

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
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State Demonstrations Group

May 14, 2026

Melisa Byrd
Senior Deputy Director and Medicaid Director
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Dear Director Byrd:

The Centers for Medicare & Medicaid Services (CMS) completed its review of the Interim and Summative Evaluation Reports, which is required by the Special Terms and Conditions (STCs), specifically STC #59 “Interim Evaluation Report” and STC #60 “Summative Evaluation Report” of the District of Columbia’s section 1115 demonstration, “District of Columbia Behavioral Health Transformation” (Project No: 11-W-00331/3). The demonstration was approved on November 5, 2019, and effective through December 31, 2026. The Interim Evaluation Report covers the period from January 2020 through June 2022. The Summative Evaluation Report covers the period from January 2020 through December 2024. The Interim Evaluation Report was submitted on June 6, 2024, and revised on March 17, 2025. The Summative Evaluation Report was submitted on July 11, 2025, and revised on February 17, 2026. CMS determines the reports are in alignment with the CMS-approved Evaluation Design and the requirements set forth in the STCs and therefore approves the District’s Interim and Summative Evaluation Reports.

The interim evaluation findings show early progress in advancing access to behavioral health services under the demonstration. Using an interrupted time series (ITS) approach, the evaluation found that the demonstration was associated with reductions in emergency department (ED) utilization among beneficiaries with SMI/SED and increases in access to community-based mental health services, including provider capacity and service use. At the same time, results for SUD-related outcomes were more limited, with only modest improvements observed in treatment initiation and no significant changes in broader utilization or retention measures. These findings are limited by the short evaluation period (approximately 2.5 years) and overlap with the COVID-19 public health emergency, which may confound observed trends.

The summative evaluation findings indicate meaningful progress in expanding access to behavioral health services over the course of the demonstration. Using ITS methods comparing trends during the demonstration period (2020–2024) to a pre-demonstration baseline (2017–2019), the evaluation found that the demonstration was associated with significant reductions in emergency department (ED) utilization and increased access to community-based mental health services, including growth in both service use and provider capacity. However, the evaluation also found increases in readmissions and limited improvement in SUD-related outcomes beyond treatment initiation. We look forward to further analysis that will come for the demonstration period from January 2025 and forward.

In accordance with STC #63, the approved Summative Evaluation Report may now be posted to the state's Medicaid website within 30 days. CMS will also post the Interim and Summative Evaluation Reports on Medicaid.gov.

States are responsible for following all applicable federal law and regulations when they claim and use federal Medicaid and CHIP funds and must fully comply with all applicable Medicaid and CHIP statutes and regulations under a section 1115 demonstration, except where specific provisions have been expressly waived or identified as not applicable for that demonstration. This obligation includes all requirements in Title XIX and Title XXI of the Social Security Act and implementing regulations governing provider screening and enrollment activities, pre- and post-payment review claiming, payment methodologies and rate-setting, utilization controls, and program integrity including processes to identify, investigate, and refer suspected fraud, and methods to receive complaints and identify questionable practices. States must maintain effective systems and safeguards to prevent, detect, and address any fraud, waste, or abuse (FWA) in the delivery of and payment for Medicaid and CHIP services, including referrals to law enforcement when appropriate.

States should have heightened monitoring and oversight mechanisms in place featuring robust internal controls to identify and remediate all vulnerabilities (including, but not limited to, FWA and beneficiary access issues) inherent in service areas approved as part of a demonstration. At any time, CMS may request that the state provide a plan detailing the state's systems and safeguards to prevent, detect, and address any FWA relative to this demonstration. Failure to meet program integrity obligations under federal statutes and regulations or under the terms and conditions of this demonstration approval may result in compliance actions or other enforcement measures that could include requirements to develop and implement corrective action plans, withholdings, deferrals, disallowances, and termination of demonstration authority.

We look forward to our continued partnership on the District of Columbia Behavioral Health Transformation section 1115 demonstration. If you have any questions, please contact your CMS demonstration team.

Sincerely,

**DANIELLE
DALY -S**

Digitally signed by
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Danielle Daly
Director

Division of Demonstration Monitoring and Evaluation

cc: Taneka Rivera, State Monitoring Lead, CMS Medicaid and CHIP Operations Group

Medicaid Behavioral Health Transformation Demonstration

Final Interim Evaluation Report

District of Columbia

Department of Health Care Finance



Medicaid Behavioral Health Transformation Demonstration

Final Interim Evaluation Report

March 14, 2025

Submitted To

District of Columbia
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Task & Deliverable

Task 5
Deliverable C.5.5.4
Final Interim Evaluation Report



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Contents

Table of Abbreviations	xii
A. Executive Summary	1
A.1. Key Takeaways From the Interim Evaluation	1
A.2. Demonstration	2
A.3. Evaluation	3
A.4. Evaluation Methods	4
A.5. Evaluation Findings	5
A.6. Summary Discussion	17
B. General Background Information	20
B.1. Demonstration Context	21
B.2. Demonstration Overview	25
C. Evaluation Questions and Hypotheses	31
C.1. Driver Diagram	31
C.2. Hypotheses and Research Questions	38
D. Methodology	46
D.1. Evaluation Design	46
D.2. Target and Comparison Populations	47
D.3. Evaluation Period	48
D.4. Evaluation Measures	49
D.5. Data Sources	50
D.6. Analytic Methods	53
E. Methodological Limitations	68
F. Results	73
F.1. Effects on SMI/SED Goals	79
F.2. Effects on SUD Goals	150
F.3. Effect on Costs	196
F.4. COVID-19 Public Health Emergency's Influence on Demonstration Implementation	230
F.5. Other Non-Waiver and Expenditure Authority Systems Changes' Influence on Demonstration Implementation	233
G. Conclusions	240
G.1. Effect on SMI/SED Goals	240
G.2. Effect on SUD Goals	243

G.3. Effect on Costs	246
G.4. COVID-19 PHE’s Influence on Demonstration Implementation	247
G.5. Other Non-Waiver and Expenditure Authority Systems Changes’ Influence on Demonstration Implementation	247
G.6. Overall Conclusions	248
G.7. Recommendations for the District.....	249
H. Interpretations, Policy Implications, and Interactions With Other District Initiatives	253
I. Lessons Learned and Recommendations	257
J. Attachment: CMS-Approved Evaluation Design	260
Appendix A. SMI/SED Diagnosis Codes Used to Identify the SMI/SED Target Population	261
Appendix B. Evaluation Measures.....	265
Appendix C. SMI/SED Goals—Regression Results Tables	302
Appendix D. SUD Goals—Regression Results Tables	340

Exhibits

Exhibit ES.1. Direction of Change in Costs for Beneficiaries With SMI/SED	15
Exhibit ES.2. Direction of Change in Costs for Beneficiaries With SUD	15
Exhibit B.1. Phased Implementation of Waiver Services and Their Utilization	25
Exhibit B.2. Goals of the Behavioral Health Transformation Demonstration	28
Exhibit C.1. Behavioral Health Transformation Demonstration Driver Diagram	33
Exhibit C.2. Behavioral Health Transformation Demonstration Driver Diagram— <i>Expand Reimbursement/Benefits Domain</i>	34
Exhibit C.3. Behavioral Health Transformation Demonstration Driver Diagram— <i>Increase Capacity Domain</i>	35
Exhibit C.4. Behavioral Health Transformation Demonstration Driver Diagram— <i>Improve Quality Domain</i>	36
Exhibit C.5. Behavioral Health Transformation Demonstration Driver Diagram— <i>Enhance IT Infrastructure Domain</i>	37
Exhibit C.6. Crosswalk of Goal Number in Interim Evaluation Report/STCs and Evaluation Design	38
Exhibit D.1. SMI/SED and SUD Monitoring Metrics Used for the Evaluation.....	49
Exhibit D.2. Types of Costs and Data Sources.....	62
Exhibit D.3. Administrative Costs of the Demonstration	64
Exhibit E.1. Methodological Limitations and Solutions Applied	68
Exhibit F.1. Annual Counts of SMI/SED and SUD Target Populations	78
Exhibit F.2. Mental Health Services Utilization—ED (Number of Medicaid Beneficiaries with SMI/SED)	80
Exhibit F.3. Mental Health Services Utilization—ED (Percentage of Medicaid Beneficiaries with SMI/SED).....	81
Exhibit F.4. Effect on Mental Health Services Utilization—ED.....	82
Exhibit F.5. ED LOS (in Hours) Among Medicaid Beneficiaries with SMI/SED	83
Exhibit F.6. Effect on ED LOS (in Hours) Among Medicaid Beneficiaries with SMI/SED	84
Exhibit F.7. Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (Percentage of Medicaid Beneficiaries with SMI/SED)	85

Exhibit F.8. Effect on Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility	87
Exhibit F.9. Any Crisis Stabilization Service (Number of Medicaid Beneficiaries with SMI/SED)	89
Exhibit F.10. Any Crisis Stabilization Service (Percentage of Medicaid Beneficiaries with SMI/SED)	90
Exhibit F.11. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Comprehensive Psychiatric Emergency Program	91
Exhibit F.12. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED)— Comprehensive Psychiatric Emergency Program	92
Exhibit F.13. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Mobile Crisis and Outreach	93
Exhibit F.14. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED)—Mobile Crisis and Outreach	94
Exhibit F.15. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Psychiatric Residential Crisis Stabilization	95
Exhibit F.16. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED)—Psychiatric Residential Crisis Stabilization	96
Exhibit F.17. Effect on the Utilization of Crisis Stabilization Services	97
Exhibit F.18. Were you able to get all the services you wanted or needed for emergency care without going to a hospital ED when you were having a crisis or needed urgent help related to drug or alcohol use or mental health?.....	99
Exhibit F.19. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, in Total	104
Exhibit F.20. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Psychiatric Hospital	105
Exhibit F.21. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Physician or Other Practitioner	106
Exhibit F.22. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Federally Qualified Health Centers	107
Exhibit F.23. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Other Behavioral Health Clinic/Entity	108
Exhibit F.24. Effect on Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration.....	109

Exhibit F.25. Which of the following, if any, was a reason that you did not get the services you needed for counseling or treatment for emotional or mental health?.....	113
Exhibit F.26. Any Mental Health Services Utilization (Number of Medicaid Beneficiaries with SMI/SED)	118
Exhibit F.27. Any Mental Health Services Utilization (Percentage of Medicaid Beneficiaries with SMI/SED).....	119
Exhibit F.28. Effect on Mental Health Services Utilization.....	120
Exhibit F.29. Number of Mental Health Services Claims, PBPM, Among Medicaid Beneficiaries with SMI/SED	121
Exhibit F.30. Effect on Number of Mental Health Services Claims, PBPM, Among Medicaid Beneficiaries with SMI/SED	122
Exhibit F.31. Were you able to get all the services you wanted or needed for counseling or treatment for emotional or mental health?	123
Exhibit F.32. Were you able to get all the services you wanted or needed for counseling or treatment for a traumatic event?	124
Exhibit F.33. In the last 12 months, have you felt you wanted or needed some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?	126
Exhibit F.34. Were you able to get all the services you wanted or needed for some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?	126
Exhibit F.35. Which of the following, if any, was a reason that you did not get the services you needed for some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?	127
Exhibit F.36. Assessment of Physical Health During IMD Stay (Number of Episodes of Care Among Medicaid Beneficiaries with SMI/SED).....	128
Exhibit F.37. Assessment of Physical Health During IMD Stay (Percentage of Episodes of Care Among Medicaid Beneficiaries with SMI/SED).....	129
Exhibit F.38. Effect on Assessment of Physical Health During IMD Stay.....	130
Exhibit F.39. How often did you receive both physical healthcare (such as checkups and treatment for being sick) and help for your drug or alcohol use or mental health from the same provider or place?	132
Exhibit F.40. Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)—Within 7 Days	134
Exhibit F.41. Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)—Within 30 Days	135

Exhibit F.42. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 7 Days	137
Exhibit F.43. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 30 Days	138
Exhibit F.44. Effect on Follow-Up Services After Hospitalization or ED Visits for Mental Illness	139
Exhibit F.45. What is your living situation today?	148
Exhibit F.46. Please select whether this statement is often true, sometimes true, or never true for you and your household. Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.....	148
Exhibit F.47. How often did the providers who help you with your drug or alcohol use or mental health know about the medical care you received for any physical health problems you have, such as illness or injuries?	149
Exhibit F.48. How often did the providers who help you with medical care for your physical health problems, such as illness or injuries, know about the counseling, treatment, or medicine you received for your drug or alcohol use or mental health?	149
Exhibit F.49. Newly Initiated SUD Treatment/Diagnosis (Number of Beneficiaries).....	151
Exhibit F.50. Newly Initiated SUD Treatment/Diagnosis (Percentage of Beneficiaries).....	153
Exhibit F.51. Effect on Beneficiaries With Newly Initiated SUD Treatment/Diagnosis	154
Exhibit F.52. Were you able to get all the services you wanted or needed for counseling or treatment for drug or alcohol use?	156
Exhibit F.53. Which of the following, if any, was a reason that you did not get the services you needed for counseling or treatment for drug or alcohol use?	157
Exhibit F.54. Effect on SUD Provider Availability	157
Exhibit F.55. Any SUD Treatment (Number of Beneficiaries)	161
Exhibit F.56. Any SUD Treatment (Percentage of Beneficiaries)	162
Exhibit F.57. Effect on SUD Treatment	163
Exhibit F.58. Number of SUD Treatment Claims, PBPM	164
Exhibit F.59. Effect on Number of SUD Treatment Claims, PBPM	165
Exhibit F.60. If my doctor prescribes medicine to help me stay off alcohol or drugs, I will have to pay for the medicine.	166
Exhibit F.61. Were you able to get all the services you wanted or needed for prescription medicine to help you detox or stay off drugs or alcohol?	166

Exhibit F.62. Initiation of Alcohol and Other Drug Dependence Treatment (IET-AD)	168
Exhibit F.63. Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)	169
Exhibit F.64. Effect on Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)	170
Exhibit F.65. How often was the following statement true for you during the past 12 months? I was unable to do what was necessary to follow my healthcare provider’s treatment plans.	172
Exhibit F.66 When you were unable to do what the healthcare provider told you to do, how often was it because you could not get an appointment you needed for follow-up care?	172
Exhibit F.67. When you were unable to do what the healthcare provider told you to do, how often was it because you could not pay for something, such as follow-up visits, medicine, or supplies?	173
Exhibit F.68. Continuity of Pharmacotherapy for Opioid Use Disorder (OD) (Number of Beneficiaries)	173
Exhibit F.69. Continuity of Pharmacotherapy for OUD (Percentage of Beneficiaries)	175
Exhibit F.70. Effect on Continuity of Pharmacotherapy for OUD	176
Exhibit F.71. Effect on Continuity of Pharmacotherapy for opioid use disorder, Individual Level.....	177
Exhibit F.72. Because of a physical, mental, or emotional condition lasting 6 months or more, do you have any difficulty working at a job or business?.....	180
Exhibit F.73. What is your current employment status?	180
Exhibit F.74. I can get help finding a job through my healthcare providers.	181
Exhibit F.75. Have you used this help?	181
Exhibit F.76. How helpful was it?	182
Exhibit F.77. Fatal Opioid Overdoses in the District, 2017–2022.....	184
Exhibit F.78. Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries.....	186
Exhibit F.79. ED Utilization for SUD per 1,000 Medicaid Beneficiaries	187
Exhibit F.80. Inpatient Hospital Admissions for Ambulatory Care Sensitive Chronic Conditions	188
Exhibit F.81. Effect on ED and Inpatient Utilization.....	189
Exhibit F.82. Readmissions Among Beneficiaries With SUD	191
Exhibit F.83. Effect on Readmissions Among Beneficiaries With SUD	192

Exhibit F.84. Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD	194
Exhibit F.85. Effect on Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD.....	195
Exhibit F.86. Annual Average PBPM Costs for the Target Population of SMI/SED Beneficiaries.....	199
Exhibit F.87. Unadjusted Means of Total Cost Estimates for Individuals With SMI/SED, January 2018–December 2021.....	200
Exhibit F.88. Unadjusted Means of Total Federal Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	201
Exhibit F.89. Interrupted Time Series Results (Marginal Effects and Standard Errors), SMI/SED Demonstration	202
Exhibit F.90. Unadjusted Means of Non-SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	205
Exhibit F.91. Unadjusted Means of SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	206
Exhibit F.92. Unadjusted Means of IMD SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	207
Exhibit F.93. Unadjusted Means of Non-IMD SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	208
Exhibit F.94. Unadjusted Means of Non-ED Outpatient Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	209
Exhibit F.95. Unadjusted Means of Outpatient-ED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	210
Exhibit F.96. Unadjusted Means of Inpatient Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	211
Exhibit F.97. Unadjusted Means of Pharmacy Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	212
Exhibit F.98. Unadjusted Means of Long-Term Care Cost Estimates for Individuals With SMI/SED, January 2018–December 2021	213
Exhibit F.99. Annual Average PBPM Costs for the Target Population of SUD Beneficiaries	215
Exhibit F.100. Unadjusted Means of Total Cost Estimates for Individuals With SUD, January 2018–December 2021.....	216
Exhibit F.101. Unadjusted Means of Total Federal Cost Estimates for Individuals With SUD, January 2018–December 2021	217

Exhibit F.102. Interrupted Time Series Results (Marginal Effects and Standard Errors), SUD Demonstration	218
Exhibit F.103. Unadjusted Means of Non-SUD Cost Estimates for Individuals With SUD, January 2018–December 2021.....	220
Exhibit F.104. Unadjusted Means of SUD Cost Estimates for Individuals With SUD, January 2018–December 2021.....	221
Exhibit F.105. Unadjusted Means of IMD Cost Estimates for Individuals With SUD, January 2018–December 2021.....	222
Exhibit F.106. Unadjusted Means of Non-IMD SUD Cost Estimates for Individuals With SUD, January 2018–December 2021	223
Exhibit F.107. Unadjusted Means of Non-ED Outpatient Cost Estimates for Individuals With SUD, January 2018–December 2021	224
Exhibit F.108. Unadjusted Means of Outpatient ED Cost Estimates for Individuals With SUD, January 2018–December 2021	225
Exhibit F.109. Unadjusted Means of Inpatient Cost Estimates for Individuals With SUD, January 2018–December 2021.....	226
Exhibit F.110. Unadjusted Means of Pharmacy Cost Estimates for Individuals With SUD, January 2018–December 2021.....	227
Exhibit F.111. Unadjusted Means of Long-Term Care Cost Estimates for Individuals With SUD, January 2018–December 2021	228
Exhibit F.112. Comparison of Administrative Costs and Marginal Effects of Total Costs, PBPM	229
Exhibit F.113. How much has your physical health been affected by COVID-19?	231
Exhibit F.114. How much has your mental health been affected by COVID-19?	232
Exhibit F.115. How much has your ability to keep from using drugs or alcohol been affected by COVID-19?.....	232
Exhibit F.116. The telemedicine visit was as good as an in-person visit.	235
Exhibit F.117. Telemedicine made it easier for me to see a healthcare provider.....	236
Exhibit F.118. I find telemedicine an acceptable way of receiving care.	236
Exhibit F.119. I felt comfortable talking about my healthcare issues using telemedicine services.	236
Exhibit H.1. Medicaid Program Changes coinciding with the Demonstration, 2017–2025	255
Exhibit H.2. Other Programs Coinciding With the Demonstration, 2017–2025.....	255

Appendix Exhibit A.1. List of Diagnosis Codes Used to Identify the Target Population for SMI/SED Evaluation Metrics.....	262
Appendix Exhibit C.1. Mental Health Services Utilization—ED (Number of Beneficiaries).....	304
Appendix Exhibit C.2. Mental Health Services Utilization—ED (Percentage of Beneficiaries)	306
Appendix Exhibit C.3. Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (Percentage of Beneficiaries)	309
Appendix Exhibit C.4. Any Crisis Stabilization Service (Number of Beneficiaries).....	311
Appendix Exhibit C.5. Any Crisis Stabilization Service (Percentage of Beneficiaries).....	313
Appendix Exhibit C.6. Any Crisis Stabilization Service, by Setting (Number of Beneficiaries)—Comprehensive Psychiatric Emergency Program	315
Appendix Exhibit C.7. Any Crisis Stabilization Service, by Setting (Percentage of Beneficiaries)—Comprehensive Psychiatric Emergency Program	317
Appendix Exhibit C.8. Any Crisis Stabilization Service, by Setting (Number of Beneficiaries)—Mobile Crisis and Outreach	319
Appendix Exhibit C.9. Any Crisis Stabilization Service, by Setting (Percentage of Beneficiaries)—Mobile Crisis and Outreach	321
Appendix Exhibit C.10. Any Mental Health Services Utilization (Number of Beneficiaries).....	323
Appendix Exhibit C.11. Any Mental Health Services Utilization (Percentage of Beneficiaries)	325
Appendix Exhibit C.12. Assessment of Physical Health During IMD Stay (Number of Episodes of Care)	328
Appendix Exhibit C.13. Assessment of Physical Health During IMD Stay (Percentage of Episodes of Care)	330
Appendix Exhibit C.14. Follow-Up After Hospitalization for Mental Illness: Ages 18 and Older (FUH-AD)—Within 7 Days.....	332
Appendix Exhibit C.15. Follow-up after hospitalization for mental illness: ages 18 and older (FUH-AD) —Within 30 days.....	334
Appendix Exhibit C.16. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 7 Days	336
Appendix Exhibit C.17. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 30 Days	338
Appendix Exhibit D.1. Newly Initiated SUD Treatment/Diagnosis (Number of Beneficiaries)	341

Appendix Exhibit D.2. Newly Initiated SUD Treatment/Diagnosis (Percentage of Beneficiaries)	343
Appendix Exhibit D.3. Any SUD Treatment (Number of Beneficiaries).....	345
Appendix Exhibit D.4. Any SUD Treatment (Percentage of Beneficiaries).....	347
Appendix Exhibit D.5. Initiation of alcohol and other drug dependence treatment (IET-AD)	349
Appendix Exhibit D.6. Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)	351
Appendix Exhibit D.7. Continuity of Pharmacotherapy for Opioid Use Disorder (Number of Beneficiaries)	353
Appendix Exhibit D.8. Continuity of Pharmacotherapy for Opioid Use Disorder (Percentage of Beneficiaries)	355
Appendix Exhibit D.9. Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries	357
Appendix Exhibit D.10. Emergency Department (ED) Utilization for SUD per 1,000 Medicaid Beneficiaries	359
Appendix Exhibit D.11. Inpatient Hospital Admissions for Ambulatory Care Sensitive Chronic Conditions.....	361
Appendix Exhibit D.12. Readmissions Among Beneficiaries With SUD.....	363
Appendix Exhibit D.13. Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD.....	365

Table of Abbreviations

ACT	Assertive community treatment
AOD	Alcohol or other drug
ARC	Assessment and Referral Center
ASAM	American Society of Addiction Medicine
ASURS	Adult substance use rehabilitative services
BH	Behavioral health
CHIP	Children’s Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
CPEP	Comprehensive psychiatric emergency program
CRISP	Chesapeake Regional Information System for our Patients
DBH	Department of Behavioral Health
DCHA	DC Hospital Association
DCMR	District of Columbia Municipal Regulations
Demonstration	Behavioral Health Transformation Demonstration
DHCF	Department of Health Care Finance
District	District of Columbia
DY	Demonstration year
EA	Expenditure authority
ED	Emergency department
EHR	Electronic health record
FDA	Food and Drug Administration
FFP	Federal financial participation
FFS	Fee-for-service
FSMHC	Free standing mental health clinics
FY	Fiscal year
FQHC	Federally qualified health center
GLM	Generalized linear model
HCBS	Home and community-based services
HEDIS	Healthcare Effectiveness Data and Information Set
HIE	Health Information Exchange
IPF	Inpatient psychiatric facility
IMD	Institutions for mental diseases
IT	Information technology
ITS	Interrupted time series
KII	Key informant interviews
LICSW	Licensed Independent Clinical Social Worker
LOC	Level of care
LOCUS	Level of Care Utilization System

LOS	Length of stay
MAT	Medication-assisted treatment
MCO	Managed care organization
MHRS	Mental health rehabilitation services
MMIS	Medicaid management information system
ODD	Opioid use disorder
PBPM	Per beneficiary per month
PDMP	Prescription drug monitoring program
PHE	Public health emergency
QIO	Quality improvement organization
RSS	Recovery support services
SED	Serious emotional disturbance
SES	Supported employment services
SMI	Serious mental illness
SOR	State Opioid Response
STCs	Special Terms and Conditions
SUD	Substance use disorder
TAP	Treatment assignment protocol
TREM	Trauma recovery and empowerment model
TST	Trauma systems therapy

A. Executive Summary

A.1. Key Takeaways From the Interim Evaluation

Awareness



- Providers, provider associations, and health plans are aware of the Demonstration components.
 - Degrees of awareness and influence on service delivery vary by Demonstration service.

COVID-19



- The COVID-19 public health emergency (PHE), which coincided with the beginning of the Demonstration, disrupted Demonstration operationalization, particularly on the provider side, and strained the District's healthcare system.
 - Beneficiaries faced increased behavioral healthcare needs and suppressed utilization.
 - Impact on service utilization patterns was more severe for SUD beneficiaries than for SMI/SED beneficiaries, with SUD service utilization levels yet to rebound to pre-PHE levels.
 - Telehealth flexibilities under the PHE and increased utilization of telemedicine helped mitigate, to some extent, the disruption to utilization, particularly on the mental health side.
 - Given the simultaneous start of the Demonstration and the PHE, the regression analysis may not have entirely removed the effects of the Demonstration from that of the PHE, despite the use of a PHE-related control variable.

