such as those with multiple chronic conditions, also have higher medical needs than the average plan enrollee, and this is reflected in higher utilization of health services and related expenditures (see Section 5.2.1). However, some beneficiaries with chronic conditions or drug-therapy problems (DTPs) may not qualify for MTM services under the traditional Model program unless they also incur high drug expenditures and take multiple Part D drugs (the threshold is typically set at eight or more). Additionally, beneficiaries with chronic conditions may not qualify for traditional MTM if they do not have the specific set of chronic conditions targeted by the plan that they are enrolled in. These beneficiaries are more likely to be eligible for Enhanced MTM than the overall enrollee

[32] See, for example: Caram, Megan EV, et al. "Adherence and out-of-pocket costs among Medicare beneficiaries who are prescribed oral targeted therapies for advanced prostate cancer." Cancer 126.23 (2020): 5050-5059; Chou, Yi-Ting, et al. "The association between Medicare low-income subsidy and anticancer treatment uptake in advanced lung cancer." JNCI: Journal of the National Cancer Institute 112.6 (2020): 637-646.

population, and they are also more likely to be eligible for MTM services than beneficiaries with similar medical profiles enrolled in plans offering traditional MTM (see Section 5.1.1).

Medically complex beneficiaries have higher utilization of health services and associated expenditures relative to other plan enrollees. This provides a bigger margin to improve health outcomes and decrease downstream medical expenditures. Additionally, Enhanced MTM services may be more targeted toward the specific needs of a beneficiary, further increasing the likelihood of successful service completion. For example, a beneficiary with low adherence to a chronic medication may receive a targeted service focused on increasing their adherence. Such a targeted service could be faster and easier for a beneficiary to complete than a more comprehensive review of their medications. Thus, the tailored design of Enhanced MTM services may offer greater benefit and higher value than services offered under traditional MTM for beneficiaries with complex medical needs, and benefit them more than the overall population of participating plan enrollees.

In summary, if the Model truly benefits certain beneficiary subgroups targeted by the interventions developed by the sponsors, these Model impacts should be detectable in analyses that focus on the beneficiary subgroups discussed in this evaluation report. This is because these subgroups are both more likely to be eligible for Enhanced MTM services, and also more likely to benefit from them.

1.3 Report Organization

This Fourth Evaluation Report updates analyses of Model impacts for beneficiaries enrolled in participating plans, to include information from the fourth year of implementation. In addition, this report presents impacts for two subpopulations of enrollees who, as discussed above, could potentially benefit more from Enhanced MTM relative to other beneficiaries: (i) beneficiaries from underserved populations, specifically those who qualify for LIS, and (ii) medically complex populations with chronic conditions such as diabetes, or DTPs.

The report is organized as follows: Section 2 presents changes in sponsors' Enhanced MTM interventions between Model Years 3 and 4, and discusses the impact of the COVID-19 public health emergency (PHE) on Model implementation. Section 3 presents updated impacts of Enhanced MTM for enrollees in Model-participating plans relative to comparators, incorporating information from Model Year 4. Section 4 focuses on Model impacts for the subgroup of beneficiaries who qualify for LIS, and also presents information on disparities in Enhanced MTM eligibility and service receipt across three racial groups (White, Black, Other race). Section 5 presents Model impacts for subgroups of beneficiaries with chronic conditions and DTPs. Section 6 offers concluding remarks.

2 HOW DID IMPLEMENTATION OF ENHANCED MTM INTERVENTIONS CHANGE IN MODEL YEAR 4?

Section Summary

The Model's flexibilities allow sponsors to right-size and make changes to interventions over time. As noted in the Model's theory of change, these changes are expected to affect health outcomes, behaviors, and downstream utilization and expenditures relative to traditional MTM. Given this flexibility, understanding implementation changes over time provides important context for understanding changes in Model eligibility and service receipt that may influence downstream Model impacts.

Sponsors continued to make changes to their interventions in the fourth year of the five-year Model. Three of the six sponsors changed their Enhanced MTM intervention offerings, beneficiary targeting criteria, and/or services. These changes are reflected in the Model's eligibility and service receipt descriptive statistics. Collectively, one new intervention was added and two interventions were discontinued. Targeting criteria changes focused on implementing risk scoring to identify high-risk beneficiaries who could potentially benefit the most from Enhanced MTM services. Service changes were designed to address broader beneficiary needs and barriers beyond medication-related issues that affect the management of chronic conditions.

According to sponsors, the COVID-19 PHE affected delivery of Enhanced MTM services, particularly in community pharmacies. Community pharmacies encountered challenges providing Enhanced MTM services during the PHE due to staffing shortages, changes in service delivery workflow (i.e., transitioning from in-person services to telephonic services), and competing priorities. Additionally, most sponsors reported providing more CMRs in Model Year 4, during the PHE, relative to previous Model Years, but fewer transitions-of-care services.

The Model offers sponsors the flexibility to customize their Enhanced MTM interventions and target specific beneficiary populations whom they expect could benefit from these services. These customized interventions and targeting approaches are then expected to affect health outcomes, behaviors, and downstream utilization and expenditures relative to traditional MTM.

Each Enhanced MTM intervention consists of a unique combination of sponsor-specific targeting criteria, defined as a set of requirements that determine which beneficiaries are eligible, and a corresponding set of Enhanced MTM outreach and services offered to the eligible

beneficiaries.[33] Sponsors generally offered the same Enhanced MTM interventions consistently across all of their participating PBPs,[34] and eligible beneficiaries who met a specific intervention's targeting criteria were offered the same services. Appendix A includes additional information about each sponsor's interventions.

Sponsors leveraged the Model's flexibility to establish targeting criteria for determining which beneficiaries were eligible for interventions. Each of the sponsors' Enhanced MTM interventions had a different set of targeting criteria, clustered around five categories of health characteristics: (i) medication utilization; (ii) high Medicare Parts A, B, and D expenditures; (iii) presence of one or more chronic conditions; (iv) recent discharge from the hospital; and (v) vaccine status.[35] The first three of these five categories are similar to, but broader than, the traditional MTM targeting criteria categories. Importantly, unlike traditional MTM, targeting was generally based on fewer criteria and sponsors did not require all three of these categories together to determine eligibility for a single intervention.

In addition to establishing different targeting criteria for each intervention, sponsors offered different types and varied frequencies of "significant services," depending on the Enhanced MTM interventions for which beneficiaries were eligible.[36] Section 3.1 presents additional information about the beneficiary targeting criteria and significant services provided under the Model.

By design, the Model allows sponsors to modify their implementation approaches over time. This enables sponsors to reassess which beneficiaries can benefit the most from services on an ongoing basis, and right-size the Enhanced MTM interventions and services they offer to these beneficiaries. Examining these changes over time provides important context for understanding the changes in Model eligibility and service receipt that would mediate any impacts on expenditures. Section 2.1 below describes and assesses sponsors' intervention offerings, beneficiary targeting criteria, and service changes through Model Year 4 (2020), with a focus on changes between Model Years 3 and 4. Section 2.2 summarizes the ways in which the COVID-19 PHE affected Enhanced MTM Model implementation in Model Year 4.

[33] Participating sponsors refer to Enhanced MTM interventions as "Enhanced MTM programs."

[34] For WellCare and Humana's transitions-of-care interventions, beneficiary targeting varied among PBPs based on the availability of health information exchange (HIE) data.

[35] SilverScript/CVS's HealthTag intervention was the only Enhanced MTM intervention that targeted beneficiaries primarily based on vaccination status (specifically influenza, shingles, or pneumonia vaccination status).

[36] "Significant services" are tailored services intended to address specific beneficiary needs. Sponsors also offered non-significant services, which included general, non-tailored outreach (e.g., welcome letters and educational newsletters). This report focuses on the provision of significant services.

2.1 Model Year 4 Enhanced MTM Intervention Changes

Three of the six sponsors changed their Enhanced MTM intervention offerings, beneficiary targeting criteria, or services in Model Year 4.

- BCBS NPA *added an intervention* focused on beneficiaries with newly prescribed opioid medications, and BCBS NPA and BCBS FL *discontinued an intervention* after finding it ineffective.
- Humana, BCBS FL, and BCBS NPA *changed targeting criteria* to better identify high-risk beneficiaries who could potentially benefit the most from Enhanced MTM services.
- *Service changes* were designed to address broader issues that affect a beneficiary's ability to manage their health condition beyond medication-related issues. Humana replaced its CMR with a new chronic condition management and education service. The service changes made by BCBS NPA and BCBS FL were intended to better address the social and financial needs of beneficiaries.

Over the course of the Model, sponsors have leveraged the Model's flexibilities to modify their implementation approaches by adding or discontinuing interventions, changing beneficiary targeting criteria, and/or refining Enhanced MTM services. This trend continued in Model Year 4, with half of the sponsors modifying their interventions.

Intervention Offerings

Sponsors implemented a total of 27 Enhanced MTM interventions in Model Year 4, with some additions and discontinuations relative to the previous Model Year. Two sponsors changed their intervention offerings in Model Year 4: BCBS NPA added a new intervention, and BCBS NPA and BCBS FL each discontinued an intervention (see Table 2.1).[37] The new intervention added by BCBS NPA focused on assessing potential risk factors among beneficiaries with newly prescribed opioid medications.[38] Plans by BCBS FL to implement a new intervention aimed at limiting hospitalizations due to complications from anticoagulants through in-home monitoring

[37] Four interventions were added in Model Year 3 and seven interventions were added in Model Year 2. For further information about intervention changes in Model Years 1 through 3, please refer to: "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

[38] This intervention is based on North Dakota's statewide collaborative ONE Rx (opioid and naloxone education) program, which is designed to address potential prescription opioid misuse from the time a patient picks up their first prescription from their local pharmacist. See https://one-program.org for more information.

were halted because the vendor scheduled to perform the monitoring services stopped accepting new clients.

Both BCBS FL and BCBS NPA discontinued an intervention each in Model Year 4 based on their own internal analyses. After internal findings indicated there was limited opportunity to make medication changes for beneficiaries taking specialty drugs, BCBS FL discontinued its Specialty Drug intervention. At the end of Model Year 3, BCBS NPA discontinued its Low-Risk, High-Cost intervention[39] after internal analyses found limited medical cost savings and few opportunities to address clinical and medication issues through Enhanced MTM services with this cohort of beneficiaries. Further details about each sponsor's interventions are available in Appendix A.

[39] This intervention targeted beneficiaries who were at low risk for multi-drug interactions but who had high medical costs.

Table 2.1: Enhanced MTM Intervention Changes Continued in Model Year 4, with One Added Intervention and Two Discontinued Interventions

	Model Year 1 (2017)				Model Year 2 (2018)				Model Year 3 (2019)				Model Year 4 (2020)			
Enhanced MTM Intervention	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
SilverScript/CVS																
Medication Therapy Counseling	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Specialty Pharmacy Care Management	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Pharmacy Advisor Counseling	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
HealthTag[a] (Vaccine)	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Long-Term Care									■	■	■	■	■	■	■	■
Humana																
Risk-Based	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Transitions of Care Medication Reconciliation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
UnitedHealth																
Risk-Based	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Transitions of Care	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Adherence Monitoring						■	■	■	■	■	■	■	■	■	■	■
WellCare																
Medication Adherence	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Opioid Utilization	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
High Utilizer	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Select Drug Therapy Problems	■	■	■	■	■	■	■	■	■	■						
Hospital Discharge									■	■	■	■	■	■	■	■
BCBS NPA																
High-Risk	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Prescriber Opioid Education				■	■											
Low-Risk / High Cost[b]							■	■			■	■				
Community Pharmacy Smart Recommendations[c]							■	■	■	■	■	■	■	■	■	■
Transitions of Care										■	■	■	■	■	■	■
Chronic Care Management											■	■	■	■	■	■
Safe Opioid Use Assessment															■	■
BCBS FL																
Hospital Prevention	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Diabetes Plus 3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Anticoagulant	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Transitions of Care	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Medication Adherence	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Specialty Drug	■	■	■	■	■	■	■	■	■	■	■	■				
Continuity of Care[d]					■	■	■	■	■	■	■	■	■	■	■	■
Statin Use in Persons with Diabetes							■	■	■	■	■	■	■	■	■	■
Behavioral Health										■	■	■	■	■	■	■

■ Intervention active in quarter

[a] SilverScript/CVS's HealthTag intervention delivers influenza, pneumonia, and shingles vaccine reminders.

[b] As planned, BCBS NPA launched and completed the Low-Risk/High-Cost intervention with one cohort of beneficiaries in Model Year 2 and another cohort of beneficiaries in Model Year 3. This intervention was discontinued in Model Year 4.

[c] BCBS NPA's Community Pharmacy Smart Recommendations intervention offers brief services (e.g., new medication, adherence, and immunization assessments; medication reconciliation) in the community pharmacy.

[d] BCBS FL's Continuity of Care intervention offers a one-time CMR to beneficiaries who qualified to receive a CMR in the previous Model Year but do not qualify in the current Model Year.

Beneficiary Targeting

In Model Year 4, four sponsors modified their targeting criteria or approaches for five of the 27 interventions. The net effect of these changes, along with the intervention additions and discontinuations described above, was an increase in the proportion of beneficiaries eligible for Enhanced MTM, discussed in more detail in Section 3.1.1. The intervention changes, however, did not represent a substantial shift in the targeting categories that sponsors prioritized. Consistent with previous Model Years, most of the 27 interventions implemented in Model Year 4 targeted beneficiaries based on their medication utilization. Appendix A presents additional details about the targeting categories for each sponsor's interventions. Section 3.1.1 presents information about beneficiary eligibility for each targeting category.

Looking specifically at targeting criteria changes, three sponsors—BCBS FL, BCBS NPA, and Humana—made changes related to risk scores in an effort to better identify and intervene with high-risk beneficiaries who could potentially benefit the most from Enhanced MTM services. For BCBS FL, risk scoring was newly incorporated into its Behavioral Health intervention targeting after more beneficiaries qualified for the intervention than anticipated. The change for BCBS NPA consisted of prioritizing outreach to beneficiaries with the highest risk scores at the time of outreach instead of beneficiaries with the highest risk score over the last 12 months. Moreover, in Model Year 4, BCBS NPA began prioritizing outreach to beneficiaries with high risk scores who had never participated in its High-Risk intervention, including those who were previously eligible but did not complete a service. Humana completely revamped the targeting approach for its Risk-Based intervention, utilizing Medicare Parts A, B, and D data to calculate risk scores based on predicted medical and pharmacy costs. Humana found that the risk scores produced by its new predictive model were more stable over time, whereas in previous Model Years, risk scores were generated using only Part D claims and tended to fluctuate significantly over the course of the Model Year.

Humana and WellCare also changed their beneficiary targeting approaches for their transitions-of-care interventions in Model Year 4. Humana initially expanded its use of state health information exchanges (HIEs) to identify eligible beneficiaries for its transitions-of-care intervention to an additional state in Model Year 4, but ultimately discontinued all HIE-based targeting in the third quarter after finding this approach was not cost effective.[40] WellCare decided to expand HIE-based targeting to beneficiaries residing in Arizona in Model Year 4 after successfully using HIE data in Model Year 3 to target beneficiaries residing in Florida for its transition-of-care intervention. These changes indicate that, even at this late stage of Model

[40] For its transitions-of-care intervention, Humana identified eligible beneficiaries using admission-discharge-transfer (ADT) data through state HIE in Florida in Model Year 2 and expanded use of HIE data to Louisiana and Virginia in Model Years 3 and 4, respectively. After discontinuing use of HIE data in the third quarter of Model Year 4, Humana relied solely on pharmacists to identify eligible beneficiaries with a recent hospital discharge.

implementation, sponsors are still refining the best approaches to target beneficiaries for transitions-of-care interventions.

Services

In Model Year 4, three sponsors made changes to the services offered under 10 of the 27 interventions. These changes were designed to address broader beneficiary needs beyond medication-related issues that affect the management of health and chronic conditions. Humana replaced its CMR service with a disease management and education service. The service changes implemented by BCBS NPA and BCBS FL involved expanding or adding services to address the social and financial needs of beneficiaries.

Humana's decision to eliminate its CMR in Model Year 4 was the most striking example of a Modelwide shift toward more broadly addressing chronic condition management, rather than focusing on medication-related issues. This decision was made after internal analyses found that the CMR did not produce medical cost savings, and a comprehensive diabetes care education service was valuable in driving cost savings. In place of the CMR, which was offered to all high-risk beneficiaries and narrowly focused on medication-related issues and DTPs, Humana implemented a new chronic condition management and education service that focused on holistic disease management and education. Humana offered this service to a subset of eligible beneficiaries with select chronic conditions (see Appendix A.2.3 for additional details).

For BCBS NPA and BCBS FL, service changes included expansion of their service offerings to address the social and financial needs of beneficiaries. Previously, BCBS NPA offered cost-sharing and social support services only as part of its two risk-based interventions, but in Model Year 4, decided to offer these services as part of all its interventions. Also in Model Year 4, BCBS FL added a new transportation service to some of its interventions so beneficiaries could schedule transportation to pick up medications from pharmacies.[41] The decision to add this new transportation service was prompted by pharmacists reporting in previous Model Years that beneficiaries were having difficulty picking up their medications.

[41] BCBS FL offered the transportation service to beneficiaries eligible for the Hospital Prevention, Diabetes Plus 3, Anticoagulant, and Transitions of Care interventions.

2.2 Effect of the COVID-19 Public Health Emergency on Enhanced MTM Model Implementation during Model Year 4

According to sponsors, the COVID-19 public health emergency (PHE) affected the delivery of Enhanced MTM services, particularly in community pharmacies.

- Sponsors reported providing more CMRs in Model Year 4, during the PHE, relative to previous Model Years, but fewer transitions-of-care services.
- Community pharmacies encountered challenges with providing Enhanced MTM services due to staffing shortages, changes in service delivery workflow (i.e., transitioning from in-person services to telephonic services), and competing priorities.

Around three months into Model Year 4, the COVID-19 PHE resulted in broad and system-wide public health and healthcare delivery changes that also affected delivery of Enhanced MTM services, particularly services delivered by community pharmacists. This section highlights effects of the COVID-19 PHE on sponsors' ability to offer their planned Enhanced MTM interventions, target beneficiaries, and deliver Enhanced MTM services.

Intervention Offerings

Overall, sponsors' ability to offer their planned Enhanced MTM interventions to beneficiaries was not substantially affected by the PHE. None of the sponsors had to suspend or discontinue an intervention as a result of the PHE, except BCBS FL, which suspended its in-home transitions-of-care sub-intervention in Model Year 4.[42]

Beneficiary Targeting

Sponsors reported that their ability to target beneficiaries was not affected by the PHE and none of the sponsors changed their targeting criteria as a result of the PHE. Some sponsors did note that decreased healthcare utilization due to the PHE could potentially lower beneficiaries' risk scores because, in some cases, these risk scores are calculated based on claims data reflecting healthcare utilization. Thus, beneficiaries may have been less likely to be eligible for Enhanced MTM or more likely to be offered lower-intensity services, such as TMRs or automated services, instead of higher-intensity services, such as CMRs. Despite this possibility, sponsors generally did not report significant shifts in intervention eligibility relative to their

[42] BCBS FL's Transitions of Care intervention consisted of three sub-interventions: (i) the Transitions of Care intervention; (ii) the Transitions of Care Expansion intervention; and (iii) the Community-Based Hospital Readmission intervention, which includes face-to-face, in-home services. The Community-Based Hospital Readmission intervention was the only Transitions of Care sub-intervention temporarily suspended in Model Year 4. The reason for this suspension was to avoid in-person interactions between Enhanced MTM providers and beneficiaries during the PHE.

expectations for Model Year 4. However, some sponsors did note fluctuations in beneficiary eligibility for transitions-of-care interventions related to the temporary suspension of elective procedures and beneficiaries avoiding hospital visits because of the PHE.

Services

The Model implementation aspects most affected by the PHE were the delivery and uptake of Enhanced MTM services, particularly CMRs and transitions-of-care services. Most sponsors noted that their self-reported CMR receipt rates were generally higher in Model Year 4 than previous Model Years. Sponsors attributed these higher receipt rates to the PHE, as well as other Enhanced MTM process improvements. Factors related to the PHE and corresponding stay-at-home orders increased beneficiaries' willingness to participate in Enhanced MTM services. In particular, sponsors reported that beneficiaries were more likely to (i) be at home and have more time to participate in Enhanced MTM services; (ii) be unable to see their usual providers and thus were more receptive to talking to a pharmacist; and (iii) be more comfortable speaking to a care provider over the phone as an alternative to in-person care. Sponsors also self-reported lower receipt of transitions-of-care services. Sponsors noted that it was more difficult to complete services with the subset of beneficiaries who had a recent hospital discharge during the PHE than in previous years.

Beyond these general experiences delivering specific services, sponsors reported that community pharmacies had difficulty completing Enhanced MTM services during the PHE. Sponsors used both call centers and community pharmacies to deliver Enhanced MTM services and, over the course of the Model, an increasing number of sponsors utilized community pharmacies. As such, the challenges related to delivery of services in community pharmacies during the PHE are noteworthy. Two sponsors—Humana and BCBS FL—also expanded their use of community pharmacies to deliver Enhanced MTM services in Model Year 4.

The challenges experienced by community pharmacies evolved as the PHE progressed. At the beginning, community pharmacies shifted to curbside or drive-through-only operations to limit face-to-face contact, which initially limited the pharmacists' ability to interact with beneficiaries and provide Enhanced MTM services. When in-person pharmacy visits declined, community pharmacists had more time to conduct telephonic outreach to beneficiaries, and sponsors worked with their community pharmacy networks to educate pharmacists about strategies for providing services telephonically.

> "*In one pharmacy location, between March and December, all six members of the pharmacy team became infected with COVID-19. This made it very difficult for this site to provide clinical [Enhanced MTM] services."*
>
> – *MTM Vendor, Program Lead*

As the PHE progressed in the second half of Model Year 4, community pharmacies became a central location for COVID-19 testing, began prioritizing and delivering influenza vaccinations, and eventually began administering COVID-19 vaccinations. Accordingly, community pharmacists' workload increased, allowing less time for them to focus on clinical services, including Enhanced MTM services. Some sponsors reported that these factors resulted in a decrease in service completions by community pharmacies during the latter half of Model Year 4. Throughout Model Year 4, some community pharmacies also had to reduce the number of staff to meet physical distancing requirements and grappled with pharmacy staff being unable to work due to quarantine or COVID-19 infections. In other cases, there were actual temporary or permanent pharmacy closures. Sponsors deployed community pharmacists for different types of significant services. So the reduced capabilities of community pharmacies during the PHE may have effected completion of services differently, depending on sponsors' use of the community pharmacy to deliver specific services.

In contrast, call center operations were largely unaffected by the PHE. None of the sponsors reported substantial disruptions to call center operations, mainly because call centers already used remote methods for delivering Enhanced MTM services and had established processes in place to provide telephonic services. These experiences indicate that a hybrid service delivery approach, which leverages both call centers and community pharmacies, is preferable as opposed to relying solely on one or the other.

3 HOW DID THE MODEL IMPACT BENEFICIARIES ENROLLED IN MODEL-PARTICIPATING PLANS?

Section Summary

Eligibility rates for Enhanced MTM continued to increase in the fourth year of the five-year Model. Although the receipt rate of any significant service was slightly lower in Model Year 4 relative to Model Year 3, CMR and TMR service receipt rates increased.

Despite higher rates of eligibility and receipt of CMR and TMR services, **estimated changes in Medicare Parts A and B expenditures for beneficiaries enrolled in Enhanced MTM plans continued to be small and not statistically significant through the fourth year of Model implementation.** There were some significant impacts on Parts A and B expenditures for individual sponsors in Model Year 4. For SilverScript/CVS, gross expenditures increased by $9.62 per beneficiary per month (PBPM) (or 1.05 percent from baseline). For Humana and WellCare, there were decreases of $17.17 PBPM (or 1.75 percent from baseline) and $18.38 PBPM (or 1.92 percent from baseline), respectively. These estimates may represent Model impacts, but they could also be confounded by the disruption in healthcare delivery caused by the COVID-19 PHE. Future analyses will assess whether these impacts persist into the fifth year of the Model.

In Model Year 4, and cumulatively across the four years of Model implementation, the sum of Medicare's prospective and performance-based payments to sponsors remains slightly larger than the estimated decreases in Medicare Parts A and B expenditures. As a result, the **Model has generated net losses for Medicare, though the estimate is not statistically significant**. Cumulatively, total estimated net losses were $270.8 million (or $3.45 PBPM).

Over the course of Model implementation, sponsors used the Model's incentives and flexibility to design and continually refine Enhanced MTM interventions. As discussed in Section 2.1, sponsors designed their Enhanced MTM interventions to address the specific needs of their beneficiary populations through services that aim to optimize medication regimens and improve management of chronic conditions. Prior evaluation reports have shown that, over the course of Model implementation, eligibility rates for Enhanced MTM interventions have increased. Receipt rates for significant services offered under the Model have also increased over time for beneficiaries enrolled in participating plans. This Fourth Evaluation Report uses information from Model Year 4 (2020) to assess changes in eligibility for Enhanced MTM interventions and receipt of Model services over the course of Model implementation.

Enhanced MTM services are expected to improve beneficiary outcomes, leading to fewer adverse events that require medical care (e.g., emergency department visits, inpatient

hospitalizations, and subsequent post-acute care) and a reduction in downstream medical expenditures (see Section 1.2 for a discussion on the Model's theory of change). Analyses presented in the Third Evaluation Report did not find significant impacts of the Model on total gross or net Medicare expenditures for beneficiaries enrolled in participating PBPs through the third year of the Model, though there were setting-specific impacts largely along the lines of the Model's theory of action.[43] This Fourth Evaluation Report updates these analyses with information from Model Year 4.

Section 3.1 begins with a discussion of trends over time in beneficiary eligibility and service receipt, focusing on changes between Model Years 3 and 4.[44,45] Section 3.2 provides brief methodological notes for the estimation of Model impacts on total medical expenditures, followed by a description of the analytic sample in Section 3.3. Next, Section 3.4 presents estimated Model impacts on total Medicare Parts A and B expenditures ("gross expenditures").[46] Finally, Section 3.5 discusses Model impacts on expenditures net of Medicare's prospective payments and performance-based payments to sponsors ("net expenditures") to assess net savings or losses to Medicare through the fourth year of Model implementation.[47]

[43] "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

[44] Eligibility and service receipt figures presented in this section may differ from previous Evaluation Reports due to retroactive corrections made by sponsors to the source data files (MARx, Enhanced MTM Encounter Data, and intervention-specific eligibility files provided to Acumen by sponsors).

[45] Prior Enhanced MTM Evaluation Reports cover implementation during prior Model Years in more detail. For further details on previous Evaluation Reports, please refer to: "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: First Evaluation Report" (October 2019), https://innovation.cms.gov/files/mtm-firstevalrpt.pdf, "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Second Evaluation Report" (November 2020), https://innovation.cms.gov/data-and-reports/2020/mtm-secondevalrpt, and "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

[46] All expenditure and utilization data come from claims information in the Common Working File (CWF; accessed in April 2021), and expenditures were standardized to control for regional differences in the cost of care (due to labor costs and practice expenses). The CWF is the Medicare Part A and Part B beneficiary benefits coordination and pre-payment claims validation system. To adjust for inflation, all expenditures are reported in 2020 US dollars.