Achievement of Demonstration goals



- The Demonstration was more successful in achieving serious mental illness and/or serious emotional disturbance (SMI/SED) goals than substance use disorder (SUD) goals.
 - Three of five SMI/SED Demonstration goals were achieved:
 - » Decreased emergency department (ED) use
 - » Improved access to crisis stabilization services
 - » Improved access to community-based services
 - Results were mixed for two of the six SUD Demonstration goals, and the remaining goals are yet to be achieved. Beneficial outcomes observed:
 - » Increased rate of initiation of SUD treatment
 - » Decreased ED use

Influential services



- Evaluation participants (providers, provider associations, and health plans) deemed the following Demonstration services as having the largest positive influence on provider behavior and beneficiary outcomes:
 - Eligibility to enroll in Medicaid for independent licensed behavioral health clinicians
 - Decentralized intake and assessment
 - Expanded crisis stabilization services
- According to evaluation participants, the following Demonstration services had slow and low uptake:
 - Transition planning services
 - Recovery support services
 - Clubhouse services
- Supported employment services

Effect on costs



The average total costs per beneficiary per month (PBPM) increased under the Demonstration for both SMI/SED and SUD beneficiaries. The likelihood of beneficiaries incurring healthcare costs also increased for both SMI/SED and SUD populations. An overall increase in cost was not unexpected based on COVID-19 PHE-related actions (e.g., SUD reimbursement rate increase) and the Demonstration.

A.2. Demonstration

The Centers for Medicare & Medicaid Services (CMS) approved the District of Columbia's (District's) Section 1115(a) demonstration titled Behavioral Health Transformation (Demonstration) on November 6, 2019. The 5-year Demonstration became operational on January 1, 2020. The District has three overarching objectives for the Demonstration:

- Expand the continuum of Medicaid behavioral health services and supports in the District;
- Advance the District's goals to improve outcomes for individuals with opioid use disorder (OUD) and other substance use disorders (SUDs); and
- Support a more person-centered, integrated, and coordinated system of physical and behavioral healthcare for Medicaid beneficiaries.

The District aims to achieve these objectives by (1) expanding treatment options for serious mental illness (SMI), serious emotional disturbance (SED), and SUD; (2) improving the quality of behavioral health treatment; (3) improving beneficiary experiences and outcomes through better care transition, coordination, and employment support services; (4) preventing emergent and acute hospitalizations by scaling up crisis treatment programs; and (5) supporting improved data collection, reporting and sharing in the District's behavioral health system.

The District conceived the Demonstration, to a large extent, as a response to the opioid use and abuse crisis the District was facing. The Demonstration is also part of a larger behavioral healthcare redesign effort to strengthen the behavioral health services continuum of care and move the District's Medicaid program toward a more integrated model of behavioral healthcare delivery.

The Special Terms and Conditions (STCs) of the Demonstration are effective from January 1, 2020, through December 31, 2024, unless otherwise specified. The STCs authorized federal financial participation (FFP) for Medicaid State Plan services furnished to eligible individuals primarily receiving short-term treatment and withdrawal management services for SUD, SMI, and/or SED in facilities that meet the definition of an institution for mental disease (IMD) for the full 5-year period of the Demonstration. The STCs granted temporary expenditure authorities, from January 1, 2020, through December 31, 2021, for SMI/SED and SUD non-State Plan services furnished during a stay in or outside an IMD setting to eligible individuals receiving treatment or assessed as needing treatment or recovery support services (RSS) for approved conditions.

The non–State Plan services granted expenditure authority (EA) under the Demonstration include the following:

- Comprehensive psychiatric emergency program (CPEP) services
- Mobile crisis intervention and outreach services
- Psychiatric residential crisis stabilization services
- Transition planning services for individuals leaving a hospital, IMD, or other facility
- RSS
- Services of licensed behavioral health clinicians
- Psychosocial rehabilitative services (also known as “Clubhouse” services)
- Trauma-targeted behavioral health services
- Supported employment services (SES)

The waiver authority under the Demonstration also exempted beneficiaries receiving SUD treatment from \$1 pharmacy co-payments for prescriptions associated with medication-assisted therapy (MAT).

A.3. Evaluation

An independent evaluation of the Demonstration is a requirement of the STCs. CMS requires the evaluation to assess progress in the achievement of Demonstration goals according to the approved evaluation design. The evaluation design identified key research questions, associated hypotheses, and metrics to assess effectiveness. The research questions cover Demonstration implementation progress and the Demonstration’s effects on healthcare utilization and health outcomes for target populations. The evaluation assesses the challenges and successes in Demonstration implementation and estimates the Demonstration’s effects on healthcare utilization and health outcomes for target populations. It also estimates changes to Medicaid costs and the drivers of those changes occurring because of the Demonstration. The District selected the American Institutes for Research® (AIR®) to conduct the independent evaluation.

The Behavioral Health Transformation Demonstration is the first demonstration addressing both SUD and SMI/SED populations approved since the Secretary of Health and Human Services announced the SMI/SED opportunity via State Medicaid Directors Letter #18-011 on November 13, 2018.

A.4. Evaluation Methods

The AIR team (AIR and its subcontractor, L&M Policy Research, LLC) implemented a mixed-methods evaluation design for the interim evaluation. The interim evaluation uses data from the first 2.5 years of the Demonstration to address the evaluation research questions. The AIR team synthesized data from multiple sources to develop an accurate and comprehensive description and analysis of the Demonstration. The AIR team collected primary data through document reviews, interviews with key informants from the implementing District agencies and their vendors (Department of Health Care Finance [DHCF], Department of Behavioral Health [(DBH)], Department of Health [DC Health], and Chesapeake Regional Information System for our Patients [CRISP]), and interviews and listening sessions with providers, local provider associations, and managed care organizations (MCOs). The AIR team also fielded a Medicaid beneficiary survey by the end of the first year of the Demonstration. Secondary data sources included various DHCF and DBH administrative data, including Medicaid fee-for-service (FFS) claims and Medicaid managed care encounter data. The AIR team also used ED length of stay (LOS) data from the DC Hospital Association.

The primary data the AIR team collected for the evaluation were analyzed using qualitative data analytic techniques. The qualitative data were systematically coded using a codebook that was developed and refined to align with Demonstration drivers, goals, and important co-occurring initiatives. The primary focus of the analysis was to identify themes related to whether the Demonstration was implemented as intended; successes, challenges, and lessons learned regarding implementation; and perceived outcomes.

The secondary data were analyzed using quantitative analytic techniques. The quantitative analysis, which focused on outcome measures (e.g., SUD treatment utilization) reflective of Demonstration goals, had two main components. The first component graphically described the trends in the outcome measures comparing the Demonstration period with a baseline period of calendar year (CY) 2017–2019. The second component assessed the effectiveness of the Demonstration in achieving its goals using multivariate regression analysis. The AIR team used the interrupted time series (ITS) regression methodology to assess Demonstration impacts. ITS is a robust quasi-experimental research design to evaluate a population-level intervention or policy change where a comparison group is not feasible, as is the case with this evaluation. The AIR team implemented District-level and individual beneficiary-level regression models for the impact estimation of utilization-based outcome measures. We used ordinary least squares regression model specification for the District-level ITS analysis. For the individual-level analysis, where the outcome measures were counts (e.g., number of SUD services), we used count model specifications.

Despite the use of control variables to account for the COVID-19 public health emergency (PHE) that coincided with the launch of the Demonstration and some of the influence of concurrent programs targeting similar populations and outcomes, the impact estimates may capture some of these effects in addition to the Demonstration's effect. Since the COVID-19 PHE occurred within 2 months of the Demonstration's start and continued through the entire period of this report's analysis, the analysis may not fully isolate the Demonstration's effects from that of the large impacts the PHE had on behavioral healthcare utilization and the healthcare system overall. Therefore, caution is warranted in interpreting the quantitative analysis results as precise causal impacts.

In addition to the Demonstration goals-based quantitative analyses, the AIR team conducted a cost analysis to assess changes in healthcare expenditures for SMI/SED and SUD beneficiaries and the drivers of these expenditures. For the cost analysis, which was at the individual beneficiary-month level, the ITS design was implemented with a two-part model specification, which is a preferred method for analyzing healthcare expenditures. The above-mentioned limitation that the regression analysis may not have fully removed the influence of the COVID-19 PHE from the Demonstration effect estimates also applies to the cost analysis. The COVID-19 PHE induced increases in the federal medical assistance percentage (FMAP) and behavioral healthcare rates, and changes in care utilization were influential on costs in addition to the Demonstration. Additionally, reimbursement rates for certain services, such as for hospital-based care, are indexed to inflation in the District; hence, inflation also contributed to an increase in reimbursements rates.

A.5. Evaluation Findings

Achievement of SMI/SED Goals

KEY TAKEAWAYS ON THE SMI/SED GOALS

After 2 Demonstration years, the District has achieved three of five goals. The Demonstration goals related to reduced utilization of ED, improved availability of crisis stabilization services, and improved access to community-based services have been achieved. According to evaluation participants, Demonstration changes related to the reimbursement methodology for crisis stabilization services, ability for independent licensed clinicians to enroll in and receive Medicaid reimbursement, and FFP for short-term stays in IMDs are influencing these positive results. Results are mixed for the goal related to improved care coordination. The goal of reduced

preventable readmissions has not yet been achieved. Evaluation participants reported that care coordination is a persistent challenge, and that lack of comprehensive outpatient treatment programs makes preventing readmissions difficult.

Evidence from the ITS analysis indicates that, at the time of this interim evaluation, the District has been largely successful in achieving the SMI/SED Demonstration goals.

- **Goal 1:** Reduced utilization and LOSs in hospital emergency departments (EDs) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings.
 - The Demonstration **has achieved the goal** of reducing utilization of ED, but not of reducing LOS in the ED.
 - » Compared to the pre-Demonstration monthly average of 77.67, there was an immediate 21% decrease in the number of beneficiaries with SMI/SED using ED services for mental health during the post-Demonstration period, which effect is statistically significant at the 10% level. Additionally, this monthly metric decreased by 8% on average each quarter during the first two years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Compared to the pre-Demonstration monthly average of 0.46%, there was an immediate 26% decrease in the percentage of beneficiaries with SMI/SED using ED services for mental health during the post-Demonstration period; this effect is statistically significant at the 1% level. Additionally, this monthly metric decreased by 11% on average each quarter during the first two years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Evaluation participants perceived that the Demonstration has reduced ED service utilization by promoting increased access to crisis stabilization services.
- **Goal 2:** Reduced preventable readmissions to acute care and specialty hospitals and residential settings.
 - The Demonstration **has not yet achieved the goal** of reducing preventable readmissions.

- » Instead of a decrease, the metric showed a statistically significant increase. However, SMI Monitoring Metric #4, which was used to assess the goal, was not limited to preventable readmissions.¹
- » According to evaluation participants, limited supply of comprehensive outpatient programs makes it difficult to prevent unnecessary readmissions.
- **Goal 3:** Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District.
 - The Demonstration **has achieved the goal** of improving the availability of crisis stabilization services.
 - » Compared to the pre-Demonstration monthly average of 257.28, there was an immediate 55% increase in the number of beneficiaries with SMI/SED accessing crisis stabilization services during the post-Demonstration period; this effect is statistically significant at the 5% level.
 - » Compared to the pre-Demonstration monthly average of 1.55%, there was an immediate 43% increase in the percentage of beneficiaries with SMI/SED accessing crisis stabilization services during the post-Demonstration period; this effect is statistically significant at the 5% level.
 - » Baseline beneficiary survey results are consistent with the ITS findings. Sixty-four percent of survey respondents said they would know how to get help for a crisis or urgent problem related to their drug or alcohol use or mental health without going to the ED or hospital. Seventy percent of survey respondents who wanted or needed non-ED emergency services were able to get all the services they wanted or needed.
 - » Evaluation participant providers reported that changes to the reimbursement methodology for crisis stabilization services improved access to these services by incentivizing new providers to pursue certification to deliver crisis stabilization services and by incentivizing existing crisis service providers to expand their delivery of these services.

¹ SMI Monitoring Metric #4 is the rate of unplanned 30-day readmissions for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease.

- **Goal 4:** Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI or SED, including through increased integration of primary and behavioral health care.
 - The Demonstration **has achieved this goal.**
 - » Compared to the pre-Demonstration monthly average of 12,635.69, there was an immediate 8% increase in the number of beneficiaries with SMI/SED using any mental health services during the post-Demonstration period; this effect is statistically significant at the 1% level. Additionally, this monthly metric increased by 4% on average during each quarter of the first 2 years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Compared to the pre-Demonstration monthly average of 76.09%, there was an immediate 4% increase in the percentage of beneficiaries with SMI/SED using any mental health services during the post-Demonstration period; this effect is statistically significant at the 1% level. Additionally, this monthly metric increased by 1% on average during each quarter of the first 2 years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Evaluation participants perceived that the ability of independent licensed clinicians to enroll in and receive reimbursement from Medicaid and the implementation of FFP for short-term stays in IMD settings increased beneficiaries' access to community-based services.
 - » Evaluation participants did not perceive the Demonstration changes related to the reimbursement methodology for TREM and TST and related to the availability of Clubhouse services as having an influence on beneficiaries' access to community-based services.
 - » Compared to the pre-Demonstration quarterly average of 274.92, the combination of the statistically significant immediate increase and the statistically significant two years of quarterly decrease in the number of episodes of care where IMD providers billed for assessments or treatment of physical condition resulted in a 38% combined increase; this effect is statistically significant at the 5% level.
 - » Evaluation participants suggested that there are opportunities to improve integration of physical and behavioral health care under the Demonstration. Few evaluation participant providers reported that they had increased integration of primary and behavioral health care under the Demonstration. Only half of beneficiary survey respondents indicated that they have received primary and behavioral health care from the same provider.

- **Goal 5:** Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities.
 - **Results related to this goal are mixed.**
 - » The changes in the percentage of SMI/SED beneficiaries receiving a mental illness-related follow-up within 7 and 30 days after a hospitalization for mental illness or intentional self-harm were not statistically significant.
 - » Two thirds of baseline beneficiary survey respondents who had experienced an inpatient stay for behavioral health reported that they had not been contacted by a healthcare provider after discharge to discuss follow-up care.
 - » Compared to the pre-Demonstration quarterly average of 57.55%, the combination of the immediate increase and the two years of quarterly decrease in the percentage of SMI/SED beneficiaries receiving a mental illness-related follow-up within 7 days after an ED visit for mental illness or intentional self-harm resulted in a 10% decrease; this effect is statistically significant at the 10% level.
 - » Compared to the pre-Demonstration quarterly average of 70.18%, the combination of the immediate increase and the two years of quarterly decrease in the percentage of SMI/SED beneficiaries receiving a mental illness-related follow-up within 30 days after an ED visit for mental illness or intentional self-harm resulted in a 10% decrease; this effect is statistically significant at the 5% level.
 - » Evaluation participants spoke positively about the Demonstration’s health information technology (IT) related changes to care coordination infrastructure in the District and reported that they have increased their use of the health information exchange (HIE) when managing beneficiaries’ care.
 - » Evaluation participants did not perceive that Demonstration changes related to follow-up requirements for psychiatric hospitals and transition planning services have influenced care coordination in the District; they reported that care coordination continues to be a significant challenge.

Achievement of SUD Goals

KEY TAKEAWAYS ON THE SUD GOALS

At the end of 2 Demonstration years, three out of six goals are yet to be achieved. These goals are related to increased adherence to and retention in SUD treatment, reduction in readmissions, and access to care for physical health conditions. Results are mixed for the goal of increased identification of, initiation of, and engagement in treatment for SUD and for the goal of reduced utilization of EDs and inpatient settings. The goal related to a reduction in overdose deaths could not be assessed because data were not yet available.²

Evaluation participants perceived that the decentralization of assessment and referral has improved identification and initiation of SUD treatment services and that changes to the reimbursement methodology for crisis stabilization services decreased preventable utilization of EDs and inpatient care. They also reported that the ability of independent licensed clinicians to enroll and receive reimbursement from Medicaid and FFP for short-term stays in IMDs had positively influenced access to SUD treatment services. Evaluation participants did not perceive that other Demonstration changes have influenced SUD outcomes.

In interpreting these results, note that SUD care utilization, which decreased due to the COVID-19 PHE, has not yet returned to pre-PHE levels.³ Though the regression analysis attempts to control for the influence of the COVID-19 PHE on the outcomes of interest, not all of that effect may have been removed from the Demonstration's impact estimates.

² Fatal opioid overdose deaths in the District tracked by DBH showed a 46% increase in 2020 after the COVID-19 PHE began compared to the year prior. The number of deaths has remained high since then.

³ The COVID-19 PHE had a larger effect on SUD care than on SMI/SED care. Unlike SUD care utilization, mental health care utilization has returned to pre-PHE levels. The growth in telemedicine during the PHE for SUD care was also much smaller than the growth for SMI/SED care.

At the time of this interim evaluation, two of the six SUD Demonstration goals show mixed results.

- **Goal 1:** Increased rates of identification of, initiation of, and engagement in treatment for SUD.
 - **Results related to this goal are mixed.**
 - » Compared to the pre-Demonstration monthly average of 1,145.28, the number of beneficiaries initiating SUD treatment during the post-Demonstration period increased by 2% on average during each quarter of the first 2 years of the Demonstration; this effect is statistically significant at the 5% level. Evaluation participants perceived that the decentralization of the assessment and intake functions of the Assessment and Referral Center (ARC) helped increase the identification and initiation of SUD treatment. But the change in the percentage of beneficiaries was not statistically significant.
 - » Instead of an increase, there was a decrease in the number or percentage of beneficiaries receiving any SUD treatment service, facility claim, or pharmacy claim during the Demonstration period. Compared to the pre-Demonstration monthly average of 4,363.44, there was an immediate 4% decrease in the number of beneficiaries receiving any SUD treatment service, facility claim, or pharmacy claim during the post-Demonstration period; this effect is statistically significant at the 10% level. Compared to the pre-Demonstration monthly average of 1.71%, the percentage of beneficiaries receiving any SUD treatment service, facility claim, or pharmacy claim decreased by 1% on average each quarter during the first two years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Evaluation participants perceived that the Demonstration changes related to the ability of independent licensed clinicians to enroll in and receive reimbursement from Medicaid and to the FFP for short-term stays in IMDs have improved access to SUD treatment services.
 - » Evaluation participants reported mixed perspectives about the influence of requirements to offer MAT on access to SUD treatment services. Some evaluation participants reported that they were in compliance with the requirements; other evaluation participants expressed reluctance to offer MAT.
 - » Baseline beneficiary survey data suggest that the removal of the \$1 copay for MAT may not yet be influencing access to SUD treatment services. Thirty percent of baseline beneficiary survey respondents reported that they agreed or were

unsure whether they would need to pay for medicine to help them stay off alcohol or drugs.

- **Goal 2:** Increased adherence to and retention in treatment.
 - The Demonstration **has not yet achieved this goal**.
 - » The change in the percentage of beneficiaries who were engaged in ongoing alcohol or other drug (AOD) treatment within 34 days of the initiation visit was not statistically significant.
 - » The change in the percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy for OUD was not statistically significant.
 - » The number of beneficiaries who had at least 180 days of continuous pharmacotherapy for OUD decreased instead of increasing. Compared to the pre-Demonstration quarterly average of 420.25, the number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days decreased by 6.5% on average each quarter during the first two years of the Demonstration; this effect is statistically significant at the 1% level.
 - » Baseline beneficiary survey results are consistent with the ITS findings. About one third of baseline beneficiary survey respondents reported that they were unable to adhere to the care plans recommended by their providers.
 - » Evaluation participants did not perceive that Demonstration changes had increased adherence to and retention in SUD treatment services.
- **Goal 3:** Reductions in overdose deaths, particularly those due to opioids.
 - **This goal was not assessed** because data were not yet available.
- **Goal 4:** Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum-of-care services.
 - **Results related to this goal are mixed**.
 - » Instead of a decrease, there was an increase in the number of SUD-related inpatient stays. Compared to the pre-Demonstration monthly average of 2.24, the combination of the immediate increase and the two years of quarterly decrease in the number of SUD-related inpatient stays per 1,000 beneficiaries resulted in a 16.5% increase; this effect is statistically significant at the 1% level.
 - » Instead of a decrease, there was an increase in the number of SUD-related ED visits. Compared to the pre-Demonstration monthly average of 6.47, there was an immediate 8% increase in the number of ED visits for SUD per 1,000

beneficiaries during the post-Demonstration period; this effect is statistically significant at the 10% level.

- » The change in the inpatient hospital admissions for ambulatory care sensitive chronic conditions was not statistically significant.
 - » However, these metrics did not assess whether the utilization was preventable or medically inappropriate but assumed SUD-related ED visits and inpatient stays are preventable.
 - » Evaluation participants perceived that changes to the reimbursement methodology for crisis stabilization services decreased preventable utilization of EDs and inpatient care.
- **Goal 5:** Fewer readmissions to the same or higher level of care (LOC) where the readmission is preventable or medically inappropriate.
 - The Demonstration **has not yet achieved the goal** of reducing readmissions.
 - » The change in the metric was not statistically significant.
 - » However, SUD Monitoring Metric #25, which was used to assess this goal, was not limited to preventable or medically inappropriate readmissions.⁴
 - » Evaluation participants perceived that the Demonstration has not reduced preventable readmissions because a lack of comprehensive outpatient treatment programs persists.
 - **Goal 6:** Improved access to care for physical health conditions among beneficiaries with SUD.
 - The Demonstration **has not yet achieved this goal**.
 - » There was a decrease in the percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period.
 - » Evaluation participants suggested that there are opportunities to improve access to care for physical and behavioral health care under the Demonstration. Few providers reported that they had increased integration of primary and behavioral health care under the Demonstration. Only half of beneficiary survey respondents indicated that they have received primary and behavioral health care from the same provider.

⁴ SUD Monitoring Metric #25 is the rate of 30-day all-cause readmissions.

Cost Analysis

KEY TAKEAWAYS FROM THE COST ANALYSIS

Under the Demonstration, total healthcare costs per beneficiary per month (PBPM) increased by

- \$115.94 for SMI/SED beneficiaries
- \$134.91 for SUD beneficiaries

This increase in total cost PBPM is not unexpected due to various actions taken during the COVID-19 PHE, in addition to the Demonstration's hypothesized increase in healthcare utilization.

The analysis of changes in costs to Medicaid indicate that total costs increased during the Demonstration period for both the SMI/SED and SUD populations. This increase was both because more Medicaid beneficiaries with SMI/SED/SUD were incurring healthcare costs in the Demonstration period and because average costs incurred increased for beneficiaries who had positive costs during the period. In response to the COVID-19 PHE, CMS increased the FMAP, and the District increased SUD provider payments. Reimbursement rates also increased for certain services (e.g., hospital-based care) due to inflation indexing. Furthermore, the Demonstration hypothesized increased utilization of SMI/SED and SUD treatment services and more integrated physical and behavioral health care. For these reasons the increase in total costs and the increases in some of the cost components are not unexpected.

Exhibit ES.1 shows the direction of change in various types of costs for beneficiaries with SMI/SED. An exploration of the cost drivers showed that SMI/SED treatment-related costs increased in the Demonstration period, but not costs that are not SMI/SED related. IMD SMI/SED costs increased, as did non-IMD SMI/SED treatment costs. The only cost that showed a reduction was ED costs. Though the reduction is small, it is a positive finding as decreased utilization of costly ED care is a Demonstration goal. Inpatient costs increased, some of which could be because of the increased IMD costs, which is an expected outcome under the Demonstration.

Exhibit ES.1. Direction of Change in Costs for Beneficiaries With SMI/SED

		Direction of change
Total costs	Total costs	↑
	Total federal costs	↑
SMI/SED cost drivers	Non-SMI/SED costs	–
	SMI/SED costs	↑
	IMD SMI/SED costs	↑
	Non-IMD SMI/SED costs	↑
Type or source of care cost drivers	Non-ED outpatient costs	↑
	Outpatient ED costs	↓
	Inpatient costs	↑
	Pharmacy costs	–
	Long-term care costs	↑

ED = emergency department; IMD = institution for mental diseases; SED = serious emotional disturbance; SMI = serious mental illness.

Note. Direction is indicated by arrows for effects that are statistically significant. – indicates no statistically significant change.

Exhibit ES.2 shows the direction of cost changes for beneficiaries with SUD. Both SUD-related costs and non-SUD-related costs increased in the Demonstration period for beneficiaries with SUD. While IMD SUD costs increased, non-IMD SUD treatment costs didn't change. ED costs showed a small decrease for SUD beneficiaries also, while inpatient costs increased.

Exhibit ES.2. Direction of Change in Costs for Beneficiaries With SUD

		Direction of change
Total costs	Total costs	↑
	Total federal costs	↑
SUD cost drivers	Non-SUD costs	↑
	SUD costs	↑
	IMD SUD costs	↑
	Non-IMD SUD costs	–
Type or source of care cost drivers	Non-ED outpatient costs	↑
	Outpatient ED costs	↓
	Inpatient costs	↑
	Pharmacy costs	–
	Long-term care costs	–

ED = emergency department; IMD = institution for mental diseases; SUD = substance use disorder.

Note. Direction is indicated by arrows for effects that are statistically significant. – indicates no statistically significant change.

COVID-19 PHE's Influence on Demonstration Implementation

KEY TAKEAWAYS ABOUT COVID-19'S INFLUENCE ON DEMONSTRATION IMPLEMENTATION

The COVID-19 PHE had a substantial impact on the Demonstration implementation by diverting resources, disrupting care delivery, and creating barriers to beneficiaries' ability to receive needed care.