[47] Measure definitions and data sources used in analyses are listed in Appendix B.2. The eligibility and service receipt statistics presented in Section 3.1 include all Enhanced MTM-participating plan enrollees in a given Model Year. The treatment group used in impact analyses presented in Section 3.4 includes a matched cohort of Enhanced MTM-participating plan enrollees. Findings on eligibility and service receipt for all participating plan enrollees were similar to findings for the subset of participating plan enrollees in the matched cohort.

3.1 Model Eligibility and Service Receipt over Model Years 1 to 4

Enhanced MTM eligibility rates were substantially higher than traditional MTM eligibility rates, and reached their highest level in Model Year 4.

Sponsors completed significant services with 39 percent of eligible beneficiaries, impacting over half a million beneficiaries in Model Year 4.

Receipt rates for CMR and TMR among eligible beneficiaries reached the highest level since the Model began, at 40 percent and 31 percent, respectively. Receipt rates for transitions-of-care and adherence services among eligible beneficiaries were lower in Model Year 4 (36 and 33 percent, respectively) than in Model Year 3 (50 and 44 percent, respectively).

Sponsors determined beneficiary eligibility for Enhanced MTM based on targeting criteria defined for each of their interventions. Eligible beneficiaries were then offered different types of significant services designed to address their specific health and medication management needs, depending on the interventions for which they were eligible. This approach differs from traditional MTM, which requires that all eligible beneficiaries are offered, at minimum, an annual CMR and quarterly TMRs. Under Enhanced MTM there were 12 categories of significant services offered which fall under five broader groupings (see Appendix B.10.3 for additional details).[48] Sponsors (or their vendors) typically conducted outreach via mail, phone, in-person outreach, automated methods (such as interactive voice response [IVR]), web alerts, email, and text to offer significant services to eligible beneficiaries.

According to the Model's theory of change, sponsors may use the Model's flexibility to designate more beneficiaries who could potentially benefit from MTM as eligible to receive different types of services, thereby improving their medication management and ultimately impacting their downstream medical spending. As discussed in Section 2 the Model also permits sponsors to make changes to beneficiary eligibility criteria and services over time, which may affect Modelwide eligibility, service receipt rates, and the resulting Modelwide impacts. Changes to beneficiary eligibility and service receipt over time, however, are influenced not only by changes to a sponsor's intervention but by other factors external to the Model. For example, beneficiary eligibility depends on the number of plan enrollees in a given Model Year and the health characteristics of the enrollees, in addition to the targeting parameters of the sponsors' interventions. Similarly, service receipt depends on beneficiary eligibility, as well as other

[48] The Second Evaluation Report, "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Second Evaluation Report" (November 2020), available at https://innovation.cms.gov/data-and-reports/2020/mtm-secondevalrpt, discusses these in more detail.

factors related to the service, including outreach strategies, the entity providing it (e.g., call center vs. community pharmacy), beneficiary willingness to participate, and its type and nature. This section provides more details about beneficiary eligibility for Enhanced MTM and receipt of Enhanced MTM services within the context of these various factors. This section discusses cumulative eligibility and service receipt findings between Model Years 1 and 4, with a focus on changes between Model Years 3 and 4.

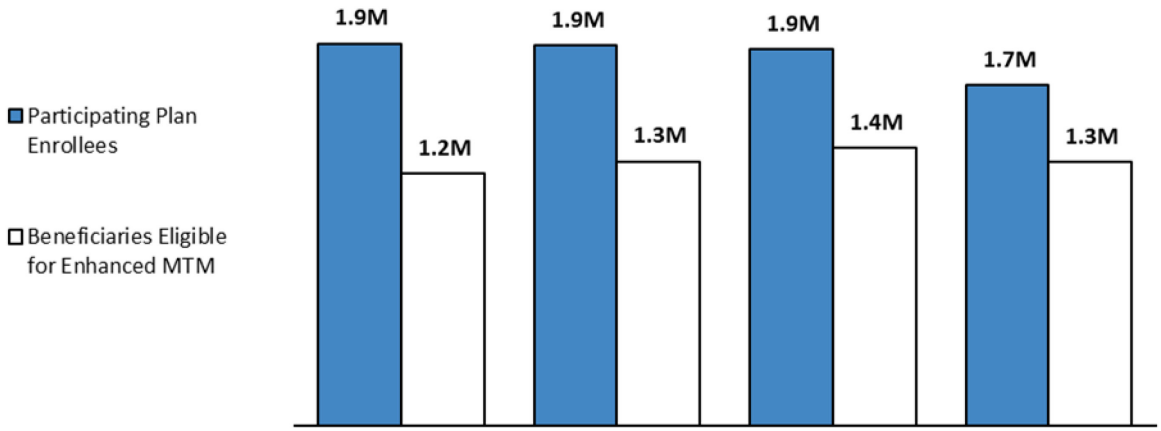
3.1.1 *Modelwide Eligibility Changes*

Sponsors establish eligibility criteria to determine which beneficiaries are offered services and the types of services that are available to them. As noted in Chapter 2.1, sponsors used their flexibility to establish targeting criteria for beneficiary eligibility that were broader than traditional MTM. As a result, Enhanced MTM eligibility rates, which ranged from 66 to 78 percent throughout Model implementation, were consistently much higher among beneficiaries enrolled in Model-participating plans than traditional MTM eligibility rates among beneficiaries included in the evaluation's comparison group, which hovered around 9 percent (see Appendix B.10.2 for additional details).

Total plan enrollment decreased between Model Years 3 and 4 from 1.9 million to 1.7 million, resulting in a reduction in the number of enrollees eligible for Enhanced MTM. At the same time, the eligibility rate increased to 78 percent in Model Year 4, its highest level since the Model began and an 18 percent increase from Model Year 1.

The Model intervention and beneficiary targeting criteria changes that sponsors made in Model Year 4 (discussed in Section 2.1), along with changes to plan enrollment and the characteristics of the enrollee population led to only a modestly higher Enhanced MTM eligibility rate in Model Year 4. Total enrollment among participating plans decreased by 11 percent in Model Year 4 relative to Model Year 3. Accordingly, fewer beneficiaries were eligible for Enhanced MTM in Model Year 4 than in Model Year 3. However, Enhanced MTM eligibility rates continued their year-over-year upward trend (Figure 3.1).

Figure 3.1: Modelwide Enhanced MTM Eligibility Rates Continued to Increase in Model Year 4



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Enhanced MTM Eligibility Rate	65.9%	69.5%	73.8%	77.5%

At the sponsor level, the nature of the changes in eligibility rates and the number of beneficiaries who were eligible for Enhanced MTM between Model Years 3 and 4 varied (see Appendix B.10.2 for additional details). All sponsors except WellCare had mostly stable or higher eligibility rates in Model Year 4. Of note, BCBS NPA, the only sponsor to add a new intervention in Model Year 4, had a substantial increase in its eligibility rate in Model Year 4 (from 33 percent to 43 percent). Humana's targeting criteria changes led to a slight increase in its eligibility rate (from 67 percent to 69 percent). WellCare's eligibility rate decreased from 74 percent to 67 percent in Model Year 4; this reflected changes in plan enrollment rather than in intervention targeting criteria.

3.1.2 *Modelwide Service Receipt*

Over half a million beneficiaries (39 percent of eligible beneficiaries) received an Enhanced MTM significant service in Model Year 4.

The Model's theory of change suggests that an increase in Enhanced MTM service receipt among eligible beneficiaries will lead to decreases in expenditures. As noted, sponsors offered 12 categories of tailored services ("significant services") under Enhanced MTM (see Appendix B.10.3 for additional details). Among these, four significant services—CMRs, TMRs, transitions-of-care services, and adherence services—were commonly used across participating

sponsors. This section presents service receipt information aggregated for all 12 significant services, as well as for these four select significant services, to provide context for interpreting the Modelwide impact results.

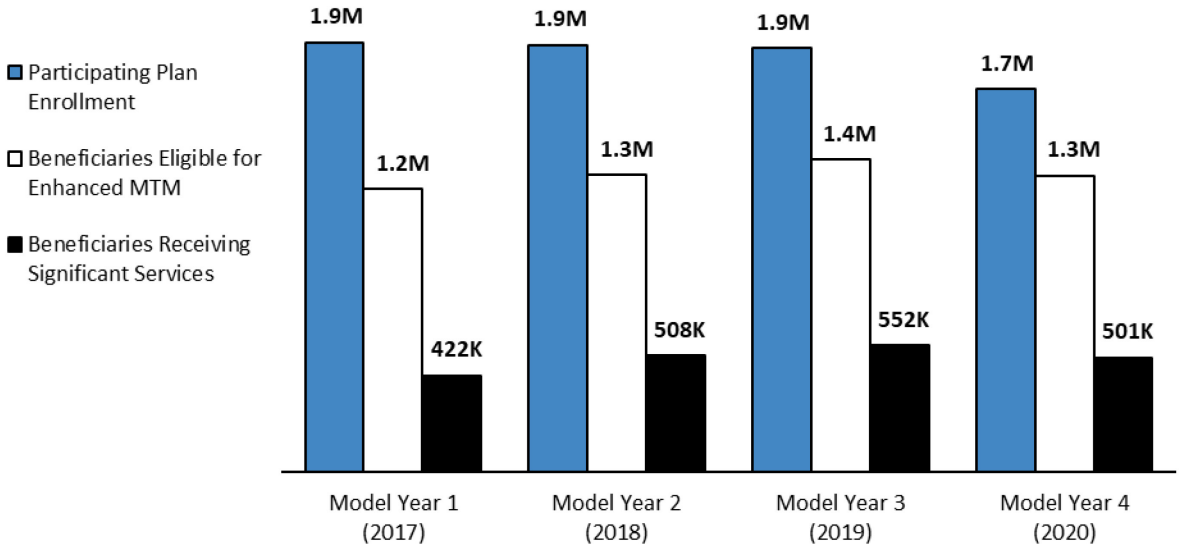
Receipt of Significant Services

Due to lower levels of enrollment, the higher beneficiary eligibility rate in Model Year 4 did not lead to more beneficiaries receiving significant services. Significant service receipt rates were slightly lower in Model Year 4 than Model Year 3, declining by 4 percent; the number of eligible beneficiaries who received significant services was also lower, declining by 9 percent (Figure 3.2).[49] Still, over half a million eligible beneficiaries (39 percent) received a significant service in Model Year 4. The receipt rate for "high-intensity" significant services decreased slightly, from 28 percent to 26 percent, between Model Years 3 and 4, while the receipt rate for "low-intensity" significant services increased slightly, from 22 to 23 percent. (See Appendix B.10.3 for more details.)[50] Over 1.7 million significant services were delivered in Model Year 4, the highest number of services delivered since the Model began (up from 1.4 million in Model Year 3).

[49] The significant service receipt rate among eligible beneficiaries was calculated using the number of beneficiaries eligible for a significant service as the denominator and the number of eligible beneficiaries who received a significant service as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

[50] High-intensity services involve interactive discussions with beneficiaries; low-intensity services focus on prescribers or non-interactive education and reminders tailored to beneficiaries.

Figure 3.2: The Rate of Significant Service Receipt and Number of Eligible Beneficiaries Receiving a Significant Service Both Decreased Slightly in Model Year 4



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Significant Service Receipt Rate among Eligible Beneficiaries	34.1%	39.1%	40.4%	38.6%
Signficiant Service Receipt Rate among Plan Enrollees	22.5%	27.2%	29.8%	30.0%

All sponsors provided significant services to fewer eligible beneficiaries in Model Year 4 relative to Model Year 3. Significant service receipt rates among eligible beneficiaries were lower in Model Year 4 for all sponsors except SilverScript/CVS, whose rate increased slightly from 34 percent to 36 percent (see Appendix B.10.3 for additional details). Humana reported that its internal analysis indicated that beneficiaries who were eligible for Enhanced MTM services for multiple Model Years (more than 15 months) were less likely to continue accepting services over time. Humana attributed this lower engagement to beneficiaries perceiving diminishing returns in the usefulness of services.[51]

Modelwide, among beneficiaries who received a significant service, the average number of services delivered per beneficiary per year increased in Model Year 4 to its highest level of 3.4 services, up from 2.6 services in Model Years 2 and 3 (see Appendix B.10.3). In contrast to traditional MTM, Enhanced MTM beneficiaries received multiple and frequent services in a given Model Year. The increase in the average number of services in Model Year 4 may reflect

[51] From Model Year 1 through Model Year 3, Humana did not reassess beneficiary eligibility for its risk-based intervention on a yearly basis; once a beneficiary was identified as eligible for Enhanced MTM, they remained eligible in all Model Years.

the higher CMR receipt rate in Model Year 4 (discussed below), because CMRs for the Enhanced MTM Model tend to be recurrent services offered multiple times in a given Model Year. In the case of Humana, which discontinued its CMR in Model Year 4, the increase may be due to its new case/disease management service implemented in Model Year 4. Beneficiaries are offered this new service up to four times per year.[52]

Receipt of Select Significant Services

Though the overall receipt of significant services was relatively consistent between Model Years 3 and 4, there may be changes in receipt of the different select significant services that contributed to the overall significant service receipt statistics. Four categories of significant services—CMRs, TMRs, transitions-of-care services, and adherence services—were commonly used across participating sponsors. An examination of these four service categories provides a more complete picture of the tailored offerings that are expected to improve beneficiary outcomes, and will be discussed next.

Receipt of CMR

The CMR is a comprehensive service that consists of a pharmacist systematically reviewing a beneficiary's medication regimen, and identifying and developing a plan to address medication-related problems. By addressing these problems, CMRs are expected to improve disease management and health outcomes. As noted in the Third Evaluation Report,[53] in previous Model Years sponsors' intervention changes led to increasing numbers of beneficiaries eligible for a CMR. Rates of CMR receipt had not increased as rapidly, due to difficulty in reaching out to and having beneficiaries accept a CMR. Between Model Years 3 and 4, however, the number of beneficiaries eligible for a CMR decreased for the first time, and the decrease of 26 percent was substantial.

The Model's CMR receipt rate reached the highest level in Model Year 4 at 40 percent, up from 32 percent in Model Year 3.

As noted in Section 2.1, Humana discontinued its CMR in Model Year 4. This change contributed to the overall Modelwide decrease in the number of beneficiaries eligible for a CMR, since roughly 50,000 Humana beneficiaries were CMR-eligible in previous Model Years. As there were fewer beneficiaries Modelwide who were eligible for a CMR in Model Year 4, the

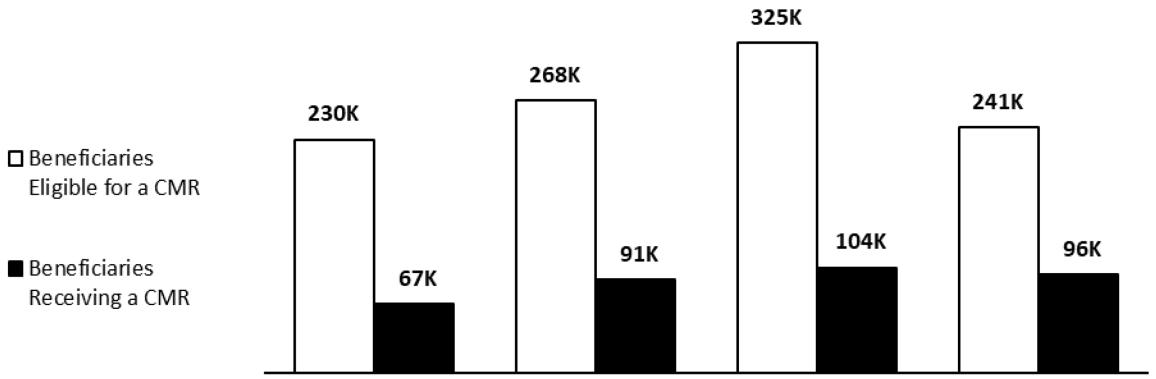
[52] Humana reported that it has seen consistently high service receipt rates for its case/disease management service since implementing the service at the beginning of Model Year 4.

[53] "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

number of beneficiaries who received a CMR also decreased; however, the CMR receipt rate among eligible beneficiaries reached its highest level since the Model began, at almost 40 percent, up from 32 percent in Model Year 3 (Figure 3.3).[54]

As with the CMR receipt rate among eligible beneficiaries, the CMR receipt rate among all plan enrollees (regardless of eligibility) reached its highest level in Model Year 4, at 6 percent.[55] The CMR receipt rate among eligible traditional MTM beneficiaries included in the Enhanced MTM Evaluation comparison group, at 41 percent in Model Year 4, has also risen steadily in all Model Years. The corresponding CMR receipt rate among all traditional MTM beneficiaries (about 3 percent) was lower than the CMR receipt rate among all Enhanced MTM beneficiaries (about 5 percent). (See Appendix B.10.3 for additional details.) The traditional MTM CMR receipt rates, however, are not directly comparable to Enhanced MTM given the differences between the traditional program and the Model.

Figure 3.3: In Model Year 4, the CMR Receipt Rate Reached the Highest Level Since the Model Began



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
CMR Receipt Rate among Eligible Beneficiaries	29.3%	34.1%	31.9%	39.9%
CMR Receipt Rate among Plan Enrollees	3.6%	4.9%	5.6%	5.8%

[54] The CMR receipt rate among eligible beneficiaries was calculated using the number of beneficiaries eligible for a CMR as the denominator and the number of eligible beneficiaries who received a CMR as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

[55] The CMR receipt rate among plan enrollees was calculated using the number of plan enrollees as the denominator and the number of beneficiaries who received a CMR as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

The number of beneficiaries who were eligible for a CMR decreased between Model Years 3 and 4 for all sponsors except WellCare, but the number of eligible beneficiaries who received a CMR increased for half of the sponsors (SilverScript/CVS, BCBS NPA, and WellCare). Indeed, there were increases in CMR receipt rates among eligible beneficiaries for all sponsors except UnitedHealth during the same time period (see Appendix B.10.3 for more information). Both the Modelwide and sponsor-specific increases in CMR receipt rates among eligible beneficiaries are consistent with sponsor reports that beneficiaries were generally more likely to respond to outreach and accept a CMR in Model Year 4 during the PHE, as discussed in Section 2.2.

Receipt of TMR

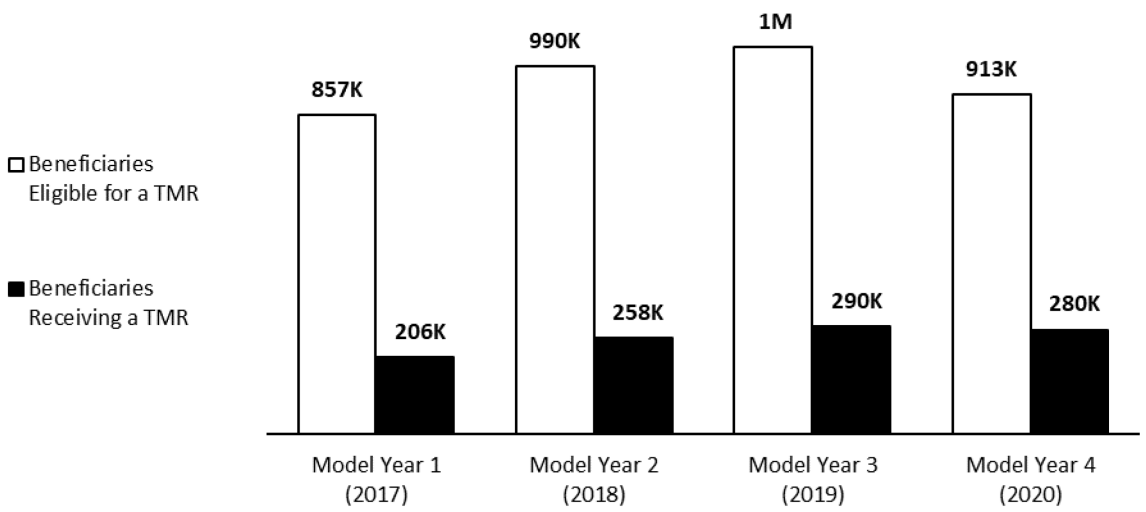
The TMR service is focused on specific, pre-identified medication issues and may be targeted to the beneficiary (beneficiary-facing) or the prescriber (prescriber-facing). This type of service is designed to address gaps in care or other medication issues that could lead to downstream health complications. Similar to the CMR findings presented above, the number of beneficiaries eligible for a TMR at the Modelwide level decreased by 9 percent between Model Years 3 and 4. The decrease in the number of beneficiaries eligible for a TMR was largely driven by WellCare. In each of Model Years 1 through 3, WellCare had over 50,000 beneficiaries eligible for a TMR through its Select Drug Therapy Problems intervention, which WellCare discontinued halfway through Model Year 3.[56] TMR receipt rates among eligible beneficiaries increased between Model Years 3 and 4 (Figure 3.4).[57] In Model Year 4, the TMR receipt rate among eligible beneficiaries reached its highest level since the Model began, at 31 percent. The increase in the Modelwide TMR receipt rate in Model Year 4, which was 9 percent higher than in Model Year 3, was largely driven by an increase in the TMR receipt rate among SilverScript/CVS beneficiaries relative to previous Model Years.

The Model's TMR receipt rate also reached the highest level in Model Year 4 at 31 percent.

[56] For more information see "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

[57] The TMR receipt rate among eligible beneficiaries was calculated using the number of beneficiaries eligible for either a beneficiary- or prescriber-facing TMR as the denominator and the number of eligible beneficiaries who received a beneficiary- or prescriber-facing TMR as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

Figure 3.4: In Model Year 4, the TMR Receipt Rate Also Reached the Highest Level Since the Model Began



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
TMR Receipt Rate among Eligible Beneficiaries	24.0%	26.0%	27.9%	30.7%
TMR Receipt Rate among Plan Enrollees	11.0%	13.8%	15.6%	16.7%

Rates of TMR receipt varied widely among sponsors. There was a substantial drop in BCBS NPA's TMR receipt rate among eligible beneficiaries between Model Years 3 and 4 (from 57 percent to 35 percent). This decrease supports reports from BCBS NPA that community pharmacists, who primarily deliver BCBS NPA's TMRs, had lower levels of Enhanced MTM service completion in the second half of Model Year 4 because they needed to balance competing priorities related to the PHE (COVID-19 testing, vaccinations, etc.). Additional details about receipt of TMRs, including TMR receipt rates broken out by prescriber- and beneficiary-facing TMR, are available in Appendix B.10.3.

Receipt of Transitions-of-Care Services

The transitions-of-care service receipt rate was lower in Model Year 4 than in Model Year 3, decreasing from 50 percent to 36 percent.

Transitions-of-care services are services offered to beneficiaries who are discharged from the hospital and are designed to identify and address medication issues that arise from medication changes made during hospitalization. By addressing these issues, these services have the potential to improve

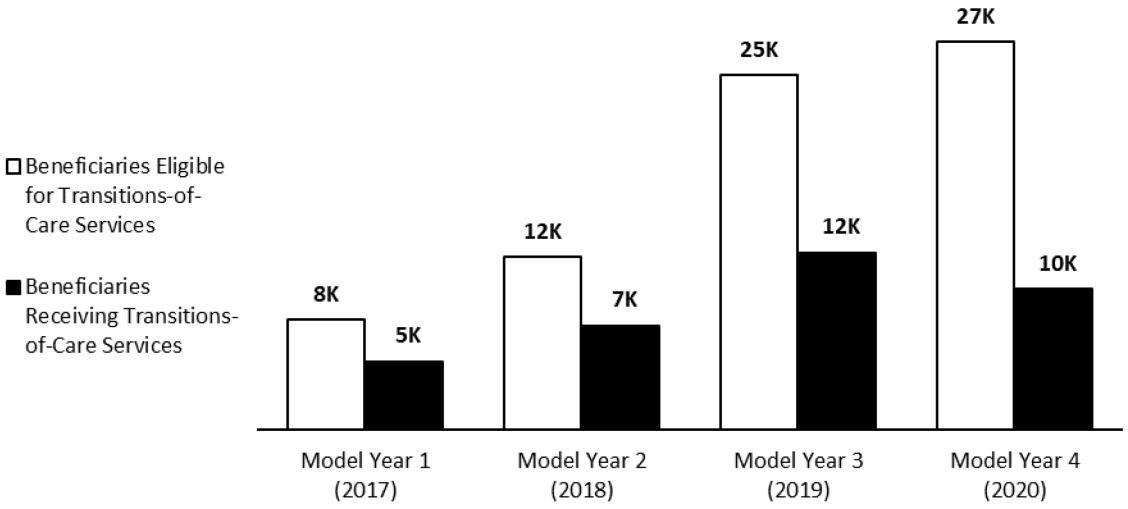
care coordination and thus decrease readmissions. The number of beneficiaries eligible for transitions-of-care services increased (by 9 percent) while the transitions-of-care service receipt rate among eligible beneficiaries decreased substantially (by 27 percent) between Model Years 3 and 4 (Figure 3.5).[58]

The increase in the number of beneficiaries eligible for transitions-of-care services was largely driven by Humana and WellCare's expanded use of HIE targeting, as noted in Section 2.1. WellCare and Humana both had substantial increases in the number of beneficiaries eligible for transitions-of-care services between Model Years 3 and 4. For WellCare, the number of beneficiaries eligible for transitions-of-care services increased from 4,500 to 7,900. For Humana, the number of eligible beneficiaries increased from 7,500 to 9,400. (See Appendix B.10.3 for additional details.) Humana began using HIE data to target beneficiaries in Virginia after successfully using HIE data to target beneficiaries in Florida and Louisiana, but ultimately decided to discontinue all HIE targeting in the third quarter of Model Year 4 because Humana's internal analyses found that it was not cost-effective. WellCare expanded HIE targeting to beneficiaries residing in Arizona after successfully using HIE data to target beneficiaries in Florida. Moreover, as noted earlier in this section, WellCare's plan enrollment also increased in Model Year 4. The remaining sponsors had mostly stable or lower numbers of eligible beneficiaries in Model Year 4 (see Appendix B.10.3 for further details). Due to data lag issues and disruptions with the Florida state HIE data feeds during Model Year 4, BCBS FL reported that fewer beneficiaries than expected were identified as eligible for a transitions-of-care service. WellCare, Humana, and BCBS NPA had mostly stable transitions-of-care service receipt rates between Model Years 3 and 4, but the transitions-of-care service receipt rates for UnitedHealth and BCBS FL were lower.

The PHE during Model Year 4 may have influenced changes in transitions-of-care service receipt. Increases in COVID-19-related hospital admissions may have also contributed to the higher number of eligible beneficiaries, though these admissions may have been partially offset by beneficiaries avoiding the hospital unless they were critically ill, and receiving fewer elective procedures. Additionally, it is possible that beneficiaries who did have a hospitalization were more likely to have had COVID-19 or a more serious illness, making them potentially less likely to accept a transitions-of-care service due to a need to focus on recovering from illness and not short-term medication management issues. As discussed in Section 2.2, sponsors did report that it was more difficult to complete services with the subset of beneficiaries with a recent hospital discharge during the PHE than in previous years.

[58] The transitions-of-care service receipt rate among eligible beneficiaries was calculated using the number of beneficiaries eligible for a transitions-of-care service as the denominator and the number of eligible beneficiaries who received a transitions-of-care service as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

Figure 3.5: The Transitions-of-Care Service Receipt Rate among Eligible Beneficiaries Dropped to its Lowest Level in Model Year 4



Transitions-of-Care Service Receipt Rate among Eligible Beneficiaries	62.1%	60.5%	50.0%	36.3%
Transitions-of-Care Service Receipt Rate among Plan Enrollees	0.3%	0.4%	0.7%	0.5%

Receipt of Adherence Services

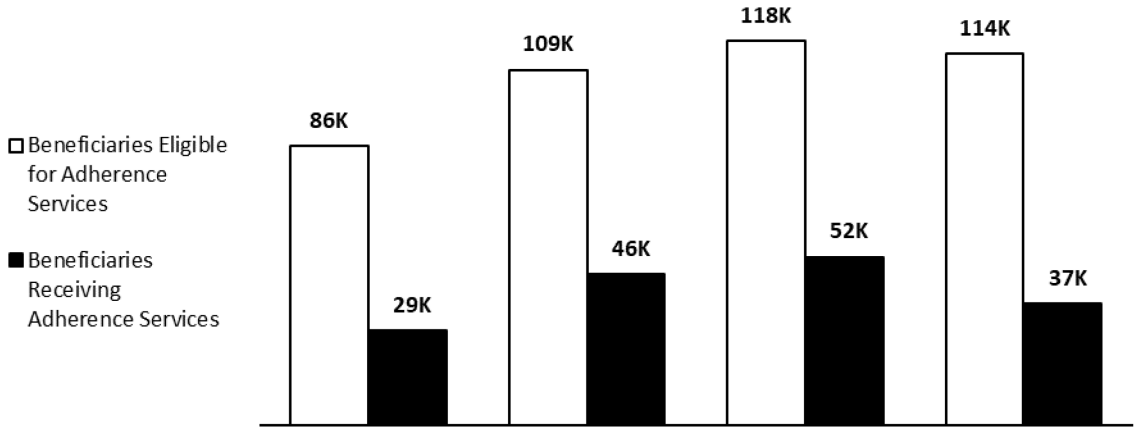
Medication adherence services investigate and address beneficiary non-adherence or risk for non-adherence to medications. These services may also involve educating new medication users about the importance of their medication. As such, these services may affect the management of chronic conditions and thus downstream outcomes. As with transitions-of-care services, beneficiary eligibility for and completion of adherence services in Model Year 4 did not continue the upward trend from previous Model Years.

The adherence service receipt rate was lower in Model Year 4 than Model Year 3, decreasing from 44 percent to 33 percent.

On the whole, sponsors reported efforts—both internal and external (i.e., among their community pharmacy partners)—to ensure beneficiaries had access to their medications during the PHE, including providing medications by mail order, offering home delivery, and/or using a 90-day supply. Also, as noted earlier in this section, overall plan enrollment decreased by 10 percent. Since these factors would result in fewer beneficiaries being eligible for adherence services, the number of beneficiaries eligible for adherence services was expected to be

substantially lower in Model Year 4 relative to Model Year 3. However, this was not the case. The number of beneficiaries eligible for adherence services decreased only slightly (by 3 percent) in Model Year 4. Despite this very slight decrease in the number of eligible beneficiaries, the adherence service receipt rate among eligible beneficiaries decreased substantially (by 25 percent) between Model Years 3 and 4 (Figure 3.6).[59]

Figure 3.6: The Adherence Service Receipt Rate among Eligible Beneficiaries Also Dropped to its Lowest Level in Model Year 4



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Adherence Service Receipt Rate among Eligible Beneficiaries	34.0%	42.7%	43.8%	32.8%
Adherence Service Receipt Rate among Plan Enrollees	1.6%	2.5%	2.8%	2.2%

Overall, the factors contributing to the decrease in adherence service receipt rates in Model Year 4 are unclear, as none of the sponsors changed the targeting criteria for their medication adherence interventions or adherence services between Model Years 3 and 4. Furthermore, the factors (e.g., beneficiaries being at home, being more receptive to services because they were unable to see their usual providers, and having more comfort with phone-based services) that sponsors identified as driving increases in CMR receipt were also generally applicable to adherence services. UnitedHealth, whose adherence intervention was entirely

[59] The adherence service receipt rate among eligible beneficiaries was calculated using the number of beneficiaries eligible for an adherence service as the denominator and the number of eligible beneficiaries who received an adherence service as the numerator. See Appendix B.10.1 for additional information about rate calculation methods.

automated, was the only sponsor with a higher adherence service receipt rate among eligible beneficiaries in Model Year 4 (70 percent from 62 percent in Model Year 3). The remaining sponsors that offered adherence interventions had marked decreases in the number of eligible beneficiaries who received adherence services and in adherence service receipt rates in Model Year 4 (see Appendix B.10.3 for more information). In the case of BCBS NPA, only community pharmacists delivered its adherence intervention. As such, the decrease may be due to limited bandwidth of community pharmacists during the PHE and lower community pharmacy in-person traffic. Other sponsors, which did not use community pharmacies to deliver their adherence interventions, did not have explanations for the decreases.

3.2 Analytic Methodology for Estimation of Model Impacts

Model impacts on beneficiaries enrolled in Model-participating plans and for select beneficiary subgroups, discussed in Sections 3, 4, and 5, were estimated using a DiD framework that compares outcomes for enrollees to a comparison group selected using a propensity score matching approach. The methodology for these analyses has been presented in prior evaluation reports and is discussed in Appendix B.2.

The methodology to produce Model impacts on net expenditures for Medicare (i.e., expenditures that consider Medicare Parts A and B expenditures, as well as the Model's prospective and performance-based payments to sponsors) has been documented in prior evaluation reports and can also be found in Appendix B.2.5 of this report.

3.3 Characteristics of the Analytic Cohort

The treatment and comparison cohorts are generally well-matched on observable characteristics such as demographics, health service utilization, expenditures, and clinical profiles. For example, measures of baseline healthcare utilization such as inpatient admissions and related expenditures are similar between treatment and comparison groups. Table 3.1 and Table 3.2 present descriptive characteristics for the pooled cohort of beneficiaries first enrolled in Enhanced MTM PBPs in 2017-2020, along with their matched comparators. These descriptive statistics correspond to the 12-month period before Model exposure (the baseline period). Additional details on sample sizes, as well as figures comparing trends in baseline Medicare Parts A and B expenditures between the treatment group and comparators, are presented in Appendix B.2.1.

Table 3.1: The Treatment and Comparison Cohorts Are Well-Matched on Baseline Demographic Characteristics

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	Treatment		Comparison	
	Mean	*STD*	Mean	*STD*
Age				
% Below 65 Years Old	24.0	*42.7*	24.1	42.8
% 65-69 Years Old	21.9	*41.4*	22.0	41.4
% 70-74 Years Old	20.8	*40.6*	20.7	40.5
% 75-79 Years Old	14.1	*34.8*	14.0	34.7
% 80+ Years Old	19.2	*39.4*	19.1	39.3
% Female	58.1	*49.3*	58.0	*49.3*
Race				
% White	81.9	*38.5*	81.8	*38.6*
% Black	10.3	*30.4*	10.4	*30.5*
% Other	7.8	*26.8*	7.8	*26.9*
% Urban	80.1	*39.9*	78.1	*41.4*
% Dually Eligible	38.5	*48.7*	38.7	*48.7*
% with LIS Status	42.9	*49.5*	43.2	*49.5*
% Disabled (Original Enrollment Reason)	32.1	*46.7*	32.3	*46.7*
% with ESRD (Original Enrollment Reason)	0.4	*6.3*	0.4	*6.3*

Notes: Number of treatment beneficiaries: 1,571,806. Number of comparison beneficiaries: 3,423,484. STD: standard deviation; LIS: low-income subsidy; ESRD: end-stage renal disease. The "% Disabled" and "% with ESRD" are based on beneficiaries' original reason for Medicare eligibility.

Sources: CME and Enrollment Database (EDB).

As reported in prior evaluation reports, beneficiaries in the analytic cohort tend to be White and reside in urban areas (Table 3.1). About 39 percent were dually eligible for Medicare and Medicaid during the baseline period (Table 3.1), and about 43 percent were eligible for the LIS. About 17 percent had at least one inpatient admission, 4 percent had at least one skilled nursing facility (SNF) stay, and 28 percent had at least one emergency department (ED) visit. In the baseline year, about 15 percent of inpatient admissions resulted in a readmission to an inpatient setting (Table 3.2). Beneficiaries in the sample used, on average, about four medications concurrently (Table 3.2). Additionally, beneficiaries in the analytic cohort are well-matched on baseline average expenditures per beneficiary. Average baseline annual expenditures per beneficiary were about $4,000 for Part D and $11,000 for Parts A and B, of which about $3,000 were in the inpatient setting.

Table 3.2: The Treatment and Comparison Cohorts Are Well-Matched on Baseline Health Services Utilization, Expenditures, and Clinical Profile Characteristics

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	Treatment		Comparison	
	Mean	*STD*	Mean	*STD*
IP Stays				
% with 0 IP Stays	83.5	*37.2*	83.3	*37.3*
% with 1 IP Stay	11.4	*31.8*	11.5	*31.8*
% with 2+ IP Stays	5.2	*22.1*	5.2	*22.2*
% of IP Admissions with a Readmission	15.0	*35.7*	14.6	*35.3*
SNF Admissions				
% with 0 SNF Admissions	96.2	*19.0*	96.4	*18.6*
% with 1 SNF Admission	2.7	*16.2*	2.6	*16.0*
% with 2+ SNF Admissions	1.0	*10.2*	1.0	*9.9*
ED Visits				
% with 0 ED Visits	72.5	*44.7*	71.3	*45.2*
% with 1 ED Visit	16.7	*37.3*	17.0	*37.6*
% with 2+ ED Visits	10.9	*31.2*	11.7	*32.1*
Evaluation and Management (E&M) Visits				
% with 0 E&M Visits	7.7	*26.6*	6.9	*25.4*
% with 1-5 E&M Visits	35.4	*47.8*	35.3	*47.8*
% with 6-10 E&M Visits	27.4	*44.6*	27.7	*44.7*
% with 11-15 E&M Visits	14.9	*35.6*	15.2	*35.9*
% with 16+ E&M Visits	14.6	*35.3*	14.9	*35.6*
Part D Utilization				
Average Number of Concurrent Medications	3.67	*2.93*	3.77	*2.92*
Expenditures				
Average Total Annual Part D Expenditures per Beneficiary	$3,991	*$12,557*	$4,110	*$13,350*
Average Total Annual Parts A and B Expenditures per Beneficiary	$10,953	*$23,122*	$11,329	*$24,375*
Average Annual IP Expenditures per Beneficiary	$3,014	*$11,144*	$3,013	*$11,269*
Clinical Profile				
Average HCC Risk Score	1.15	*1.13*	1.16	*1.14*

Notes: Number of treatment beneficiaries: 1,571,806. Number of comparison beneficiaries: 3,423,484. STD: standard deviation; IP: inpatient; SNF: skilled nursing facility; ED: emergency department; HCC: Hierarchical Condition Categories.

Sources: Prescription Drug Event (PDE) data, Common Working File (CWF), Master Beneficiary Summary File (MBSF)

3.4 Model Impacts on Gross Medicare Expenditures

For the Model as a whole, there were no significant impacts on gross Medicare Parts A and B expenditures for enrollees of Enhanced MTM plans through Model Year 4. Changes in Medicare Parts A and B expenditures in each of the four Model Years and for the cumulative time period were small and not statistically significant.

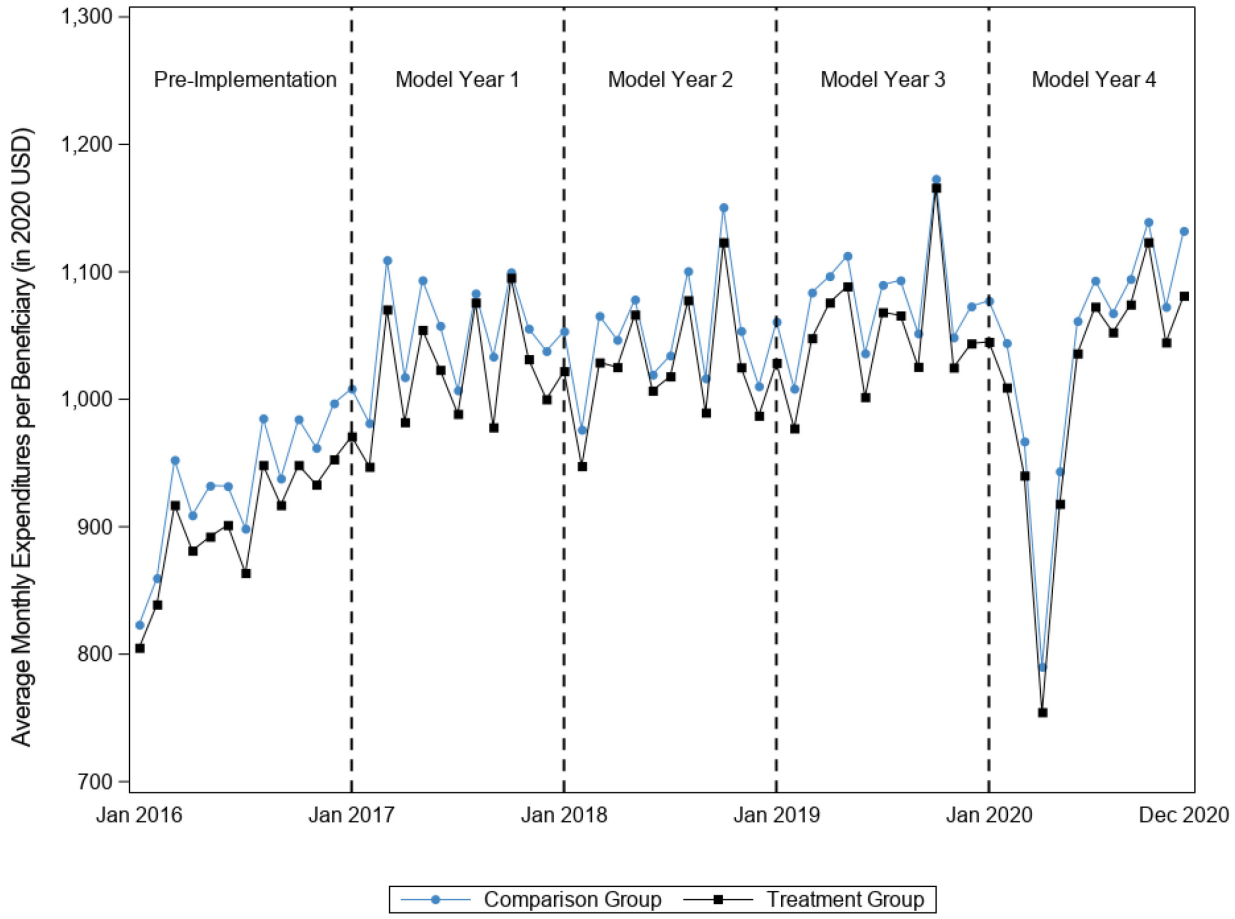
In Model Year 4, there were some impacts on Parts A and B expenditures for individual sponsors. For SilverScript/CVS, gross expenditures increased by $9.62 PBPM (corresponding to a 1.05 percent increase from baseline). For Humana and WellCare, there were respective decreases of $17.17 PBPM (corresponding to a 1.75 percent decrease from baseline) and $18.38 PBPM (corresponding to a 1.92 percent decrease from baseline).

These expenditure estimates should be interpreted with caution, in light of the disruption in healthcare delivery caused by the COVID-19 PHE. Future analyses will assess if these impacts persist into the fifth year of the Model.

Over the first four years of Model implementation, there were small and statistically non-significant decreases in gross Medicare Parts A and B expenditures for beneficiaries enrolled in Enhanced MTM plans relative to comparators. Figure 3.7 shows similar trends in monthly average gross Medicare expenditures per beneficiary across the treatment and comparison groups both before and after Model implementation. Notably, for both the treatment and the comparison group, there were similar, sharp decreases in monthly average expenditures in early 2020, reflecting the disruption in the provision of healthcare caused by the COVID-19 PHE.

Consistent with this visual representation of trends, through the fourth year of the Model there have been no significant impacts on gross Parts A and B expenditures for Medicare, cumulatively or by Model Year. In addition, the non-significant estimates of changes in expenditures were small, ranging in magnitude from 0.04 to 0.44 percent from baseline depending on the Model Year (see Table 3.3).

Figure 3.7: Medicare Parts A and B Expenditures for the Treatment and Comparison Groups Pre- and Post-Implementation



Note: There were similar sharp decreases in monthly average expenditures in early 2020, reflecting the disruption in the provision of healthcare caused by the COVID-19 PHE.

Table 3.3: Decreases in Parts A and B Expenditures Were Small and Not Statistically Significant

	Cumulative	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Per-Beneficiary Per-Month Estimate (in $)					
Difference-in-Differences	- $1.16	- $3.95	- $0.52	- $0.38	$0.97
P-value	0.674	0.230	0.888	0.920	0.809
95% Confidence Interval	(-6.56, 4.25)	(-10.38, 2.49)	(-7.71, 6.68)	(-7.73, 6.98)	(-6.91, 8.86)
Relative Difference	-0.13%	-0.44%	-0.06%	-0.04%	0.11%
Means (beneficiary-month, regression-adjusted)					
Baseline Enhanced MTM Mean	$904.25	$900.31	$900.73	$906.76	$910.73
Intervention Period Enhanced MTM Mean	$1,029.63	$1,022.80	$1,030.44	$1,054.17	$1,011.28
Baseline Comparison MTM Mean	$931.82	$931.97	$926.59	$932.45	$936.83
Intervention Period Comparison MTM Mean	$1,058.36	$1,058.41	$1,056.81	$1,080.23	$1,036.41

Notes: The unit of observation is a beneficiary-month. Number of Enhanced MTM observations: 72,138,205 (1,571,806 beneficiaries). Number of comparison observations: 142,112,219 (3,423,484 beneficiaries). Each DiD estimate corresponds to change relative to the baseline period. Negative estimates represent decreases in expenditures and positive estimates represent increases in expenditures. The relative difference is calculated as the DiD estimate divided by the baseline Enhanced MTM regression-adjusted mean, and expressed as a percentage.

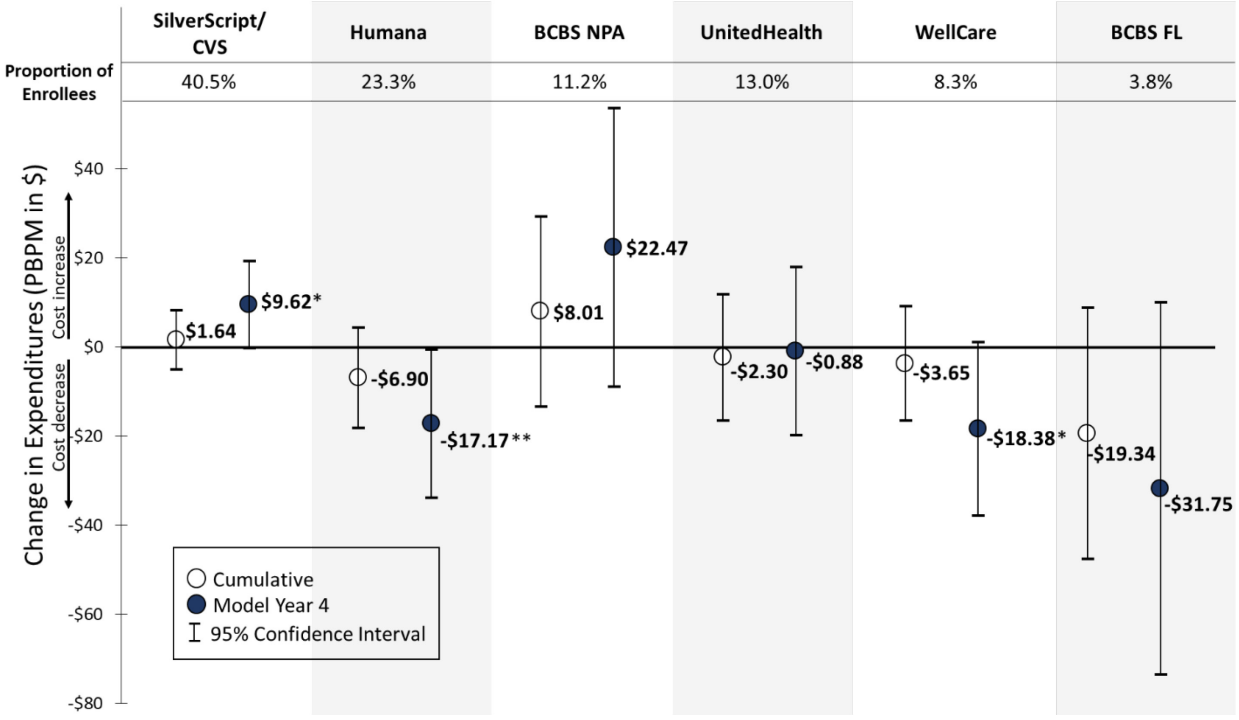
The Model did not have significant cumulative impacts on gross Medicare Parts A and B expenditures for any individual sponsor (see Figure 3.8). Not shown in the Figure, and similar to the cumulative estimates, sponsor-level estimates for prior Model Years (Model Years 1-3) were generally small in magnitude and not statistically significant, with the exception of BCBS FL in Model Year 1 (see Appendix B.3.1 for detailed sponsor-specific estimates by Model Year).[60] For each sponsor, there was no consistent pattern in the direction of estimates over time and the confidence intervals of estimates for each Model Year largely overlap.

In Model Year 4 there were statistically significant changes in gross Medicare Parts A and B expenditures for SilverScript/CVS, Humana, and WellCare (see Figure 3.8). Gross expenditures increased for SilverScript/CVS by $9.62 PBPM (corresponding to a 1.05 percent increase from baseline), due to increases in expenditures for outpatient and ancillary services (see Appendix B.3 for these setting-specific estimates). For Humana and WellCare, there were respective decreases of $17.17 PBPM (corresponding to a 1.75 percent decrease from baseline) and $18.38 PBPM (corresponding to a 1.92 percent decrease from baseline), driven by decreases in expenditures for inpatient services (for Humana) and institutional post-acute care (for both

[60] As discussed in the Second Evaluation Report, the unique features of BCBS FL's Enhanced MTM implementation, enrollee characteristics, regional conditions, and outlier observations do not provide an adequate explanation for the significant decrease in gross expenditures observed only in Model Year 1. It is possible that the Model Year 1 estimate for BCBS FL is due to random variation or mean reversion rather than the impact of the Model given that this significant decrease was not sustained over time.

Humana and WellCare). The significant increase in gross expenditures for SilverScript/CVS in Model Year 4 is inconsistent with the sponsor's service delivery efforts and the Model's theory of change, but could be related to the impact of the COVID-19 PHE in that year. Across all four years, the proportion of eligible beneficiaries receiving significant services increased for SilverScript/CVS, along with increases in CMR and TMR service receipt rates (see Appendix B.10.3). For Humana and WellCare, the decreases in gross expenditures in the fourth year of the Model are consistent with the Model's theory of change. Both Humana and WellCare also continued to test approaches to beneficiary targeting and service delivery (see Section 2.1) through Model Year 4. Because the fourth year of the Model (2020) coincided with disruption in health service delivery due to the COVID-19 PHE, these significant estimates of changes in Medicare Parts A and B expenditures could be confounded by the PHE-related disruption, rather than reflect causal impacts. Estimates for Model Year 4 should therefore be interpreted with caution. Future analyses will leverage data from the fifth year of Model implementation to assess whether these impacts persist over time.

Figure 3.8: At the Sponsor Level, Cumulative Estimates of Model Impacts on Parts A and B Expenditures Were Small and Lacked Statistical Significance, But There Were Some Significant Changes in Expenditures for Model Year 4



Notes: * p-value < 0.10; ** p-value < 0.05; *** p-value < 0.01.

Estimated changes in expenditures by service delivery setting were generally consistent with the Model's theory of change. For the Model as a whole, there were moderate, statistically significant decreases in expenditures for hospital inpatient services and institutional post-acute care, and these were partially offset by increases in expenditures for emergency department, outpatient non-emergency, and ancillary services. These findings, which use data through the fourth year of the Model, are qualitatively similar to those reported in prior evaluation reports.[61] The estimated impacts on utilization of related health services were mostly aligned with the impacts on gross expenditures, and showed decreases in utilization of some services related to inpatient or institutional post-acute care. Notably, there were statistically significant cumulative decreases in inpatient expenditures and inpatient admissions related to ACSCs, which suggest that Enhanced MTM has the potential to affect outcomes related to the management of certain chronic conditions. Appendix B.3.2 through B.3.4 present Model impacts on setting-specific expenditures and utilization across all four Model Years.[62]

Overall, through the fourth year of Model implementation, there is limited evidence of significant Model impacts on total Medicare Parts A and B expenditures for enrollees of Model-participating plans. The lack of significant findings does not suggest that MTM services are not beneficial, however. The estimates reported here capture the marginal benefit of the Enhanced MTM Model over traditional MTM, and are therefore consistent with no additional benefit of the Model's interventions and services relative to the current traditional MTM program.

[61] See, for example, the Enhanced MTM Model Third Evaluation Report, "Evaluation of the Part D Enhanced Medication Therapy Management (MTM) Model: Third Evaluation Report" (August 2021), https://innovation.cms.gov/data-and-reports/2021/mtm-thrdevalrept.

[62] Acumen also assessed medication use and patient safety outcomes leveraging data through Model Year 4 and found that, generally, cumulative estimates were also qualitatively similar to those reported in prior evaluation reports. Differences in cumulative estimates across sponsors cannot always be attributed to differences in Model implementation and intervention focus, in baseline rates for these outcomes, or in the demographic makeup of their enrollee populations. Considered together, there is no strong evidence that Model impacts on medication use and patient safety outcomes are mediating estimated impacts on medical expenditures.

3.5 Model Payments and Net Expenditures

In Model Year 4 and for the cumulative time period since Model implementation began, the Model generated net losses for Medicare, though the estimates were not statistically significant. Medicare's prospective and performance-based payments to sponsors for the Model continue to be larger than the decreases in Medicare Parts A and B expenditures.

This section provides information on the Model's prospective payments and performance-based payments, sponsor-reported actual costs of Model implementation, and estimates of net expenditures for Medicare. CMS provides prospective payments to cover sponsors' projected costs of Model implementation. Additionally, CMS designed performance-based payments to incentivize participating sponsors to improve beneficiary outcomes and reduce downstream medical expenditures. These payments are combined with the estimated impact on gross expenditures to generate estimates of the Model's impact on Medicare's net expenditures.