- Implementing agencies were forced to divert resources to address pressing public health concerns.
- Most evaluation participants who were providers described experiencing significant disruption to their care delivery, increased lengths of stay in inpatient settings, and increased costs associated with accommodating social distancing guidelines and personal protective equipment.
- These disruptions likely contributed to the evaluation results that demonstrate a decrease in utilization of services that must be delivered in person.
- In addition, baseline beneficiary survey data demonstrate that COVID-19 was the most commonly reported reason for respondents' inability to get the treatment services they needed.

Non-Waiver and Expenditure Authority Systems Changes

KEY TAKEAWAYS ABOUT NON-WAIVER AND EXPENDITURE AUTHORITY SYSTEMS CHANGES

Non-waiver and expenditure authority systems changes under the Demonstration helped mitigate the influence of COVID-19 PHE and supported the delivery of evidence-based SMI/SED and SUD treatment services.

- Finalizing reimbursement and guidance for telemedicine (approving audio-only visits) allowed providers to deliver services under the COVID-19 PHE that they would otherwise have been unable to deliver.
- Evaluation participants who were providers reported that they were using the District-required evidence-based assessment tools to refer beneficiaries to the appropriate level of care.

- Requirements to query the Prescription Drug Monitoring Program (PDMP) before prescribing or dispensing an opioid or benzodiazepine, integrating the PDMP platform with electronic health records (EHRs) and the HIE, and providing technical assistance on opioid prescribing promoted safe prescribing practices.
- Developing and enforcing licensing, certification, and accreditation requirements created a regulatory foundation for reimbursing Demonstration services such as TREM, TST, SES, transition planning, and crisis services and provided a mechanism for promoting the evidence-based delivery of these services. However, evaluation participants perceived these requirements to be burdensome.
- Evaluation participants expressed both positive and negative perspectives on the Demonstration guidance regarding utilization review policies and procedures.

A.6. Summary Discussion

In fiscal year (FY) 2021, one quarter of the District's 286,000 total Medicaid beneficiaries had a behavioral health diagnosis, and an estimated 16% of all beneficiaries (or 65% of those with any behavioral health diagnosis) had an SMI/SED or SUD diagnosis. To better serve these beneficiaries with SMI/SED and/or SUD, the District is using a multipronged strategy to move the behavioral healthcare delivery system in the District to a more patient-centered and integrated model with better access, care coordination, and quality across the continuum of SMI/SED/SUD services. The Demonstration is a major component of this effort.

There is broad support for the Demonstration strategies and services among the District's providers, provider associations, and managed care plans. Providers were aware of the Demonstration components that were applicable to them. They considered the expansion of eligibility for FFS Medicaid reimbursement to community-based independent licensed behavioral health clinicians as contributing to increased beneficiary access. However, workforce shortages (partly due to low reimbursement rates) were a continuing concern of evaluation participants. Impact analysis did not indicate a significant increase in the number of mental health and SUD providers under the Demonstration.

Evaluation participants considered the requirement that all SUD providers conduct intake, assessment, and referral processes and the changes to crisis stabilization services to be the most impactful Demonstration components. The intake, assessment, and referral requirement may have contributed to the increase in the number of beneficiaries with SUD identified and initiating treatment. In addition to increased utilization of these services, evaluation participants described other potential outcomes of this requirement, such as beneficiaries' improved experiences of care due to being able to reconnect with care via providers they were familiar and comfortable with.

Regarding crisis stabilization services, results of the claims analyses are consistent with participants' perspectives, which showed an overall increase in the utilization of these services. However, utilization of CPEP services decreased, there has been little utilization of the newly introduced residential psychiatric crisis stabilization benefit, and there was an increase in mobile crisis and outreach services under the Demonstration that was not statistically significant. Transition planning services, RSS, and SES are three main areas where providers reported facing implementation challenges, which explains the low utilization of these services. Increased connectivity and use of the HIE was considered a positive development under the Demonstration, though bidirectional data sharing is still not widely prevalent among evaluation participants.

The COVID-19 PHE, which started in the third month of the Demonstration, posed challenges for implementing agencies, providers, and beneficiaries. Implementing agencies and providers needed to divert resources away from Demonstration implementation to modify service delivery requirements and approaches so that beneficiaries could continue to safely access the care they needed. These modifications were not possible for all services, and in general beneficiaries sought less care. The telehealth flexibilities granted under the PHE helped to reduce the adverse effects of the pandemic on behavioral health services delivery and utilization because they created a method of access that kept beneficiaries connected to providers.

The ITS impact estimation model assessing the achievement of Demonstration goals and changes in costs controlled for the COVID-19 PHE. However, the confounding effect of the PHE on the impact estimates may not be entirely removed. The confounding of impact estimates is considered a bigger problem for SUD goals than SMI/SED goals because SUD care was more adversely affected by the PHE than SMI/SED care in the District. While utilization rates have bounced back to pre-COVID levels for mental health care, that is not yet the case for SUD care. Furthermore, the growth in telemedicine during the PHE for SUD care was much smaller than the growth for SMI/SED care.

Analysis of claims data showed that at the interim evaluation point the District has achieved success in meeting most of the SMI/SED goals. Utilization-related goals such as access to community-based mental health services, including integrated physical healthcare and crisis stabilization services, are being achieved under the Demonstration for SMI/SED beneficiaries. However, follow-up and care coordination after hospitalization/ED visits showed mixed results. The low take-up of care coordination and transition services indicated by DHCF and DBH stakeholders and evaluation participating providers could explain the limited progress on this goal. Among health outcome-related goals, ED utilization by SMI/SED beneficiaries decreased, which is a positive development that could be attributed to increased utilization of crisis stabilization services, while readmission rates did not change.

The SUD component of the Demonstration showed less success in achieving its goals in the first 2 years of the Demonstration compared to the SMI/SED component of the Demonstration. As far as utilization-related goals are concerned, initiation of SUD treatment improved, but not adherence to or retention in SUD treatment. However, there was no significant reduction in SUD-related ED visits and inpatient admissions as well as readmissions for SUD beneficiaries.

The total costs increased for both SMI/SED beneficiaries and SUD beneficiaries in the post-Demonstration period. While the Demonstration did not have any hypotheses related to changes in costs, since the Demonstration aimed for increased utilization of SMI/SED/SUD services and increased integration of physical and behavioral health services, the cost increases are not unexpected. SMI/SED treatment costs increased for SMI/SED beneficiaries and SUD treatment costs increased for SUD beneficiaries. Non-SMI/SED costs did not increase for SMI/SED beneficiaries, while non-SUD costs increased for SUD beneficiaries. The costly ED costs showed small reductions for both populations. The expected increase in IMD costs, which was observed for both populations, contributed to an increase in inpatient costs.

Based on interim evaluation findings, recommendations for the District's consideration follow:

1. Focus more on promoting the SUD Demonstration goals of improved identification of, adherence to, and retention in SUD treatment in the second half of the Demonstration. In future rounds of evaluation data collection, further probe access and delivery challenges associated with SUD care.
2. Explore opportunities to clarify utilization management and service delivery requirements in ways that ease provider burden and provide accurate information that providers can use to make decisions about service offerings. For services such as trauma recovery and empowerment model and crisis stabilization services, perceived certification requirements deter providers from adopting or increasing their delivery of these services.
3. Continue to build the policy, payment, and delivery system infrastructure for telemedicine.
4. Expand access to peer supports, which have wide support among providers. The District could expand the settings within which peer services may receive Medicaid reimbursements beyond providers that are certified by DBH.
5. Review care coordination services provided by MCOs to assess whether they are likely to meet the needs of beneficiaries with SUD, SMI, and SED.
6. Request an extension of the Demonstration. This would allow estimation of effects of services that have had low uptake thus far (e.g., transition planning services). More precise impact estimates that are less biased by the effects of the PHE can also be generated.

B. General Background Information

On November 6, 2019, the Centers for Medicare & Medicaid Services (CMS) approved the District of Columbia's (District's) Section 1115(a) demonstration titled Behavioral Health Transformation (Demonstration).⁵

The Demonstration has three overarching aims:

- Expand the continuum of Medicaid behavioral health services and supports in the District;
- Advance the District's goal to improve outcomes for individuals with opioid use disorder (OUD) and other SUDs; and
- Support a more person-centered, integrated, and coordinated system of physical and behavioral healthcare for Medicaid beneficiaries.

The Demonstration's STCs require the District to contract with an independent third party to evaluate the Demonstration. The District's DHCF contracted with American Institutes for Research (AIR) to conduct the independent evaluation of the Demonstration. The AIR team includes AIR and its subcontractor, L&M Policy Research, LLC.

According to the STCs, the District must submit an Interim Evaluation Report for each evaluation design, as applicable, for the completed years of the Demonstration and for each subsequent renewal or extension of the Demonstration, as outlined in 42 CFR 431.412(c)(2)(vi). The Interim Evaluation Report will discuss evaluation progress and present findings to date based on the methodology in the approved evaluation design (Attachment J). For Demonstration authority that expires prior to the overall Demonstration's expiration date, the Interim Evaluation Report must include an evaluation of the authority as approved by CMS.

This Interim Evaluation Report follows CMS's recommended structure for the Report.⁶

⁵ Verma, S. (2019, November 5). [Letter to Melisa Byrd]. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

⁶ Centers for Medicare & Medicaid Services. (n.d.). *1115 Demonstration State Monitoring & Evaluation Resources*. <https://www.medicare.gov/medicaid/section-1115-demonstrations/1115-demonstration-monitoring-evaluation/1115-demonstration-state-monitoring-evaluation-resources/index.html>

Report Organization

- A. Executive Summary
- B. General Background Information
- C. Evaluation Questions and Hypotheses
- D. Methodology
- E. Methodological Limitations
- F. Results
- G. Conclusions
- H. Interpretations, Policy Implications and Interactions With Other District Initiatives
- I. Lessons Learned and Recommendations
- J. Attachment J—Evaluation Design

Appendices A–D include additional detail on these sections. Appendix A provides the list of SMI/SED diagnoses codes used to identify the target population for the SMI/SED evaluation metrics. Appendix B provides Demonstration goals and research questions and associated evaluation measure specifications. Appendix C provides the results of the SMI/SED Demonstration subgroup analyses, and Appendix D provides the results of the SUD Demonstration subgroup analyses.

B.1. Demonstration Context

In this section, we describe a few of the key characteristics of the District’s Medicaid population and delivery system that influenced the District’s decision to apply for the Demonstration and the design of the Demonstration. These key characteristics include:

- beneficiaries’ SUD needs related primarily to opioid use by older African American men who are long-term heroin users,
- policy- and capacity-related barriers to access, and
- a complex delivery system characterized by multiple agencies with authority for provider oversight and payment.

Beneficiary SUD needs. In FY 2022, one-quarter of the District’s 302,724 total Medicaid beneficiaries had a behavioral health diagnosis, and an estimated 16% percent of all beneficiaries (or 63% percent of those with any behavioral health diagnosis) had an SMI/SED or SUD diagnosis. Forty four percent of beneficiaries with a behavioral health diagnosis had an SMI

diagnosis only, 6% had an SUD diagnosis only, and 11% had both an SMI and an SUD diagnosis. Like most states across the country, the District experienced an increased need for SUD treatment, and OUD treatment in particular, in the years preceding the Demonstration. The number of opioid overdose deaths increased 239% between 2014 and 2017 (from 81 to 281), mirroring trends in other states. After a dip in 2018, the opioid overdose death counts increased again and reached an all-time high of 455 in 2022. Additionally, the demographic profile of OUD-related deaths in the District differs from that in some other states. Opioid-related deaths in the District were initially concentrated among older African American men who are long-term heroin users, rather than among younger White adults who first became addicted to opioids through prescription drug use.⁷ Approximately 74% of all fatal opioid overdoses in the District have been among adults ages 40 to 69. Overall, 8 in 10 (84%) of all fatal opioid overdoses were among African Americans (which is consistent with the fact that 80% of all beneficiaries in the District are African American), and nearly three quarters (72%) of all individuals with a fatal opioid overdose were men. The racial characteristics of opioid users in the District suggest that culturally competent care, an important facilitator to effective behavioral health treatment, is especially important to addressing the opioid overdose crisis in the District.⁸

Addressing co-occurring SMI and SUD may also be important to addressing the opioid overdose crisis in the District. As noted above, a significant portion of the District's Medicaid beneficiaries with behavioral health diagnoses have both SMI and SUD diagnoses. In general, co-occurring SMI and SUD is associated with difficulties engaging in and adhering to treatment. In addition, older heroin users, who are prevalent in the District, tend to have co-occurring mental health co-morbidities and face issues of marginalization that impact treatment seeking and treatment retention.⁹

Barriers to access. The federal IMD exclusion limited the Medicaid supports available for individuals needing services in facilities that specialize in the treatment of psychiatric disorders and SUDs. Historically, Medicaid did not allow FFP for care provided to individuals ages 21–64 during stays in IMDs—hospitals, nursing facilities, or other institutions with more than 16 beds. Federal Medicaid managed care requirements allow capitation payments to be made on behalf of an individual who spends part of the calendar month (up to 15 days) in an IMD as part of the

⁷ Department of Behavioral Health. (2021, August). *LIVE. LONG. DC. Strategic Plan 2.0: The District's plan to reduce opioid use, misuse and related deaths.*

https://livelong.dc.gov/sites/default/files/dc/sites/opioid/page_content/attachments/DC_Opioid_Strategic_Plan_2.0_FINAL.pdf

⁸ Substance Abuse and Mental Health Services Administration. (2014). *Tip 59: Improving cultural competence.*

<https://store.samhsa.gov/system/files/sma14-4849.pdf>

⁹ Rosen, D., Hunsaker, A., Albert, S. M., Cornelius, J. R., Reynolds, C. F., 3rd. (2011). Characteristics and consequences of heroin use among older adults in the United States: A review of the literature, treatment implications, and recommendations for further research. *Addictive Behaviors*, 36(4), 279–285. <https://doi.org/10.1016/j.addbeh.2010.12.012>

“in lieu of” services policy. Therefore, managed care beneficiaries ages 21–64 have had access to medically necessary treatment in IMD settings for stays less than 15 days, but not for longer term stays. FFS beneficiaries had some access to IMD services as well, via local payment. For example, prior to waiver implementation, residential treatment for SUDs and short-term, medically monitored withdrawal management (WM) services delivered in IMDs were provided with local funding through DBH. However, local funding available for these and other FFS IMD services was limited.

In addition to the access challenges beneficiaries face related to the federal IMD exclusion, research commissioned by District agencies suggests that beneficiaries also experience reduced access due to insufficient provider capacity for appropriate levels of SUD care. DHCF leveraged the complementary efforts of its SUPPORT Act Section 1003 Planning Grant to conduct stakeholder engagement to assess SUD provider capacity and need.¹⁰ More than 150 individuals participated in the contractor-convened interviews, focus groups, steering committee meetings, and community meetings. These participants included representatives from health and social service organizations, DHCF, DBH, DC Health, advocacy and professional groups, and community businesses, as well as individuals from the community at large. The assessment showed that the District’s SUD provider network is strong and well supported compared to SUD service networks in similar urban markets. Services are well-distributed throughout the District and provide a full breadth of services across the SUD service continuum. However, this does not mean that District residents with SUD are always able to access the person-centered services they need when and where they want them. The assessment identified several significant gaps across the American Society of Addiction Medicine (ASAM) levels of care and a range of service delivery challenges that limit engagement in care, hinder care coordination, interfere with care transitions, and ultimately reduce the effectiveness of the existing service network.

Many stakeholders cited gaps in the availability, variety, and quality of intensive outpatient programs and recommended expanding:

- availability of intensive outpatient services that target specific segments of the SUD population (e.g., veterans, men only, women only, women with children),
- availability of intensive outpatient services that have different requirements and philosophies (e.g., sober and nonsobor living, 12 step, SMART Recovery, faith-based or secular), and

¹⁰ JSI Research & Training. (2021, February). *Substance use disorder community health and service capacity assessment*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/release_content/attachments/DC%20SUD%20NA%20-%20Final%20Report%20for%20Distribution%20Feb%202021.pdf

- training and technical assistance on evidence-based best practices for delivering high-quality intensive outpatient services.

Delivery system complexity. The District’s Medicaid behavioral health delivery system is complex. Nearly 90% of Medicaid beneficiaries in the District are enrolled in managed care, thus the challenges associated with managed care arrangements affect a majority of beneficiaries in the District.¹¹ MCOs are contractually obligated to provide low-acuity behavioral health services (e.g., counseling) to their enrolled beneficiaries as part of the capitated payments MCOs receive from DHCF. The District’s three MCOs contract with both private and public sector providers to deliver these services. With the exception of IMD services, community-based higher acuity and specialized behavioral health services are carved out of MCO contracts and paid for either by Medicaid via FFS arrangements or by DBH (this payment mechanism is hereafter referred to as “local dollars”). These FFS or local funding payments are made on behalf of beneficiaries using these services regardless of the beneficiaries’ FFS or managed care enrollment status. Community-based higher acuity and specialized behavioral health services are typically delivered by providers who are contracted with and certified by DBH, whether those services are reimbursed by Medicaid or local dollars. These services are defined by DBH regulations as mental health rehabilitation services (MHRS) and adult substance use and rehabilitation services (ASURS).

Another delivery system challenge is that FFS beneficiaries have been unable to take advantage of the care management services offered by MCOs. This makes it difficult to provide integrated, whole-person care to FFS beneficiaries.

These multiple overlapping delivery systems as well as differing administrative and financing roles of DHCF and DBH result in coordination challenges, confusion about entry points to care, and gaps in services. In addition, Medicaid providers and beneficiaries often lack complete information about available benefits and reimbursement requirements.

¹¹ Department of Health Care Finance. (n.d.). *Monthly Medicaid and alliance enrollment reports*. <https://dhcf.dc.gov/node/1180991>

B.2. Demonstration Overview

Demonstration and Evaluation Periods

The approval period for the District’s Demonstration is January 1, 2020–December 31, 2024.¹² The STCs under which the District operates the Demonstration are effective during this same period, unless otherwise specified. The STCs authorized the following:

- FFP for Medicaid state plan services in IMD settings such as residential and inpatient treatment for individuals with SUD and SMI/SED (Expenditure Authority [EA] #1) for the Demonstration’s full 5-year period,
- FFP for nonstate plan services in IMD settings furnished during a stay in an IMD for individuals with SUD and SMI/SED (EA #2) for the first 2 years of the Demonstration (January 1, 2020–December 31, 2021), and
- Expenditure and waiver authority for SMI/SED and SUD non-IMD and nonstate plan services (EA #3) for the first 2 years of the Demonstration (January 1, 2020–December 31, 2021).

The STCs also authorized expenditure and waiver authority for the removal of the \$1 pharmacy copayments for beneficiaries who receive prescriptions associated with medication-assisted therapy (MAT) for the full 5-year period of the Demonstration.

While the Medicaid waiver authority was effective immediately for all Demonstration services, several of the services were implemented in a phased manner. Exhibit B.1 shows the implementation schedule of the various Demonstration services and the number of unique Medicaid beneficiaries who utilized those services as of September 8, 2022.¹³

Exhibit B.1. Phased Implementation of Waiver Services and Their Utilization

Service	Demonstration go-live date	State plan authority effective date	Number of unique Medicaid beneficiaries			
			CY2020	CY2021	CY2022 to 9/8	Total
IMD services for individuals ages 21–64	January 2020	N/A	1,759	1,842	651	3,411
Hospital	January 2020	N/A	949	630	347	1,691

¹² The District received 24-month approval for certain additional waiver authorities. Verma, S. (2019, November 5). [Letter to Melisa Byrd]. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

¹³ Department of Behavioral Health & Department of Health Care Finance. (2022, October 28). *Behavioral Health Transformation Demonstration Post-Award Stakeholder Forum*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/Post%20Award%20Forum%20October%202022%20Demonstration%20102822.pdf

Service	Demonstration go-live date	State plan authority effective date	Number of unique Medicaid beneficiaries			
			CY2020	CY2021	CY2022 to 9/8	Total
<i>Psychiatric</i>	January 2020	N/A	472	426	213	970
<i>Detox (withdrawal management)</i>	January 2020	N/A	535	220	93	777
Adult substance use rehabilitation service (ASURS) providers	January 2020	N/A	1,083	1,330	423	2,262
<i>Residential</i>	January 2020	N/A	1,064	1,323	381	2,215
<i>Detox (withdrawal management)</i>	January 2020	N/A	133	391	80	548
Clubhouse (psychosocial rehabilitative services)	January 2020	January 2022	3	11	12	17
Recovery support services (RSS)	January 2020	January 2022	1,228	1,191	672	2,316
Independent licensed behavioral health clinicians	January 2020	January 2022	290	314	269	556
Eliminate \$1 copay for MAT	January 2020	N/A	964	191	135	1,119
Supported employment–SMI (vocational)	February 2020	July 2022	412	462	224	870
Supported employment–SUD (therapeutic and vocational)	March 2020	July 2022	0	10	4	14
Trauma-targeted care (trauma recovery empowerment model [TREM] and trauma systems therapy [TST])	March 2020	January 2022	10	7	2	11
Behavioral health crisis stabilization services	June 2020	January 2020	1,572	2,846	2,251	5,193
Adult mobile crisis and behavioral health outreach	June 2020	January 2020	1,275	1,836	1,547	3,756
Youth mobile crisis	June 2020	January 2020	236	1,109	739	1,891
Comprehensive psychiatric emergency program (CPEP)	June 2020	January 2020	301	1,296	963	2,128
Psychiatric residential crisis stabilization	June 2020	January 2020	41	187	118	294
Transition planning services	October 2020	January 2020	N/A	N/A	N/A	N/A

The first State Plan Amendment (SPA) associated with the Demonstration was approved September 24, 2021.¹⁴ It transitioned Medicaid enrollment of independent licensed behavioral health clinicians to state plan authority effective January 1, 2022. On April 26, 2022, CMS approved the second Demonstration-related SPA, which included all the community-based non-SPA Demonstration services with the exception of SES.¹⁵ CMS granted a retroactive effective date of January 1, 2022, for these services' inclusion under state plan authority. To allow additional time to develop an approvable SPA for SES, the District requested and was granted an extension (on June 8, 2022) of the Demonstration's EA #2 and EA #3. State plan authority over SES became effective July 1, 2022.¹⁶

On March 21, 2022, CMS provided time-limited approval to the Managed Care Risk Mitigation COVID-19 Public Health Emergency (PHE) section 1115 demonstration application the District submitted. This allows the District to enter into or modify a risk mitigation arrangement with a Medicaid managed care plan after the applicable rating period has begun. The application was approved as an amendment under the District's Demonstration; however, it is associated with separate monitoring and evaluation requirements, so it is not discussed in this Interim Evaluation Report.¹⁷

The evaluation period for the Demonstration is from January 1, 2020, to December 31, 2024. The Interim Evaluation Report covers Demonstration activities between January 1, 2020, and June 30, 2022 (Demonstration year [DY] 1–2.5). The impact analysis covers claims data up to December 31, 2021, in order to assess the effectiveness of the Demonstration's first phase (January 1, 2020–December 31, 2021), as approved in the original STCs, where all services approved under the demonstration were waiver services. The implementation analysis includes implementation activities and perspectives from January 1, 2020, to June 30, 2022.

Goals and Activities of the Demonstration

The Demonstration aims to improve care for Medicaid beneficiaries with SMI, SED, and/or SUD. The primary objectives are for the District to maintain and enhance access to behavioral health treatment services and to continue delivery system improvements to provide more coordinated and comprehensive treatment for Medicaid beneficiaries with SMI, SED, and/or SUD. The

¹⁴ Centers for Medicare & Medicaid Services. (2021, September). *State plan amendment 21-0009*. <https://www.medicaid.gov/Medicaid/spa/downloads/DC-21-0009.pdf>

¹⁵ Centers for Medicare & Medicaid Services. (2022, April). *State plan amendment 21-0010*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%2021-0010%20APPROVAL.pdf

¹⁶ Centers for Medicare & Medicaid Services. (2022, June). *Transmittal Number 21-0011*. <https://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Waivers/1115/downloads/dc/dc-behavioral-health-transformation-ca.pdf>

¹⁷ Centers for Medicare & Medicaid Services. (2022, March). *Managed Care Risk Mitigation COVID-19 PHE Section 1115 Demonstration approval*. <https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/dc-behavioral-health-transformation-risk-miti-appvl-03212022.pdf>

District's approach to achieving Demonstration objectives is a comprehensive strategy involving multiple payment, benefit, service redesign, and health information technology (IT) interventions that each address specific challenges the District faced prior to the Demonstration and work collectively to improve the behavioral healthcare delivery system. The Demonstration complements ongoing District efforts under the Medicaid State Plan and administration operations to enhance ASURS and MHRS and identify opportunities for system improvements. The Demonstration also complements the District's efforts to implement models of care that are focused on increasing supports for individuals outside of institutions, in home- and community-based settings (HCBS), to improve their access to SUD/SMI/SED services at varied levels of intensity, and to combat OUD and other SUDs among District residents.

During the Demonstration period, the District seeks to achieve 11 goals as approved in the STCs.¹⁸ Exhibit B.2 lists the five SMI/SED goals and the six SUD goals with the STC goal number in parentheses.¹⁹

Exhibit B.2. Goals of the Behavioral Health Transformation Demonstration

SMI/SED GOALS

1. Reduced utilization and lengths of stay in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)
2. Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)
3. Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, and services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)
4. Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI or SED, including through increased integration of primary and behavioral healthcare. (SMI/SED-4 in STCs)
5. Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)

¹⁸ Verma, S. (2019, November 5). [Letter to Melisa Byrd]. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

¹⁹ A crosswalk of the goal numbers in Exhibit B.2 to the goal numbers in the evaluation design is included in Exhibit C.6.