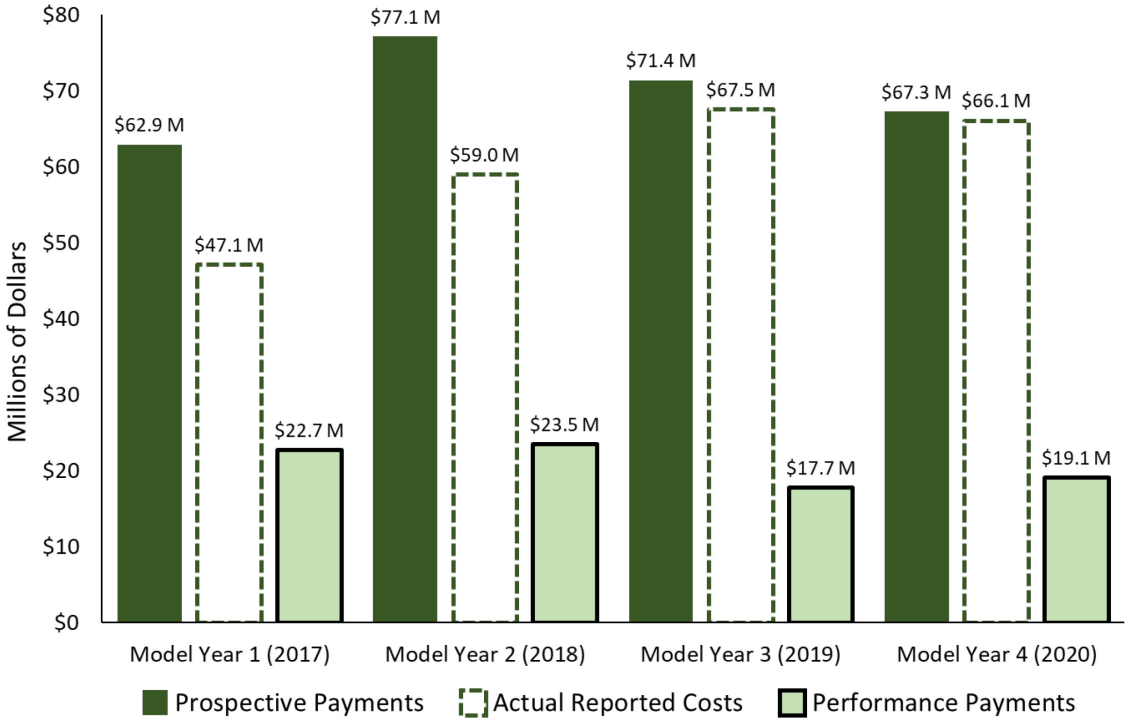
3.5.1 *Enhanced MTM Prospective Payments and Performance-based Payments*

CMS provides participating sponsors with prospective payments to implement Enhanced MTM interventions. Sponsors provide projected implementation costs to CMS annually, along with the expected number of targeted beneficiaries for each participating PBP and specific intervention. CMS then aggregates this information to determine a total prospective payment amount. For ease of disbursement, CMS computes the prospective payment for all beneficiaries enrolled in the sponsors' participating PBP and not just those targeted for interventions. For example, if a sponsor expects to provide services to 50 percent of beneficiaries enrolled in the PBP, CMS allocates the total projected implementation cost for providing those services on a PBPM basis for all beneficiaries enrolled in the PBP.

CMS prospectively paid sponsors about $67.3 million in total to cover sponsors' anticipated Model implementation costs in Model Year 4 (Figure 3.9). These payments are somewhat lower than prospective payments paid in Model Year 3, which were about $71.4 million. In each of the four Model Years, sponsors reported spending less for implementation than their prospective payment amounts. Over the course of implementation, actual reported costs converged with prospective payments. Sponsors reported actual costs ranging from about 75 percent of prospective payment amounts in Model Year 1 to about 98 percent in Model Year 4.

CMS awards performance-based payments contingent on identifying a net reduction in Medicare Parts A and B expenditures of at least 2 percent for beneficiaries enrolled in participating PBPs, relative to a benchmark. The performance payment is distributed as a fixed $2 PBPM amount in the form of an increase in Medicare's contribution to the PBP's Part D premium (i.e., an increase in the direct subsidy component of Part D payment), thus decreasing the plan premium paid by beneficiaries. Performance-based payments are awarded with a two-year delay. For example, performance results in Model Year 2 determine eligibility for performance-based payments that are awarded in Model Year 4. Total annual performance-based payments varied across Model Years, ranging from about $17.7 million to $23.5 million (Figure 3.9).[63] To calculate net expenditures, performance-based payments are attributed to the year in which they were earned, and not the year in which they were awarded.

Figure 3.9: Actual Reported Costs and Prospective Payments Converged Over Time



Sources: Data provided by CMS. Participating sponsors submit Actual Reported Costs to the Enhanced MTM Model's Implementation Contractor annually. Information about which PBPs qualified for performance-based payments were received directly from CMS. Information on PBP enrollment was from the Enrollment Database (EDB).

Notes: Because performance-based payments are awarded with a two-year delay, Acumen projected enrollment for September through December 2021 (to estimate performance-based payments for Model Year 3 [2019]) and all of 2021 (to estimate performance-based payments for Model Year 4 [2020]). Please see Appendix B.2.5 for additional methodology details.

[63] Out of 22 participating PBPs, 11 received performance payments in Model Year 1, 14 in Model Year 2, 15 in Model Year 3, and 14 in Model Year 4.

3.5.2 *Model Impact on Net Expenditures*

The Model's impact on net expenditures for Medicare combines estimated impacts on gross Medicare Parts A and B expenditures along with the payments that CMS makes to sponsors in the form of prospective and performance-based payments. Table 3.4 presents each component of net expenditures. Depending on the Model Year, prospective payments were $3-$4 PBPM, and performance-based payments were about $1 PBPM. As discussed in the preceding section, estimated changes in total Medicare Parts A and B expenditures were relatively small in magnitude and not significantly different from zero in any Model Year.

In Model Year 4, and for the cumulative time period since Model implementation began, payments by CMS to sponsors continued to exceed estimated Model impacts on Medicare Parts A and B expenditures. In Model Year 4, net expenditures for Medicare increased by $5.72 PBPM. Cumulatively across all four Model Years, the total estimated net loss was $270.8 million. However, these estimated changes in net expenditures were not significantly different from zero cumulatively or in any Model Year (as shown in Table 3.4).[64]

[64] Changes in net expenditures for Model Years 1, 2, and 3 slightly differ from those reported in the Second and Third Evaluation Reports due to minor updates in the sample populations and updated sources of data.

Table 3.4: The Enhanced MTM Model Did Not Have a Statistically Significant Impact on Cumulative Net Expenditures through Model Year 4

Time Period	Number of Beneficiary-months [N]	Change in Gross Medicare Expenditures PBPM in $ (95% CI) [A]	Prospective Payments PBPM in $ [B]	Performance-based Payments PBPM in $ [C]	Change in Net Expenditures		
					PBPM in $ (95% CI) [D=A+B+C]	**Total Annual in $million (95% CI)** [N*D]	**P-value**
Cumulative	78,433,364	-1.16 (-6.56, 4.25)	3.55	1.06	3.45 (-1.95, 8.86)	270.75 (-152.79, 695.08)	0.211
Model Year 1 (2017)	20,254,028	-3.95 (-10.38, 2.49)	3.11	1.12	0.28 (-6.15, 6.72)	5.62 (-124.61, 136.06)	0.933
Model Year 2 (2018)	20,090,552	-0.52 (-7.71, 6.88)	3.90	1.17	4.55 (-2.64, 11.75)	91.45 (-53.00, 236.10)	0.215
Model Year 3 (2019)	19,916,637	-0.38 (-7.73, 6.98)	3.52	0.89	4.03 (-3.32, 11.39)	80.28 (-66.11, 226.86)	0.283
Model Year 4 (2020)	18,172,147	$0.97 (-6.91, 8.86)	3.70	1.05	5.72 (-2.16, 13.61)	103.99 (-39.20, 247.37)	0.155

Notes: PBPM: per-beneficiary per-month; CI: confidence interval. PBPM changes in net expenditures [D] are calculated as the sum of the estimated change in gross Medicare expenditures [A] and Medicare prospective payments [B] and performance-based payments [C] to sponsors. Negative net expenditures estimates represent net savings and positive estimates represent net losses to the Medicare program. Changes in net expenditures for Model Years 1, 2, and 3 slightly differ from those reported in the Enhanced MTM Model Second and Third Evaluation Reports due to minor updates in the sample populations and updated data sources. The total annual estimate may deviate from the [N*D] manual calculation due to rounding.

3.6 Discussion of Model Impacts on Beneficiaries Enrolled in Model-participating Plans

Eligibility rates for Enhanced MTM continued to increase in Model Year 4. They also remained substantially higher than traditional MTM eligibility rates. Sponsors completed significant services with over half a million beneficiaries in Model Year 4, which represented 39 percent of eligible beneficiaries. Between Model Years 3 and 4, CMR and TMR service receipt rates increased, while receipt rates for transitions-of-care services and adherence services decreased.

Although there were higher rates of Enhanced MTM eligibility and service receipt for CMR and TMR services in Model Year 4, estimated changes in Medicare Parts A and B expenditures continued to be small and not statistically significant. There were no impacts on gross or net Medicare Parts A and B expenditures for beneficiaries enrolled in Enhanced MTM plans through the fourth year of the Model. Across service delivery settings, decreases in expenditures for hospital inpatient services and institutional post-acute care were offset by

increases in expenditures for emergency department, outpatient non-emergency, and ancillary services. These findings are qualitatively similar to those reported in prior evaluation reports.

At the sponsor level, while there were no cumulative impacts, there were some significant impacts on Parts A and B expenditures in Model Year 4 for SilverScript/CVS, Humana, and WellCare. For Humana and WellCare, the decreases in gross expenditures in the fourth year of the Model are consistent with the Model's theory of action. The significant increase in gross expenditures for SilverScript/CVS in Model Year 4 is inconsistent with the observed increase in significant service receipt for this sponsor. The disruption in healthcare provision due to the COVID-19 PHE in 2020 may have confounded impact estimates for Model Year 4, so these findings should be interpreted with caution. The next evaluation report will leverage information from the fifth year of Model implementation to assess whether these sponsor-specific findings persist, and if they can be plausibly attributed to implementation features.

The estimates reported in this section suggest that there is no additional benefit of the Model's interventions and services relative to the traditional MTM program. The Model may impact specific beneficiary subgroups, and these impacts could go undetected in analyses that focus on the enrollee population as a whole. Subsequent sections discuss findings from analyses on beneficiary subgroups that may be affected by the Model. Model impacts on beneficiaries from underserved populations and beneficiaries with complex medical needs are discussed in Sections 4 and 5, respectively.

4 HOW DID THE MODEL IMPACT BENEFICIARIES FROM UNDERSERVED POPULATIONS?

Section Summary

Relative to the enrollee population as a whole, there were notable differences in Enhanced MTM eligibility and service receipt rates among beneficiaries from underserved populations.

Among three racial subgroups—White, Black, and Other—**eligibility rates were highest for beneficiaries in the Black and Other racial subgroups, but service receipt rates were highest among White beneficiaries.** Over the course of Model implementation, about 28 percent of all White, 26 percent of all Black, and 25 percent of all beneficiaries belonging to the Other race category received significant services.

Relative to all beneficiaries enrolled in Enhanced MTM-participating plans, **LIS beneficiaries were more likely to be eligible for Enhanced MTM**. Enhanced MTM eligibility rates among LIS beneficiaries increased in all Model Years. Enhanced MTM eligibility rates among LIS beneficiaries were also substantially higher than traditional MTM eligibility rates among the LIS beneficiaries included in the evaluation's comparison group.

In all Model Years, **significant service receipt rates among LIS beneficiaries were lower than receipt rates among all eligible beneficiaries.** Service receipt rates among eligible LIS beneficiaries were also lower for select significant services (CMR, TMR, transitions-of-care services, and adherence services) in all Model Years relative to receipt rates for all eligible beneficiaries. Over the course of the Model, around 22 percent of all LIS beneficiaries received significant services, compared with about 30 percent of all beneficiaries enrolled in participating plans.

Estimates of Model impacts for LIS beneficiaries were generally similar to the estimates for the enrollee population as a whole. **There was no impact on Total Medicare Parts A and B expenditures for LIS beneficiaries**, and estimated impacts on setting-specific expenditures were similar to those for all enrollees in Model-participating plans.

This section focuses on analyses that assess race- and income-based disparities in access to Enhanced MTM services, and the Model's reach among beneficiaries from underserved populations. Specifically, this section presents information on Model eligibility and service receipt for beneficiaries across three racial subgroups and for beneficiaries who qualify for the low-income subsidy (LIS). It also presents estimated impacts on medical expenditures for LIS-eligible enrollees, who represent approximately 49 percent of the sample used in all-enrollee

analyses. The Part D LIS program[65] provides financial assistance to qualifying low-income beneficiaries, to cover part or all of the expenditures associated with the Part D benefit, including plan premiums, deductibles, and co-pays.[66] The Enhanced MTM Model does not explicitly target LIS-eligible beneficiaries ("LIS beneficiaries") or enrollees from other underserved populations. However, as discussed in Section 1.2, the Model's targeting flexibilities and tailored service design may offer additional gains for LIS beneficiaries, relative to traditional MTM, for several reasons.

First, the Model's targeting flexibilities are expected to lead to higher levels of eligibility and, subsequently, service receipt for LIS beneficiaries. As shown later in this section, beneficiaries from underserved populations, such as beneficiaries eligible for the LIS, tend to have greater healthcare needs and higher associated healthcare expenditures compared to the overall population of beneficiaries enrolled in participating plans. From this standpoint, there is greater potential opportunity to reduce expenditures for this beneficiary subgroup, because beneficiaries with greater healthcare needs could benefit more from Enhanced MTM services compared to beneficiaries with fewer healthcare needs.

Second, some Enhanced MTM interventions include services that involve multiple rounds of outreach and regular contact with beneficiaries. This increases the chances of successful beneficiary engagement. These interventions would be particularly beneficial to LIS beneficiaries, who, according to sponsor reports, are often challenging to successfully contact for service completion. Furthermore, LIS beneficiaries could potentially benefit from Model services that specifically focus on removing financial and other barriers to medication optimization.

The remainder of this section is organized as follows: Section 4.1 discusses eligibility and service receipt across three racial beneficiary subgroups (White, Black, and Other[67]). Section 4.2 presents eligibility and service receipt results for the subgroup of LIS-eligible beneficiaries. Section 4.3 presents Model impacts on expenditures for LIS beneficiaries.[68]

[65] CMS.gov. Medicare Prescription Drug Benefit Manual. https://www.cms.gov/regulations-and-guidance/guidance/transmittals/downloads/chapter13.pdf.

[66] Current LIS eligibility requirements include having financial resources less than $14,790 for an individual or $29,520 for a married couple living together, and income less than $19,320 for an individual or $26,130 for a married couple living together. CMS.gov. 2021 Resource and Cost-Sharing Limits for Low-Income Subsidy (LIS). https://www.cms.gov/files/document/2021-lis-resource-limits-memo.pdf.

[67] The "Other" category includes Asian, Hispanic, North American Native, Other, and Unknown categories.

[68] The eligibility and service receipt statistics presented in Section 4.2 include all Enhanced MTM-participating plan enrollees who were ever eligible for LIS in a given Model Year. The treatment group used in the impact analyses presented in Section 4.3 includes a matched cohort of the Enhanced MTM-participating plan enrollees who were eligible for LIS for at least one month in the 12-month period prior to their exposure to the Model. Findings on eligibility and service receipt descriptive statistics for all LIS beneficiaries in participating plans were similar to findings for LIS beneficiaries in the matched cohort.

4.1 Model Eligibility and Service Receipt over Model Years 1 to 4, by Race

Among three racial subgroups—White, Black, and Other—eligibility rates were highest for beneficiaries in the Black or Other racial subgroups, while service receipt rates were highest among White beneficiaries.

- In all Model Years, Enhanced MTM eligibility rates increased for all three racial categories (White, Black, and Other); eligibility rates were highest among Black beneficiaries and lowest among White beneficiaries.
- Significant service receipt rates were higher among eligible White than among eligible Black or Other race beneficiaries in all Model Years.
- Over the course of Model implementation, about 28 percent of all White, 26 percent of all Black, and 25 percent of all beneficiaries belonging to Other race categories received significant services.
- For all select significant services (CMR, TMR, transitions-of-care services, and adherence services), receipt rates were highest among eligible White beneficiaries in all Model Years.

This section provides more details about differences in beneficiary eligibility for Enhanced MTM and receipt of Enhanced MTM services across three racial subgroups (White, Black, and Other) between Model Years 1 and 4. There is substantial overlap between LIS beneficiaries and the Black and Other racial subgroups, with most beneficiaries belonging to these two racial subgroups also qualifying for the LIS. Information on beneficiary eligibility, service receipt, and Model impacts for LIS beneficiaries is presented in Sections 4.2 and 4.3.

4.1.1 *Eligibility by Race*

The distribution of plan enrollment across racial categories was similar across all Model years. White beneficiaries represented about 78 percent of plan enrollees, Black beneficiaries represented about 12 percent, and 10 percent of beneficiaries belonged to the Other racial group (Table 4.1).[69]

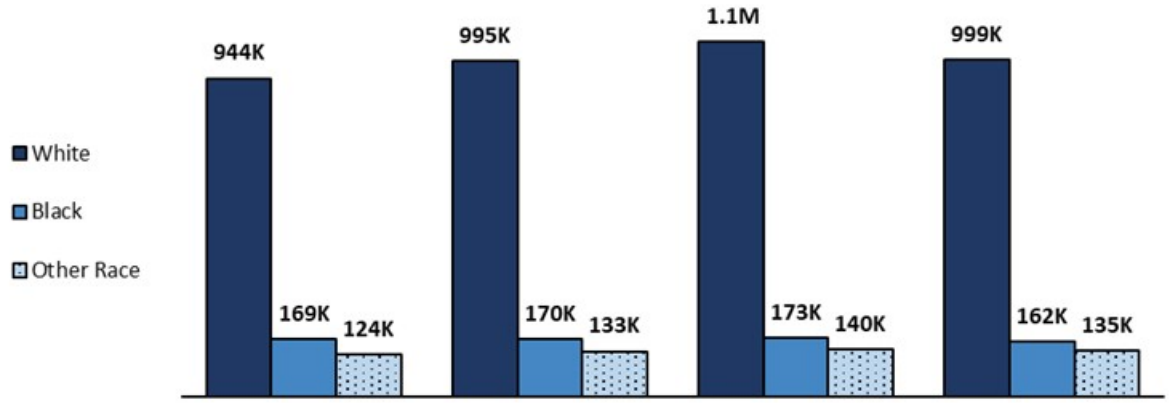
Table 4.1: The Distribution of Plan Enrollment across Racial Categories Was Similar in All Model Years

	Number of Plan Enrollees by Racial Category (Proportion of Plan Enrollees by Racial Category)			
	Model Year 1 (2017)	**Model Year 2 (2018)**	**Model Year 3 (2019)**	**Model Year 4 (2020)**
All Plan Enrollees	***1,878,104 (100%)***	***1,867,500 (100%)***	***1,851,735 (100%)***	***1,672,477 (100%)***
White	1,465,634 (78.0%)	1,464,272 (78.4%)	1,445,007 (78.0%)	1,301,274 (77.8%)
Black	229,195 (12.2%)	222,039 (11.9%)	221,529 (12.0%)	200,208 (12.0%)
Other Race	183,275 (9.8%)	181,189 (9.7%)	185,199 (10.0%)	170,995 (10.2%)

There were increases in the number of eligible beneficiaries in all racial categories between Model Years 1 and 3, and a decrease in Model Year 4 (Figure 4.1). These trends are similar to trends observed among the enrollee population as a whole (discussed in Section 3.1.1).

[69] At the sponsor level, there was variation in the distribution of plan enrollment across racial categories. For both BCBS NPA and BCBS FL, White beneficiaries represented a larger proportion (over 90 percent) of plan enrollees in all Model Years. As a result of the overlap between LIS status and Black/Other racial subgroup, plans that do not have benchmark status (such as the plans operated by BCBS NPA and BCBS FL) tend to have fewer non-White enrollees.

Figure 4.1: For Each Racial Category, the Number of Beneficiaries Eligible for Enhanced MTM Increased through Model Year 3 but Decreased in Model Year 4



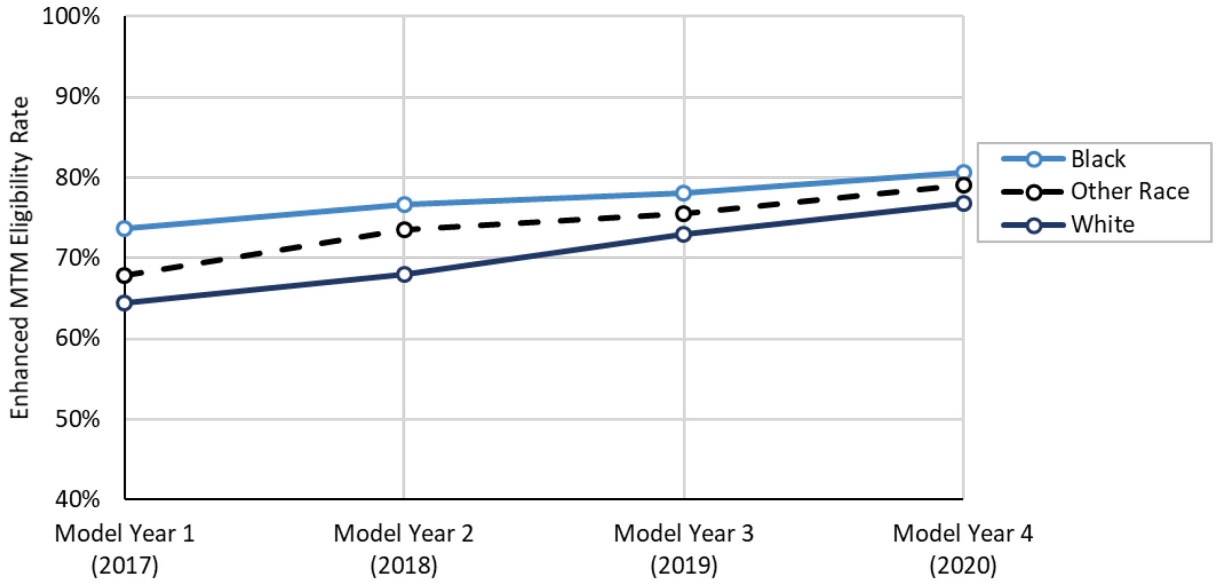
Enhanced MTM Eligibility Rate among White Beneficiaries	64.4%	68.0%	72.9%	76.8%
Enhanced MTM Eligibility Rate among Black Beneficiaries	73.6%	76.7%	78.1%	80.7%
Enhanced MTM Eligibility Rate among Other Race Beneficiaries	67.9%	73.5%	75.5%	79.1%

Similar to the trends among all eligible beneficiaries, there was an increase in the Enhanced MTM eligibility rate for each racial category in all Model Years. Eligibility rates reached their highest levels for all racial categories in Model Year 4 (Figure 4.2). In all Model Years, Enhanced MTM eligibility rates were higher among Black and Other race beneficiaries than among White beneficiaries. In later Model Years, however, eligibility rates among the racial categories increasingly converged. Modelwide eligibility rates were highest among Black beneficiaries in every Model Year, and ranged between 74 and 81 percent.

For all racial categories, eligibility rates for Enhanced MTM (shown in Figure 4.2) were substantially higher than eligibility rates for traditional MTM among beneficiaries included in the Enhanced MTM Evaluation comparison group. For traditional MTM, the eligibility rate was around 8 percent among White beneficiaries, 10 percent among Black beneficiaries, and 9 percent among Other race beneficiaries. Appendix B.10.2 contains additional information on

traditional MTM eligibility rates among comparison group beneficiaries by racial category, and sponsor-specific Enhanced MTM eligibility rates by racial category.[70]

Figure 4.2: Eligibility Rates Rose for All Racial Categories Each Model Year and Were Highest among Black Beneficiaries



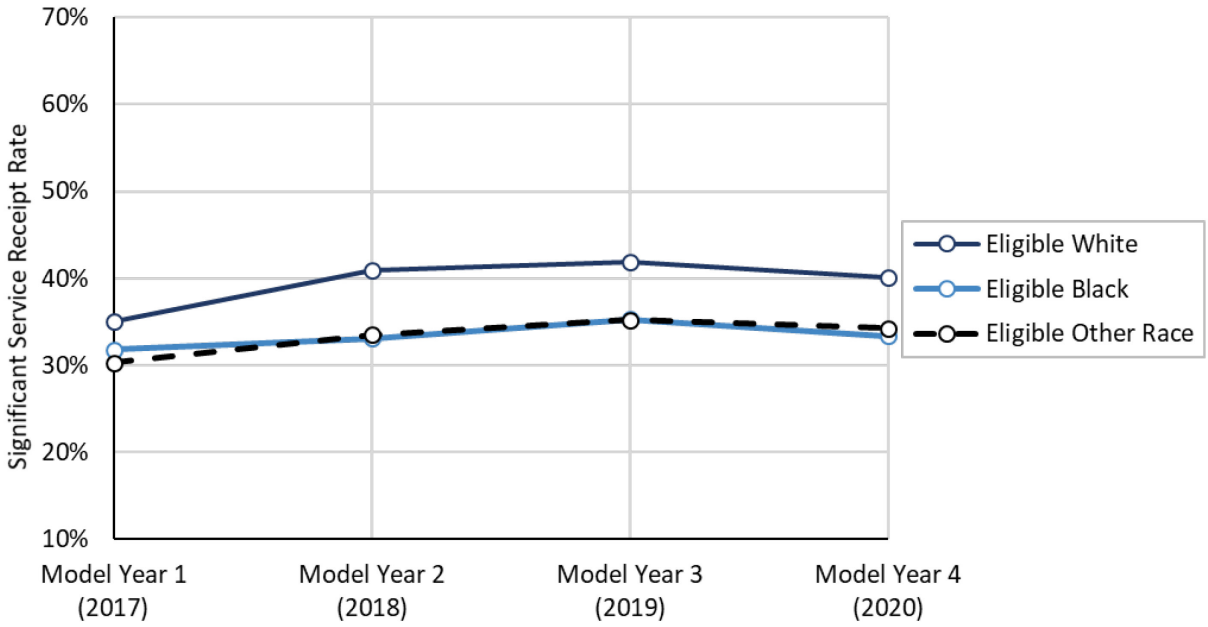
4.1.2 *Service Receipt by Race*

In all Model Years, significant service receipt rates were higher among eligible White beneficiaries, at around 40 percent, than among eligible Black or Other race beneficiaries (Figure 4.3). Significant service receipt rates among eligible Black and Other race beneficiaries, at around 33.5 percent, were similar across Model Years. The higher receipt rates among eligible White beneficiaries were primarily driven by SilverScript/CVS's significant service receipt rates. (See Appendix B.10.3 for sponsor-specific service receipt information by racial category.) Service receipt rates for Humana and UnitedHealth were similar across the three racial groups. For BCBS FL, Black beneficiaries had the highest significant service receipt rates relative to the White or Other race beneficiaries. Looking at all enrolled beneficiaries, over the course of Model implementation about 28 percent, 26 percent, and 25 percent of all beneficiaries belonging to the White, Black, and Other race categories, respectively, received significant services (see Appendix B.10.3 for additional information). These racial disparities in service receipt do not appear related to any specific characteristic of Model implementation (e.g., intervention

[70] At the sponsor level, the differences in eligibility rates between White and Black beneficiaries were most pronounced for BCBS FL, which had substantially higher eligibility rates among Black beneficiaries in all Model Years.

targeting, beneficiary outreach, or service delivery). None of the sponsors reported any internal efforts to track racial differences in service receipt, or implemented any efforts to address racial disparities in Enhanced MTM service delivery.

Figure 4.3: Significant Service Receipt Rates Were Highest among Eligible White Beneficiaries in All Model Years

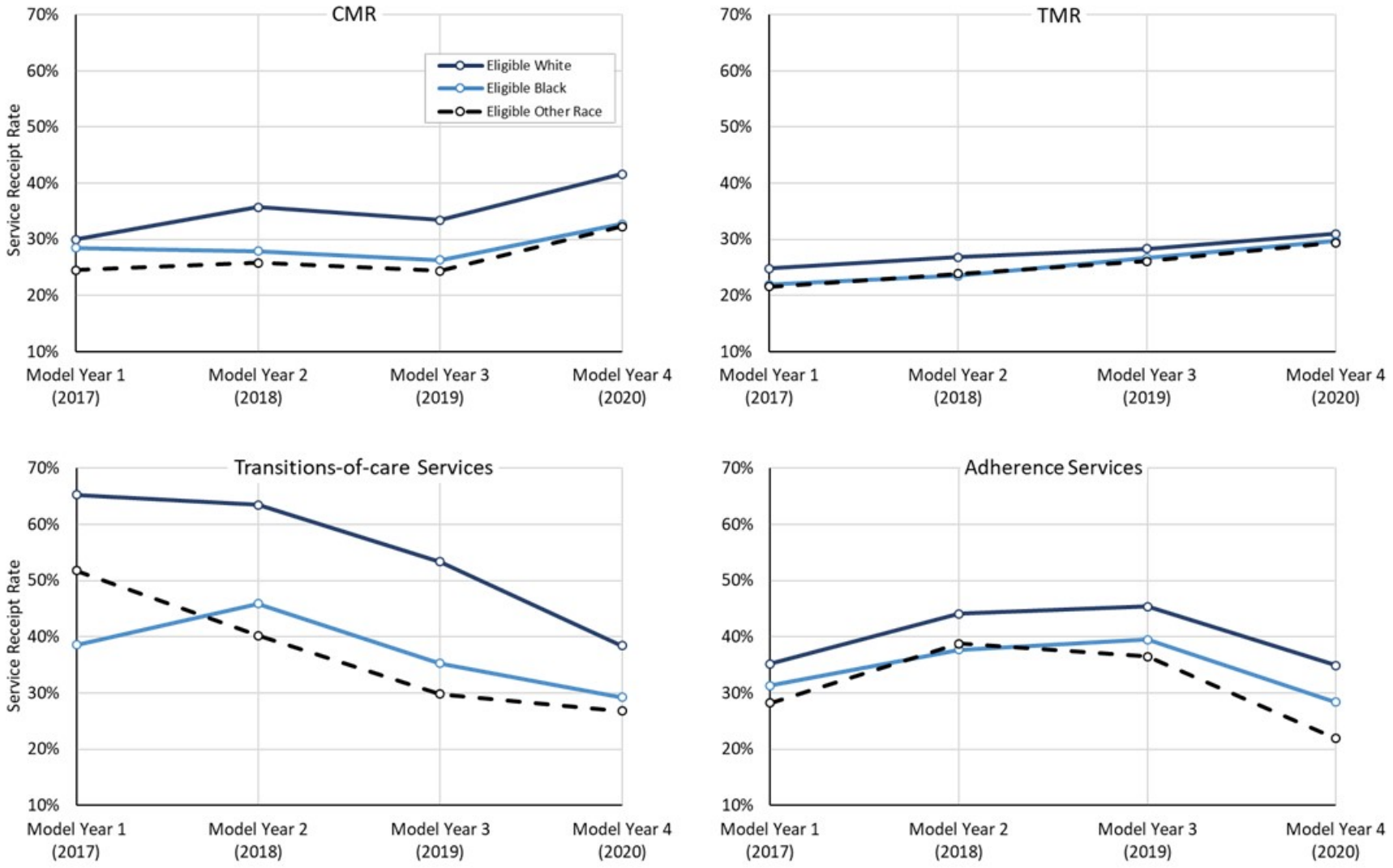


The trends in receipt rates among racial categories for select significant services—CMR, TMR, transitions-of-care, and adherence services—were similar to the overall significant service receipt rates, discussed above. Service receipt rates for these four select significant services were higher among eligible White beneficiaries than eligible Black and Other race beneficiaries in all Model Years (Figure 4.4). Select significant service receipt rates were similar for eligible Black and Other race eligible beneficiaries over time, and changes generally followed similar patterns for all racial categories. Over time, CMR and adherence service receipt rates across racial categories generally moved in parallel, with higher rates among White beneficiaries. There was only a slight difference in TMR service receipt rates between eligible White and Black/Other race beneficiaries. This may be attributable to some TMRs being provider-facing or involving less interaction with beneficiaries. A large proportion of Black and Other race beneficiaries also qualify for LIS, and as noted earlier, sponsors reported more difficulty contacting and completing services with LIS beneficiaries. Of the four types of select significant services, transitions-of-care service receipt rates were most different across the three racial categories.

Select service receipt rates among eligible Black or Other race beneficiaries were generally similar to select service receipt rates among eligible LIS beneficiaries (see Section 4.2.2). Over time, CMR receipt rates among eligible Black and Other race beneficiaries were nearly identical to service receipt rates for eligible LIS beneficiaries, and TMR, transitions-of-care service, and adherence service receipt rates were generally just slightly higher than those among eligible LIS beneficiaries, though still lower than rates among all eligible beneficiaries.

Racial differences in service receipt rates varied across traditional and Enhanced MTM plans. Among eligible Black and Other race beneficiaries, CMR receipt rates in Enhanced MTM plans were lower than rates in traditional MTM plans included in the Enhanced MTM Evaluation comparison group. (See Appendix B.10.3 for additional details.) CMR receipt rates were similar between White Enhanced MTM-eligible beneficiaries and White traditional MTM-eligible beneficiaries. Among the entire enrollee population (regardless of eligibility), Black and Other race beneficiaries in Enhanced MTM-participating plans had similar CMR receipt rates (4 percent and 3 percent, respectively) as Black and Other race beneficiaries in traditional MTM plans (3 percent for both subgroups). Rates of CMR receipt among all White beneficiaries in Model-participating plans (regardless of eligibility) were higher than rates among all White beneficiaries in the comparison group (5 percent and 3 percent, respectively).

Figure 4.4: Receipt Rates for Select Significant Services Were Higher among White Beneficiaries in All Model Years



4.2 Model Eligibility and Service Receipt over Model Years 1 to 4 for LIS Beneficiaries

LIS beneficiaries had higher Enhanced MTM eligibility rates but lower receipt rates of significant and select significant services, relative to all Model beneficiaries.

- In all Model Years, Enhanced MTM eligibility rates among LIS beneficiaries increased, and eligibility rates were higher among LIS beneficiaries compared with the Model's overall enrollee population. Enhanced MTM eligibility rates among LIS beneficiaries were also substantially higher than traditional MTM eligibility rates among the LIS beneficiaries included in the comparison group for the evaluation.
- In all Model Years, significant service receipt rates among eligible LIS beneficiaries were lower than receipt rates among all eligible beneficiaries. Overall, significant service receipt rates among all LIS beneficiaries (22 percent) were lower than receipt rates among all beneficiaries (27 percent).
- Receipt rates among eligible LIS beneficiaries were also lower for all select significant services (CMR, TMR, transitions-of-care services, and adherence services) in all Model Years relative to receipt rates for all eligible beneficiaries.

This section describes eligibility for and receipt of Enhanced MTM services among LIS beneficiaries. Under traditional MTM, beneficiaries who qualify for LIS may not reach the chronic condition, Part D spending, and drug utilization minimum thresholds necessary for eligibility in traditional MTM.[71] The Enhanced MTM Model does not require beneficiaries to meet these three thresholds, and as such, creates additional opportunity for more LIS beneficiaries to be targeted for and hence receive Enhanced MTM services. Moreover, the ability to tailor the content and frequency of services under the Enhanced MTM Model may offer greater benefit to beneficiaries who qualify for LIS. Two sponsors (BCBS NPA and BCBS FL)

[71] Beneficiaries who have financial barriers may not visit healthcare providers, and therefore may not have their chronic conditions diagnosed or be prescribed (or take) medications to address these conditions. These beneficiaries would not qualify for traditional MTM.

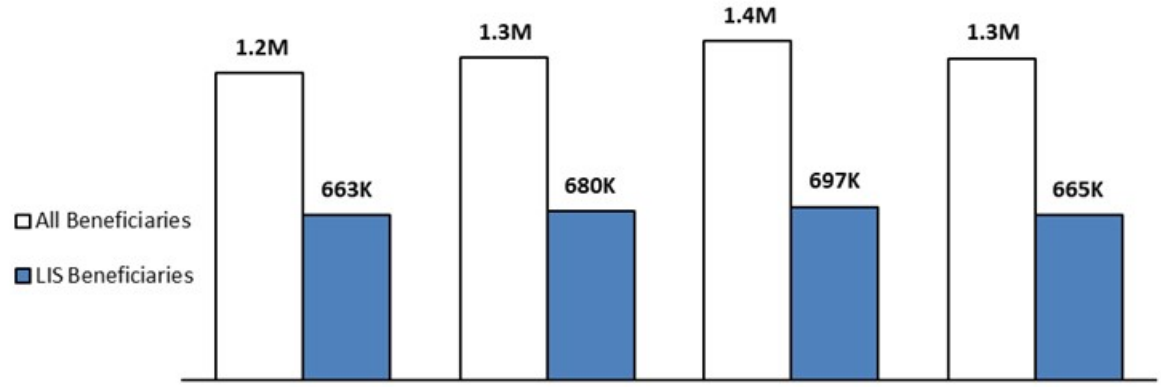
offered cost-sharing and social support services to beneficiaries designed to address socioeconomic barriers to medication management.

Though the Enhanced MTM Model may create opportunities to involve more LIS beneficiaries in MTM services, there are corresponding challenges to delivering Enhanced MTM services to LIS beneficiaries. Qualitative information collected from sponsors suggests that sponsors have found it more difficult to contact and complete services with LIS beneficiaries relative to non-LIS beneficiaries. For example, sponsors describe having difficulties obtaining accurate contact information for LIS beneficiaries, and report that LIS beneficiaries are more difficult to reach or are uninterested in Enhanced MTM services.

4.2.1 *Eligibility for LIS Beneficiaries*

In every Model Year, LIS beneficiaries made up about half of the enrollee population eligible for Enhanced MTM (Figure 4.5). Similar to eligibility among the wider population of plan beneficiaries, there were increases in the number of eligible LIS beneficiaries between Model Years 1 and 3, and a decrease in Model Year 4.

Figure 4.5: The Number of Eligible LIS Beneficiaries Increased through Model Year 3 but Decreased in Model Year 4, Similar to All Beneficiaries



	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Enhanced MTM Eligibility Rate among All Beneficiaries	65.9%	69.5%	73.8%	77.5%
Enhanced MTM Eligibility Rate among LIS Beneficiaries	71.8%	76.2%	77.6%	81.2%

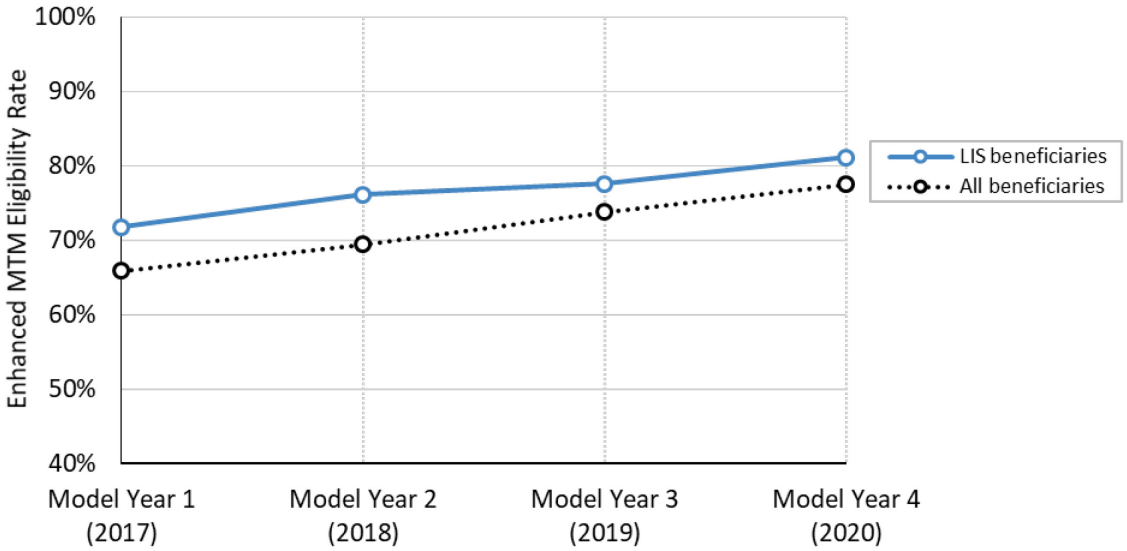
Notes: The term "LIS beneficiaries" refers to beneficiaries who receive the low-income subsidy (LIS), and the term "all beneficiaries" refers to all enrollees in Model-participating plans.

None of the interventions implemented for Enhanced MTM specifically targeted beneficiaries based on their LIS status. Still, Enhanced MTM eligibility rates were higher among LIS beneficiaries than among all plan enrollees in all Model Years (Figure 4.6). This is likely attributable to higher disease burden, expenditures, and utilization among LIS beneficiaries compared with the overall enrollee population, discussed in more detail in Section 4.3.1. In addition, as in the overall population of all participating plan enrollees, Enhanced MTM eligibility rates among LIS beneficiaries increased in each Model Year. The eligibility rate for Enhanced MTM among LIS beneficiaries was also substantially higher than the eligibility rate for traditional MTM among LIS beneficiaries included in the Enhanced MTM Evaluation comparison group. For traditional MTM, the eligibility rate among LIS beneficiaries hovered around 12 percent; for Enhanced MTM, it was over 70 percent for all Model Years. Both of these rates exceeded the eligibility rates for the overall enrollee population in their respective MTM programs. The eligibility rates among all plan enrollees were around 9 percent and 70 percent in traditional MTM and Enhanced MTM, respectively. Appendix B.10.2 has additional details on traditional MTM eligibility rates for each Model Year, and on sponsor-level Enhanced MTM eligibility rates among LIS beneficiaries.[72]

Enhanced MTM eligibility rates among LIS beneficiaries were over 70 percent in all Model Years. The traditional MTM eligibility rate among LIS beneficiaries included in the evaluation's comparison group was around 12 percent.

[72] Two sponsors (BCBS NPA and BCBS FL) had notably higher eligibility rates among LIS beneficiaries compared with all beneficiaries in most Model Years, though both of these sponsors had small numbers of LIS plan enrollees and LIS Enhanced MTM-eligible beneficiaries relative to other sponsors.

Figure 4.6: Trends in Eligibility Rates over Time among LIS Beneficiaries and All Beneficiaries Were Similar, though Rates Were Higher for LIS Beneficiaries



Notes: The term "LIS beneficiaries" refers to beneficiaries who receive the low-income subsidy (LIS), and the term "all beneficiaries" refers to all beneficiaries enrolled in Model-participating plans.

Rates of Enhanced MTM eligibility for LIS beneficiaries were generally similar to rates of eligibility among Black and Other race beneficiaries. This could be a function of the substantial overlap between LIS beneficiaries and beneficiaries in the Black and Other race categories. As shown in Table 4.2, the LIS beneficiary subgroup consisted of much higher proportions of non-White beneficiaries. Among Enhanced MTM enrollees, about 88 percent of Black beneficiaries and 80 percent of beneficiaries belonging to the Other racial group qualified for LIS. In contrast, only 40 percent of White beneficiaries qualified for LIS.

Table 4.2: The LIS Subgroup Had Much Higher Proportions of Non-White Enrollees

Enrollee Group	Plan Enrollees by Racial Category (Proportion of Plan Enrollees within Racial Category)			
	Any Race	White	Black	Other
All Plan Enrollees	***1,571,806 (100%)***	***1,251,329 (100%)***	***185,046 (100%)***	***135,431 (100%)***
Plan Enrollees with LIS status	764,117 (48.6%)	494,051 (39.5%)	162,461 (87.8%)	107,605 (79.5%)
Plan Enrollees with Non-LIS status	807,689 (51.4%)	757,278 (60.5%)	22,585 (12.2%)	27,826 (20.5%)

Notes: The data presented in this table include beneficiaries used in all-enrollee impact analyses presented in Section 3 of this report.

4.2.2 *Service Receipt for LIS Beneficiaries*

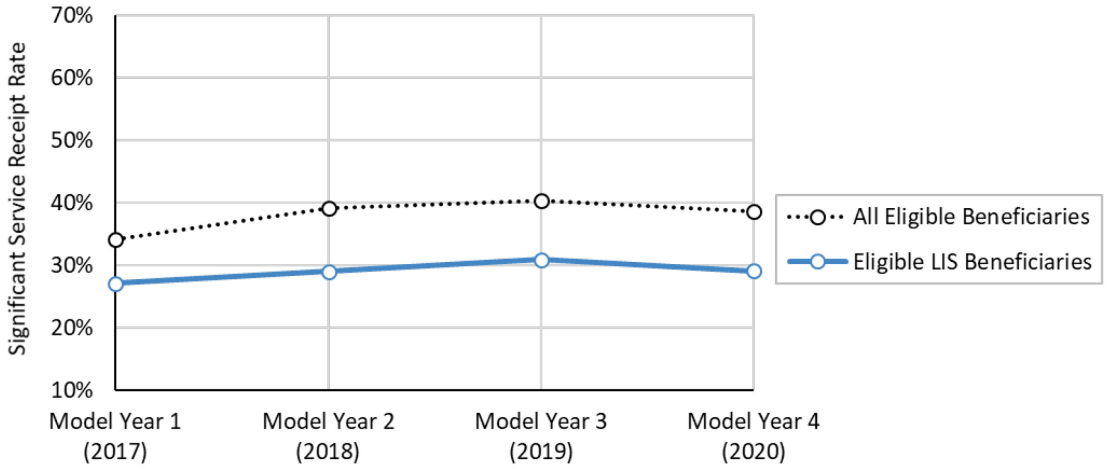
Over the course of Model implementation, significant service receipt rates among eligible LIS beneficiaries, around 29 percent, were lower than receipt rates among all eligible beneficiaries, around 38 percent (Figure 4.7).[73] Significant service receipt rates among all LIS beneficiaries (regardless of eligibility) were around 22 percent (see Appendix B.10.3 for additional details), whereas service receipt rates among all beneficiaries enrolled in participating plans were around 27 percent, as discussed in Section 3.1.2. The lower significant service receipt rates among LIS beneficiaries are consistent with sponsor reports that it is more difficult to reach LIS beneficiaries for participation in Enhanced MTM services.

Sponsors conducted outreach to all eligible beneficiaries based on the intervention for which they were targeted and, in some cases, their level of risk. These efforts were the same across all eligible beneficiaries. Sponsors did not conduct different types of outreach based on eligible beneficiaries' LIS status, except for WellCare, which attempted to reach LIS beneficiaries early in the month, when pre-paid cell phone minutes renew. In addition, WellCare, as well as UnitedHealth, Humana, and BCBS NPA used community pharmacies to conduct outreach to beneficiaries, including LIS beneficiaries, who were either not responsive to call center outreach or unreachable due to inaccurate or missing contact information. This strategy is based on the premise that community pharmacies are better able to leverage their relationships with beneficiaries to complete Enhanced MTM services. Some sponsors also reported attempting to obtain more accurate beneficiary contact information for beneficiaries, including LIS beneficiaries, from physicians or community pharmacists. Finally, both BCBS FL and BCBS NPA offered services specifically designed to address the social and financial needs of beneficiaries. Though these services were not limited to LIS beneficiaries, the financial and social focus of these services was particularly relevant for LIS beneficiaries. In general, the sponsors that deployed the aforementioned strategies had relatively comparable significant service receipt rates among their eligible LIS beneficiaries and the overall population of eligible enrollees by Model Year 4.

Patterns in significant service receipt rates over time were similar among eligible LIS beneficiaries and the overall population of all eligible plan enrollees. After a small increase between Model Years 1 and 2, service receipt rates did not change much in later Model Years. Rates of significant service receipt for LIS beneficiaries were lower than significant service receipt rates among White, Black, and Other race beneficiaries in all Model Years. Service receipts rates for eligible LIS beneficiaries for each sponsor are available in Appendix B.10.3.

[73] SilverScript/CVS had lower service receipt rates among LIS beneficiaries relative to all eligible beneficiaries in all Model Years, driving the Modelwide trend. Humana, UnitedHealth, and WellCare had similar service receipt rates among LIS beneficiaries and all eligible beneficiaries in all Model Years.

Figure 4.7: Trends over Time in Receipt Rates of Significant Services among Eligible LIS Beneficiaries and All Eligible Beneficiaries Were Similar, though Rates Were Lower among Eligible LIS Beneficiaries

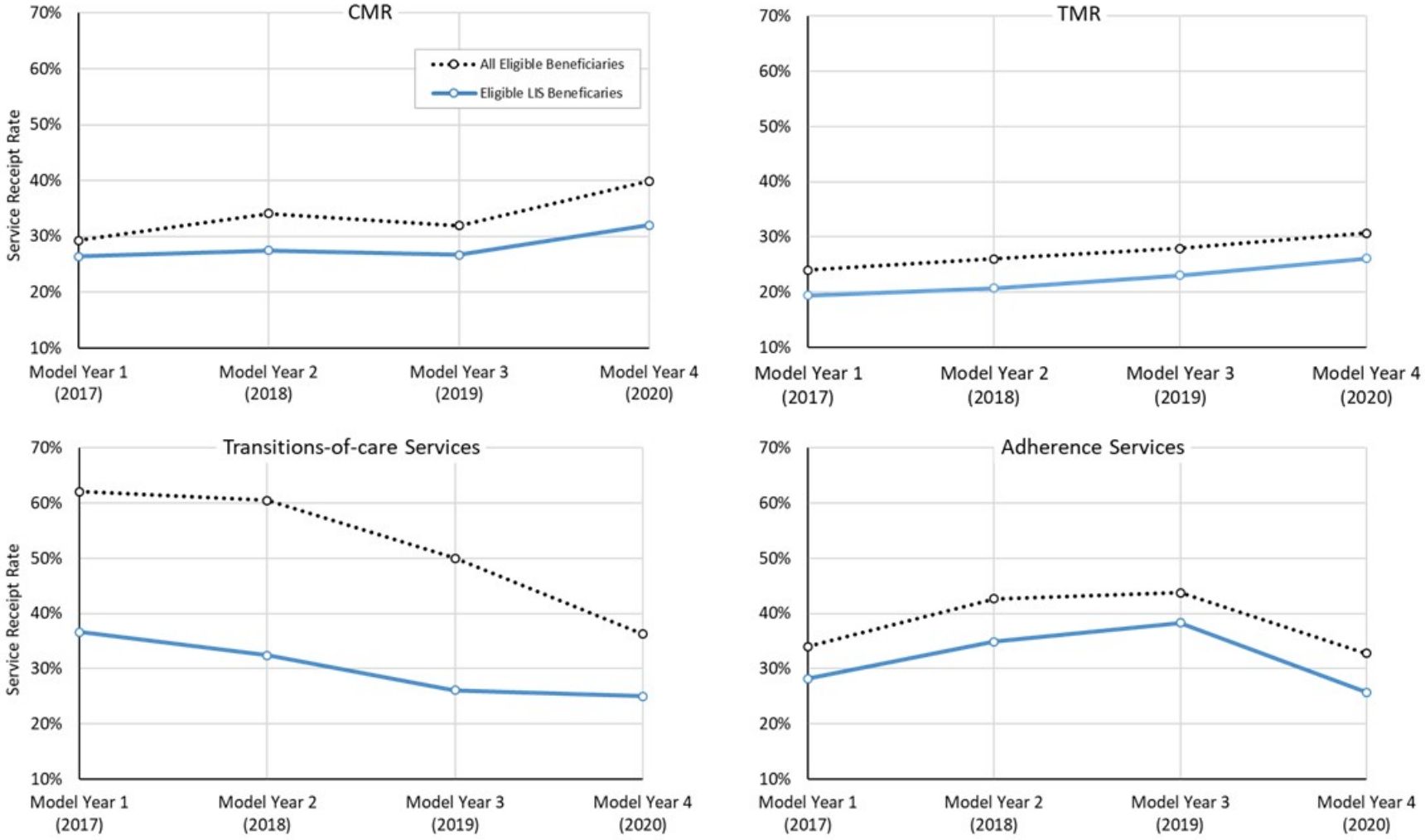


Notes: The term "eligible LIS beneficiaries" refers to beneficiaries who receive the low-income subsidy (LIS) and are eligible for Enhanced MTM, and the term "all eligible beneficiaries" refers to all beneficiaries in Model-participating plans who are eligible for Enhanced MTM.

Receipt rates for the four select significant services (CMR, TMR, transitions-of-care services, and adherence services) were lower for eligible LIS beneficiaries than for all eligible beneficiaries in all Model Years (Figure 4.8). For example, receipt rates for CMRs were around 34 percent for all eligible beneficiaries, whereas they were around 28 percent among eligible LIS beneficiaries across all Model Years. Receipt rates for CMR were also higher, though only slightly, among the entire all-enrollee population (i.e., regardless of eligibility) than the entire LIS enrollee population, at about 5 percent and 4 percent, respectively. Receipt rates for CMR among LIS beneficiaries in the comparison group who were eligible for traditional MTM increased from 24 to 41 percent in later Model Years. As a comparison, CMR receipt rates among eligible Enhanced MTM LIS beneficiaries never exceeded 32 percent.[74] There were also slight increases in traditional MTM CMR receipt rates among all LIS beneficiaries included in the comparison group, from 3.3 percent in Model Year 1 to 4.7 percent in Model Year 4. Among the entire Enhanced MTM LIS enrollee population, CMR receipt rates also increased over time, but were slightly lower relative to the LIS beneficiaries in the comparison group. (See Appendix B.10.3 for additional details.) Among all select significant services and Model Years, the biggest difference in receipt rates between eligible LIS beneficiaries and all eligible beneficiaries was for transitions-of-care services.