SUD GOALS

1. Increased rates of identification of, initiation of, and engagement in treatment for SUD. (SUD-1 in STCs)
2. Increased adherence to and retention in treatment. (SUD-2 in STCs)
3. Reductions in overdose deaths, particularly those due to opioids. (SUD-3 in STCs)
4. Reduced utilization of hospital EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum-of-care services. (SUD-4 in STCs)
5. Fewer readmissions to the same or higher LOC where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)
6. Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs)

In addition to the services listed in Exhibit B.1 that fall under the Demonstration's expenditure and waiver authorities, the Demonstration includes the following initiatives:

- Increasing entry points and access to SUD and dual SUD/mental health treatment via decentralizing the assessment and referral functions of the Assessment Referral Center (ARC);
- Implementing requirements related to evidence-based assessment tools and practices;
- Revising and clarifying reimbursement methodologies for telemedicine;
- Implementing requirements and technical assistance related to clinical care coordination;
- Implementing prescription drug monitoring program (PDMP) participation requirements alongside technical assistance for opioid-prescribing practices;
- Ensuring all residential treatment facilities provide or facilitate access to MAT for beneficiaries for whom MAT is an appropriate treatment option;
- Updating the District's ability to assess provider capacity; and
- Collaborating with stakeholders to improve health IT adoption, use, and interoperability.

Throughout all of these initiatives, the District developed, maintained, and/or enforced licensing, certification, and accreditation requirements and utilization review policies and procedures for applicable providers and services.

Population Groups Impacted by the Demonstration

The populations targeted and likely to be most impacted by the Demonstration are beneficiaries with SUD and/or SMI/SED who are in need of acute levels of care, such as short-term residential or inpatient behavioral health stabilization, and/or beneficiaries for whom crisis stabilization services are appropriate treatment alternatives to acute levels of care. Beneficiaries with OUD and other SUDs who could be stabilized and/or undergo detox with the follow-up use of MAT could also benefit from expanded access to and utilization of MAT and the increased provision of care coordination services, particularly at care transitions. These populations are often particularly vulnerable, and if the Demonstration is successfully implemented, many of the District's SUD and/or SMI/SED beneficiaries could be helped with increased support for care transitions and linkages to social support services. As opioid-overdose mortality has disproportionately impacted older African American heroin users in the District, this population may benefit from increased access to treatment.

C. Evaluation Questions and Hypotheses

Section C.1 includes driver diagrams that link the aims of the Demonstration to primary and secondary Demonstration interventions and policy changes that will drive expected outcomes.²⁰ Section C.2 articulates the hypotheses behind each Demonstration goal and provides research questions that we use to test the hypotheses.

C.1. Driver Diagram

The waiver goals and initiatives in Section B.2 articulate DHCF’s vision for the Demonstration. The driver diagrams (Exhibits C.1–C.5) illustrate how the goals, implementation milestones, and initiatives from the District’s SUD and SMI/SED Implementation Plans work together to drive change and advance the three overarching **aims** of the Demonstration. The District’s interventions under the waiver are presented as secondary drivers. These secondary drivers are grouped into four domains (**Expand Reimbursement/Benefits**, **Increase Capacity**, **Improve Quality**, and **Enhance IT Infrastructure**) and map to the goals of the Demonstration (summarized here as **primary drivers**). Exhibits C.2–C.5 break down the overall driver diagram (Exhibit C.1) to show how the interventions in each domain map to the goals of the Demonstration. For example, one of the Demonstration’s key interventions—reimbursement of intensive services delivered in an IMD setting—supports the District’s goal of expanding access to the full range of SUD and SMI/SED services. Similarly, within the Improve Quality domain, the District’s provision of technical assistance on care coordination supports the goal of improving care transitions and behavioral and physical health coordination.

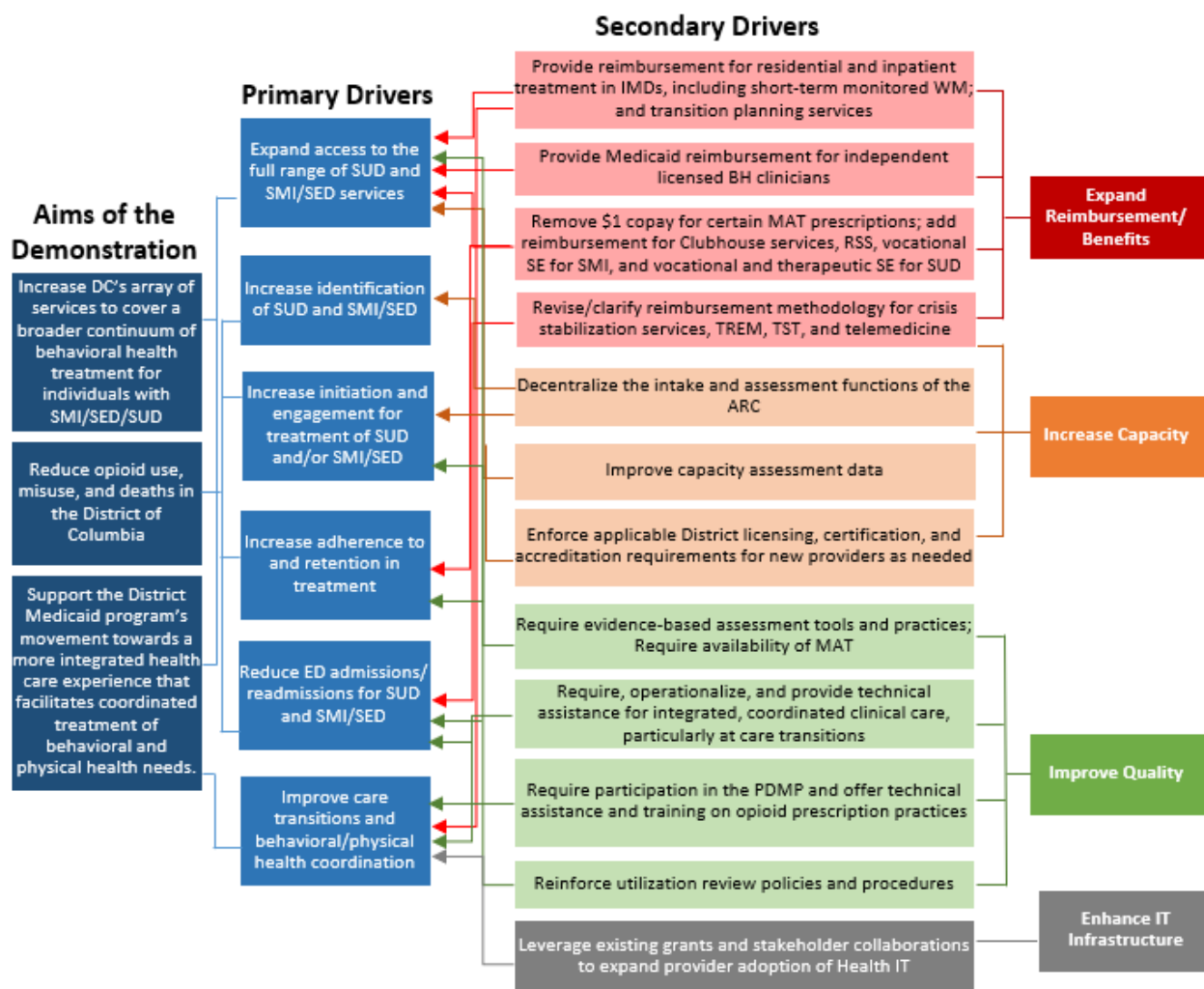
As these driver diagrams show, the District will achieve the Demonstration aims through expanded reimbursement, increased capacity, quality improvements, and enhanced IT infrastructure in SUD and SMI/SED services. The expansion of coverage for intensive inpatient and outpatient treatment, crisis care, MAT, and recovery supports will increase access to the full continuum of care, improve retention and completion of treatment, and reduce reliance on emergency departments (EDs) and avoidable hospitalizations. The Demonstration also increases provider capacity, which supports access to services, improves identification of care needs and engagement in treatment, and seeks to decrease preventable or medically inappropriate ED/hospital service use. Quality improvements such as care transition services, evidence-based assessment, care coordination, technical assistance, and utilization review will further improve

²⁰ A driver diagram depicts the relationship between the aim, the primary drivers that contribute directly to achieving the aim, and the secondary drivers that are necessary to achieve the primary drivers for the demonstration. Centers for Medicare & Medicaid Services. (2013, January). *Defining and using aims and drivers for improvement: A how-to guide*. <https://innovation.cms.gov/files/x/hciatwoaimsdvrs.pdf>

identification of SUD and SMI/SED, increase access to treatment and adherence, and align beneficiaries' physical and behavioral healthcare. Finally, the District will use existing grants and stakeholder collaborations to expand the use of health IT among SUD and mental health providers to improve care coordination and transitions between levels of care.

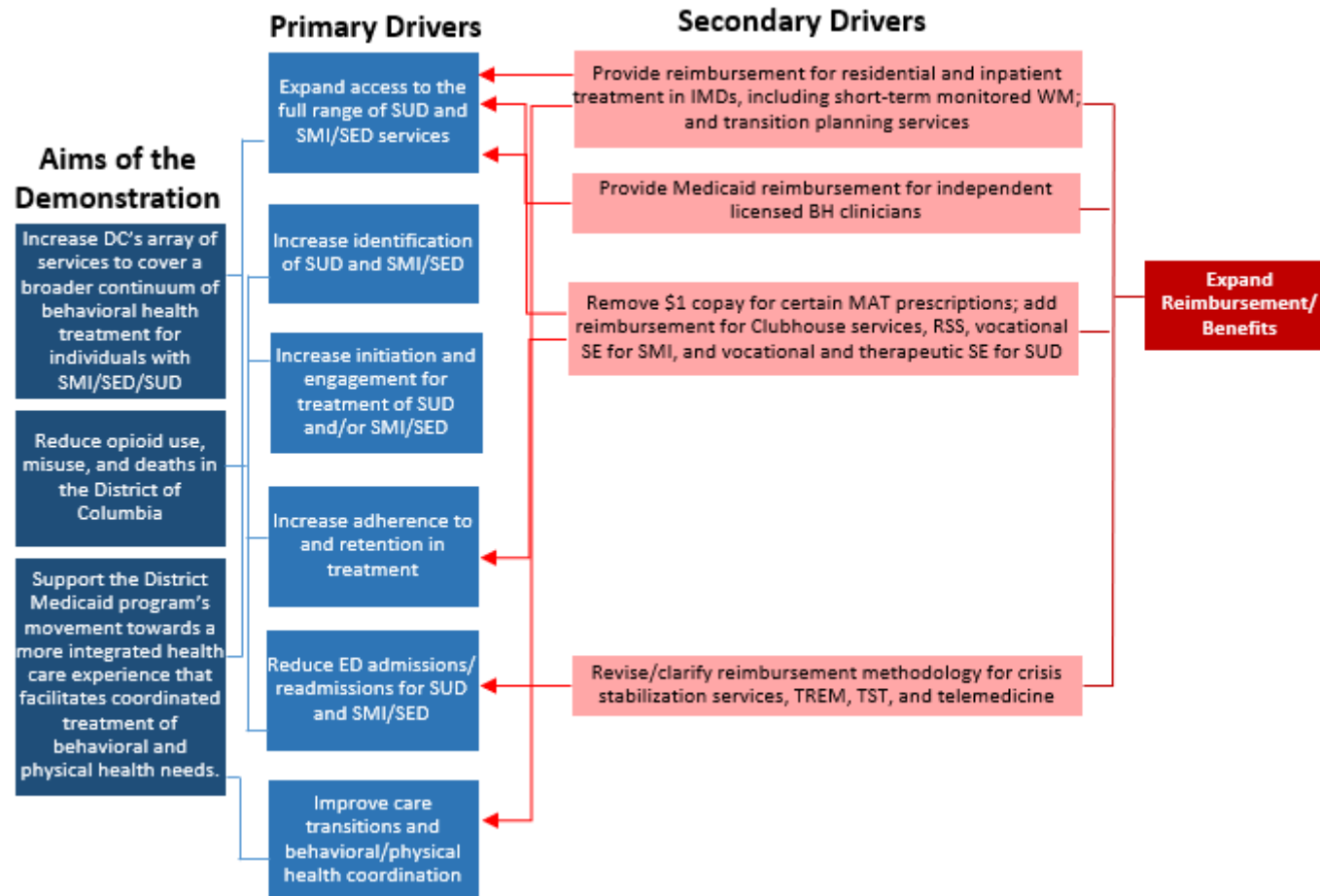
The primary and secondary drivers in Exhibits C.1–C.5 are reflected in the hypotheses and research questions (Section C.2) and the proposed evaluation measures (Appendix B).

Exhibit C.1. Behavioral Health Transformation Demonstration Driver Diagram



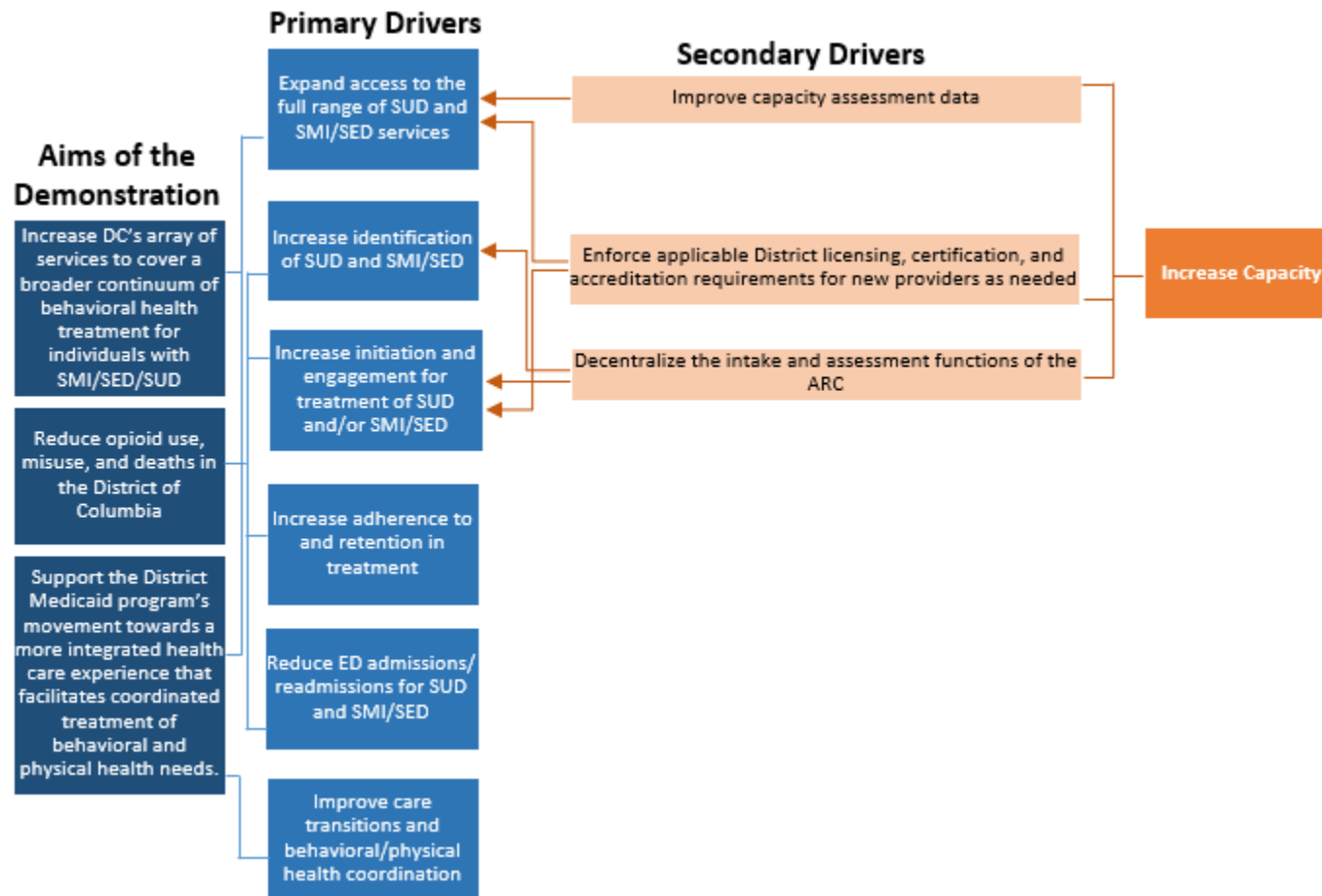
ARC = Assessment and Referral Center; BH = behavioral health; ED = emergency department; IMD = institution of mental disease; IT = information technology; MAT = medication-assisted treatment; PDMP = prescription drug monitoring program; RSS = recovery support services; SE = supported employment; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder; TREM = trauma recovery and empowerment model; TST = trauma systems therapy; WM = withdrawal management.

Exhibit C.2. Behavioral Health Transformation Demonstration Driver Diagram—*Expand Reimbursement/Benefits Domain*



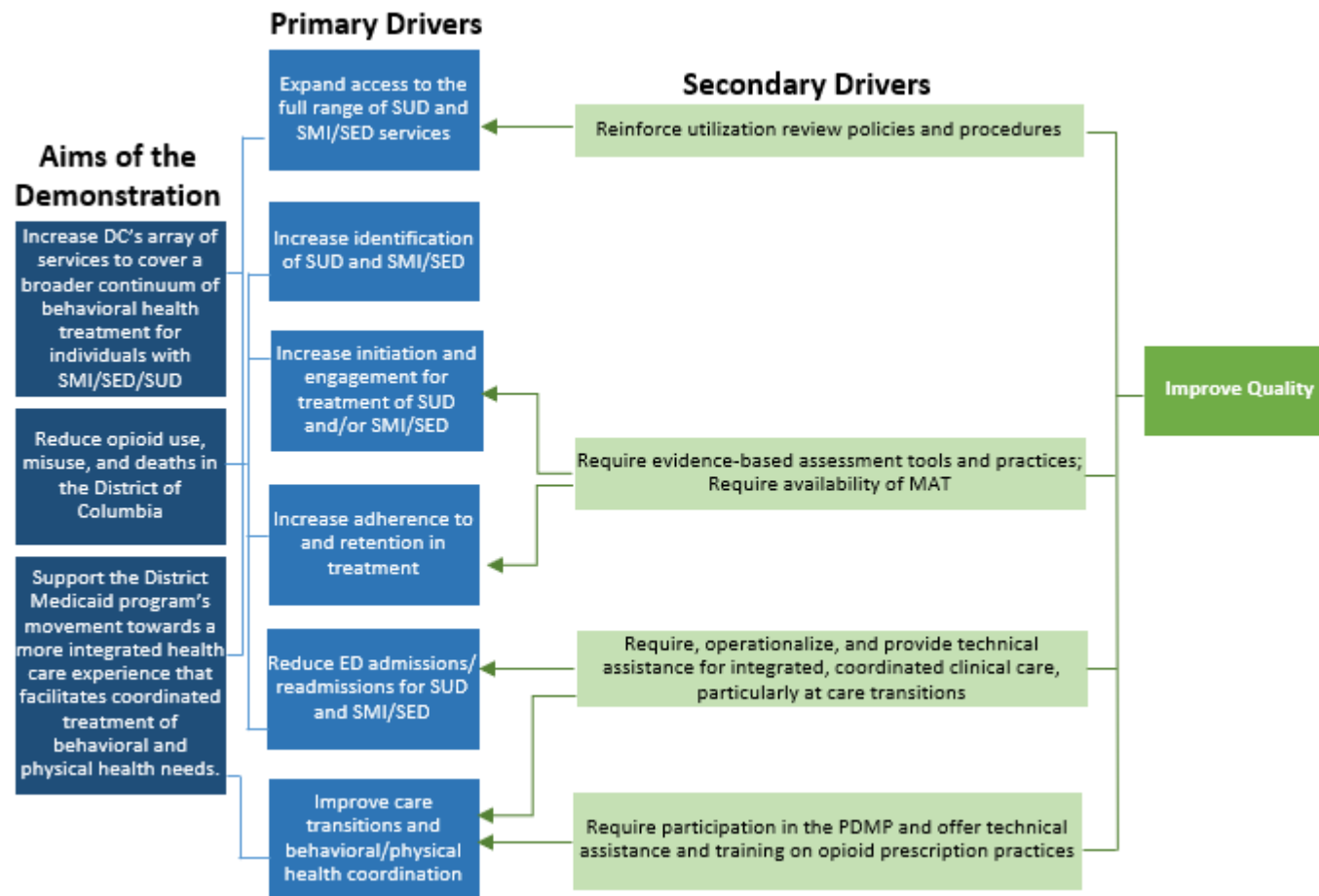
BH = behavioral health; ED = emergency department; IMD = institution of mental disease; MAT = medication-assisted treatment; RSS = recovery support services; SE = supported employment; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder; TREM = trauma recovery and empowerment model; TST = trauma systems therapy; WM = withdrawal management.

Exhibit C.3. Behavioral Health Transformation Demonstration Driver Diagram—*Increase Capacity Domain*



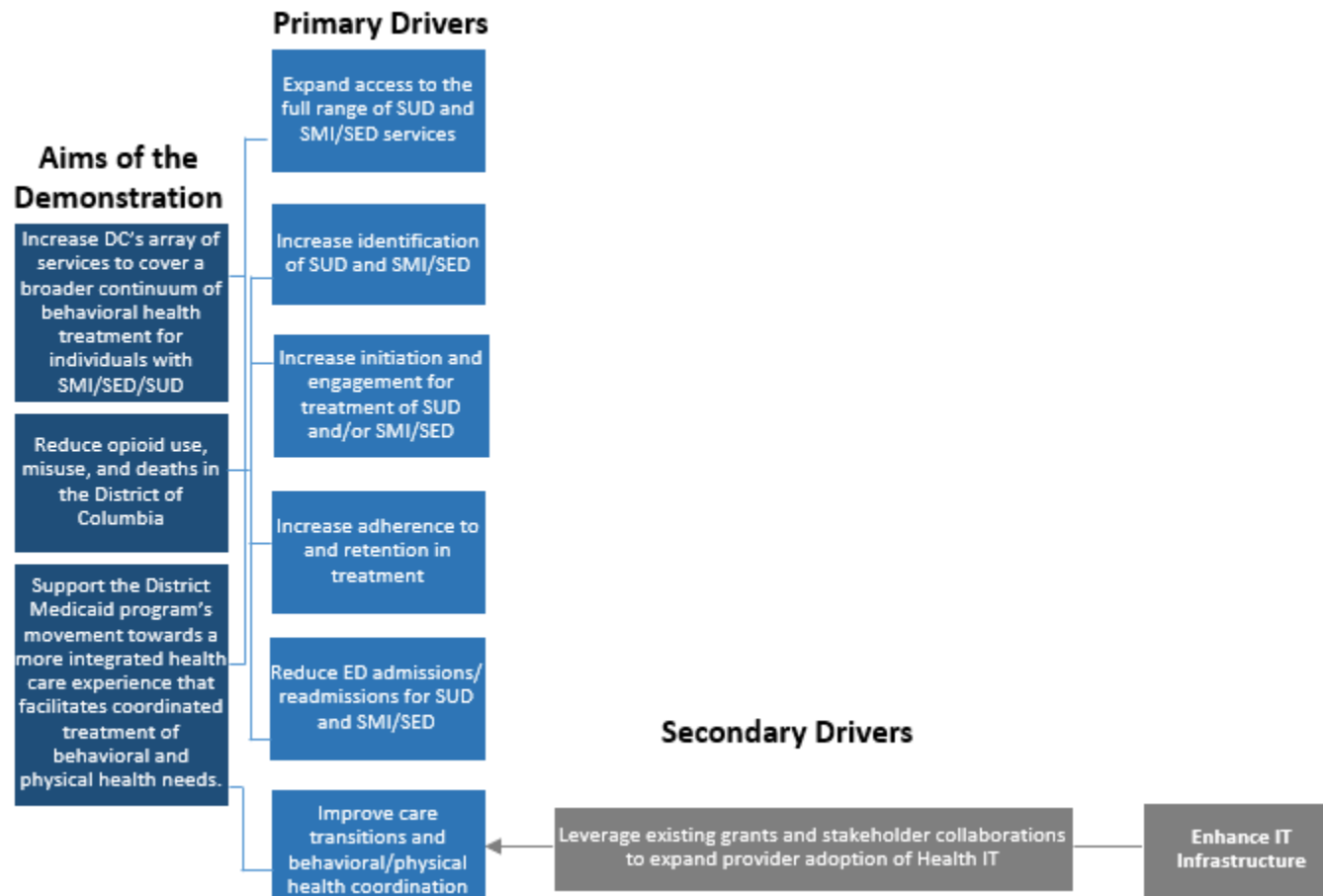
ARC = Assessment and Referral Center; ED = emergency department; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder.

Exhibit C.4. Behavioral Health Transformation Demonstration Driver Diagram—*Improve Quality Domain*



ED = emergency department; MAT = medication-assisted treatment; PDMP = prescription drug monitoring program; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder.

Exhibit C.5. Behavioral Health Transformation Demonstration Driver Diagram—*Enhance IT Infrastructure Domain*



ED = emergency department; IT = information technology; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder.

C.2. Hypotheses and Research Questions

In this section, SMI/SED goals, associated hypotheses, and related research questions are listed first, followed by SUD goals, associated hypotheses, and related research questions. Thereafter cost analysis related research questions are listed. In addition to those, one research question on the influence of COVID-19 PHE on Demonstration implementation and two research questions on the influence of non-waiver and expenditure authority systems changes on Demonstration implementation are included.