[74] The LIS status flags used to generate the traditional MTM CMR receipt rates for this subgroup were created using baseline information and were fixed over time.

Figure 4.8: Trends over Time in Receipt Rates for Select Significant Services among Eligible LIS Beneficiaries and All Eligible Beneficiaries Were Similar, though Rates Were Lower among Eligible LIS Beneficiaries



Notes: The term "eligible LIS beneficiaries" refers to beneficiaries who receive the low-income subsidy (LIS) and are eligible for Enhanced MTM, and the term "all eligible beneficiaries" refers to all beneficiaries in Model-participating plans who are eligible for Enhanced MTM.

4.3 Model Impacts for LIS Beneficiaries

Estimates of Model impacts for LIS beneficiaries were generally similar to the estimates for the beneficiary population as a whole. **There was no impact on total Medicare Parts A and B expenditures for LIS beneficiaries, and estimated impacts on setting-specific expenditures were similar to those for all beneficiaries in Model-participating plans.**

This section examines the impact of the Model on total Medicare Parts A and B expenditures for LIS beneficiaries. The Model's theory of change anticipates that the incentives and flexibilities granted to sponsors may lead to decreases in Medicare Parts A and B expenditures (see Figure 1.2). However, as discussed in Section 3.4, the Model has not resulted in significant reductions in total Medicare Parts A and B expenditures among participating plan beneficiaries as of the end of Model Year 4. As discussed earlier, beneficiaries who qualify for the LIS may benefit more from Enhanced MTM than the overall beneficiary population, and impacts on this subgroup could go undetected in all-enrollee analyses of Model impacts. The previous section showed that LIS beneficiaries are more likely to be targeted than the overall population of beneficiaries enrolled in Model-participating plans, but a smaller proportion of all LIS beneficiaries received significant services relative to the overall enrollee population. This section takes a closer look at Model impacts for the subgroup of LIS beneficiaries.

Findings from subgroup analyses of LIS beneficiaries suggest that the Model did not achieve significant reductions in total Medicare Parts A and B expenditures for this group. Estimated impacts on setting-specific expenditures are similar to impacts for the overall beneficiary population. The remainder of this section discusses these findings. First, Section 4.3.1 provides a brief methodological introduction and discusses the demographic and clinical characteristics of the subgroup of LIS beneficiaries included in impact analyses. Section 4.3.2 presents the analytic findings.

4.3.1 *Subgroup Characteristics*

To construct the analytic sample for subgroup analyses of LIS beneficiaries, beneficiaries included in all-enrollee analyses (in the treatment or comparison cohort) were flagged if they qualified for LIS at least one month during the 12-month baseline period, which is the period prior to their exposure to Enhanced MTM. The LIS subgroup was then constructed using all matched sets of beneficiaries who had LIS status for at least one month in the baseline period. Thus, the LIS beneficiaries included in the impact analyses are a subset of matched beneficiaries

who had LIS status prior to their exposure to Enhanced MTM. The analytic sample includes all matched LIS beneficiaries included in all-enrollee analyses, regardless of whether they were eligible for Enhanced MTM services. The estimation of Model impacts used the same statistical models to derive DiD estimates as those used in all-enrollee analyses. These statistical models are briefly described in Section 3.2 and, in more detail, in Appendix B.2.4.

The LIS sample represents approximately 49 percent of the sample used in all-beneficiary analyses; this percentage is the same across the treatment and comparison cohorts. Table 4.3 and Table 4.4 contain information on baseline demographic and clinical characteristics for the treatment and comparison cohorts of the LIS sample. As shown in the tables, similar to the sample used in all-enrollee analyses (see Table 3.1 and Table 3.2), the LIS treatment and comparison cohorts are well-matched on baseline demographic characteristics, healthcare utilization, expenditures, and clinical profiles. However, the subgroup of LIS beneficiaries differs significantly from the sample of beneficiaries used in all-enrollee analyses on many of these characteristics.

Compared to beneficiaries in the all-enrollee sample, larger proportions of LIS beneficiaries are below 65 years old (52 versus 24 percent), dually eligible for Medicaid (90 versus 39 percent), and disabled (64 versus 32 percent); they are also more likely to be Black (20 versus 10 percent) or Other (14 versus 8 percent) race. LIS beneficiaries have greater medical needs: they have more inpatient stays and ED visits and take more concurrent medications compared to the total beneficiary population. Their expenditures are significantly higher across all spending categories, and they have higher Hierarchical Condition Category (HCC) risk scores.

Table 4.3: The LIS Treatment and LIS Comparison Cohorts Are Well-Matched on Baseline Demographic Characteristics

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	LIS Treatment		LIS Comparison	
	Mean	*STD*	Mean	*STD*
Age				
% Below 65 Years Old	51.6	*50.0*	51.6	*50.0*
% 65-69 Years Old	12.9	*33.5*	13.0	*33.6*
% 70-74 Years Old	11.2	*31.6*	11.2	*31.6*
% 75-79 Years Old	8.8	*28.3*	8.8	*28.3*
% 80+ Years Old	15.5	*36.1*	15.5	*36.1*
% Female	58.2	*49.3*	58.2	*49.3*
Race				
% White	65.9	*47.4*	65.9	*47.4*
% Black	20.4	*40.3*	20.4	*40.3*
% Other	13.7	*34.4*	13.7	*34.4*
% Urban	80.0	*40.0*	78.0	*41.4*
% Dually Eligible	89.6	*30.5*	89.6	*30.5*
% Disabled (Original Enrollment Reason)	63.6	*48.1*	63.6	*48.1*
% with ESRD (Original Enrollment Reason)	0.8	*8.8*	0.8	*8.8*

Notes: Number of LIS treatment group beneficiaries: 764,117. Number of LIS comparison beneficiaries: 1,687,453. STD: standard deviation; ESRD: end-stage renal disease; LIS: low-income subsidy. "% Disabled" and "% with ESRD" are based on beneficiaries' original reason for Medicare eligibility.

Sources: CME and Enrollment Database (EDB).

Table 4.4: The LIS Treatment and LIS Comparison Cohorts Are Well-Matched on Baseline Utilization, Expenditures, and Clinical Profile Metrics

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	LIS Treatment		LIS Comparison	
	Mean	*STD*	Mean	*STD*
Inpatient (IP) Admissions				
% with 0 IP Admissions	79.0	*40.7*	79.6	*40.3*
% with 1 IP Admissions	13.1	*33.7*	12.9	*33.5*
% with 2+ IP Admissions	7.9	*27.0*	7.5	*26.4*
% of IP Admissions with a Readmission	17.8	*38.3*	16.8	*37.4*
Skilled Nursing Facility (SNF) Admissions				
% with 0 SNF Admissions	94.9	*22.0*	95.3	*21.1*
% with 1 SNF Admissions	3.4	*18.2*	3.2	*17.5*
% with 2+ SNF Admissions	1.7	*12.8*	1.5	*12.2*
Emergency Department (ED) Visits				
% with 0 ED Visits	63.0	*48.3*	61.9	*48.6*
% with 1 ED Visit	19.3	*39.4*	19.6	*39.7*
% with 2+ ED Visits	17.8	*38.2*	18.5	*38.8*
Evaluation and Management (E&M) Visits				
% with 0 E&M Visits	12.5	*33.1*	11.0	*31.2*
% with 1-5 E&M Visits	34.0	*47.4*	34.0	*47.4*
% with 6-10 E&M Visits	24.3	*42.9*	24.4	*43.0*
% with 11-15 E&M Visits	14.3	*35.0*	14.6	*35.4*
% with 16+ E&M Visits	15.0	*35.7*	15.9	*36.6*
Part D Utilization				
Average Number of Concurrent Medications	4.34	*3.45*	4.35	*3.38*
Expenditures				
Average Total Annual Part D Expenditures per Beneficiary	$6,252	*$16,122*	$6,243	*$16,545*
Average Total Annual Parts A and B Expenditures per Beneficiary	$13,501	*$28,332*	$13,568	*$29,075*
Average Annual IP Expenditures per Beneficiary	$4,106	*$13,841*	$3,902	*$12,846*
Clinical Profile				
Average HCC Risk Score	1.42	*1.40*	1.42	*1.39*

Notes: Number of LIS treatment group beneficiaries: 764,117. Number of LIS comparison beneficiaries: 1,687,453. STD: standard deviation; HCC: Hierarchical Condition Categories. Readmissions are defined as follow-up unplanned hospital admissions that occur within 30 days of a hospital discharge.

Sources: Prescription Drug Event (PDE) data, Common Working File (CWF), Master Beneficiary Summary File (MBSF).

4.3.2 *Findings from Impact Analyses*

The clinical characteristics of the LIS subgroup and their higher likelihood of being targeted for Enhanced MTM services compared to the overall enrollee population suggest that they have the potential to benefit more from Enhanced MTM than other plan enrollees. However, the estimated impacts for the LIS subgroup were not substantially different than for the sample of beneficiaries used in all-enrollee analyses (Figure 4.9). Specifically, as shown in Table 4.5, and similar to findings from all-enrollee analyses, the Model did not significantly impact

Medicare Parts A and B expenditures for the subgroup of LIS beneficiaries. There were no significant cumulative impacts and no significant impacts for any Model Year either.

As described in Appendix B.2.4, all-enrollee impact analyses censored observations for beneficiaries who switched to a plan operated by another Enhanced MTM sponsor. This was done because it is not possible to attribute impacts for these beneficiaries to a specific sponsor after the beneficiaries switch. For example, if a beneficiary switches from a Humana plan to a SilverScript/CVS plan in Model Year 2, only data up to the end of Model Year 1 are kept in analyses. The findings presented in Table 4.5 follow this methodology. Additional sensitivity analyses that relaxed this censoring rule were also conducted by the evaluation team. These sensitivity analyses did not censor observations for beneficiaries who switched Enhanced MTM sponsors. Findings from these analyses are qualitatively the same as those presented in Table 4.5, and show no cumulative Model impacts on Parts A and B expenditures for LIS beneficiaries.[75]

Table 4.5: Estimated Cumulative Changes in Parts A and B Expenditures for LIS Beneficiaries Were Small and Not Statistically Significant

	Cumulative	Model Year 1 (2017)	Model Year 2 (2018)	Model Year 3 (2019)	Model Year 4 (2020)
Per-Beneficiary Per-Month Estimate (in $)					
Difference-in-Differences	$0.05	- $0.64	$7.85	- $2.30	- $6.00
P-value	0.990	0.890	0.166	0.702	0.351
95% Confidence Interval	(-8.00, 8.10)	(-9.66, 8.38)	(-3.26, 18.96)	(-14.08, 9.48)	(-18.60, 6.61)
Relative Difference	0.00%	-0.06%	0.71%	-0.21%	-0.55%
Means (beneficiary-month, regression-adjusted)					
Baseline Enhanced MTM Mean	$1,096.52	$1,096.65	$1,099.25	$1,093.92	$1,095.82
Intervention Period Enhanced MTM Mean	$1,232.98	$1,225.16	$1,246.26	$1,243.66	$1,217.68
Baseline Comparison MTM Mean	$1,109.36	$1,110.39	$1,110.57	$1,106.39	$1,109.35
Intervention Period Comparison MTM Mean	$1,245.76	$1,239.55	$1,249.74	$1,258.44	$1,237.20

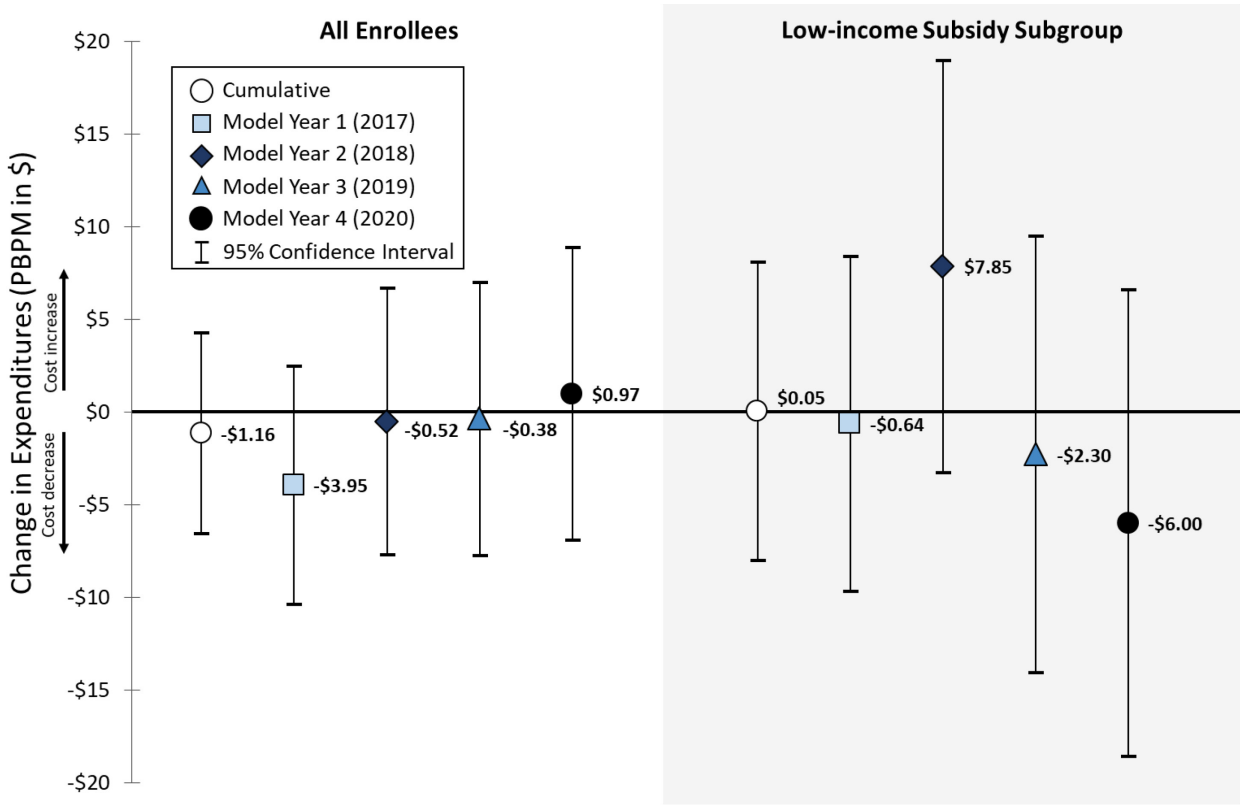
Notes: The unit of observation is a beneficiary-month. Number of Enhanced MTM observations: 30,740,379 (764,117 beneficiaries). Number of comparison observations: 64,653,370 (1,687,453 beneficiaries). Each DiD estimate corresponds to change relative to the baseline period. The relative difference is calculated as the DiD estimate divided by the baseline Enhanced MTM regression-adjusted mean, and expressed as a percentage. Negative estimates represent decreases in expenditures and positive estimates represent increases in expenditures.

Estimated changes in utilization and expenditures by service delivery setting were also similar to findings from all-enrollee analyses (see Appendix B.4). There were expenditure

[75] The estimates that do not censor switchers show a 0.94 percent increase in expenditures that is significant at the 10 percent level in Model Year 2. This estimate does not persist in later Model Years and is unlikely to represent causal Model impacts.

decreases in the inpatient and institutional post-acute care settings, which were offset by increases in the outpatient setting (including ED expenditures). There was one exception—ancillary services.[76] In all-enrollee analyses, expenditures for ancillary services increased (by $1.55 PBPM, p-value <0.01). However, expenditures for ancillary services did not significantly increase for the subgroup of LIS beneficiaries (DiD estimate: $0.21 PBPM, p-value 0.54).

Figure 4.9: Estimated Changes in Part A and Part B Expenditures for the LIS Subgroup Were Not Statistically Significant



Notes: * p-value <0.10; ** p-value <0.05; *** p-value <0.01.

[76] Ancillary services include laboratory, pathology, and other tests; imaging services; and durable medical equipment (DME) and supplies.

4.4 Discussion of Access to Services and Model Impacts on Beneficiaries from Underserved Populations

Under the Model, sponsors did not explicitly target beneficiaries based on race or LIS status. Nonetheless, the targeting criteria implemented by sponsors led to higher rates of Enhanced MTM eligibility among Black and Other race beneficiaries and LIS beneficiaries, relative to the enrollee population as a whole. These differences in eligibility may be attributable to higher disease burden, expenditures, and utilization among non-White and LIS populations relative to all enrollees. Sponsors deployed outreach strategies to increase service receipt rates among LIS beneficiaries, but eligible non-White beneficiaries and LIS beneficiaries had lower significant service receipt rates than all eligible beneficiaries. Enhanced MTM-eligible non-White beneficiaries and LIS beneficiaries also had lower CMR receipt rates than traditional MTM-eligible beneficiaries included in the evaluation's comparison group who belonged to these subgroups. That is, overall CMR receipt rates did not improve under the Model relative to traditional MTM.

Overall, the impact results for LIS beneficiaries suggest that the Model does not impact this subgroup differently than the overall population of participating plan enrollees. As discussed, even though eligibility for Enhanced MTM was higher for LIS beneficiaries than other plan enrollees, service receipt rates were significantly lower. Ultimately, over the course of the Model, only around 22 percent of LIS beneficiaries received significant services. These low service receipt rates may not be sufficient to generate significant impacts on expenditures for this subgroup.

5 HOW DID THE MODEL IMPACT MEDICALLY COMPLEX BENEFICIARIES?

Section Summary

Medically complex beneficiaries were more likely to be eligible for Enhanced MTM and receive significant services than the overall population of enrollees in Model-participating plans.

However, the Model did not differentially impact expenditures of beneficiaries with chronic conditions or DTPs relative to the overall population of beneficiaries enrolled in Model-participating plans. There were small and non-significant changes in Medicare Parts A and B expenditures cumulatively across the four Model Years for all three subgroups of medically complex beneficiaries, similar to findings from analyses on the all-enrollee cohort.

This section focuses on subgroups of beneficiaries with medically complex profiles. Beneficiaries with medically complex profiles have higher rates of healthcare utilization and medical expenditures compared to the overall population of enrolled beneficiaries (see Section 5.2.1), and were commonly targeted by sponsors for their Enhanced MTM interventions. As discussed in Section 1.2, Model impacts on these beneficiaries could potentially be greater than impacts on the full cohort of beneficiaries enrolled in participating plans. First, medically complex beneficiaries are more likely to be eligible for MTM services than other participating plan enrollees. Additionally, their higher medical expenditures imply a bigger margin for improvement for this subgroup of beneficiaries relative to other participating plan enrollees. The MTM services provided by the Model are more frequent and tailored to beneficiary needs than services offered in traditional MTM, increasing the likelihood of successful engagement of these beneficiaries in services. Increased service receipt may lead to further behavioral change for disease management and optimization of medication regimens, with reductions in downstream expenditures and related healthcare utilization.

Impacts on the subset of medically complex beneficiaries may go undetected in analyses that look at the entire cohort of participating plan enrollees. This section focuses on three subgroups of beneficiaries with complex medical needs to assess whether the Model had different impacts on them relative to the overall population of beneficiaries enrolled in Model-participating plans. The three subgroups are: beneficiaries with two or more chronic conditions, beneficiaries with diabetes, and beneficiaries with drug-therapy problems (DTPs).

The beneficiary subgroups presented in this section were selected based on common themes found in targeting criteria across all participating sponsors. In all Model Years, medication utilization was the most widely used targeting category (see Section 2.1). Among the beneficiaries targeted primarily based on medication utilization, almost all (more than 99 percent) were targeted due to DTPs, a sub-category within medication utilization.[77] Of the 27 interventions offered in Model Year 4, eight interventions used the presence of DTPs as a primary targeting category, and two interventions used it as a secondary targeting category. (See Appendix B.10.2 for more details about beneficiary eligibility based on presence of DTPs and other medication utilization sub-categories in all Model Years.)

All sponsors had at least one intervention where the presence of chronic conditions was a primary or secondary targeting category, though sponsors used different chronic conditions to trigger eligibility. In Model Year 4, five of the 27 interventions used the presence of chronic conditions as a primary targeting category, and seven used it as a secondary targeting category. (See Appendix B.10.2 for more details about interventions using chronic conditions for targeting in all Model Years.) Diabetes, specifically, was a chronic condition targeted by many sponsors for their Enhanced MTM interventions. Some sponsors, such as BCBS FL and BCBS NPA, also have interventions that focus exclusively on beneficiaries with diabetes (see Appendix A for more details).[78]

In summary, based on the characteristics of Enhanced MTM interventions, the presence of chronic conditions and DTPs are key targeting criteria for most sponsors. For analyses presented in this section, beneficiaries were selected into subgroups based on chronic conditions and DTPs that are common and/or associated with high expenditures in the Medicare population.[79] Enhanced MTM eligibility and service receipt rates among these three subgroups are presented in Section 5.1. Findings from analyses on the impact of the Model are presented in Section 5.2.

---

[77] Within the medication utilization category, there are four sub-categories: (i) DTPs, (ii) opioid medications, (iii) newly prescribed medications, and (iv) number of medications (i.e., polypharmacy). DTPs encompass medication adherence issues, adverse drug reactions/interactions, gaps in care, dosage issues, and unnecessary or inappropriate drug therapy.

[78] The intervention focusing on beneficiaries with diabetes from BCBS FL was implemented from Model Year 1 through Model Year 4. The intervention from BCBS NPA was implemented in Model Years 3 and 4.

[79] Chronic conditions include diabetes, ischemic heart disease, stroke, atrial fibrillation, heart failure, asthma, chronic obstructive pulmonary disease, chronic lung disorder, osteoporosis, osteoarthritis, and rheumatoid arthritis. DTPs include poor medication adherence, with drug-drug interactions, and taking high doses of a certain medication. Full definitions for each subgroup included in analyses is presented in Appendix B.2.2. The eligibility and service receipt statistics presented in Section 5.1 include all Enhanced MTM-participating plan enrollees who had indicators of interest in a given Model Year. The treatment group used in the impact analyses presented in Section 5.2 includes a matched cohort of the Enhanced MTM-participating plan enrollees who had indicators of interest in the 12-month period prior to their exposure to the Model. Findings on eligibility and service receipt rates for all medically complex beneficiaries in participating plans were similar to findings for those in the matched cohort.

5.1 Model Eligibility and Service Receipt over Model Years 1 to 4 among Medically Complex Beneficiaries

Relative to all beneficiaries enrolled in Enhanced MTM-participating plans, medically complex beneficiaries had higher Enhanced MTM eligibility and significant service receipt rates in all Model Years. Select significant service receipt rates among eligible medically complex beneficiaries and all eligible beneficiaries were relatively similar.

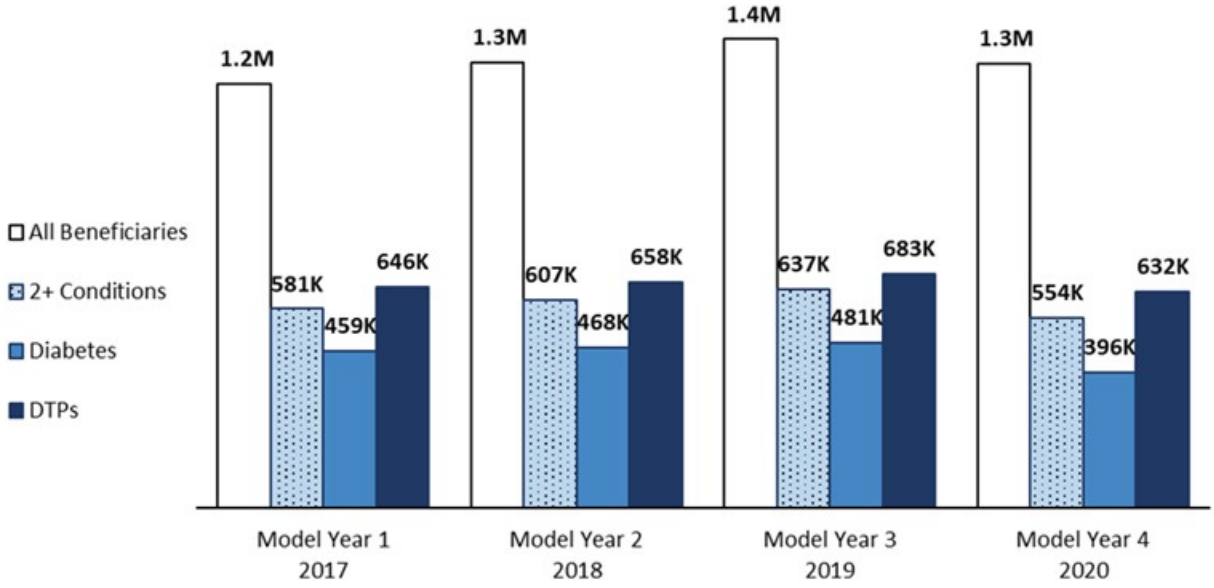
Over the course of the Model, sponsors have viewed beneficiaries with DTPs and beneficiaries with chronic conditions, including diabetes, as populations that could benefit from Enhanced MTM interventions. Accordingly, this section provides details about eligibility for Enhanced MTM and receipt of Enhanced MTM services between Model Years 1 and 4 among the three medically complex beneficiary subgroups of interest: beneficiaries with two or more chronic conditions, beneficiaries with diabetes, and beneficiaries with DTPs.[80]

5.1.1 *Eligibility for Medically Complex Beneficiaries*

There were increases in the number of eligible beneficiaries in all three subgroups of medically complex beneficiaries between Model Years 1 and 3, and a decrease in Model Year 4 (Figure 5.1). These trends are similar to those seen among the enrollee population as a whole (discussed in Section 3.1.1).

[80] Findings on eligibility and service receipt descriptive statistics for beneficiaries with one or more chronic conditions were similar to findings for beneficiaries with two or more chronic conditions in all Model Years. Accordingly, this section only presents eligibility and service receipt descriptive statistics for the group of beneficiaries with two or more chronic conditions (2+ chronic conditions), for brevity.

Figure 5.1: The Number of Medically Complex Eligible Beneficiaries Increased through Model Year 3 but Decreased in Model Year 4, Similar to All Beneficiaries



Enhanced MTM Eligibility Rate among 2+ Conditions	78.8%	81.7%	85.1%	88.2%
Enhanced MTM Eligibility Rate among All Beneficiaries	65.9%	69.5%	73.8%	77.5%
Enhanced MTM Eligibility Rate among Diabetes	81.0%	83.3%	86.3%	88.7%
Enhanced MTM Eligibility Rate among DTPs	78.4%	80.8%	84.5%	87.4%

Notes: The term "2+ conditions" refers to beneficiaries with two or more chronic conditions, "diabetes" refers to beneficiaries with diabetes, and "DTPs" refers to beneficiaries with DTPs. The term "all beneficiaries" refers to all enrollees in Model-participating plans.

Similar to the patterns seen among the overall population of beneficiaries enrolled in Model-participating plans ("all enrollees"), intervention changes made by sponsors, along with plan enrollment changes, led to higher eligibility rates for medically complex beneficiaries in each Model Year (Figure 5.2). (See Section 2.1 and Appendix A for more information.) Additionally, in all Model Years eligibility rates among medically complex beneficiaries in each of the three subgroups were higher than eligibility rates among all enrollees. This is expected and consistent with sponsors implementing

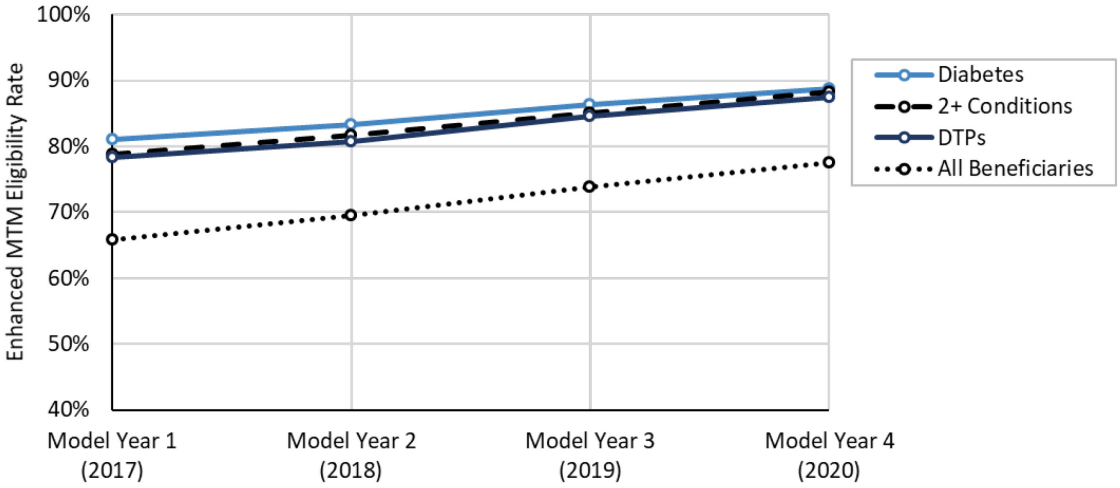
By Model Year 4, the Enhanced MTM eligibility rate for any of the three medically complex beneficiary subgroups was over 87 percent.

interventions with primary or secondary targeting criteria focused on chronic conditions or presence of DTPs, as discussed earlier in this section.

Enhanced MTM eligibility rates among each of the three subgroups were also substantially higher than traditional MTM eligibility rates among equivalent comparison beneficiaries. Depending on the subgroup and Model Year, Enhanced MTM eligibility rates for medically complex beneficiaries ranged between 78 and 89 percent, whereas traditional MTM eligibility rates for medically complex beneficiaries ranged between 12 and 24 percent. This difference is an expected consequence of the flexibilities provided by the Model that enabled sponsors to select intervention targeting criteria. As noted, beneficiaries with multiple chronic conditions and DTPs were commonly targeted by sponsors for their Enhanced MTM interventions. Additional information on traditional MTM eligibility rates and sponsor-level Enhanced MTM eligibility rates among medically complex beneficiaries is provided in Appendix B.10.2.

The number of eligible beneficiaries differed across subgroups, but their eligibility rates were similar. In all Model Years, the DTPs subgroup was the largest of the three groups, and the diabetes subgroup was the smallest. This is consistent with the large number of interventions primarily targeting beneficiaries based on medication utilization, particularly DTPs. Among the three subgroups, eligibility rates were fairly similar; the eligibility rate among beneficiaries with diabetes was slightly higher than eligibility rates among beneficiaries with multiple chronic conditions or DTPs, ranging from 81 to 89 percent.

Figure 5.2: Eligibility Rates Were Higher among the Medically Complex Beneficiary Subgroups than among All Beneficiaries, but Trends over Time Were Similar



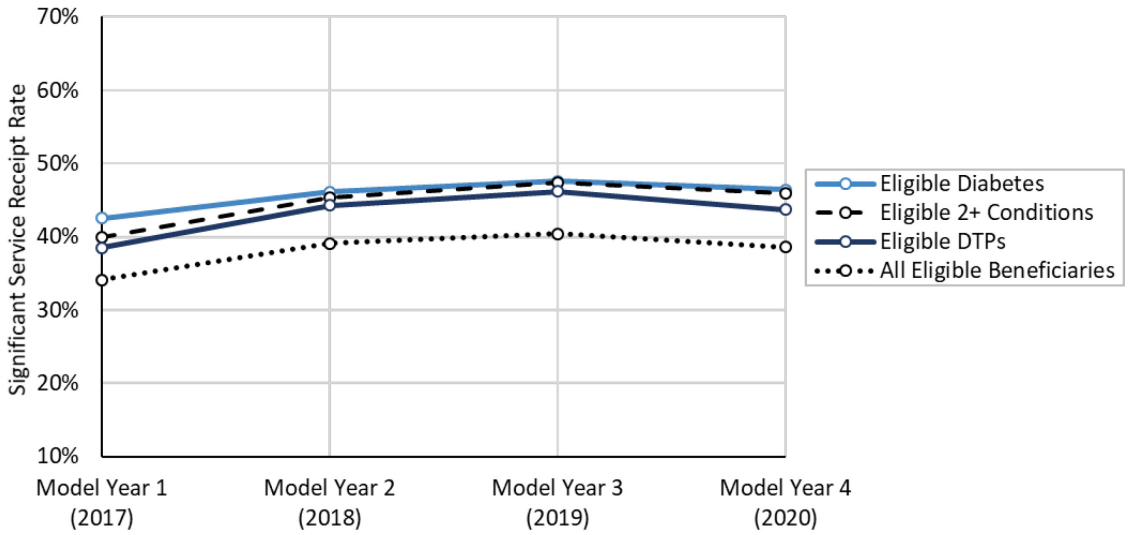
Notes: The term "2+ conditions" refers to beneficiaries with two or more chronic conditions, "diabetes" refers to beneficiaries with diabetes, and "DTPs" refers to beneficiaries with DTPs. The term "all beneficiaries" refers to all beneficiaries enrolled in Model-participating plans.

5.1.2 *Service Receipt for Medically Complex Beneficiaries*

Across all Model Years, significant service receipt rates among each of the three subgroups were higher than receipt rates among all eligible beneficiaries enrolled in participating plans ("all eligible beneficiaries"). (See Figure 5.3.) In most cases, significant service receipt rates among eligible medically complex beneficiaries were over 40 percent. Depending on the subgroup and Model Year, the rate of eligible medically complex beneficiaries receiving significant services was 4 to 9 percentage points higher than the rate for all eligible beneficiaries. Over the course of Model implementation, over 35 percent of medically complex beneficiaries (irrespective of eligibility) received significant services (see Appendix B.10.3 for additional information). These rates are higher than those seen among all participating plan enrollees (around 27 percent).

Significant service receipt rates were similar across the three subgroups of medically complex beneficiaries. The significant service receipt rates were slightly higher among eligible beneficiaries with diabetes across all Model Years, though the rates for eligible beneficiaries with diabetes and eligible beneficiaries with two or more chronic conditions converged over time.

Figure 5.3: Significant Service Receipt Rates Were Higher among Medically Complex Beneficiaries than among All Eligible Beneficiaries in All Model Years



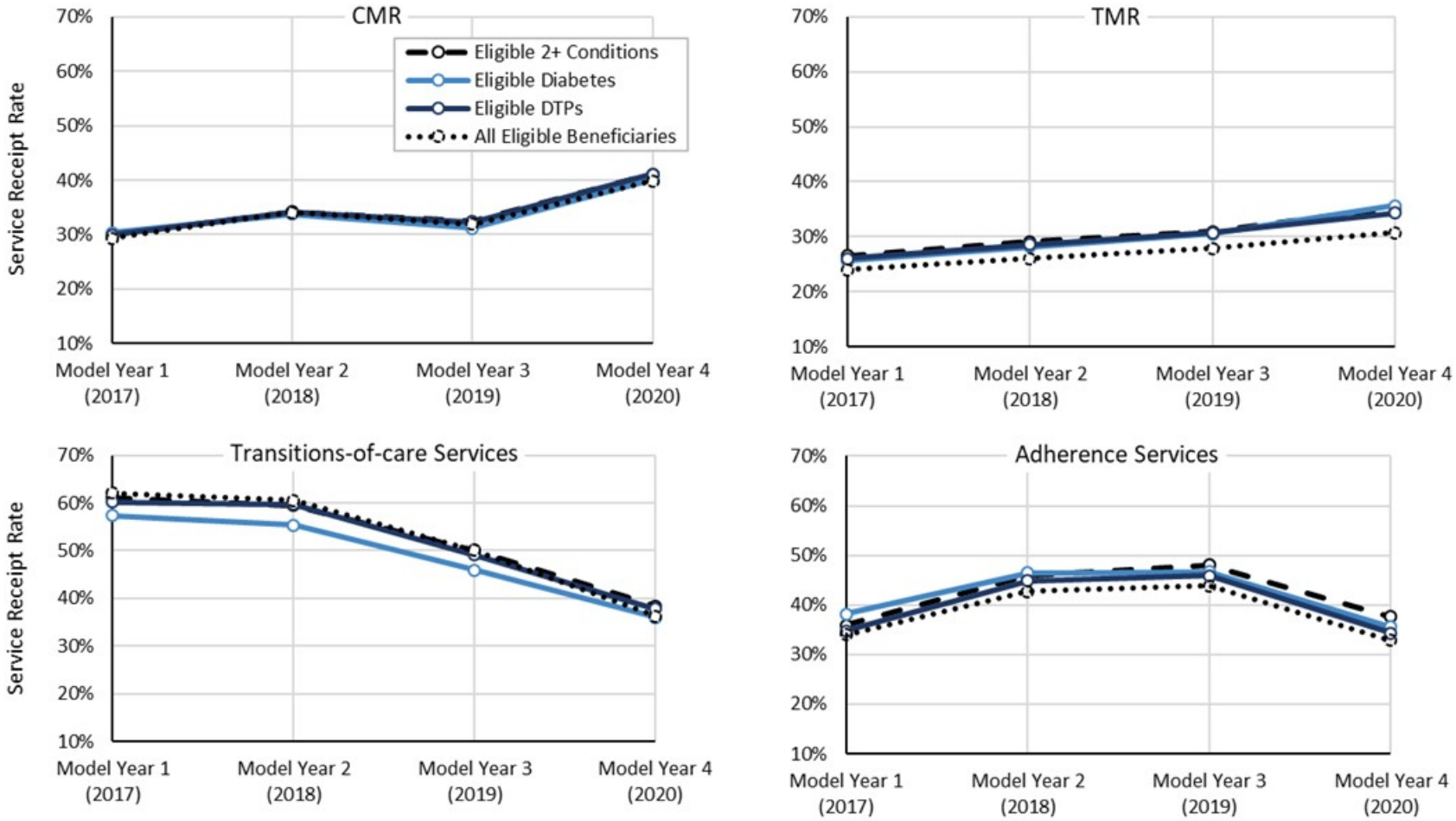
Notes: The term "eligible 2+ conditions" refers to eligible beneficiaries with two or more chronic conditions, "eligible diabetes" refers to eligible beneficiaries with diabetes, and "eligible DTPs" refers to eligible beneficiaries with DTPs. The term "all eligible beneficiaries" refers to all beneficiaries in Model-participating plans who are eligible for Enhanced MTM.

For the four select significant services (CMR, TMR, transitions-of-care, and adherence services), receipt rates among eligible beneficiaries with two or more chronic conditions, diabetes, or DTPs were nearly identical to receipt rates among all eligible beneficiaries in all Model Years (Figure 5.4). Adherence and TMR service receipt rates were only slightly higher in all Model Years among the medically complex beneficiary subgroups than the rates among all eligible beneficiaries, and CMR rates were nearly identical.[81] The slightly higher TMR and adherence service receipt rates among the subgroups may be attributable to beneficiaries with chronic conditions taking medications on a long-term basis and potentially being more likely to see the relevance of medication adherence in the management of their chronic conditions.

Over the course of the Model, CMR receipt rates among medically complex beneficiaries (around 8 percent) were higher than rates among all beneficiaries (4 percent) and higher than rates among all comparison traditional MTM beneficiaries belonging to the same subgroups (around 6 percent). (See Appendix B.10.3 for additional details.) Receipt rates for the four select significant services were generally similar across eligible beneficiaries with two or more chronic conditions, diabetes, or DTPs. One exception was the transitions-of-care service receipt rate for beneficiaries with diabetes in Model Years 1 through 3, which was lower relative to beneficiaries with two or more chronic conditions and beneficiaries with DTPs, as well as all eligible beneficiaries. This difference may be attributable to patients with diabetes often requiring more follow-up care following a hospitalization (e.g., with a primary care provider or endocrinologist). Some sponsors that offered transitions-of-care interventions reported that it was difficult to complete services with beneficiaries after a hospital discharge due to follow-up appointments and "fatigue" from receiving multiple check-in calls inquiring about their status.

[81] The CMR receipt rates among these three cohorts (two or more chronic conditions, diabetes, or DTPs) of traditional MTM beneficiaries included in the Enhanced MTM Evaluation comparison group were also similar to each other in all Model Years (see Appendix B.10.3 for more information). Relative to the Enhanced MTM subgroups, the traditional MTM subgroups had lower CMR rates in Model Years 1 and 2, higher rates in Model Year 3, and nearly identical rates in Model Year 4. The traditional MTM CMR receipt rates, however, are not directly comparable to Enhanced MTM given the differences between the traditional program and the Model.

Figure 5.4: Select Significant Service Receipt Rates Were Nearly Identical among Medically Complex Beneficiaries and All Eligible Beneficiaries



Notes: The term "eligible 2+ conditions" refers to eligible beneficiaries with two or more chronic conditions, "eligible diabetes" refers to eligible beneficiaries with diabetes, and "eligible DTPs" refers to eligible beneficiaries with DTPs. The term "all eligible beneficiaries" refers to all beneficiaries in Model-participating plans who are eligible for Enhanced MTM.

5.2 Model Impacts for Medically Complex Beneficiaries

The Model did not differentially impact the subpopulation of medically complex beneficiaries. Similar to all-enrollee analyses, there were small and non-significant changes in gross Medicare Parts A and B expenditures cumulatively across the four Model Years for all three subgroups of medically complex beneficiaries.

This section discusses findings from analyses of Model impacts on total Medicare Parts A and B expenditures for subgroups of beneficiaries with complex medical profiles. The Model's theory of change anticipates that the incentives and flexibilities granted to sponsors may lead to decreases in Medicare Parts A and B expenditures through improved medication use (see Figure 1.2). However, as discussed in Section 3.4, the Model has not resulted in significant reductions in total Medicare Parts A and B expenditures among all beneficiaries enrolled in Model-participating plans as of the end of Model Year 4. Analyses of Model impacts on the overall population of enrolled beneficiaries may fail to detect impacts on subgroups of beneficiaries with complex medical profiles who, as discussed in Section 1.2 and earlier in this section, may stand to benefit more from the Model. Additionally, subgroups of beneficiaries with complex medical profiles were more likely to be targeted for and receive Enhanced MTM services than the overall population of beneficiaries enrolled in participating plans. A focused analysis of Model impacts for these subgroups is therefore warranted.

Overall, findings from subgroup analyses of medically complex beneficiaries suggest that the Model, despite resulting in increased eligibility and service receipt for these beneficiaries, did not achieve significant reductions in total Medicare Parts A and B expenditures for beneficiaries with chronic conditions or DTPs. The remainder of this section is organized as follows: Section 5.2.1 includes a brief methodological overview on the construction of the subgroup samples, and presents the demographic and clinical characteristics of beneficiaries in these samples. Section 5.2.2 discusses findings from analyses of Model impacts on the subgroups of beneficiaries with complex medical profiles.

5.2.1 *Subgroup Characteristics*

The subgroups of medically complex beneficiaries were defined based on common themes found in targeting criteria across all participating sponsors. The chronic conditions and DTPs that defined the subgroups are common and/or associated with high expenditures in the Medicare population. The two or more chronic conditions subgroup (2+ chronic conditions) included, for example, beneficiaries with diabetes, ischemic heart disease, and stroke.[82] The DTPs subgroup included, for example, beneficiaries with poor medication adherence, drug-drug interactions, or drug overutilization. A full list of the chronic conditions and DTPs used to define the beneficiary subgroups, along with additional methodological details about subgroup construction, are presented in Appendix B.2.2.

To construct the analytic sample for subgroup analyses of beneficiaries with complex medical profiles, beneficiaries included in analyses of Model impacts for the cohort of all enrollees (presented in Section 3.4) were flagged if they had two or more chronic conditions (for the 2+ chronic conditions subgroup), diabetes (for the diabetes subgroup), or DTPs (for the DTP subgroup) during the 12-month baseline period, which is the period prior to their exposure to Enhanced MTM. Each subgroup was then constructed using all matched sets of beneficiaries who were flagged for that subgroup. Thus, the beneficiaries of a specific subgroup (e.g., diabetes) included in impact analyses are the subset of matched beneficiaries who are in that subgroup, based on information from prior to their exposure to Enhanced MTM. The estimation of Model impacts used the same statistical models to derive DiD estimates as those used in all-enrollee analyses. These statistical models are described in Section 3.2 and, in more detail, in Appendix B.2.4. Similar to the all-enrollee cohort (Section 3.3), beneficiaries in the medically complex subgroups are likely to be White and reside in urban areas.

As expected, medically complex beneficiaries had higher rates of healthcare utilization and medical expenditures in the baseline period (Table 5.1 and Table 5.2). For example, for the all-enrollee cohort, about 17 percent of beneficiaries had at least one inpatient admission during baseline, whereas 31 percent of beneficiaries with 2+ chronic conditions, 25 percent of beneficiaries with diabetes, and 23 percent of beneficiaries with DTPs had at least one inpatient admission during baseline. Average baseline Parts A and B annual expenditures per beneficiary were about $4,000 to $9,000 higher for medically complex beneficiaries compared to the all-enrollee cohort.

There were some differences in the baseline characteristics across beneficiaries included in the 2+ chronic conditions subgroup, diabetes subgroup, and DTPs subgroup (Table 5.1 and

[82] Acumen also assessed Model impacts on the subgroup of beneficiaries with 1+ chronic conditions and findings were qualitatively similar to the 2+ chronic conditions subgroup. For brevity, only findings for the 2+ chronic conditions subgroup are included in this chapter (full results are presented in Appendix B.5 and Appendix B.6).

Table 5.2). Beneficiaries in the 2+ chronic conditions subgroup were older relative to the other two subgroups of medically complex beneficiaries. Beneficiaries in the diabetes subgroup were more likely to be racially diverse, dually eligible for both Medicare and Medicaid, and eligible for LIS. Among the DTPs subgroup, beneficiaries were more likely to be younger and female. As expected, beneficiaries with 2+ chronic conditions had the highest average Parts A and B annual expenditures per beneficiary (about $20,000). Beneficiaries with diabetes had the highest Part D annual expenditures per beneficiary (about $6,000).

Table 5.1: Baseline Demographic Characteristics, Medically Complex Beneficiaries

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	2+ Chronic Conditions Subgroup				Diabetes Subgroup				Drug Therapy Problems Subgroup			
	Treatment		Comparison		Treatment		Comparison		Treatment		Comparison	
	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*
Age												
% Below 65 Years Old	16.9	*37.5*	16.9	*37.5*	22.4	*41.7*	22.4	*41.7*	27.3	*44.6*	27.3	*44.5*
% 65-69 Years Old	15.7	*36.4*	15.8	*36.4*	19.9	*39.9*	19.9	*39.9*	18.8	*39.1*	18.9	*39.1*
% 70-74 Years Old	20.0	*40.0*	20.0	*40.0*	21.1	*40.8*	21.1	*40.8*	18.9	*39.2*	18.9	*39.2*
% 75-79 Years Old	17.6	*38.1*	17.6	*38.1*	16.2	*36.9*	16.2	*36.9*	14.2	*34.9*	14.2	*34.9*
% 80+ Years Old	29.7	*45.7*	29.7	*45.7*	20.4	*40.3*	20.4	*40.3*	20.8	*40.6*	20.8	*40.6*
% Female	59.0	*49.2*	59.0	*49.2*	55.6	*49.7*	55.6	*49.7*	62.6	*48.4*	62.6	*48.4*
Race												
% White	80.5	*39.6*	80.5	*39.6*	71.6	*45.1*	71.6	*45.1*	81.3	*39.0*	81.3	*39.0*
% Black	11.6	*32.1*	11.6	*32.1*	16.5	*37.1*	16.5	*37.1*	10.8	*31.0*	10.8	*31.0*
% Other	7.9	*26.9*	7.9	*26.9*	11.9	*32.3*	11.9	*32.3*	7.9	*27.0*	7.9	*27.0*
% Urban	81.4	*38.9*	78.1	*41.4*	80.8	*39.4*	78.7	*40.9*	79.6	*40.3*	77.3	*41.9*
% Dually Eligible	43.0	*49.5*	43.0	*49.5*	49.7	*50.0*	49.7	*50.0*	46.5	*49.9*	46.5	*49.9*
% with LIS Status	47.3	*49.9*	47.3	*49.9*	54.9	*49.8*	54.9	*49.8*	51.0	*50.0*	51.0	*50.0*
% Disabled (Original Enrollment Reason)	30.5	*46.0*	30.5	*46.0*	36.2	*48.0*	36.2	*48.0*	38.4	*48.6*	38.4	*48.6*
% with ESRD (Original Enrollment Reason)	0.7	*8.3*	0.7	*8.3*	1.0	*10.0*	1.0	*10.0*	0.5	*7.2*	0.5	*7.2*

Notes: For the 2+ chronic conditions subgroup, number of treatment beneficiaries: 541,122, number of comparison beneficiaries: 703,225. For the diabetes subgroup, number of treatment beneficiaries: 368,208, number of comparison beneficiaries: 451,249. For the drug-therapy problems subgroup, number of treatment beneficiaries: 688,387, number of comparison beneficiaries: 963,356. STD: standard deviation; ESRD: end-stage renal disease; LIS: low-income subsidy. "% Disabled" and "% with ESRD" are based on beneficiaries' original reason for Medicare eligibility.

Sources: CME and Enrollment Database (EDB).

Table 5.2: Baseline Health Services Utilization, Expenditures, and Clinical Profile Characteristics, Medically Complex Beneficiaries

Characteristics (12 months before exposure to the Enhanced MTM Model; weighted)	2+ Chronic Conditions Subgroup				Diabetes Subgroup				Drug Therapy Problems Subgroup			
	Treatment		Comparison		Treatment		Comparison		Treatment		Comparison	
	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*	Mean	*STD*
Inpatient (IP) Admissions												
% with 0 IP Admissions	69.0	*46.3*	69.4	*46.1*	75.0	*43.3*	75.5	*43.0*	77.3	*41.9*	77.3	*41.9*
% with 1 IP Admissions	20.0	*40.0*	19.7	*39.8*	15.4	*36.1*	15.1	*35.9*	14.7	*35.4*	14.6	*35.3*
% with 2+ IP Admissions	11.1	*31.4*	10.9	*31.1*	9.5	*29.4*	9.3	*29.1*	8.0	*27.2*	8.0	*27.2*
% of IP Admissions with a Readmission	16.8	*37.4*	16.6	*37.2*	18.9	*39.1*	18.8	*39.1*	16.6	*37.2*	16.5	*37.1*
Skilled Nursing Facility (SNF) Admissions												
% with 0 SNF Admissions	91.3	*28.2*	91.9	*27.2*	93.2	*25.1*	93.7	*24.4*	94.2	*23.4*	94.5	*22.9*
% with 1 SNF Admissions	6.0	*23.8*	5.6	*23.0*	4.5	*20.8*	4.2	*20.2*	4.0	*19.6*	3.8	*19.2*
% with 2+ SNF Admissions	2.7	*16.1*	2.5	*15.5*	2.2	*14.8*	2.1	*14.3*	1.8	*13.3*	1.7	*12.9*
Emergency Department (ED) Visits												
% with 0 ED Visits	61.0	*48.8*	60.0	*49.0*	65.4	*47.6*	64.6	*47.8*	65.5	*47.5*	64.5	*47.9*
% with 1 ED Visit	21.8	*41.3*	21.8	*41.3*	19.3	*39.5*	19.4	*39.6*	19.5	*39.6*	19.8	*39.8*
% with 2+ ED Visits	17.3	*37.8*	18.2	*38.6*	15.3	*36.0*	16.0	*36.7*	15.0	*35.7*	15.8	*36.4*
Evaluation and Management (E&M) Visits												
% with 0 E&M Visits	3.8	*19.0*	3.7	*18.8*	4.2	*20.2*	4.2	*20.1*	3.8	*19.0*	3.9	*19.2*
% with 1-5 E&M Visits	19.4	*39.5*	19.3	*39.5*	27.4	*44.6*	27.4	*44.6*	27.4	*44.6*	27.2	*44.5*
% with 6-10 E&M Visits	27.9	*44.9*	28.2	*45.0*	28.6	*45.2*	28.5	*45.1*	28.5	*45.1*	28.4	*45.1*
% with 11-15 E&M Visits	21.5	*41.1*	21.5	*41.1*	18.2	*38.6*	18.3	*38.6*	18.6	*38.9*	18.7	*39.0*
% with 16+ E&M Visits	27.5	*44.6*	27.3	*44.6*	21.6	*41.1*	21.6	*41.2*	21.7	*41.2*	21.9	*41.3*
Part D Utilization												
Average Number of Concurrent Medications	5.36	*3.08*	5.37	*3.02*	5.53	*3.21*	5.50	*3.14*	5.16	*3.00*	5.16	*2.97*
Expenditures												
Average Total Annual Part D Expenditures per Beneficiary	$5,684	*$13,820*	$5,697	*$14,203*	$6,160	*$13,215*	$6,167	*$12,997*	$5,546	*$14,448*	$5,587	*$14,003*
Average Total Annual Parts A and B Expenditures per Beneficiary	$19,986	*$31,199*	$20,214	*$31,025*	$17,716	*$32,125*	$17,878	*$31,879*	$15,107	*$27,515*	$15,381	*$27,707*
Average Annual IP Expenditures per Beneficiary	$6,105	*$16,071*	$5,936	*$15,159*	$5,253	*$16,178*	$5,054	*$14,935*	$4,410	*$13,852*	$4,344	*$13,226*
Clinical Profile												
Average HCC Risk Score	1.87	*1.43*	1.85	*1.43*	1.76	*1.50*	1.75	*1.49*	1.45	*1.32*	1.45	*1.33*

Notes: For the 2+ chronic conditions subgroup, number of treatment beneficiaries: 541,122, number of comparison beneficiaries: 703,225. For the diabetes subgroup, number of treatment beneficiaries: 368,208, number of comparison beneficiaries: 451,249. For the drug-therapy problems subgroup, number of treatment beneficiaries: 688,387, number of comparison beneficiaries: 963,356. STD: standard deviation; HCC: Hierarchical Condition Categories. Readmissions are defined as follow-up unplanned hospital admissions that occur within 30 days of a hospital discharge.