In this report, SMI/SED and SUD goals are listed and discussed in separate sections and follow the order in the corresponding STCs. Exhibit C.6 includes a crosswalk of goal numbers in this report with the goal numbers in the evaluation design which was based on the Demonstration application.²¹

Exhibit C.6. Crosswalk of Goal Number in Interim Evaluation Report/STCs and Evaluation Design

Goal number in interim evaluation report and STCs	Goal number in evaluation design
SMI/SED	
Goal 1: Reduced utilization and lengths of stay in hospital emergency departments (ED) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)	Goal 4
Goal 2: Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)	Goal 7
Goal 3: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)	Goal 10
Goal 4: Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral health care. (SMI/SED-4 in STCs)	Goal 2
Goal 5: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)	Goal 6
SUD	
Goal 1: Increased rates of identification, initiation, and engagement in treatment for SUD. (SUD-1 in STCs)	Goal 1

²¹ We have grouped SMI/SED goals and SUD goals separately in this report to make it easier for the District, CMS and the public to draw clear conclusions about the effectiveness of the SMI/SED and SUD demonstration components separately. Since not all 1115 waiver Demonstrations include both SMI/SED and SUD components, with many states focusing only on the SUD component, this separation of goals also helps CMS and others to aggregate this Demonstration's effectiveness related evidence to that of the corresponding SMI/SED or SUD evidence component from other states' demonstrations.

Goal number in interim evaluation report and STCs	Goal number in evaluation design
Goal 2: Increased adherence to and retention in treatment. (SUD-2 in STCs)	Goal 3
Goal 3: Reductions in overdose death, particularly those due to opioids. (SUD-3 in STCs)	Goal 11
Goal 4: Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services. (SUD-4 in STCs)	Goal 5
Goal 5: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)	Goal 8
Goal 6: Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs)	Goal 9

C.2.1. SMI/SED Goal-Based Hypotheses and Research Questions

Goal 1: Reduced utilization and lengths of stay in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings.

Hypothesis 1.1. The Demonstration will decrease the utilization of ED services by beneficiaries with SMI/SED.

Research Question 1.1a. Was there a decrease in ED service utilization by beneficiaries with SMI/SED?

Research Question 1.1b. How does the Demonstration influence the ED service utilization by beneficiaries with SMI/SED (e.g., through improved access to other continuum of care services)?

Hypothesis 1.2. The Demonstration will decrease the length of stay (LOS) in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings.

Research Question 1.2a. Was there a decrease in the LOS in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings?

Research Question 1.2b. How does the Demonstration influence the LOS in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings (e.g., through improved access to other continuum of care services)?

Goal 2: Reduced preventable readmissions to acute care and specialty hospitals and residential settings.

Hypothesis 2.1. The Demonstration will reduce preventable readmissions to acute care and specialty hospitals and residential settings for beneficiaries with SMI/SED.

Research Question 2.1. Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?

Goal 3: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, and services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District.

Hypothesis 3.1. The Demonstration will increase the availability of crisis stabilization services.

Research Question 3.1a. Was there an increase in the utilization of crisis stabilization services?

Research Question 3.1b. Was there an increase in awareness of the availability of crisis stabilization services?

Research Question 3.1c. How does the Demonstration influence the availability of crisis stabilization services (i.e., CPEP, psychiatric crisis stabilization program, youth mobile crisis intervention, and adult mobile crisis and behavioral health outreach)?

Goal 4: Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI/SED including through increased integration of primary and behavioral healthcare.

Hypothesis 4.1. The Demonstration will increase access to specific community-based SMI/SED treatment services.

Research Question 4.1a. Was there an increase in access to community-based SMI/SED treatment services?

Research Question 4.1b. Was there an increase in community knowledge of available community-based SMI/SED treatment and services?

Research Question 4.1c. How does the implementation of changes to the reimbursement methodology for trauma systems therapy (TST) and trauma recovery and empowerment model (TREM) influence access to TST and TREM?

Research Question 4.1d. How does the implementation of reimbursement for independent licensed behavioral health clinicians for SMI/SED services influence access to independent licensed behavioral health clinicians?

Research Question 4.1e. How does creating separate service definitions for TREM and TST influence access to TREM and TST services?

Research Question 4.1f. How does the implementation of FFP for short-term stays for acute care in IMD settings influence access to short-term stays for acute care in IMD settings?

Hypothesis 4.2. The Demonstration will increase utilization of specific community-based SMI/SED treatment services.

Research Question 4.2a. Was there an increase in utilization of community-based SMI/SED treatment services?

Research Question 4.2b. How does the Demonstration influence utilization of TST and TREM services?

Research Question 4.2c. How does the availability of the Clubhouse influence utilization of SMI/SED treatment services?

Research Question 4.2d. How does the Demonstration influence utilization of independent licensed behavioral health clinicians by beneficiaries with SMI or SED?

Hypothesis 4.3. The Demonstration will increase integration of primary and behavioral healthcare.

Research Question 4.3a. Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?

Research Question 4.3b. Did the Demonstration increase integration of primary and behavioral healthcare for beneficiaries with SMI/ED?

Goal 5: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities.

Hypothesis 5.1. The Demonstration will improve follow-up for beneficiaries with SMI/SED after episodes of acute care in hospitals.

Research Question 5.1a. Was there an increase in utilization of follow-up services for beneficiaries with SMI/SED after episodes of acute care in hospitals?

Research Question 5.1b. How does the implementation of the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge influence care coordination?

Research Question 5.1c. How does the implementation of reimbursement for transition planning services influence care coordination?

Research Question 5.1d. How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SMI/SED?

Research Question 5.1e. How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SMI/SED?

Research Question 5.1f. Did care coordination improve for beneficiaries with SMI/SED?

C.2.2. SUD Goal-Based Hypotheses and Research Questions

Goal 1: Increased rates of identification of, initiation of, and engagement in treatment for SUD.

Hypothesis 1.1. The Demonstration will increase rates of identification and initiation of treatment for SUD.

Research Question 1.1. Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?

Hypothesis 1.2. The Demonstration will increase access to specific SUD treatment services.

Research Question 1.2a. Did the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increase during the Demonstration period?

Research Question 1.2b. How does the implementation of reimbursement for services provided in IMD settings influence access to specific SUD treatment services?

Research Question 1.2c. How does the implementation of reimbursement for withdrawal management in IMD settings influence access to these SUD treatment services?

Research Question 1.2d. How does the implementation of requirements to offer or facilitate access to all Food and Drug Administration (FDA)-approved medications for use in SUD influence access to these SUD treatment services?

Research Question 1.2e. How does the implementation of reimbursement for independent licensed behavioral health clinicians providing SUD services influence access to specific SUD treatment services?

Hypothesis 1.3. The Demonstration will increase utilization of specific SUD treatment services.

Research Question 1.3a. Was there an increase in community knowledge of available SUD treatment and services?

Research Question 1.3b. Was there an increase in the utilization of specific SUD treatment services?

Research Question 1.3c. How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence utilization of SUD services?

Goal 2: Increased adherence to and retention in treatment.

Hypothesis 2.1. The Demonstration will increase adherence to and retention in SUD treatment.

Research Question 2.1a. Did the Demonstration increase adherence to SUD treatment?

Research Question 2.1b. Did the Demonstration increase retention in SUD treatment?

Research Question 2.1c. How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence adherence to and retention in SUD treatment?

Research Question 2.1d. How does the availability of supported employment influence adherence to and retention in SUD treatment?

Research Question 2.1e. How does the availability of recovery support services influence initiation of, adherence to, and retention in SUD treatment?

Research Question 2.1f. How does the availability of transition planning services influence adherence to and retention in SUD treatment?

Research Question 2.1g. How does the availability of independent licensed behavioral health clinician services influence adherence to and retention in SUD treatment?

Goal 3: Reductions in overdose deaths, particularly those due to opioids.

Hypothesis 3.1. The Demonstration will reduce the rate of overdose deaths.

Research Question 3.1. Was there a decrease in the rate of overdose deaths?

Goal 4: Reduced utilization of hospital EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum-of-care services.

Hypothesis 4.1. The Demonstration will reduce utilization of hospital EDs and inpatient hospital settings.

Research Question 4.1a. Was there a reduction in ED or inpatient utilization for beneficiaries with SUD?

Research Question 4.1b. How does the Demonstration influence preventable utilization of ED or inpatient care through improved access to other continuum-of-care services?

Research Question 4.1c. How does the Demonstration influence medically inappropriate utilization of ED or inpatient care through improved access to other continuum-of-care services?

Goal 5: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.

Hypothesis 5.1. The Demonstration will decrease preventable or medically inappropriate readmissions to the same or higher LOC for beneficiaries with SUD.

Research Question 5.1. Was there a decrease in preventable or medically inappropriate readmissions to the same or higher LOC for beneficiaries with SUD?

Goal 6: Improved access to care for physical health conditions among beneficiaries with SUD.

Hypothesis 6.1. The Demonstration will increase access to care for physical health conditions among beneficiaries with SUD.

Research Question 6.1a. Was there an increase in access to care for physical health conditions among beneficiaries with SUD?

Research Question 6.1b. Did care coordination improve for beneficiaries with SUD?

Research Question 6.1c. How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SUD?

Research Question 6.1d. How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SUD?

C.2.3. Research Questions for SMI/SED Cost Analysis

Research Question 1. Have the total costs per beneficiary per month (PBPM) for the target population of SMI/SED beneficiaries increased, decreased, or stayed the same in the Demonstration period?

Research Question 2. Have the costs related to the diagnosis and treatment of SMI/SED increased, decreased, or stayed the same during the Demonstration period?

Research Question 3. What are the sources of the treatment cost drivers for the target population of SMI/SED beneficiaries in the Demonstration period?

C.2.4. Research Questions for SUD Cost Analysis

Research Question 1. Have the total costs PBPM for the target population of SUD beneficiaries increased, decreased, or stayed the same in the Demonstration period?

Research Question 2. Have the costs related to the diagnosis and treatment of SUD increased, decreased, or stayed the same during the Demonstration period?

Research Question 3. What are the sources of the treatment cost drivers for the target population of SUD beneficiaries in the Demonstration period?

C.2.5. Research Questions Related to the COVID-19 Public Health Emergency

Research Question 1. How does the COVID-19 PHE influence the implementation of the Demonstration?

C.2.6. Research Questions Related to Non-Waiver and Expenditure Authority Systems Changes under the Demonstration

Research Question 1. What other behavioral health systems changes influenced the implementation of the Demonstration?

Research Question 2. How do these systems changes influence the implementation of the Demonstration?

D. Methodology

This section describes the mixed-methods evaluation design methodology the AIR team implemented following the CMS-approved evaluation design included in Attachment J. The subsections below follow CMS's recommended structure for the methodology section of the Interim Evaluation Report.

- Evaluation design
- Target and comparison populations
- Evaluation period
- Evaluation measures
- Data sources
- Analytic methods

D.1. Evaluation Design

The AIR team employed a mixed-methods approach to this interim evaluation that used multiple quantitative and qualitative analyses to assess the implementation and impact of the Demonstration. A mixed-methods approach accounts for the complexity and variety of the Demonstration activities shown in the driver diagrams (Exhibit C.1–C.5). This section gives an overview of our evaluation design. Sections D.2–D.6 describe our methods in detail.

Implementation evaluation. To assess whether the Demonstration was implemented as intended, we collected Demonstration documents, such as regulations and subregulatory guidance; conducted interviews and listening sessions with representatives of the implementing agencies, MCOs, healthcare providers, and local provider associations; and administered a survey of Medicaid beneficiaries. We employed thematic coding, descriptive statistics, and triangulation to analyze these primary data sources. Based on these analyses, we identified themes related to implementation progress, successes, and challenges, including whether providers were aware of and adopting the Demonstration policy changes and believed that these changes would influence Demonstration goals. We also identified themes related to whether beneficiaries were aware of new and modified benefits available under the Demonstration.

Impact evaluation. To assess the Demonstration's effects on quantifiable measures, such as utilization of SMI/SED and SUD treatment services and health outcomes, we analyzed Medicaid claims and other administrative data. The quantitative analytic methods include visual representation of observed and adjusted data and regression-based effect estimates. We used

an interrupted time series (ITS) design, which is CMS’s preferred methodology for impact analysis when there is no appropriate comparison group—as is the case with this Demonstration—for estimating effects. The unit of observation for the ITS analysis was the District for most metrics, while for a subset of metrics we conducted beneficiary-level analysis. For the cost analysis, we used a two-part model specification. We also conducted descriptive analyses of the beneficiary survey data and thematic analyses from the interviews and listening sessions to assess the perceived impacts of the Demonstration. Sections D.5.2 and D.6.2 describe the quantitative data sources and analytic methods.

Integrated mixed-methods analysis. We integrated findings from the various quantitative and qualitative analyses using methods such as sequential exploratory design (e.g., designing interview guides to explore trends in monitoring reports) and concurrent triangulation (e.g., using the results of both regression and thematic analyses to answer the same research question, as applicable) to draw conclusions.^{22, 23} The mixed-methods evaluation approach provides summative insights into how successful the Demonstration is in achieving its objectives. In addition, it provides more formative insights into how and why the various components of the Demonstration work or could be improved.

D.2. Target and Comparison Populations

Target population. The target population for the impact evaluation was determined based on the Demonstration goals and corresponding evaluation metrics. For the claims-based SMI/SED metrics used to evaluate the Demonstration’s effectiveness in achieving the SMI/SED goals, the target population is Medicaid beneficiaries with SMI/SED enrolled in Medicaid for any amount of time during the measurement period of the metric.²⁴ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI.²⁵ Appendix A contains the list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition of SMI. For the claims-based SUD metrics used to evaluate the Demonstration’s effectiveness in achieving the SUD goals, generally,²⁶ the target population is all Medicaid beneficiaries enrolled in Medicaid

²² Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3–20. <https://doi.org/10.1177/1525822X05282260>

²³ Castro, F. G., Kellison, J. G., Boyd, S. J., & Kopak, A. A. (2010). Methodology for conducting integrative mixed methods research and data analyses. *Journal of Mixed Methods Research*, 4(4), 342–360. <https://doi.org/10.1177/1558689810382916>

²⁴ One exception is the length of stay (LOS) in the ED metric where the SMI/SED target population is defined based on psychiatric codes used by the District of Columbia Hospital Association, which provided LOS data for this measure.

²⁵ These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications.

²⁶ Some exceptions include the rate of all-cause readmissions among beneficiaries with SUD and the percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period, where the target population is specific to Medicaid beneficiaries with an SUD diagnosis. These exceptions are discussed when presenting findings by measure in Section F.

for any amount of time during the measurement period of the metric. The target population for the Medicaid beneficiary survey is Medicaid beneficiaries with an SMI/SED or SUD diagnosis who are 21 years or older.

Comparison population. According to CMS’s SUD Demonstration Evaluation Guidance, the ideal comparison groups are comparable states without the Demonstration waiver flexibilities or similar programs affecting the same population occurring concurrently with the Demonstration, comparison populations that are not able to receive services due to geographic or demographic limitations, or late-Demonstration participants that can act as a comparison group for early-Demonstration participants. However, such comparison groups were not available for this evaluation because all eligible beneficiaries in the District are participating in the Demonstration, their participation begins at the same time, and obtaining access to administrative claims data or performing data collection for other states was outside the scope of this project (as discussed further in Section D.6.2). Therefore, we used the ITS design as the main method for estimating the effects of the Demonstration. The ITS design compares the trend of the outcome after Demonstration implementation with the outcome trend that would have occurred if the preexisting trend had continued after implementation.

D.3. Evaluation Period

The Interim Evaluation covers the period from January 1, 2020, to June 30, 2022 (Demonstration year [DY] 1–2.5). The pre-Demonstration period serves as the baseline, and the period after the Demonstration begins is considered the post-Demonstration period for the quantitative analysis. The baseline is the 3-year period prior to the Demonstration start date of January 1, 2020 (i.e., from January 1, 2017, to December 31, 2019), for the ITS analysis. The baseline for the cost analysis is the 2-year period from January 1, 2018, to December 31, 2019.²⁷ The qualitative data analyzed for the Interim Evaluation Report covers Demonstration activities during the entire period of DY 1–2.5. The claims-based quantitative data analysis covers data until December 31, 2021 (DY 1–2). The regression analysis data are limited to the first two DYs to ensure that the estimates cleanly capture the effects of the Demonstration when all the originally approved Demonstration services were funded under the waiver (termed Phase I here for ease of reference). All Demonstration services except for the IMD services and the removal of the \$1 MAT copay transitioned from waiver services to the state plan authority starting January 1, 2022. While this change in funding sources is not expected to result in significant changes to provider and beneficiary behavior, from an evaluation

²⁷ The use of a 3-year baseline for the Demonstration goals analysis and a 2-year baseline for the cost analysis are according to CMS evaluation guidance. Centers for Medicare & Medicaid Services. (n.d.). *1115 Demonstration State Monitoring & Evaluation Resources*. <https://www.medicaid.gov/medicaid/section-1115-demonstrations/1115-demonstration-monitoring-evaluation/1115-demonstration-state-monitoring-evaluation-resources/index.html>

standpoint it is useful to get a separate estimate of the effects of the Demonstration when all the SMI/SED/SUD services were in effect.²⁸ Furthermore, starting in January 2022, DHCF began the soft launch of a new prior authorization process for all SUD residential services' claim submissions, which introduced providers to the new process but did not have a direct impact on payment. Until the hard launch, the date of which is to be determined, the new process does not directly affect Medicaid payment. However, claims submission delays by some SUD residential treatment providers while navigating the new process reduced measurable Medicaid utilization for FY 2022. Excluding data from calendar year (CY) 2022 in the interim evaluation is also useful for this reason as it could otherwise result in an underestimation of the Demonstration effects on outcomes related to SUD treatment utilization.

D.4. Evaluation Measures

CMS suggests the use of nationally recognized sources and national measures sets, where possible, to assess the impact of 1115(a) waivers.²⁹ Therefore, we used five SMI/SED monitoring metrics and nine SUD monitoring metrics that DHCF regularly reports to CMS under the Demonstration (Exhibit D.1) to answer evaluation research questions. These measures are drawn from the Healthcare Effectiveness Data and Information Set (HEDIS), Medicaid Core Set, or other standardized measure sets.

Exhibit D.1. SMI/SED and SUD Monitoring Metrics Used for the Evaluation

SMI/SED MONITORING METRICS

1. Metric #4: 30-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (IPF)
2. Metric #8: Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)
3. Metric #10: Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)
4. Metric #16: Mental Health Services Utilization—ED
5. Metric #18: Mental Health Services Utilization—Any Services

²⁸ On the other hand, the Summative Evaluation Report will estimate the combined effect of the Demonstration including both Phase I, when all the services were waiver funded, and Phase II, when only the IMD services and the \$1 MAT copay removal were waiver funded.

²⁹ The use of nationally recognized measures to the extent possible meant that for some of the Demonstration goals the measures used to assess goal achievement are not perfectly aligned with the goals to be assessed.

SUD MONITORING METRICS

1. Metric #2: Medicaid Beneficiaries With Newly Initiated SUD Treatment/Diagnosis
2. Metric #6: Any SUD Treatment
3. Metric #13: SUD Provider Availability
4. Metric #15: Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD)
5. Metric #22: Continuity of Pharmacotherapy for Opioid Use Disorder
6. Metric #23: Emergency Department Utilization for SUD per 1,000 Medicaid Beneficiaries
7. Metric #24: Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries
8. Metric #25: Readmissions Among Beneficiaries With SUD
9. Metric #32: Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD

We also created five de novo quantitative measures that address specific dimensions of the Demonstration that are not captured in the monitoring metrics or established measures: ED LOS, assessment of physical health during IMD stay, crisis stabilization services, number of mental health providers, and inpatient hospital admissions for ambulatory care sensitive chronic conditions. There are also several quantitative questions from the beneficiary survey that cover beneficiary needs and experience with mental healthcare.

In Appendix B, Exhibit B.1 (SMI/SED goals) and Exhibit B.2 (SUD goals) describe these measures and the qualitative research domains, along with the data sources and analytic methods that we used to evaluate changes in access to SMI/SED and SUD services and patient outcomes associated with the Demonstration. These exhibits align the goals, hypotheses, research questions, and proposed measures/research domains. The measure names, descriptions, numerators, and denominators/populations of interest are drawn from CMS's specifications for monitoring metrics where available. In addition to the measures in Appendix Exhibits B.1 and B.2 that we used to assess the Demonstration research questions, we used cost measures listed in Exhibit D.2 under the cost analysis.

D.5. Data Sources

For the interim evaluation, the AIR team used a combination of primary and secondary data sources. Primary data collected for the evaluation by the AIR team included interviews of providers, provider associations, and Medicaid managed care plans as well as DHCF and DBH officials and a Medicaid beneficiary survey. The secondary data the AIR team analyzed included Medicaid claims and encounter data and other administrative data as well as external data

from the DC Hospital Association (DCHA). The AIR team also conducted program document review to assess implementation plans and progress.

D.5.1. Primary Data

Document Reviews

The AIR Team reviewed six types of key documents to assess systems changes that were occurring under the Demonstration and the overlapping initiatives that may complicate or provide synergy to the Demonstration activities:

- Briefing materials about the Demonstration,
- District policy (e.g., rules, legislation),
- Demonstration monitoring reports,
- Provider guidance documents (e.g., bulletins),
- DHCF's and DBH's self-assessment of progress toward Demonstration milestones, and
- Materials that describe relevant co-occurring initiatives (e.g., grant narratives, reports).

Key Informant Interviews With Implementation Staff

Between January 2021 and January 2023, AIR conducted 17 key informant interviews (KIIs) with the core Demonstration implementation teams at DHCF and DBH; one with DC Health, the agency that administers the District's PDMP; and two with CRISP, the District's designated HIE entity. These interviews supplemented the information gathered in the document reviews regarding implementation progress, including changes or delays to implementation, and provided information about barriers and facilitators to implementation, including lessons learned.

Stakeholder Interviews and Listening Sessions

AIR solicited feedback on the Demonstration from providers, provider associations, and Medicaid managed care plans in the District. At two time points, March–April 2021 and November 2022, we conducted the following:

- Five interviews and five listening sessions representing 23 provider organizations,
- Two interviews representing two District behavioral health and primary care provider associations, and
- Two interviews representing two Medicaid managed care plans.

The goals of the interviews and listening sessions were to assess:

- stakeholders' awareness of changes made under the Demonstration,
- whether and how these changes have influenced how providers deliver care, and
- perceptions of the Demonstration's impact on the 11 SMI/SED and SUD goals.

We also solicited information on stakeholders' recommendations for how the District might overcome any Demonstration challenges.

Beneficiary Survey

Between February 12, 2021, and April 30, 2021, AIR conducted a survey of Medicaid beneficiaries with an SMI/SED or SUD diagnosis who were 21 years or older. The survey explored beneficiaries' awareness of and experiences with new or expanded services available under the Demonstration—particularly utilization of services undetectable in claims data at baseline (e.g., new care transition and crisis stabilization services) and barriers to accessing behavioral health services from the perspective of beneficiaries. The survey included questions on six major topics:

- Awareness of, access to, and barriers to services;
- Care coordination and integration;
- Adherence to, and retention in, treatment;
- Perceptions of care;
- COVID-19–related changes to health and healthcare; and
- Perceived health status.

The AIR team selected a stratified random sample of 2,158 Medicaid beneficiaries for survey participation. The sample contained proportions of beneficiaries with SMI/SED only, SUD only, and both SMI/SED and SUD (three strata) that reflected the proportions of sample frame Medicaid beneficiaries with SMI/SED only, SUD only, and both SMI/SED and SUD. Beneficiaries could complete the survey via phone or web. A subset of beneficiaries whose preferred language was Spanish or Amharic also received the option to complete a mailed survey questionnaire.

Survey responses were received from 358 beneficiaries for a survey response rate of 17% (the response rate is 27% when the denominator is limited to the “contacted sample”).³⁰ The

³⁰ Contacted sample is defined as the full sample minus the number of cases with disposition of “no contact with a live person at any point.”

interviewer-administered phone survey option accounted for 94% (337) of responses received. Of the survey respondents, 242 (68%) were African American, 32 (9%) were American Indian or Alaska Native, 24 (6%) were White, and 16 (5%) were of Hispanic origin. Two hundred twenty-seven (62%) respondents were women. Fifty-one (15%) respondents were 65 or older.³¹

D.5.2 Secondary Data

The AIR team independently calculated evaluation measures using Medicaid FFS claims and Medicaid managed care program (Medicaid MCO) encounter data as well as other administrative data such as lists of Medicaid providers certified to provide Demonstration-relevant services. The Medicaid claims and encounter data, along with Medicaid beneficiary enrollment data and other DHCF data, come from the District's Medicaid Management Information System (MMIS) accessed through the Medicaid Data Warehouse. Additional administrative data needed for the evaluation were extracted from data sources such as the provider directories of DBH.

The DC MCO encounter data on claims paid by managed care plans have a similar level of quality and completeness as the FFS claims data. The MCO encounter claims include information on the actual payments to providers. No further imputation of costs is necessary, and the MCO encounter data can be used in the same fashion as the FFS claims data for the cost analysis.

A limitation of the secondary data sources is that DHCF may not have complete crossover claims data on dual-eligibles (particularly for those in Medicare Advantage plans), and thus analyses on the dual subpopulation might not capture all of their utilization and the full effect of the Demonstration.

Because Medicaid claims data do not include information on the length of visits in EDs, the data used for this metric were provided by DCHA. The universe consists of all ED visits that had DC Medicaid as either primary or secondary payer in the District's acute care hospitals that participated in the claims data sharing program with DCHA. The length of ED stay is calculated separately for those with SUD and SMI/SED diagnoses.

D.6. Analytic Methods

D.6.1. Qualitative Data Analysis

To analyze the interview and listening session data, we began by developing a code list to capture key concepts related to the Demonstration goals, evaluation driver diagram and

³¹ Percentages are weighted. We weighted the survey responses to account for differential selection probabilities and unit nonresponse.

research questions, and data collection protocols. Evaluation team members coded a small number of data sources to test this code list and refined the code list based on this test. For example, team members read the data and consulted the start list of codes to determine if the text response fits within the existing code list. If it did, then it was assigned to the relevant code. If it did not, the coder would create a new “emergent code” to capture the content of the text. After all team members coded the test data sources, we held a series of team meetings to discuss how well the start list of codes captured the intended information and potential new codes to add. We refined the codebook based on these team meetings. Once we reached consensus on the code list, we systematically applied this refined code list to all of the interview and listening sessions using Dedoose software. We conducted quality assurance checks throughout the coding process to ensure consistent, accurate, and complete coding across team members.

To analyze the Demonstration documents, we developed analytic memos that described the key information included in each document. Examples of information we captured in these analytic memos include:

- the effective date of new or modified policies,
- how the changes were implemented (e.g., through regulation, subregulatory guidance, or technical assistance),
- features of Demonstration services,
- beneficiary eligibility requirements associated with Demonstration services, and
- providers eligible to deliver Demonstration services and any applicable certification requirements.

After completing the analysis and memo process, we identified themes within and across data sources using several techniques. For example, we identified and summarized frequent codes, explored patterns in coding such as codes that were more common by provider type, and developed analytic memos integrating document summaries with interview and listening session themes. We also identified novel findings that could be informative, such as successes and challenges that are unique to particular services or provider types.

D.6.2. Quantitative Data Analysis

The quantitative analysis had five components: (1) We descriptively analyzed the Medicaid beneficiary survey questions and presented the results in a graphic format. To estimate the effectiveness of the Demonstration on outcome measures that are claims based or based on other data administrative data sources, we deployed multiple regression models. (2) We evaluated changes in all administrative data-based (e.g., claims-based) evaluation metrics

pre- and post-Demonstration at the District level using an interrupted time series (ITS) design. (3) For a subset of the evaluation metrics, we created individual-level datasets and estimated the impact of the Demonstration using count and logistic regression models. (4) We conducted subgroup analyses for various beneficiary characteristics using the same ITS methodology as the main District-level analysis. (5) For the cost analysis, we implemented the ITS model with a two-part model specification.

Survey Data Analysis

The AIR team drew a stratified random sample of 1,377 (64%) SMI/SED-only beneficiaries, 330 (15%) SUD-only beneficiaries, and 451 (21%) SMI/SED and SUD beneficiaries, for a total of 2,158 Medicaid beneficiaries. This sample reflected the proportions of a sample frame of the District's Medicaid beneficiaries who were 21 or older with SMI/SED only, SUD only, and SMI/SED and SUD. We received survey responses from 358 beneficiaries. We weighted the survey responses to account for differential selection probabilities and unit nonresponse.^{32,33} The weighted survey responses were produced using probability weights, or the inverse of the probability that each respondent was selected from the sampling frame, to make the results representative of the District's adult Medicaid beneficiaries with SMI/SED and/or SUD. We tabulated the survey responses and produced bar charts to visually represent the results. We report unweighted frequencies and weighted percentages in this report.³⁴

Impact Analysis—District-Level Analysis Using an ITS Design

The main impact analysis used an ITS design, which is a robust research design when a quasi-experimental approach requiring a comparison group is not feasible.^{35,36,37,38} A comparison group was not feasible because all eligible Medicaid beneficiaries in the District are considered to be participating in the Demonstration, their participation begins at the same time, and obtaining access to claims and administrative data for other states was out of scope for this

³² Lavallée, P., & Beaumont, J.-F. (2015). Why we should put some weight on weights. *Survey Insights: Methods From the Field*, <https://surveyinsights.org/?p=6255>

³³ We assumed that nonresponse was not selective in terms of beneficiary characteristics and weighting by the response rate within strata was sufficient.

³⁴ We did not conduct regression analysis of survey data because of small sample sizes.

³⁵ Soumerai, S. B., Starr, D., & Majumdar, S. R. (2015). How do you know which health care effectiveness research you can trust? A guide to study design for the perplexed. *Preventing Chronic Disease*, 12, Article E101.

³⁶ Wagner, A. K., Soumerai, S. B., Zhang, F., & Ross-Degnan, D. (2002). Segmented regression analysis of interrupted time series studies in medication use research. *Journal of Clinical Pharmacy and Therapeutics*, 27(4), 299–309.

³⁷ Bernal, J. L., Cummins, S., & Gasparrini, A. (2017). Interrupted time series regression for the evaluation of public health interventions: A tutorial. *International Journal of Epidemiology*, 46(1), 348–355.

³⁸ Ewusie, J. E., Soobiah, C., Blondal, E., Beyene, J., Thabane, L., & Hamid, J. S. (2020). Methods, applications and challenges in the analysis of interrupted time series data: A scoping review. *Journal of Multidisciplinary Healthcare*, 13, 411–423. <https://doi.org/10.2147/JMDH.S241085>

project. The ITS design is particularly suitable for interventions introduced at the population level that have a clearly defined time period and targeted health outcomes.

The ITS design compares the trend of each outcome of interest after Demonstration implementation with the outcome trend that would have occurred if the pre-Demonstration trend had continued after implementation. The difference between an ITS and a pre-post design is that the ITS design compares the actual outcome trend in the post period to the baseline outcome trend projected into the post period. Alternatively, the pre-post design compares the mean of the outcome in the post period to the mean of the outcome in the baseline period. As a result, the ITS design will provide a more accurate estimate than the pre-post design if there was a trend in the outcome of interest in the baseline period and if that trend would have continued in the post-Demonstration period in the absence of the Demonstration.

The disadvantage of both the pre-post and ITS designs is that programs or events occurring at the same time as the Demonstration could confound the impact estimates they produce.

While the ITS design is relatively unaffected by changes that happen slowly (e.g., change in the population age distribution) and could be accounted for by the long-term trend variable included in the regression, that is not the case with changes that happen more rapidly. If there are District-level factors that change quickly or unpredictably during the sample period, they should be included in the model as covariates. The prime example would be characteristics from other programs happening concurrently with the Demonstration. There are several concurrent programs targeting a similar population and similar outcomes as the Demonstration (e.g., LIVE.LONG.DC). Exhibit H.2 lists the programs outside of the Demonstration that coincide with the Demonstration as well as the start and end dates of these programs. However, we did not control for these concurrent programs given the relatively short Demonstration period and the small sample size.³⁹ Therefore, the ITS design estimates the combined impact of the services of the Demonstration as well as that of concurrent programs. However, the continuous time variable included in the ITS could capture some of the effects of the concurrent programs that started before the Demonstration.

Another contemporaneous event that could potentially confound the impact estimate is the COVID-19 pandemic, the onset of which coincided with the beginning of the Demonstration. The pandemic affected both the demand and supply of behavioral health services in the

³⁹ With an ITS design, estimating the level and slope parameters requires a minimum number of observations (usually at least eight; see table note below for citation) before and after the intervention to have sufficient statistical power to estimate the regression coefficients. This interim evaluation meets that requirement. However, there aren't many data points (degrees of freedom) to add several more control variables.

District. On the demand side, District residents reported increased mental health problems.⁴⁰ Notable declines were observed in in-person service utilization and ED visits, whereas behavioral health diagnoses and telehealth service utilization increased. There was also a decline in the availability of services—for instance, the supply of psychiatric beds decreased due to COVID-19 quarantine and distancing requirements.⁴¹ Considering the potential effects of the COVID-19 pandemic on the evaluation, the ITS design may be a more flexible approach compared to most standard methods that would require stricter structural assumptions about the data as well as a comparison group. Furthermore, we explicitly control for the potential effects of the COVID-19 PHE using the number of COVID-19 deaths in a month or quarter depending on the particular unit of analysis. Consistent data on COVID-19 deaths were available throughout the time period of analysis covered by this report. Hence, this variable was used as a control to capture changes in the severity of the disease, proxying for the effects of the pandemic on behavioral health service utilization, over the time period of analysis.⁴² Given the policy context, where there are only 2 months without COVID-19 PHE in the Demonstration period and no months with COVID-19 PHE in the pre-Demonstration period, the use of this control variable may not be enough to fully isolate the effect of the Demonstration by removing the confounding effect of the pandemic. (See Section E for a detailed discussion of this methodological limitation.)

The unit of analysis for the primary specification of the claims-based impact analysis implemented using the ITS design is District-time. Estimating the model at the District level allows us to obtain the impact of the Demonstration and concurrent programs on outcomes for the entire District. The estimates from this model are also more directly interpretable from a policy perspective as they give a single effect estimate at the District level and don't require extrapolating estimates from a more granular level, such as the beneficiary level, to get the big picture.

The time component of the unit of observation is metric specific. For monitoring metrics that are valid at the monthly level (e.g., the number of beneficiaries in the demonstration with SMI/SED who used any services related to mental health during the measurement period), the unit of analysis is District-month. For the annual monitoring metrics, where feasible, the unit of

⁴⁰ The Household Pulse Survey data from the District indicate that 50% of respondents reported symptoms of an anxiety or depressive disorder in 2020 compared to 31% at the end of 2022. National Center for Health Statistics. U.S. Census Bureau, Household Pulse Survey, 2020–2023. Anxiety and Depression. Generated interactively: from <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>

⁴¹ Georgetown University Center for Global Health Science and Security. (2023). *COVID-19 & behavioral health in the District of Columbia*. [https://dcauditor.wpenginepowered.com/wp-content/uploads/2023/04/COVID19.Behavioral.Health.D.C.4.20.23.Web .pdf](https://dcauditor.wpenginepowered.com/wp-content/uploads/2023/04/COVID19.Behavioral.Health.D.C.4.20.23.Web.pdf)

⁴² In this report, due to a small number of observations in the District-level regressions ($N = 60$ for monthly level regressions and $N = 20$ for quarterly level regressions) it was not desirable to include multiple control variables capturing different dimensions of the pandemic, as doing so could affect statistical power of the regression model. Hence, the COVID-19 deaths variable was included as a single summary measure to control for the effects of the pandemic.

analysis is District-quarter (e.g., the number of beneficiaries who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days). If the metrics can be meaningfully defined only on an annual basis, we did not conduct an ITS analysis and just presented their trend figures (one metric, SUD Monitoring Metric 13: the number of providers who were enrolled in Medicaid and qualified to deliver SUD services during the measurement period).

We tested and included in the main model control variables to account for seasonality in the receipt of behavioral health services. To capture seasonality, we included indicator variables for quarters.⁴³ Controlling for seasonality is important because the literature documents seasonal patterns in mental health disorders (including seasonal affective disorder, symptoms of major depressive disorder, mood disorders, and hospital admissions for mania and depression) as well as in alcohol and other substance use.^{44,45}

While the waiver authority was effective immediately, not all the services under the Demonstration were implemented immediately. Exhibit B.2 shows the phased implementation of Demonstration services. This variation in program implementation in the Demonstration could mean lags in the effectiveness of the Demonstration. The particular specification of the ITS we implemented addresses this by including level and slope variables; the former captures the immediate effect of the Demonstration, while the latter captures the effects over time.

We implemented the ITS design using an ordinary least squares (OLS) regression model. The District-time level ITS model is specified as follows:

$$\text{Equation 1: } Y_t = \alpha + \beta_1 \text{time}_t + \beta_2 \text{demo}_t + \beta_3 \text{time} \times \text{demo}_t + X_t + \varepsilon_t$$

Where:

- Y_t is the outcome in month t . An example of the outcome could be the number of beneficiaries in the Demonstration with SMI/SED who used any services related to mental health during month t .⁴⁶

⁴³ The variables indicated whether a data point was from the second, third, or fourth quarter of a year using quarter 1 as the base.

⁴⁴ Kovalenko, P. A., Hoven, C. W., Wicks, J., Moore, R. E., Mandell, D. J., & Liu, H. (2000). Seasonal variations in internalizing, externalizing, and substance use disorders in youth. *Psychiatry Research*, 94(2), 103–119.

⁴⁵ Danilenko, K. V., Putilov, A. A., Russkikh, G. S., Duffy, L. K., & Ebbesson, S. O. (1994). Diurnal and seasonal variations of melatonin and serotonin in women with seasonal affective disorder. *Arctic Medical Research*, 53(3), 137–145.

⁴⁶ Some of the outcome metrics are at the quarter level, and for those metrics t denotes a quarter rather than a month. The outcome metrics that are specified in quarterly units are annual monitoring metrics.

- $time_t$ is a count variable that starts with the first quarter of 2017 and ends with the fourth quarter of 2021 using a base quarter of 2019 Q4.
- $demo_t$ is an indicator variable taking the value of 0 in the baseline period (January 1, 2017–December 31, 2019) and 1 in the post period (January 1, 2020–December 31, 2021).
- X_t represents District-level characteristics that change over time. X_t includes indicators for seasonality (indicators for the second, third, and fourth quarter of a year), and the number of COVID-19 deaths in each quarter.
- α is the constant term.
- β_1 estimates the baseline trend. It is the change in the outcome in the baseline period or the slope of the trend in the baseline period. An extrapolation of this baseline period trend into the post-Demonstration period, controlling for changes in X_t , provides the counterfactual trend.
- β_2 estimates the change in level of the outcome from the baseline period to the post period or the change in the intercept after the post-Demonstration period started. This is one of the policy parameters of interest. It captures the immediate effect of the Demonstration.⁴⁷
- β_3 estimates the rate of change in the post-Demonstration period outcome trend. It is the slope of the trend in the post-Demonstration period minus the slope of the trend in the pre-Demonstration period. This is one of the policy parameters of interest. It captures the additional effects over time of the Demonstration and measures the rate of change in a quarter. The variable $time_t$ assumes that the slope is linear and the change in slope remains the same from quarter to quarter.⁴⁸
- ε_t is the error term.

The above specification with X_t , or District-level characteristics that change over time, is the main ITS model. We conducted robustness checks by implementing ITS specification without including X_t . The results from the former specification are reported in the body of the report, and the results from the robustness check are reported in Appendices B (SMI/SED goals) and C (SUD goals).

⁴⁷ Given that the effective date of the District’s implementation of the Medicaid reimbursement for residential and inpatient treatment services in IMDs in the first Demonstration rule was November 19, 2019, it is possible that the effects of the Demonstration started before January 1, 2020 (the start date of the post-Demonstration period). Therefore, the possibility that the immediate effect of the Demonstration, captured by the level changes, happens by the first month or quarter of the Demonstration (i.e., the existence of potential “anticipation effects”) is not unreasonable.

⁴⁸ For both the monthly and quarterly metrics, the slope is measured as a quarterly change as $time$ is a quarterly indicator.

When the level change (β_2) and slope change (β_3) were in opposite directions and both the effects were statistically significant, we calculated the overall effect at the end of the 2-year Demonstration period. Additionally, we tested if the combination of the level change and 2 years (eight quarters) of additional quarterly changes was statistically significant.

Impact Analysis—Beneficiary-Level Analysis using Count and Logistic Regression Models

The District time-level analysis using an ITS design is our primary model. However, there is supplementary knowledge to be gained from beneficiary-level analysis, which can describe how individual behavior changed in terms of the frequency of treatment. The District-level analyses assess the difference in overall rates of outcomes in various components of healthcare provision that could be affected by the Demonstration. A question of further interest is the extent to which beneficiaries utilized these services, which we explore in individual beneficiary-level analyses.

The individual beneficiary-level analyses are useful robustness checks of the District-level analyses because they have more observations, which results in more accurate estimates, and can control for individual beneficiary-level differences. The use of individual-level control variables reduces potential biases in the District-level estimates that are driven by individual-level characteristics such as demographics. The individual beneficiary level control variables include age categories, female, dual eligible status, race categories, MCO vs FFS coverage, DC ward (geographic variable), monthly COVID-19 deaths in the District, and co-occurring physical condition status.

As a supplement to the District-level analysis, the individual-level analysis focused on measures of utilization that were particularly targeted by the Demonstration: monthly number of SMI/SED mental health services claims (adapted from SMI/SED Monitoring Metric #18), monthly number of SUD treatment claims (adapted from SUD Monitoring Metric #6), and the continuity of pharmacotherapy for opioid use disorder (adapted from SUD Monitoring Metric #22).

Maximum-Likelihood based count models are the most appropriate category of models for analyzing outcomes such as number of healthcare visits, because the outcome is always a whole number, limited in range, and unequally distributed with higher frequencies of lower numbers. For example, the number of monthly visits by an individual to a mental health provider cannot include a fraction of a visit, is limited in the number of times a person can feasibly visit a provider in a month, and is highly likely to be zero in a month with most positive values being relatively small.

For the individual-level analyses, we use an approach similar to the individual-month-level cost analysis, with the same control variables and coefficients of interest as described in Equation 2 (page 61). The difference is that instead of using two-part models that are suitable for modelling continuous variables such as cost with a high proportion of zeroes, we use count models.

For the count models, we compare the model fit of several distributions: Poisson, Negative Binomial with dispersion as a function of the mean, and Negative Binomial with dispersion as a function of the constant.⁴⁹ After choosing the best fit for the model based on Akaike information criterion and the Bayesian information criterion, we visually confirm the model's goodness of fit by plotting the distribution of the actual vs. the predicted values. The Negative Binomial with dispersion as a function of the constant was chosen for both the monthly number of SMI/SED mental health services claims and the monthly number of SUD treatment claims.

We calculate the marginal effects of the Demonstration using the Stata “*margins, dydx*” command. In the same vein as the cost analysis that follows, the *post2020* variable of Equation 2 affects the outcome both directly (through β_2 immediately) and indirectly (through β_3 over time). The marginal effect approach combines the main and interaction effects of *post2020* to estimate the total effect of the Demonstration. Consequently, the results can be interpreted as the change in the monthly number of mental health/SUD treatment services associated with the Demonstration during the Demonstration period.

The third outcome that we perform individual-level analysis on is the continuity of pharmacotherapy for opioid use disorder. This measure is a zero/one indicator for whether the individual has at least 180 days of continuous pharmacotherapy with an OUD medication without a gap of more than 7 days. Since the measure is an individual-level indicator variable, we used a logistic regression model on Equation 2. We then use the same marginal effect analysis on the logistic regression. The results of this analysis serve as a robustness check on whether the district-level analysis could be biased by changes in beneficiary-level characteristics.

Subgroup Analysis

To evaluate whether the Demonstration is associated with differential effects for beneficiaries with various characteristics, we defined each measure for various subpopulations and separately estimated the impact of the Demonstration for each of these subpopulations.

The beneficiary subgroups of interest are as follows:

- FFS vs. MCO
- Dually eligible for Medicare and Medicaid vs. not
- Pregnant vs. not
- Justice involved vs. not

⁴⁹ These beneficiary-level analyses are supplementary robustness checks to the District-level analyses, so we chose to test the three models that we predicted would be most likely to provide information in our context. Other count models can include zero-inflated Poisson, zero-inflated negative binomial, and hurdle models.

- Disability vs. no disability
- SMI/SED with vs. without co-occurring SUD
- SMI/SED with vs. without co-occurring physical condition
- OUD vs. not
- Age < 21, 21–44, 45–64, and ≥ 65
- DC ward number (01, 02, ..., 08, and missing)

For the subgroup analyses, we estimated Equation 1 separately for each subgroup and report the estimated coefficients. The covariates for the subgroup analyses are the same as those for the main analyses. The findings from the subgroup analyses are reported in Appendices C (SMI/SED goals) and D (SUD goals).

Cost Analysis

For the cost analysis, the AIR team assessed the change in total costs and costs related to the diagnosis and treatment of SMI/SED and SUD PBPM in the demonstration period. We also explored the treatment cost drivers for the target population of SMI/SED (or SUD) beneficiaries in the Demonstration period.

Exhibit D.2 describes the various cost measures related to the changes in the healthcare costs of the targeted beneficiaries in the Demonstration period along with the level of analysis and data sources. The three levels indicate the research question addressed. We estimated the measures below separately for beneficiaries with SMI/SED and SUD. The MMIS data source includes FFS claims and MCO encounters.

Exhibit D.2. Types of Costs and Data Sources

Level of analysis	Type of beneficiaries	Type of costs	Description/data source
Level 1: Total costs	SMI/SED	Total costs	Sum of benefits for beneficiaries with SMI/SED. ^a Data source for benefits costs is MMIS.
		Total federal costs	Total Medicaid costs for beneficiaries with SMI/SED * federal medical assistance percentage (FMAP). ^b
	SUD	Total costs	Sum of benefits for beneficiaries with SUD. ^a Data source for benefits costs is MMIS.
		Total federal costs	Total Medicaid costs for beneficiaries with SUD * FMAP.

Level of analysis	Type of beneficiaries	Type of costs	Description/data source
Level 2: Cost related to diagnosis and treatment	SMI/SED	IMD costs	IMD costs for beneficiaries with SMI/SED. Data source is MMIS.
		Non-IMD SMI/SED costs	Benefit costs for SMI/SED care other than IMD stays. Data source is MMIS.
		SMI/SED costs	Benefit costs for SMI/SED care. Data source is MMIS.
		Non-SMI/SED costs	Benefit costs for non-SMI/SED care. Data source is MMIS.
	SUD	IMD costs	IMD costs for beneficiaries with SUD. Data source is MMIS.
		Non-IMD SUD costs	Benefit costs for SUD care other than IMD stays. Data source is MMIS.
		SUD costs	Benefit costs for SUD care. Data source is MMIS.
		Non-SUD costs	Benefit costs for non-SUD care. Data source is MMIS.
Level 3: Source of treatment cost drivers for beneficiaries in the target population	SMI/SED	Outpatient costs, non-ED	Types of costs are defined using HEDIS, CMS, or DHCF standards and utilize claim type, procedure code, revenue code, place of service, provider type, and other data elements as applicable. Data source is MMIS.
		Outpatient costs, ED	
		Inpatient costs	
		Pharmacy costs	
		Long-term care costs	
	SUD	Outpatient costs, non-ED	Types of costs are defined using HEDIS, CMS, or DHCF standards and utilize claim type, procedure code, revenue code, place of service, provider type, and other data elements as applicable. Data source is MMIS.
		Outpatient costs, ED	
		Inpatient costs	
		Pharmacy costs	
		Long-term care costs	

CMS = Centers for Medicare & Medicaid Services; DHCF = Department of Health Care Finance; ED = emergency department; HEDIS = Healthcare Effectiveness Data and Information Set; MMIS = Medicaid Management Information System; SED = serious emotional disturbance; SMI = serious mental illness; SUD = substance use disorder.

^a Benefit costs are defined as payments made by DHCF, or on behalf of DHCF by MCOs, to healthcare providers for services delivered to Medicaid beneficiaries. While the CMS guidance refers to inpatient [IP], outpatient [OT], pharmacy [RX], long-term care [LT] file types in the Transformed Medicaid Statistical Information System (T-MSIS) as an example, equivalent data from DHCF's MMIS are used in the cost analysis.

^b The FMAP varies by subgroups and increased under the public health emergency (PHE FMAP): (1) For childless adults, we use FMAP of 0.9; (2) for Children's Health Insurance Program (CHIP) children, we use the applicable FMAP for the year (this will account for PHE FMAP increase); and (3) for all others, we use 0.7 and add the PHE FMAP bump. For CHIP children, the FMAP we applied for each fiscal year is as follows: FY 2022: 83.34%; FY 2021: 83.34%; FY 2020: October–December 2019 = 90.50%, January–September 2020 = 94.84%; FY 2019: 100.00%; FY 2018: 100.00%; FY 2017: 100.00%. For all others, the FMAP we applied is as follows: 1/1/2017–12/31/2019: 70.00%; 1/1/2020–12/31/2021: 76.20%.

Exhibit D.3 shows the administrative costs of the Demonstration. The total administrative cost up to June 2022 is about \$2.88 million. Because the administrative costs are not separately available for the SMI/SED and SUD components of the Demonstration, are available only at the

quarterly level, and the number of beneficiaries in the cost analysis varies each month, there is no clear-cut way to create a PBPM administrative cost from the District-level quarterly administrative costs. Therefore, we calculated a Demonstration-level PBPM administrative cost by distributing the total administrative costs for the entire period equally across the SMI/SED and SUD beneficiary-months in the cost analysis data sample.⁵⁰ We then compared this PBPM administrative cost with the total PBPM additional costs in the post-Demonstration period (marginal effects from the total cost regressions) for SMI/SED and SUD to assess how much of an additional effect the administrative costs have on the Demonstration's effects.⁵¹

Exhibit D.3. Administrative Costs of the Demonstration

Fiscal year quarter	Calendar year quarter	Behavioral health waiver administrative cost
FY2020 Q2	Q1 2020	\$357,034.05
FY2020 Q3	Q2 2020	\$232,106.46
FY2020 Q4	Q3 2020	\$423,915.65
FY2021 Q1	Q4 2020	\$220,425.68
FY2021 Q2	Q1 2021	\$349,948.91
FY2021 Q3	Q2 2021	\$335,687.25
FY2021 Q4	Q3 2021	\$288,723.75
FY2022 Q1	Q4 2021	\$273,435.54
FY2022 Q2	Q1 2022	\$223,333.89
FY2022 Q3	Q2 2022	\$179,890.40

Note. Reflects total computable (federal and local share) of behavioral health waiver administrative costs in quarterly CMS-64 reports to CMS.

Source. Data compiled by the DC Department of Health Care Finance's Office of the Chief Financial Officer as of 11/7/2022.