Sources: Prescription Drug Event (PDE) data, Common Working File (CWF), Master Beneficiary Summary File (MBSF)

5.2.2 *Findings from Impact Analyses*

Similar to analyses of all beneficiaries enrolled in Model-participating plans, estimated changes in gross Medicare Parts A and B expenditures were small and not statistically significant for all three subgroups of medically complex beneficiaries, cumulatively across the four Model Years (Table 5.3). Among these three subgroups, there were non-significant cumulative increases in expenditures. As discussed in Section 3.4, for the all-enrollee cohort, there were non-significant cumulative decreases in expenditures. For both sets of analyses (of the all-enrollee cohort and the subgroups of medically complex beneficiaries), the cumulative estimates are not statistically different from zero, and the confidence intervals overlap.

Table 5.3: Estimated Cumulative Changes in Parts A and B Expenditures for Medically Complex Subgroups Were Small and Not Statistically Significant

	2+ Chronic Conditions Subgroup	Diabetes Subgroup	Drug Therapy Problems Subgroup
Per-Beneficiary Per-Month Estimate (in $)			
Difference-in-Differences (DiD)	$0.39	$7.20	$3.29
P-value	0.951	0.338	0.501
95% Confidence Interval	(-12.08, 12.86)	(-7.52, 21.92)	(-6.29, 12.88)
Relative Difference	0.02%	0.48%	0.26%
Means (beneficiary-month, regression-adjusted)			
Baseline Enhanced MTM Mean	$1,644.02	$1,485.25	$1,251.53
Intervention Period Enhanced MTM Mean	$1,675.93	$1,581.93	$1,315.97
Baseline Comparison MTM Mean	$1,676.59	$1,509.86	$1,280.94
Intervention Period Comparison MTM Mean	$1,708.12	$1,599.34	$1,342.09
Sample Information			
Total Enhanced MTM Observations	21,911,981	14,785,204	29,260,093
Total Comparison Observations	26,890,949	17,569,830	38,897,193
Total Enhanced MTM Beneficiaries	541,122	368,208	688,387
Total Comparison Beneficiaries	703,225	451,249	963,356

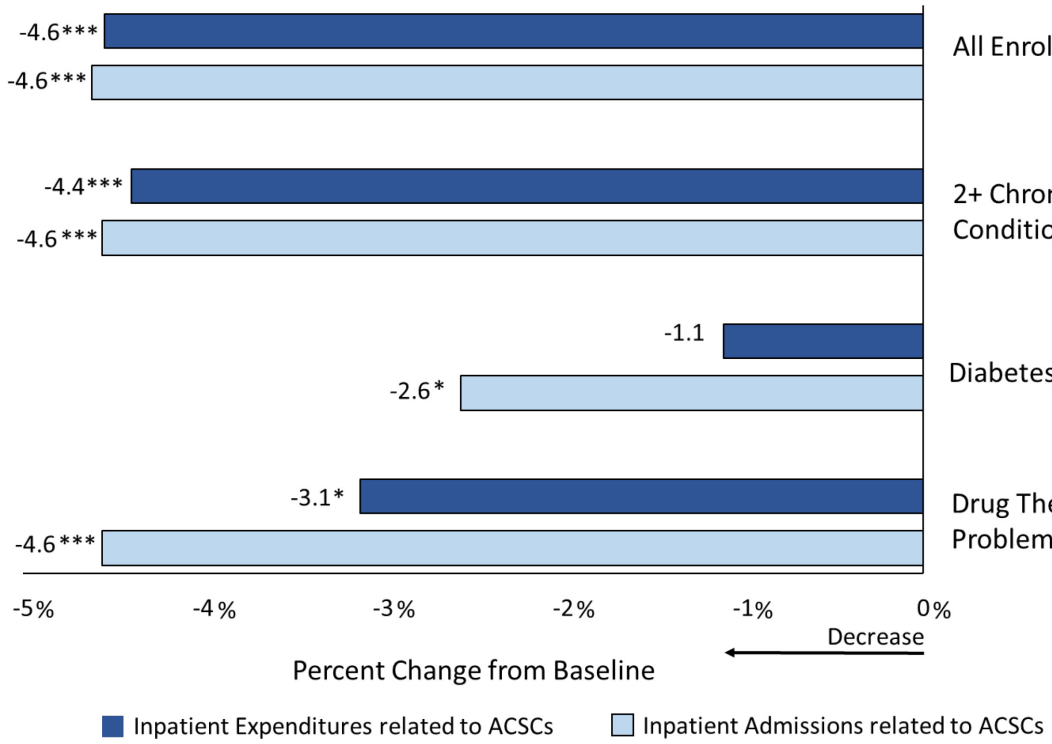
Notes: The unit of observation is a beneficiary-month. Each DiD estimate corresponds to change relative to the baseline period. Negative estimates represent decreases in expenditures and positive estimates represent increases in expenditures. The relative difference is calculated as the DiD estimate divided by the baseline Enhanced MTM regression-adjusted mean, and expressed as a percentage.

As a sensitivity check, the evaluation team conducted analyses that use updated censoring rules (described in Appendix B.2.4) where post-exposure observations were not censored after beneficiaries switched to an Enhanced MTM-participating plan of a different sponsor. Findings from these sensitivity analyses were generally similar to findings from the original analyses. For the DTPs subgroup, however, there were statistically significant increases in Medicare Parts A and B expenditures in Model Years 2 and 3 that did not continue into Model Year 4.

Estimated changes in utilization and expenditures by service delivery setting for subgroups of medically complex beneficiaries were also qualitatively similar to findings for all-enrollee analyses. These findings are consistent with beneficiaries with complex medical profiles increasing their interactions with their prescribers and other doctors. Specifically, decreases in expenditures for hospital inpatient services and institutional post-acute care were generally offset by increases in expenditures for emergency department, outpatient non-emergency, and ancillary services (see Appendix B.6 through Appendix B.8 for full results). By subgroup, there is some variation. While there were significant decreases in inpatient and post-acute care expenditures for beneficiaries with multiple chronic conditions and beneficiaries with DTPs, estimated decreases for the diabetes subgroup were not significant cumulatively or in any Model Year (see Appendix B.7).

There were also decreases in inpatient expenditures and/or admissions related to ambulatory care-sensitive conditions (ACSCs) for all three subgroups of medically complex beneficiaries. For the subgroup of beneficiaries with multiple chronic conditions, these decreases were very similar in magnitude to the decreases estimated for the all-enrollee cohort (see Figure 5.5). For all three subgroups, the estimated decreases in ACSC-related inpatient expenditures and admissions were of similar or lower magnitude than the estimated decreases for the all-enrollee cohort, suggesting that the subgroups of medically complex beneficiaries do not benefit more from Enhanced MTM than the overall population of participating plan enrollees.

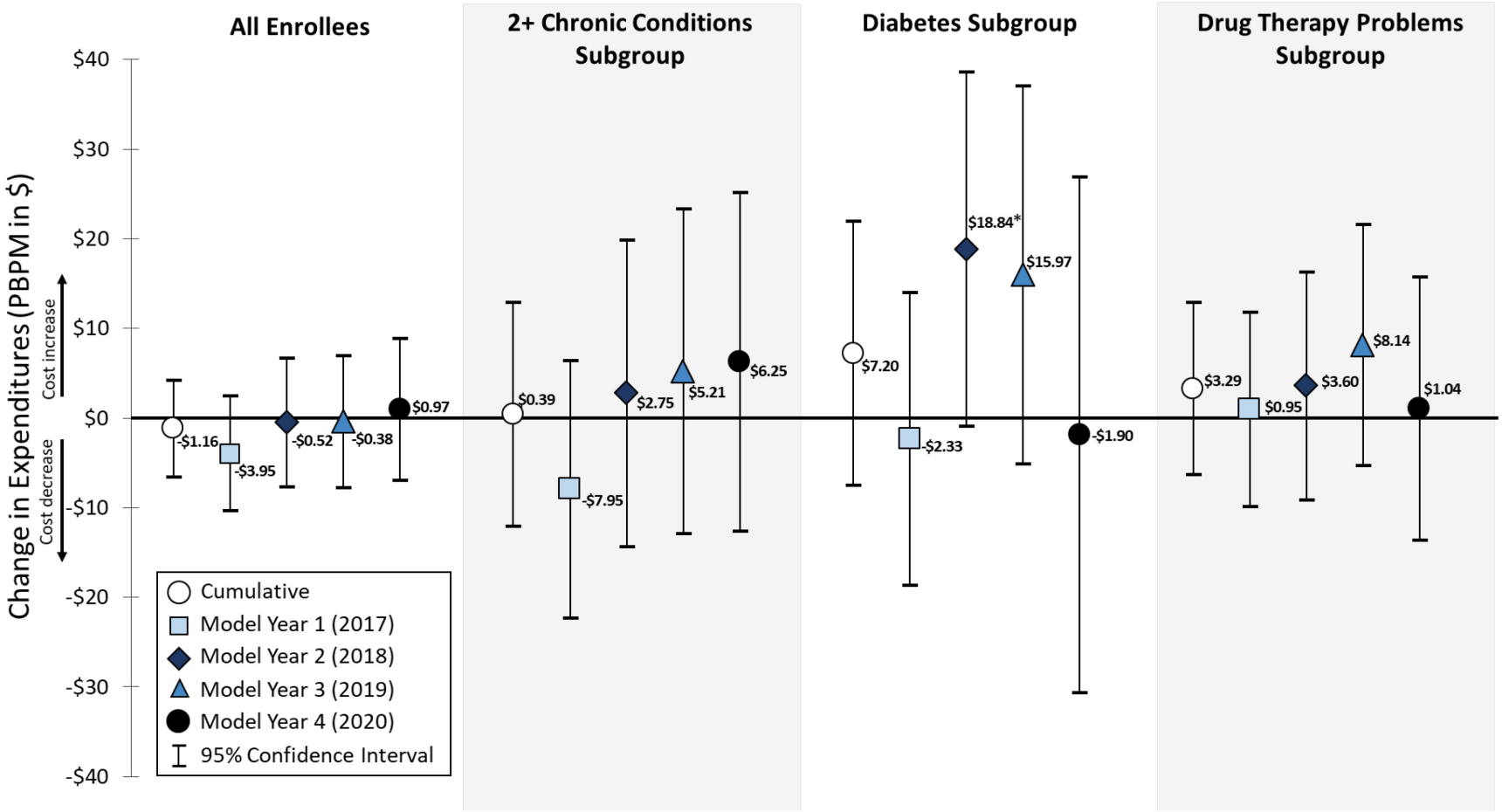
Figure 5.5: There Were Similar Decreases in Inpatient Expenditures and Admissions Related to ACSCs for Some Medically Complex Beneficiaries and the Overall Population of Participating Plans Enrollees



Notes: * p-value <0.10; ** p-value <0.05; *** p-value <0.01.

In each Model Year, estimated changes in expenditures were also generally small and not statistically significant, except for a marginally significant increase for the diabetes subgroup in Model Year 2 (see Figure 5.6). Medicare Parts A and B expenditures increased by $18.84 PBPM, representing a small, 1.27 percent change from baseline, for beneficiaries with diabetes in the second year of the Model. This estimated increase is unexpected and not consistent with the Model's theory of change. For the diabetes subgroup, Enhanced MTM eligibility and service receipt rates from Model Year 1 to Model Year 4, presented in Section 5.1 are similar to those of other subgroups of medically complex beneficiaries, and do not suggest any specific mechanisms for this finding. The estimated increase in gross expenditures for the diabetes subgroup in Model Year 2 was only statistically significant at the 10 percent level and did not persist in later Model Years, so it is unlikely to be related to causal Model impacts.

Figure 5.6: Estimated Changes in Expenditures for Medically Complex Subgroups by Model Year Were Also Generally Small and Not Statistically Significant



Notes: * p-value <0.10; ** p-value <0.05; *** p-value <0.01.

According to the Model's theory of change, the Model is expected to improve medication-taking behavior, leading to improved chronic disease management and lower downstream medical expenditures. Thus, the Model could have proximal impacts on measures of medication-taking behavior before affecting downstream outcomes. For beneficiaries with diabetes, prior research has found positive associations between pharmacist-led interventions and both medication adherence and initiation of statin use among diabetics.[83,84] The evaluation team examined the Model's proximal impacts on medication adherence and statin use among diabetics, to assess whether the Model affected these outcomes before impacting downstream outcomes such as medical expenditures. However, for the diabetes subgroup, there was no impact on medication adherence to oral antidiabetics, and only modest improvements in the rate of statin use among persons with diabetes (SUPD) (Table 5.4).

Table 5.4: No Impact on Medication Adherence to Oral Antidiabetics and Modest Improvements in Statin Use for the Diabetes Subgroup

	Adherence to Oral Antidiabetics (PDC ≥ 80%)	Statin Use in Persons with Diabetes
Percentage Point Change in Rate		
Difference-in-Differences	0.06	**0.37***
P-value	0.782	0.055
95% Confidence Interval	(-0.39, 0.52)	(-0.01, 0.75)
Relative Difference	0.08%	0.49%
Rates (regression-adjusted)		
Baseline Enhanced MTM Rate	79.49	76.04
Intervention Period Enhanced MTM Rate	84.66	80.26
Baseline Comparison MTM Rate	78.29	75.97
Intervention Period Comparison MTM Rate	83.40	79.82
Sample Information		
Total Enhanced MTM Observations	294,666	354,821
Total Comparison Observations	309,827	400,276
Total Enhanced MTM Beneficiaries	106,162	125,668
Total Comparison Beneficiaries	113,160	145,127

Notes: * p-value <0.10; ** p-value <0.05; *** p-value <0.01. PDC: proportion of days covered. Measure definitions are listed in Appendix B.2.

[83] Jeannine S. Skinner, Brett Poe, Rebecca Hopper, Alaina Boyer, and Consuelo H. Wilkins, "Assessing the effectiveness of pharmacist-directed medication therapy management in improving diabetes outcomes in patients with poorly controlled diabetes." *Diabetes Educator* 41, no. 4 (August 2015): 459–65. https://doi.org/10.1177/0145721715587563.

[84] Sarah L. Anderson, Joel C. Marrs, Cynthia R. Chachas, Brian S. Cichon, Amber D. Cizmic, Bianca B. Calderon, and Tara B. Vlasimsky, "Evaluation of a pharmacist-led intervention to improve statin use in persons with diabetes." *Journal of Managed Care & Specialty Pharmacy* 26, no. 7 (July 2020): 910–7. https://doi.org/10.18553/jmcp.2020.26.7.910.

5.3 Discussion of Model Impacts on Medically Complex Beneficiaries

Many of the interventions that sponsors implemented under the Model had targeting criteria that focused on chronic conditions or presence of DTPs. This resulted in higher rates of Model eligibility among beneficiaries with multiple chronic conditions, beneficiaries with diabetes, and beneficiaries with DTPs, relative to the all-enrollee population. Unlike service receipt rates among eligible LIS beneficiaries, service receipt rates among eligible beneficiaries belonging to one of these three medically complex subgroups were similar to or higher than rates among all eligible beneficiaries. Among all medically complex beneficiaries, Enhanced MTM CMR receipt rates were higher than traditional MTM CMR receipt rates among all medically complex comparison group beneficiaries.

These higher levels of service receipt among medically complex beneficiaries, however, did not result in statistically significant impacts on their cumulative Medicare Parts A and B expenditures. Setting-specific impacts were generally similar for the medically complex and all-enrollee cohorts. Notably, both the medically complex and the all-enrollee cohort saw decreases in inpatient expenditures and admissions related to ACSCs. Overall, there is little evidence that the Model differentially impacted expenditures for medically complex beneficiaries relative to the overall population of beneficiaries enrolled in Model-participating plans. Although there were no significant effects of the Model on total Medicare expenditures, the lack of findings does not mean that MTM services are not a valuable component of healthcare delivery. Instead, estimates of Model impacts on medically complex beneficiaries suggest that the Enhanced MTM Model's flexibility in targeting and the provision of services to a higher volume of beneficiaries did not translate into added benefits or improvements upon the existing traditional MTM program.

6 CONCLUSIONS

The Enhanced MTM Model provides Medicare Part D PDP sponsors with financial incentives and regulatory flexibilities to encourage the provision of innovative MTM services. The financial incentives provided to Part D sponsors include both prospective payments to cover implementation costs, and performance-based payments awarded for reductions in Medicare Parts A and B expenditures of enrollees in Model-participating plans. The five-year Model tests whether these incentives and programmatic flexibilities result in decreases in medical expenditures and/or improvements in beneficiaries' therapeutic outcomes.

This Fourth Evaluation Report covers the first four years of Model implementation (January 2017 – December 2020). The report provides an updated assessment of implementation, and describes the impacts of the COVID-19 PHE on sponsors' ability to offer Enhanced MTM interventions, target beneficiaries, and provide services in 2020. Additionally, estimates of Model impacts on expenditures of enrollees in Model-participating plans are updated to include an additional year of data. Furthermore, the report presents estimates on Model impacts on select beneficiary subpopulations who are more likely to be targeted and potentially benefit from the Model relative to other beneficiaries enrolled in participating plans. These subpopulations include beneficiaries who qualified for the LIS, as well as beneficiaries with complex medical needs. This final section summarizes the report's key findings and offers concluding thoughts.

Each of the six participating sponsors used the Model's flexibilities to offer multiple interventions, each with its own targeting criteria to determine eligibility, and a set of services tailored to beneficiary needs. Since the beginning of Model implementation, all sponsors modified their Enhanced MTM intervention offerings, beneficiary targeting criteria, or services in at least one Model Year, directly affecting both eligibility and service receipt. Sponsors continued to make changes to their interventions in Model Year 4, but these changes generally reflected sponsors' individual learnings from their implementation rather than coalescing around common approaches. For example, BCBS NPA and BCBS FL discontinued one intervention each after sponsors' internal analyses showed limited value. Changes in the targeting criteria of ongoing interventions either incorporated risk scores or changed the way that risk scores were used to determine beneficiary eligibility for services. Sponsors also continued to experiment in Model Year 4 with the best way to target beneficiaries with a recent hospital discharge for the provision of transitions-of-care MTM services. While Humana discontinued the use of HIE data for transitions-of-care targeting in favor of targeting by pharmacists, WellCare expanded the use of HIE-based targeting. Changes in services provided by the Model aimed to address broader beneficiary needs, and social and financial barriers that affect the management of chronic conditions. The most important change in services was Humana's decision to replace its CMR

service with a new chronic condition management and education service that focuses on holistic disease management and education. Other changes explicitly addressed social and financial needs by providing, for example, cost-sharing support and transportation services to and from pharmacies for medication pickup. In addition, and despite disruptions caused by the COVID-19 PHE described below, sponsors expanded their use of community pharmacies in Model Year 4, recognizing that community pharmacies could effectively leverage existing relationships with beneficiaries to improve their engagement.

Based on sponsor reports, the PHE affected service delivery and uptake but did not substantially affect other areas of Model implementation. Only one intervention was temporarily suspended because it included at-home visits for the provision of transitions-of-care services. The aspects of Model implementation most affected by the PHE were sponsors' ability to deliver services and beneficiaries' willingness to accept them. Receipt rates for CMRs increased in Model Year 4, which sponsors attributed to most beneficiaries being more likely to be at home and willing to engage on the phone with a pharmacist for a service.

On the other hand, receipt rates for transitions-of-care interventions were lower than in previous Model Years. Sponsors reported that it was more difficult to complete services with the subset of beneficiaries who had a recent hospital discharge during the PHE than in previous Model Years. It is possible that hospitalized beneficiaries in this period were more likely to have had COVID-19 or a more serious illness, making them less likely to accept a transitions-of-care service because they were focused on recovery and not short-term medication management issues. While community pharmacies encountered challenges in service provision due to staffing shortages, changes in service delivery workflow (i.e., transitioning from in-person services to telephonic services), and competing priorities (e.g., COVID-19 testing and delivery of vaccinations), there were no substantial disruptions to call center operations. Thus, sponsors preferred a hybrid service delivery approach, which leveraged both call centers and community pharmacies, rather than relying solely on one or the other.

The proportion of beneficiaries eligible for Enhanced MTM increased between Model Years 3 and 4 as a result of these ongoing implementation changes, continuing the year-over-year upward trend since Model implementation began. The proportion of beneficiaries eligible for Enhanced MTM interventions increased to 78 percent in Model Year 4, its highest level since the Model began. In comparison, eligibility for traditional MTM among the evaluation's comparison group was 8 percent in Model Year 4. The increases in Enhanced MTM eligibility rates occurred despite decreases in total enrollment in participating plans in Model Year 4 relative to Model Year 3, which was reflected in the reduced volume of beneficiaries eligible for Enhanced MTM interventions and receiving related services.

Receipt rates for all significant services among eligible beneficiaries fell slightly, but receipt rates for CMRs and TMRs reached their highest level in Model Year 4, at 40 percent and 31 percent, respectively.[85] Factors leading to the higher CMR receipt rate included beneficiaries being more likely to respond to outreach and accept a CMR in Model Year 4 during the PHE, and other Enhanced MTM process improvements. The higher TMR receipt in Model Year 4 was largely driven by an increase among SilverScript/CVS beneficiaries relative to previous Model Years, and not directly linked to any implementation changes or process improvements. There was a substantial drop in receipt rates among beneficiaries eligible for transitions-of-care and adherence services, potentially as a result of the PHE-related disruptions in service delivery and uptake as described above. Receipt rates for CMRs among comparators who were eligible for traditional MTM were similar to Enhanced MTM-eligible enrollees, at 41 percent, in Model Year 4.[86] The substantial difference in eligibility rates between traditional and Enhanced MTM means that a larger proportion of all beneficiaries enrolled in Model-participating plans received CMR services relative to all comparators enrolled in plans offering traditional MTM (5 versus 3 percent). An even larger proportion of beneficiaries enrolled in participating plans (30 percent) received an Enhanced MTM service.

Despite the expanded eligibility and service receipt rates in Model-participating plans relative to traditional MTM, analyses of Model impacts continue to find no significant impacts on gross or net Medicare expenditures for participating plan enrollees. Estimated cumulative decreases in (gross) Medicare expenditures were small in magnitude (decrease of 0.13 percent relative to baseline) and not statistically significant. Prospective and performance-based payments to sponsors for the Model ($4.56 PBPM) were larger than the estimated (non-significant) decreases in Medicare Parts A and B expenditures ($1.16 PBPM). The Model, therefore, generated cumulative net losses for Medicare ($3.45 PBPM or about $271 million in total) over the first four years, though this estimate is not statistically significant. Similar to the cumulative results, estimates of Modelwide changes in gross and net expenditures were not statistically significant in any of the four Model Years.

Analyses of Model impacts that are estimated among the entire population of participating plan beneficiaries may not detect impacts on specific beneficiary subgroups that potentially benefit from Enhanced MTM more than the overall beneficiary population. For this reason, the evaluation also estimated expenditure impacts for two beneficiary subpopulations: beneficiaries who qualified for the LIS, and medically complex beneficiaries. The medically

[85] These service receipt rates are calculated for the Enhanced MTM beneficiaries who were eligible for interventions that offered these services. For example, around 241,000 beneficiaries, or 14.2 percent of participating plan enrollees, were eligible for interventions offering CMRs.

[86] All beneficiaries eligible for traditional MTM are eligible for CMRs. Data sources used for calculating eligibility rates for traditional MTM include Common Medicare Environment (CME) and Part D Report Requirements data.

complex subpopulation included three subgroups: beneficiaries with two or more chronic conditions, beneficiaries with diabetes, and beneficiaries with DTPs due to low adherence, drug overutilization, or dangerous drug interactions. The Model had the potential to have a larger impact on these subgroups for two reasons. First, as shown in this report, these subgroups are more likely to be eligible for Enhanced MTM than other participating plan enrollees and have higher medical needs than the overall enrolled beneficiary population. Second, the tailored design and higher frequency of Enhanced MTM services may offer additional gains to these beneficiaries. For example, sponsors report that it is hard to engage LIS-eligible beneficiaries for service provision. Enhanced MTM services that focus on a specific drug utilization issue (e.g., low adherence) may be easier for beneficiaries to complete than services that comprehensively review a beneficiary's drug utilization. In addition, frequent services may be more effective for long-lasting behavioral change and better chronic condition management.

As expected, eligibility rates for Enhanced MTM were higher for LIS beneficiaries and for medically complex beneficiaries relative to all enrolled beneficiaries. However, despite offering focused services under Enhanced MTM, service receipt rates were lower among eligible LIS beneficiaries than in the overall eligible population. Overall, a smaller proportion of all LIS beneficiaries received services than all enrolled beneficiaries (24 versus 30 percent in Model Year 4). The lower service receipt rate for LIS beneficiaries corroborates sponsor reports that it is more difficult to contact and complete services with LIS beneficiaries. On the other hand, significant service receipt rates among eligible beneficiaries with complex medical needs were higher than among all eligible beneficiaries.

Despite higher eligibility rates and, in the case of medically complex beneficiaries, higher significant service receipt rates, analyses of Model impacts did not identify significant reductions in Medicare expenditures for either LIS beneficiaries or medically complex beneficiaries. Estimates of Model impacts for LIS beneficiaries (who represent approximately 49 percent of the sample used in all-enrollee analyses) were generally statistically similar to the estimates for the enrollee population as a whole. Findings from subgroup analyses of medically complex beneficiaries suggest that the Model did not differentially impact beneficiaries with chronic conditions or DTPs either. Similar to the findings for all beneficiaries enrolled in Model-participating plans, there were small and non-significant changes in Medicare expenditures cumulatively across the four Model Years for all three subgroups of medically complex beneficiaries. Estimated changes in utilization and expenditures by service delivery setting, including those related to ACSCs, were largely similar to findings from all-beneficiary analyses. Thus, there is no evidence to suggest that the Model significantly impacted expenditures for the subgroups who had the potential to benefit from the Model, or that subgroups of medically complex beneficiaries benefited more from Enhanced MTM than the overall enrollee population.

In conclusion, the Model, in its fourth year of implementation, has not produced net savings for Medicare. Even among subgroups of beneficiaries who are more likely to have benefited from or been targeted by the Model, there were no Model impacts on Medicare expenditures. Sponsors have continued to refine their interventions, and, overall, a higher proportion of beneficiaries enrolled in Model-participating plans are eligible for and receive MTM services relative to beneficiaries enrolled in plans offering traditional MTM. To date, there is little evidence that these expansions have decreased medical expenditures relative to the traditional MTM program. The next, final evaluation report will provide a comprehensive assessment of Model implementation and impacts. The final evaluation report will also provide insights on lessons learned from the implementation of the five-year Model, to inform policymaker and sponsor efforts to optimize the provision of MTM programs in the future.