To compute total federal costs, we multiply the total costs by the federal medical assistance percentage (FMAP), which varies in each fiscal year by type of enrollee. FMAP increased under the COVID-19 PHE. (See Exhibit D.2 note for detail.)

The cost analysis uses a different inclusion criterion of beneficiaries for the analytic sample compared to that for the evaluation metrics. Based on CMS guidance, we used beneficiary

⁵⁰ Note that this means an individual beneficiary-month can be counted twice if the beneficiary is in both the SMI/SED and SUD samples.

⁵¹ The administrative costs cannot be incorporated directly into the PBPM total costs and included in the regression analysis because the two-part model methodology we implemented is designed to account for the large number of zero-cost observations common in healthcare expenditure data. Allocating the administrative costs to all beneficiaries in the post period will change all zero-cost observations to positive costs and the two-part model cannot be implemented in that scenario.

month as the unit of analysis.⁵² The target population for the SMI/SED cost analysis is Medicaid beneficiaries with an SMI/SED diagnosis or treatment, and the target population for the SUD cost analysis is Medicaid beneficiaries with an SUD diagnosis or treatment. We used a repeated cross-sectional approach that does not require minimum enrollment durations for beneficiaries to be included in the analysis. Beneficiaries were included in the analysis during the first month in which a relevant SMI/SED or SUD diagnosis or treatment claim was observed and for up to 11 additional months that did not include a relevant diagnosis or treatment claim. Once an individual has a period of 1 year with no relevant diagnosis or treatment claim, that beneficiary is excluded from further analyses, unless and until they have a subsequent, relevant diagnosis or treatment claim. Setting the inclusion criteria this way results in an analysis that represents the costs of serving individuals in the target population with active treatment needs.

During the analysis time period, multiple COVID-19 PHE-related changes to costs occurred. First, the Families First Coronavirus Response Act authorized a 6.2 percentage-point increase in the FMAP.⁵³ This enhanced FMAP was applied retroactively to start on January 1, 2020, and is applicable until the end of the quarter in which the PHE ends (i.e., second quarter of 2023). While these enhanced FMAP rates are primarily reflected in higher federal costs, total costs also may have increased as the enhanced FMAP provides room to states to pay a higher rate for services. Second, DHCF increased reimbursement rates for Adult Substance Abuse Rehabilitation Services (ASARS) providers to support additional costs related to the delivery of services during the COVID-19 PHE, effective March 1, 2020, through the end of the federal PHE.⁵⁴ Last, another source of increase in both federal and total costs is inflation, which was high during the period of analysis, especially in 2021. Reimbursement rates for certain services, such as for hospital-based care, are indexed to inflation in the District. These increases in reimbursement rates are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases, in addition to the effects of the Demonstration.

⁵² Centers for Medicare & Medicaid Services. (n.d.). *Appendix C: Approaches to analyzing costs associated with section 1115 demonstrations for beneficiaries with serious mental illness/serious emotional disturbance or substance use disorders*. <https://www.medicaid.gov/sites/default/files/2020-02/smi-sed-sud-cost-appendix-c.pdf>

⁵³ Kaiser Family Foundation. (2021). *Federal Medicaid outlays during the COVID-19 pandemic*. <https://www.kff.org/coronavirus-covid-19/issue-brief/federal-medicaid-outlays-during-the-covid-19-pandemic/>

⁵⁴ Government of the District of Columbia, Department of Healthcare Finance. (2020). Temporary enhanced reimbursement rates for Adult Substance Abuse Rehabilitation Services (ASARS) due to COVID-19. <https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/Transmittal%2020-36%20Temporary%20Enhanced%20Reimbursement%20Rates%20for%20Adult%20Substance%20Abuse%20Rehabilitation%20Services%2028ASARS%29%20Due%20to%20COVID-19.pdf>

Following CMS guidance, we implemented the following ITS model using a two-part model specification to estimate the impact of the Demonstration on costs.⁵⁵ The Demonstration was launched January 1, 2020; hence we consider that the intervention happened in January 2020 for all beneficiaries. So, we are checking for a level change at that point in time and a slope change thereafter to identify changes in costs occurring in the Demonstration period. We use 2 years (January 1, 2018–December 31, 2019) as the baseline.

A two-part model is a flexible statistical model specifically designed to deal with limited dependent variables. It is useful in the case where there is a high frequency of zeros in an outcome because it allows separate modeling of whether the outcome is zero and subsequently the magnitude of that outcome. This makes it particularly well suited for modeling health costs, which will have many zeros and then some distribution of the positive costs. With the two-part model we can choose to use one method for estimating the probability of having any health care cost in a particular month and then another more appropriate method for modeling the distribution of the nonzero costs.

Estimating a two-part model consists of two stages. In the first stage, the threshold for observing nonzero outcomes is typically modeled using a regression model for binary outcomes such as the probit or logit. We used a logit model, which assumes the error term follows a logistic distribution. In the second stage, the positive outcomes are typically modeled using an OLS regression or a generalized linear model (GLM). We used a GLM model, given the skewed distribution of the cost variables. Instead of using a log link function for all cost outcomes, we conducted tests for each outcome separately to ensure we use the appropriate link function for each cost outcome. Additionally, we selected the distribution family for each cost outcome using the Modified Park test. For example, for the total costs we used a log link function and Gamma distribution for both SMI/SED and SUD.

Equation 2:

Model first stage:

$$\text{Logistic}(p_{im}) = \gamma_0 + \gamma_1 \times \text{Time}_q + \gamma_2 \times \text{Post}_m + \gamma_3 \times \text{Time}_q \times \text{Post}_m + X_{im} + \theta_s + e_{im}$$

Model second stage:

$$y_{im} = g(\beta_0 + \beta_1 \times \text{Time}_q + \beta_2 \times \text{Post}_m + \beta_3 \times \text{Time}_q \times \text{Post}_m + X_{im} + \theta_s + \epsilon_{im})$$

where

- i denotes beneficiary.

⁵⁵ Deb, P., Manning, W G., & Norton, E. C. (2014, June). *Modeling health care costs and counts*. Fifth biennial conference of the American Society of Health Economists. http://econ.hunter.cuny.edu/parthadeb/wp-content/uploads/sites/4/2014/05/ASHEcon_LosAngeles_minicourse.pdf

- m denotes month-year (January 2018, February 2018, ..., December 2021).
- y_{im} denotes the outcomes of interest, or various types of Medicaid costs PBPM.
- s denotes month of year (January, February, ..., December).
- q denotes quarter-year (e.g., January–March 2018).
- p_{im} is the probability of having nonzero costs for beneficiary i in month m .
- y_{im} denotes the outcome measure of PBPM, with the main outcome of interest as total cost PBPM.
- $Time_q$ is a count variable that starts with the first quarter of 2018 and ends with the fourth quarter of 2021 using a base quarter of 2019 Q4.
- $Post_m$ is the indicator variable that equals 1 if the month occurred on or after January 2020 and 0 if the month occurred during January 2018 to December 2019.
- X_{im} includes all controls we deemed necessary from theory: age categories, female, dual-eligible status, race categories, MCO vs. FFS coverage, DC ward (geographic variable), monthly COVID-19 deaths in the District, and co-occurring physical condition status.⁵⁶
- θ_s is the seasonal fixed effects at the month level (i.e., an indicator for January that is 1 for Jan 2018, 2019, 2020, and 2021).
- ϵ_{im} is the error term.

We estimate the total effect of the Demonstration through the marginal effect of $Post_m$, the indicator for the post-Demonstration months. $Post_m$ affects the costs both directly (through β_2 immediately) and indirectly (through β_3 over time). The marginal effect approach combines the main and interaction effects of $Post_m$ to estimate the total effect of the Demonstration.

⁵⁶ These beneficiary-level control variables are not included in the District-level ITS analyses because the unit of observation for those were District-month (or quarter), unlike the cost analysis which has beneficiary-month as the unit of observation.

E. Methodological Limitations

Exhibit E.1 summarizes the methodological challenges the AIR team faced with the quantitative and qualitative analyses and the solutions we applied for mitigating these limitations to the extent feasible.

Exhibit E.1. Methodological Limitations and Solutions Applied

Challenge/limitation	Solution
Quantitative methods	
Because all eligible Medicaid beneficiaries are considered to be participating in the Demonstration, their participation begins at the same time, and obtaining access to administrative claims data or performing data collection for other states was not feasible for this project, there is no appropriate comparison group that is not affected by the Demonstration to compare to the Demonstration group.	Following CMS evaluation guidance, we used an ITS design to evaluate the effects of the Demonstration, which is the preferred methodology when there is no appropriate comparison group.
Because several concurrent programs targeting similar populations and outcomes exist, it can be difficult to rule out alternative explanations and disentangle the precise estimates of the impact of the Demonstration using the ITS design. This is a limitation of the ITS design. Examples of concurrent programs include State Opioid Response grant, LIVE.LONG.DC, the District's opioid strategic plan, and funding from the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act.	AIR's ITS evaluation design approach estimated the combined impact of both the Demonstration and elements of other concurrent programs. However, the programs that started before the Demonstration and continued concurrently are accounted for by the continuous time variable included in the ITS if the effect of those programs remained steady over time. Furthermore, our qualitative data on the nature of these concurrent programs provides insights into the relative contributions of Demonstration-specific versus preexisting or new concurrent services to outcomes.
The Demonstration's target population of beneficiaries with SMI/SED and/or SUD vary in other characteristics, and the effect of the Demonstration may vary according to these characteristics. The number of beneficiaries in some subgroups is small, sometimes fewer than 10 or even zero in certain months or quarters (e.g., age group, ward, pregnancy, and criminal justice involved). When aggregating the data into monthly or quarterly time series, the average outcome might be influenced by just a few individuals.	AIR evaluated the heterogeneous effects of the Demonstration by conducting ITS in different subsamples in addition to assessing the average effect across the whole target population. The subsamples are defined using categorical variables of characteristics of program, provider, and beneficiaries. Due to the smallness of some subgroups, caution is warranted in interpreting the results. While we reported all subgroup results in Appendices C and D, we only discussed the results for subgroups that were deemed most relevant to the Demonstration and had sufficient beneficiary counts.
17,000 adult beneficiaries with complex healthcare needs (beneficiaries with disabilities) who are not dual-eligible transitioned to managed care in October 2020. For this transitioned population, payment of some care shifted from waiver to MCOs. Furthermore, behavioral health services currently carved out of managed care will be carved in by October 2023.	AIR conducted subgroup ITS analysis by FFS and managed care status of beneficiaries to assess whether there are any differences in Demonstration outcomes by program status.

Challenge/limitation	Solution
The COVID-19 PHE poses challenges to the ITS design because the timing of the pandemic coincides with the beginning of the Demonstration and confounds the ITS estimates. Several evaluation outcomes examine the utilization and availability of behavioral health services, which were affected by the pandemic. The pandemic depressed the demand for in-person behavioral health services, increased the utilization of telehealth services, and affected the availability of services as a result of quarantine/distancing requirements and exacerbated workforce shortages.^{57,58}	AIR controlled for the number of COVID-19 deaths in each month/quarter to mitigate the confounding effects of the pandemic on the Demonstration's impact estimates. Death count was chosen as the severity measure because it is recorded consistently for the whole time period of this report and can be identified for the time period that will be covered in the Summative Evaluation Report. A prevalence measure based on COVID-19 testing was not used because it was considered less reliable with the lack of adequate testing at the beginning of the pandemic and the rise of rapid testing. Similarly, COVID-19 hospitalizations were not used as a control variable because they were recorded consistently starting only in the fall of 2020 (Couture et al., 2022).⁵⁹ There are limitations to this solution given the policy context, where there are only 2 months without COVID-19 PHE in the Demonstration period and no months with COVID-19 PHE in the pre-Demonstration period. Controlling for COVID-19 deaths does help to the extent that COVID-19 deaths represent the variation in severity of the pandemic. However, there were many changes in the policy and medical environments surrounding the PHE that will not be perfectly correlated with the deaths measure, so there could still be omitted variable bias. Relevant changes to the policy/medical environment include quarantine/distancing requirements, changes to Medicaid eligibility policies (e.g., Continuous Coverage⁶⁰), and changes to Medicaid reimbursement policies and rates (e.g., payment for telehealth delivered in a beneficiary's home,⁶¹ enhanced reimbursement for ASARS services⁶²).

⁵⁷ Georgetown University Center for Global Health Science and Security. (2023). *COVID-19 & behavioral health in the District of Columbia*. https://dcauditor.wpenginepowered.com/wp-content/uploads/2023/04/COVID19.Behavioral.Health.D.C.4.20.23.Web_.pdf

⁵⁸ Kaiser Family Foundation. (2023). *A look at strategies to address behavioral health workforce shortages: Findings from a survey of state Medicaid programs*. <https://www.kff.org/medicaid/issue-brief/a-look-at-strategies-to-address-behavioral-health-workforce-shortages-findings-from-a-survey-of-state-medicaid-programs/>

⁵⁹ Couture, A., Iuliano, A. D., Chang, H. H., Patel, N. N., Gilmer, M., Steele, M., Havers, F. P., Whitaker, M., & Reed, C. (2022). Estimating COVID-19 hospitalizations in the United States with surveillance data using a Bayesian hierarchical model: Modeling Study. *JMIR Public Health and Surveillance*, 8(6), e34296.

⁶⁰ Department of Health Care Finance - DHCF. (2023). *Medicaid restart*. <https://dhcf.dc.gov/medicaid-restart>

⁶¹ Department of Health Care Finance - DHCF. (2020). *DC Medicaid telemedicine guide*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/Telemedicine%20Guide%20for%20Medicaid%20Providers%203.25.2020.pdf

⁶² Government of the District of Columbia, Department of Healthcare Finance. (2020). *Temporary enhanced reimbursement rates for Adult Substance Abuse Rehabilitation Services (ASARS) due to COVID-19*. <https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/Transmittal%2020->

Challenge/limitation	Solution
With an ITS design, estimating the level and slope parameters requires a minimum number of observations (usually at least eight; see table note below for citation) before and after the intervention to have sufficient statistical power to estimate the regression coefficients. While level changes due to the intervention can be estimated sooner, about eight quarters of data after the Demonstration start are needed to obtain an accurate estimate of the changes in post-Demonstration trends.	For the District-level ITS estimation, we have 12 quarters (3 years) of data prior to the beginning of the Demonstration and eight quarters of data in the post-Demonstration period. This meets the minimum required number of observations to obtain reasonable impact estimates.
Payment amounts for prescription drugs on FFS claims and MCO encounters in DHCF's MMIS data do not reflect rebates.	This is a limitation that would apply to any claims-based analysis, but it does not create any systematic difference in the cost outcome measures pre- and post-Demonstration and thus will not introduce biases in the regression estimates.
Some of the monitoring metrics (e.g., SUD Monitoring Metric 22: Continuity of Pharmacotherapy for Opioid Use Disorder) are specified as annual measures, which does not allow for regression analysis using an ITS design covering only 5 years of data.	We adapted annual measures to be quarterly measures as this increases the number of data points available during the period of analysis and allows the ITS model. However, the resulting measures may not be directly comparable to the monitoring measures.
All but the IMD services and the \$1 copay for MAT transitioned to the state plan authority with effect from January 1, 2022. The District does not expect that the change in funding source will lead to large behavior change on the part of providers and beneficiaries. However, from an impact evaluation's clarity perspective it will be useful to estimate Demonstration impact when the full range of services were under the Demonstration.	For the ITS analysis of the interim evaluation, we limited the data to December 31, 2021, to estimate the effect of the Demonstration when the full range of services were waiver funded. The summative evaluation will estimate the combined impact of the Demonstration.
CMS suggests the selection of evaluation measures from nationally recognized sources and national measures sets where possible. Therefore, the evaluation uses SMI/SED and SUD monitoring metrics where available. Because of that the metrics used to assess goal achievement are not well aligned for certain goals. For example, the readmission metric used to assess progress on the SUD goal "Fewer readmissions to the same or higher level of care (LOC) where the readmission is preventable or medically inappropriate" looked at all-cause readmissions using SUD Monitoring Metric #25 and was not limited to those readmissions that were preventable or medically inappropriate.	Where there is substantial misalignment between goals and underlying metrics, we added notes to clarify under the respective metric.

[36%20Temporary%20Enhanced%20Reimbursement%20Rates%20for%20Adult%20Substance%20Abuse%20Rehabilitation%20Services%2028ASARS%29%20Due%20to%20COVID-19.pdf](#)

Challenge/limitation	Solution
Under the authority of a Disaster Relief State Plan Amendment, DHCF increased reimbursements to Adult Substance Abuse Rehabilitation Services (ASARS) providers to support additional costs related to the delivery of services during the COVID-19 PHE, effective March 1, 2020, through the end of the federal PHE. ⁶³ Any increases in costs reflected in the cost analysis are inclusive of this rate increase, as well as other factors that may have influenced increases in costs, such as increases in the FMAP ⁶⁴ and inflation.	CMS guidance for the cost analysis only requires an analysis of costs expressed in current dollars. It does not require adjusting for changes in reimbursement rates or inflation, or unpacking the sources of changes in reimbursement rates within a regression framework. Therefore, to contextualize the observed cost increases, we note the factors driving increases in costs such as higher reimbursement rates related to COVID-19 PHE.
Qualitative methods	
Interviews and listening sessions obtain information from a relatively small number of individuals. This poses the risk of inadvertently missing important individuals and/or perspectives.	AIR's approach to qualitative data collection used the evidence-based standard that saturation is commonly reached after five to seven interviewees as a baseline for the number of interviews and listening sessions we conducted with District providers. With a final sample size of 23 organizations, we are confident that we have diversity in providers' perspectives. In addition, we invited all key informants from implementing agencies (DHCF, DBH, DOH, HIE) and applicable MCOs to participate in interviews. Thus, there is little risk of sampling bias related to key informant interviews (KIIs).
Evaluation participants may be reluctant to share negative information about the Demonstration. For example, key informants may worry that it will affect their ability to maintain the waiver and institutionalized Demonstration activities. Providers may worry that it would jeopardize their relationship with agencies that certify them and provide their service reimbursement.	To mitigate potential response bias, we ensured confidentiality for providers and informed all evaluation participants that the goals of the interim qualitative research are to identify emerging challenges with the Demonstration that can inform the District's (and potentially other states') future efforts. The richness of the interview and listening session data suggests that evaluation participants felt comfortable sharing both successes and challenges related to implementation progress and impact.

⁶³ Government of the District of Columbia, Department of Healthcare Finance. (2020). *Temporary enhanced reimbursement rates for Adult Substance Abuse Rehabilitation Services (ASARS) due to COVID-19*. <https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/Transmittal%2020-36%20Temporary%20Enhanced%20Reimbursement%20Rates%20for%20Adult%20Substance%20Abuse%20Rehabilitation%20Services%2028ASARS%29%20Due%20to%20COVID-19.pdf>

⁶⁴ Kaiser Family Foundation. (2023). *Federal Medical Assistance Percentage (FMAP) for Medicaid and multiplier*. <https://www.kff.org/medicaid/state-indicator/federal-matching-rate-and-multiplier/?activeTab=graph&currentTimeframe=0&startTimeframe=4&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

Challenge/limitation	Solution
Beneficiary data collection	
Medicaid beneficiaries are a hard-to-reach population group, and this is even more true for the subset who have SMI/SED or SUD issues.	To increase response rates, AIR employed several strategies to recruit beneficiaries, including mail and telephone (voice and text) outreach and using contact information from enrollment databases as well as the DC HIE. In addition, beneficiaries were able to complete the survey via phone (voice), web, or hard copy (hard copy survey was available in English, Spanish, and Amharic).
The survey addressed sensitive topics related to the treatment experiences as well as mental health and substance use of respondents.	AIR survey interviewers were well trained and experienced in working with populations with SMI, SED, and SUD. They understood the importance of cultural competency, cultural humility, and trauma-informed care. Interviewers made efforts to build rapport and trust at the start of the interview, emphasized confidentiality, and explained the purpose of the survey. Respondents were given the opportunity to pause as well as to skip questions they were not comfortable answering. AIR also developed a protocol for transferring beneficiaries to the District's behavioral health triage line if they showed signs of distress during the survey interviews.
Due to co-occurring SMI and trauma, some respondents may need additional support and time to answer questions, explanation of questions in easy-to-understand language, and flexibility in timing and breaks.	AIR interviewers were experienced in working with people with SMI, SED, and SUD. Interviewers took their time, built rapport, provided breaks, offered flexibility, and reframed questions as needed.
The COVID-19 public health restrictions pose challenges in conducting in-person data collection at beneficiary residences or provider sites.	AIR administered the survey by telephone or online and, for a subset, via mail.
The beneficiary survey sample was selected using a stratified random sample, and the majority of invitees did not participate in the survey. This could affect the representativeness of the survey findings.	The stratified random sample reflected the proportions of sample frame of the District's Medicaid beneficiaries who were 21 or older with SMI/SED only, SUD only, and SMI/SED and SUD. AIR weighted the survey responses to account for differential selection probabilities and unit nonresponse. This weighting makes the survey results representative of the District's SMI/SED, SUD and SMI and SUD populations.

Note. Penfold, R. B., & Zhang, F. (2013). Use of interrupted time series analysis in evaluating healthcare quality improvements. *Academic Pediatrics, 13*(6), S38–S44.

F. Results

This section presents findings from the qualitative and quantitative data analysis conducted to evaluate the effectiveness of the Demonstration in achieving its objectives. We explore the evidence available at the time of the interim evaluation to identify answers to the evaluation research questions and the extent to which the hypotheses underlying the research questions were confirmed. Where applicable and when data are available, we triangulate findings across data sources to answer the research questions.

In this section, we first describe the Demonstration's effect on the SMI/SED goals (Section F.1), followed by the SUD goals (Section F.2). Under each Demonstration goal, we list associated hypotheses and research questions. The direction of the arrow icon next to each hypothesis indicates the hypothesized direction of potential impact. At the beginning of each subsection covering a goal, we provide a text box with key takeaways and the main evaluation findings.

We primarily use qualitative data to answer research questions related to perceptions of whether the District implemented the Demonstration as intended, whether the systems changes and waiver and expenditure authorities under the Demonstration influenced Demonstration outcomes, and if so, how the Demonstration influenced outcomes. These results are based primarily on thematic analysis of:

- interview and listening session discussions with key stakeholders impacted by the Demonstration such as behavioral health providers and Medicaid managed care plans in the District
- interview with other District stakeholders, such as provider associations
- interviews with representatives from DHCF and DBH, the implementing agencies
- program documents

We also report descriptive statistics of responses to the baseline Medicaid beneficiary survey to assess beneficiaries' awareness and perceived access to Demonstration services. While we cannot assess whether beneficiaries' experiences have improved under the Demonstration because we have not yet administered the follow-up survey, these data provide insight into Demonstration services that have opportunities for improvement from the beneficiaries' perspective.

We conduct descriptive and regression analyses of Medicaid claims and encounter data to answer research questions that assess the effectiveness of the Demonstration on quantitative outcome metrics associated with various goals. For each outcome metric, we first show observed trends in the metric, such as the change in SUD and SMI/SED service utilization during

the pre- and post-Demonstration period reports, and then estimates from the regression analysis implemented to assess the Demonstration's effectiveness. Section F.3 presents cost analysis findings separately for the SMI/SED (Section F.3.1) and SUD (Section F.3.2) components of the Demonstration.

The last two subsections of results describe how COVID-19 PHE impacted the Demonstration implementation and how additional non-waiver and expenditure authority systems changes in the District influenced Demonstration implementation and outcomes based on the perspectives of the evaluation participants.

Interpretation of the regression-based effect estimates. For each metric, we first provide a visual representation of unadjusted data and predicted post-Demonstration period and counterfactual trend lines. A scatter plot depicts the observed, unadjusted value of the outcome at different points in time during the pre- and post-Demonstration periods. We generated the predicted outcomes in the post-Demonstration period, depicted by the predicted trend line (solid trend line), by fitting an ITS regression model that controlled for seasonality (indicators for quarters with one quarter omitted) and the number of COVID-19 deaths. Then, using the fitted ITS model, we predicted the counterfactual trend (dotted line) in the outcome metric that would have occurred during the post-Demonstration period in the absence of the Demonstration. The counterfactual trend line is not just a continuation of the pre-Demonstration period trend, because it is a prediction from the fitted model controlling for seasonality and COVID-19 deaths. These figures show whether there was an increasing or decreasing trend in the outcome of interest during the first 2 years of the Demonstration compared to the baseline pre-Demonstration 3-year period, and also compared to what would have happened during the post-Demonstration period in the absence of the Demonstration. However, the visual representation of actual data points and trends may not be interpreted as indicating statistically significant impacts. The key parameters of interest (regression coefficients and standard errors) from the regression model may be used to assess impacts.

After the graph, we provide a table of the key parameters that capture impact estimates from the regression model for each outcome of interest. This table also includes the baseline unadjusted mean of the outcome metric for interpreting effect estimates. It should be noted that the regression analysis, based on pre- and post-Demonstration trends, estimates associations and not the precise causal impact of the Demonstration in the absence of a comparison group.

The ITS regression describes two main effects:

- **Level change post-Demonstration:** This parameter tells us how much the outcome changed immediately upon Demonstration implementation. If the intercept of the

predicted line post-Demonstration is above or below the predicted line at the beginning of the Demonstration, and the ITS regression coefficient on the variable called “Level Change Post-Demonstration” in the table shows a statistically significant change, the finding should be interpreted as the Demonstration being associated with a level change in the outcome, after controlling for the pre-Demonstration trend.

- **Slope change or additional quarterly change post-Demonstration:** This parameter tells us about the long-term or sustained effect of the Demonstration on the outcome. If the slope of the predicted line increased or decreased post-Demonstration and the ITS regression coefficient on the variable called “Additional Quarterly Change Post-Demonstration” in the table (slope change) showed a statistically significant change, the finding should be interpreted as the Demonstration being associated with a change in the rate of change of the outcome over time, post-Demonstration. It represents the average additional effect of the Demonstration in each quarter of the post-Demonstration period.

Any regression coefficient that was statistically significant at the 10% level or lower was considered to be showing a statistically significant effect. In cases where the level change and slope change were both statistically significant and in opposite directions, we generated an estimate of the combined effect of the Demonstration at the end of 2 Demonstration years and tested its statistical significance.

The results reported in the body of the report are from the preferred ITS model, which captures changes in outcome trends after controlling for seasonality and the number of COVID-19 deaths.

As a robustness check, results from the most parsimonious regression specification without covariates are reported in Appendix C (SMI/SED goals) and Appendix D (SUD goals) for each outcome metric. These appendices also present regression estimates from the preferred ITS model for the various subgroups of interest and also discuss findings related to a few key subgroups.

In addition to the ITS conducted using District-level aggregate data, we conducted beneficiary-level regression analysis for a subset of the outcomes. These results are reported in graphs and tables. The graph shows the histogram of the individual monthly outcome data, during both pre-Demonstration and post-Demonstration periods, to facilitate a comparison of the distributions of number of monthly treatment services. The table shows the results of the marginal effect from the relevant regression model, either the count model for the number of mental health/SUD treatment services measures or the logistic regression model for the indicator (0 or 1) of continuity of OUD pharmacotherapy. For the count models, the findings can be interpreted as the number of additional treatment services PBPM associated with the

Demonstration, controlling for individual characteristics. For the logistic regression model, the marginal effect can be interpreted as the change in likelihood, i.e., the change in probability expressed as a percentage, that a beneficiary receives continuous pharmacotherapy, controlling for individual characteristics.

Impact of the COVID-19 Public Health Emergency. The COVID-19 pandemic saw increases in mental health diagnoses and substance use disorders, indicating an increased need for behavioral health services. According to a recent report on COVID-19 and behavioral health in the District, Medicaid data during the COVID-19 pandemic in the District showed a 15% increase above baseline in mental health diagnoses. The report also documented more than a 200% increase in crisis/suicide calls to the DBH Access Helpline in the first year of the pandemic compared to the prior year and a peaking of fatal opioid-related overdoses during the pandemic at 45% above the expected baseline.⁶⁵ Nationally, the pandemic coincided with an increase in substance use and increased death rates due to substances. In 2021, drug overdose deaths increased by 51% from before the pandemic.^{66,67} Several factors, including layoffs, fewer available jobs, exacerbated housing, and food insecurity, may have contributed to increases in the incidence of anxiety, depression, and loneliness. Furthermore, changes in drug use behaviors, such as an increase in use of drugs during isolation, may have contributed to an increase in deaths.⁶⁸ Even though the pandemic saw a greater need for behavioral health services, the availability of several services was more limited, especially early in the pandemic. For instance, public health departments needed to redirect resources to address COVID-19 infections, thereby limiting their capacity to implement key harm-reduction interventions, including syringe exchange and naloxone distribution programs, and hospital administrators needed to close psychiatric units to accommodate surges in COVID-19 patients.⁶⁹ The supply of psychiatric beds also decreased due to COVID-19 quarantine and distancing requirements.⁷⁰

⁶⁵ Georgetown University Center for Global Health Science and Security. (2023). *COVID-19 & behavioral health in the District of Columbia*. https://dcauditor.wpenginepowered.com/wp-content/uploads/2023/04/COVID19.Behavioral.Health.D.C.4.20.23.Web_.pdf

⁶⁶ Roberts, A., Rogers, J., Mason, R., Siriwardena, A. N., Hogue, T., Whitley, G. A., & Law, G. R. (2021). Alcohol and other substance use during the COVID-19 pandemic: A systematic review. *Drug and Alcohol Dependence*, 229, 109150.

⁶⁷ Kaiser Family Foundation. (2023). *Opioid overdose deaths and opioid overdose deaths as a percent of all drug overdose deaths*. <https://www.kff.org/other/state-indicator/opioid-overdose-deaths/?currentTimeframe=2&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

⁶⁸ New York University. (2022, April 25). *The impact of COVID-19 on drug use—and how it contributes to overdose risk* [News release]. <https://www.nyu.edu/about/news-publications/news/2022/april/covid-19-drug-use.html>

⁶⁹ Ghose, R., Forati, A. M., & Mantsch, J. R. (2022). Impact of the COVID-19 pandemic on opioid overdose deaths: A spatiotemporal analysis. *Journal of Urban Health*, 99(2), 316–327.

⁷⁰ Georgetown University Center for Global Health Science and Security. (2023). *COVID-19 & behavioral health in the District of Columbia*. https://dcauditor.wpenginepowered.com/wp-content/uploads/2023/04/COVID19.Behavioral.Health.D.C.4.20.23.Web_.pdf

Additionally, existing workforce shortages made it difficult to accommodate the increased need.⁷¹

Several evaluation outcomes examining the utilization and availability of behavioral health services were directly affected by the pandemic, which confounds the ITS estimates. Moreover, other PHE-related policy changes, such as Continuous Coverage,⁷² payment for telehealth delivered in a beneficiary's home,⁷³ and enhanced reimbursement for ASARS services⁷⁴ enacted in the District to help increase access to behavioral access overlap with Demonstration activities.

The COVID-19 PHE poses challenges to the ITS design because the timing of the pandemic coincides with the beginning of the Demonstration. As previously discussed, AIR controlled for the number of COVID-19 deaths in each month/quarter in the regression analyses to mitigate the confounding effects of the pandemic on the Demonstration's impact estimates. However, there are limitations to this solution because there were only 2 months without COVID-19 PHE in the Demonstration period and no months with COVID-19 PHE in the pre-Demonstration period. Controlling for COVID-19 deaths does help to the extent that COVID-19 deaths represent variation in the severity of the pandemic. Other factors, however, such as overlapping policy changes, may not perfectly correlate with the deaths measure, indicating that there still could be omitted variable bias in the reported estimates of the Demonstration's impacts.

Target population counts. Exhibit F.1 provides the annual counts of the target populations for the SMI/SED and SUD evaluation metrics. In general, the target population for the SMI/SED metrics is Medicaid beneficiaries with an SMI/SED diagnosis during the measurement period, and the target population for the SUD metrics is Medicaid beneficiaries enrolled in Medicaid for any amount of time during the measurement period. As described in Section D.2, there are a few exceptions where the population is defined according to the specifications of a particular metric. For example, for the denominator for the SUD metric "percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period," which is adapted from SUD Monitoring Metric #32, the target population is Medicaid

⁷¹ Saunders, H., Guth, M., & Eckart, G. (2023). *A look at strategies to address behavioral health workforce shortages: Findings from a survey of state Medicaid programs*. Kaiser Family Foundation. <https://www.kff.org/medicaid/issue-brief/a-look-at-strategies-to-address-behavioral-health-workforce-shortages-findings-from-a-survey-of-state-medicaid-programs/>

⁷² Department of Health Care Finance - DHCF. (2023). *Medicaid restart*. <https://dhcf.dc.gov/medicaid-restart>

⁷³ Department of Health Care Finance - DHCF. (2020). *DC Medicaid telemedicine guide*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/Telemedicine%20Guide%20for%20Medicaid%20Providers%203.25.2020.pdf

⁷⁴ Government of the District of Columbia, Department of Healthcare Finance. (2020). *Temporary enhanced reimbursement rates for Adult Substance Abuse Rehabilitation Services (ASARS) due to COVID-19*. <https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/Transmittal%2020-36%20Temporary%20Enhanced%20Reimbursement%20Rates%20for%20Adult%20Substance%20Abuse%20Rehabilitation%20Services%2028ASARS%29%20Due%20to%20COVID-19.pdf>

beneficiaries with an SUD diagnosis rather than any Medicaid beneficiary. Note that for the SMI/SED metrics, we restrict the target population to Medicaid beneficiaries with an SMI/SED diagnosis, per the set of SMI/SED diagnosis codes adopted by DHCF when reporting under the State-specific definition of SMI in the monitoring reports.⁷⁵ Also note that the number of beneficiaries included in the target population (denominator) for a metric will vary from period to period according to the type of metric. For example, for a monthly SMI/SED metric, the monthly denominator for a particular month includes beneficiaries enrolled in Medicaid with SMI/SED diagnoses during that month.

Exhibit F.1. Annual Counts of SMI/SED and SUD Target Populations

Type of Evaluation Metric	Target Population	Year				
		2017	2018	2019	2020	2021
SMI/SED	Number of beneficiaries ages 18+ who are Medicaid enrolled and have a state-defined SMI/SED diagnosis in any month of the year	34,235	35,057	36,713	36,932	40,204
SUD	Number of beneficiaries ages 18+ who are Medicaid enrolled in any month of the year	190,031	193,466	187,655	190,797	196,343

⁷⁵ SMI/SED codes in the State-specific definition are a subset of the diagnosis codes used in the Standardized Definition of SMI in the CMS Technical Specifications for Monitoring Metrics.

F.1. Effects on SMI/SED Goals

F.1.1. Goal 1. Reduced utilization and LOS in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings

Takeaway: The Demonstration has achieved the goal of reducing utilization, but not of reducing LOS in the ED.

Hypothesis 1.1: The Demonstration will decrease the utilization of emergency department (ED) services by beneficiaries with SMI/SED.



- The number of beneficiaries with SMI/SED who used ED services for mental health during the measurement period had a statistically significant decrease in level and slope.
- The percentage of beneficiaries with SMI/SED who used ED services for mental health during the measurement period had a statistically significant decrease in level and slope.



- Evaluation participants perceived that the Demonstration has reduced ED service utilization by promoting increased access to crisis stabilization services.

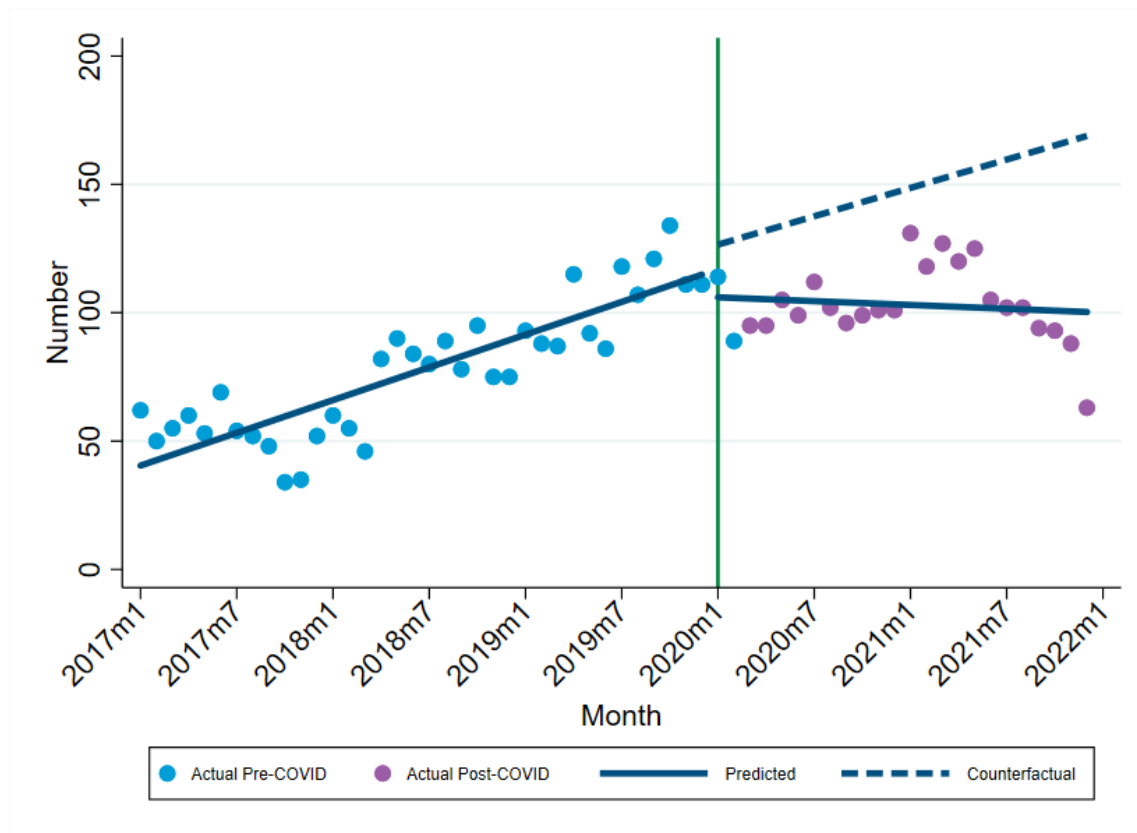
Hypothesis 1.2: The Demonstration will decrease the length of stay (LOS) in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings.



- For ED LOS for Medicaid beneficiaries, we did not detect a statistically significant change in level, but did identify a statistically significant increase in slope.

F.1.1.1 Research Question 1.1a. Was there a decrease in ED service utilization by beneficiaries with SMI/SED?

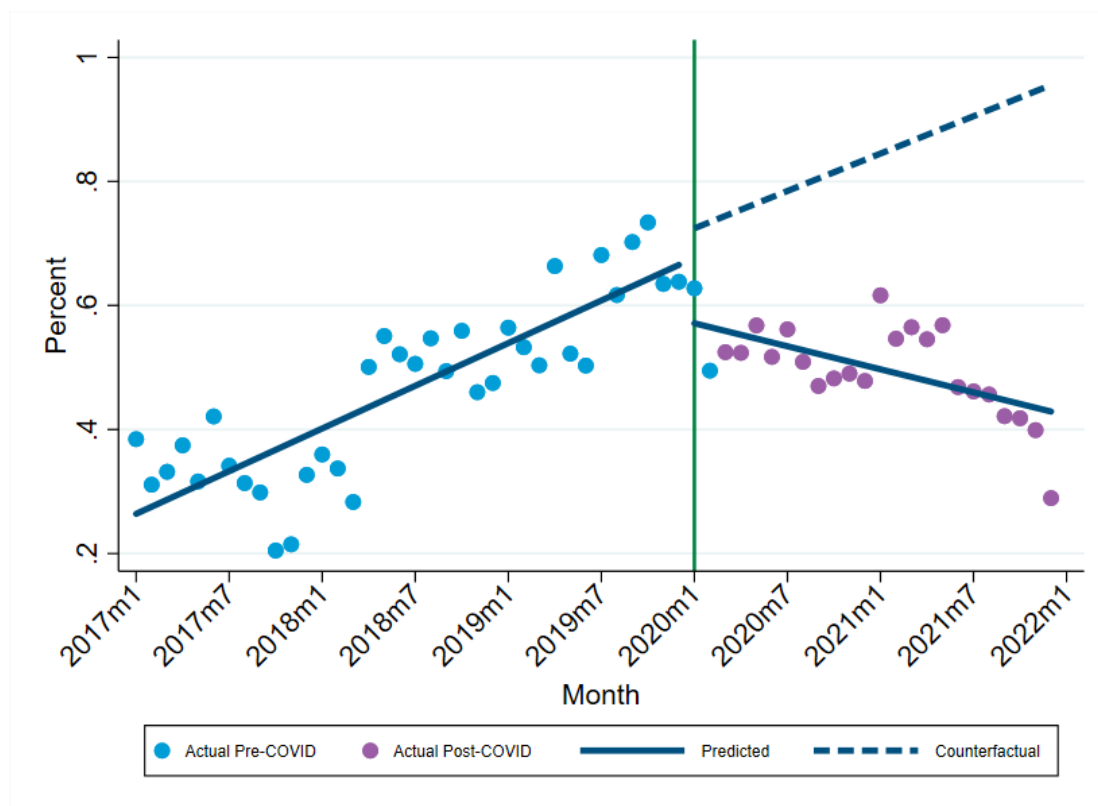
Exhibit F.2. Mental Health Services Utilization—ED (Number of Medicaid Beneficiaries with SMI/SED)



This monthly metric was adapted from SMI/SED Monitoring Metric #16 which is also a monthly metric. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁷⁶ Exhibit F.2 shows that the observed number of beneficiaries with SMI/SED who used ED services for mental health during the measurement period increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

⁷⁶ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.3. Mental Health Services Utilization—ED (Percentage of Medicaid Beneficiaries with SMI/SED)



This monthly metric was adapted from SMI/SED Monitoring Metric #16 which is also a monthly metric. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁷⁷ Exhibit F.3 shows that the observed percentage of beneficiaries with SMI/SED who used ED services for mental health during the measurement period increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

⁷⁷ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.4. Effect on Mental Health Services Utilization—ED

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries with SMI/SED who used ED services for mental health during the measurement period	↓	77.67	-15.94* (8.11)	-6.36*** (1.52)
Percentage of beneficiaries with SMI/SED who used ED services for mental health during the measurement period	↓	0.46	-0.12*** (0.04)	-0.05*** (0.01)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.4 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period decrease of 15.94 in the number of beneficiaries with SMI/SED who used ED services for mental health during the measurement period (level change in the predicted trend figure), from a baseline mean of 77.67. In addition, this metric decreased by a statistically significant value of 6.36 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are shown in Appendix Exhibit C.1.

The second row of Exhibit F.4 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period decrease of 0.12 percentage points in the percentage of beneficiaries with SMI/SED who used ED services for mental health during the measurement period (level change in the predicted trend figure), from a baseline mean of 0.46%. In addition, this metric decreased by a statistically significant 0.05 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are shown in Appendix Exhibit C.2.

F.1.1.2. Research Question 1.1b. How does the Demonstration influence ED service utilization by beneficiaries with SMI/SED (e.g., through improved access to other continuum of care services)?

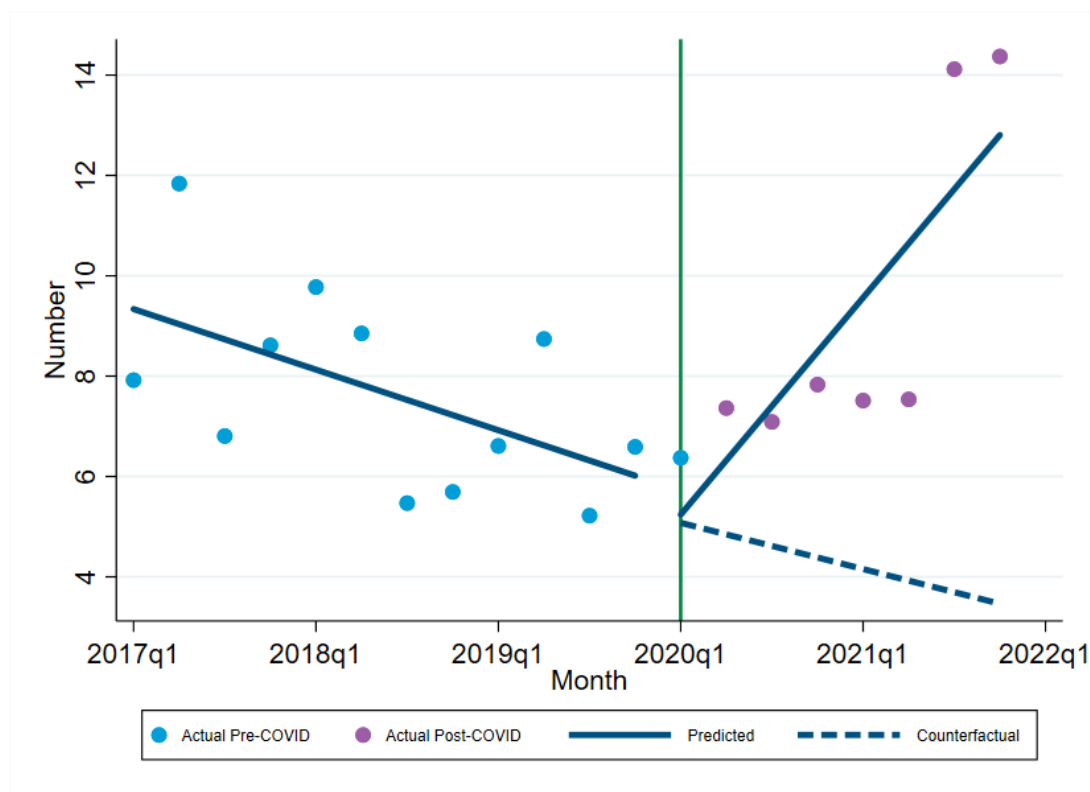
It is likely that the COVID-19 PHE contributed, at least in part, to the sharp decline in ED service utilization over the Demonstration period, given that utilization of all in-person services decreased because of safety restrictions and concerns. However, interview and listening session discussions with providers suggested that Demonstration changes may also have contributed to

this decrease. Specifically, providers indicated that the changes to crisis stabilization services helped to keep beneficiaries out of the ED.

“We have opened up some crisis stabilization beds that are really pulling people out of the emergency department who may not need hospitalization but cannot be discharged immediately.”

F.1.1.3. Research Question 1.2a. Was there a decrease in the LOS in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings?

Exhibit F.5. ED LOS (in Hours) Among Medicaid Beneficiaries with SMI/SED



The target population for this metric is Medicaid beneficiaries receiving treatment for SMI/SED in emergency departments. The data for this metric was provided by the DC Hospital Association. Beneficiaries with SMI/SED are identified based on diagnoses codes adopted by the DC Hospital Association, which may differ from the SMI/SED codes we used to define the target population for the other SMI/SED metrics.⁷⁸ Exhibit F.5 shows that the observed ED LOS (in hours) for Medicaid beneficiaries decreased over time during the pre-Demonstration period but

⁷⁸ See Appendix A for the list of SMI/SED diagnosis codes used in the other SMI/SED metrics, which are the same as those adopted by DHCF for the monitoring metrics when reporting under the State-specific definition of SMI.

increased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted slightly upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was an increasing trend over time under the Demonstration.

Exhibit F.6. Effect on ED LOS (in Hours) Among Medicaid Beneficiaries with SMI/SED

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
ED LOS (in hours) for Medicaid beneficiaries	↓	7.68	-1.15 (1.26)	1.31*** (0.35)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

Exhibit F.6 shows that the immediate or early post-Demonstration period change in ED LOS (in hours) for Medicaid beneficiaries (level change in the predicted trend figure) was not statistically significant. However, this metric increased by a statistically significant value of 1.31 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Data for this measure were provided by the DC Hospital Association, and no subgroup data were provided, so the subgroup analysis is not applicable.

Perspectives of evaluation participants. See section F.1.1.2. Provider perspectives on the Demonstration’s influence on ED utilization are covered in that section.

F.1.1.4. Research Question 1.2b. How does the Demonstration influence the LOS in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings (e.g., through improved access to other continuum of care services)?

See section F.1.1.2. Provider perspectives on the Demonstration’s influence on ED utilization are covered in that section.

F.1.2. Goal 2. Reduced preventable readmissions to acute care and specialty hospitals and residential settings

Takeaway: The Demonstration has not yet achieved the goal of reducing preventable readmissions. Goal assessment is based on SMI/SED Monitoring Metric #4, which counts all readmissions other than planned readmissions following a psychiatric admission to an inpatient psychiatric facility.

Hypothesis 2.1: The Demonstration will reduce preventable readmissions to acute care and specialty hospitals and residential settings for beneficiaries with SMI/SED.



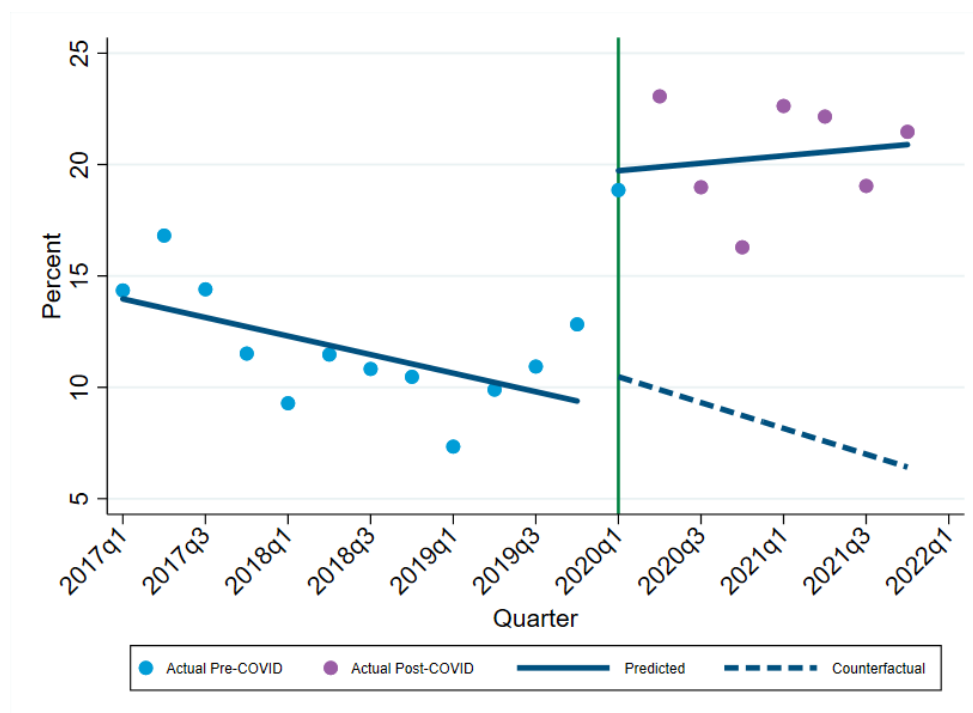
– The rate of unplanned, 30-day readmissions for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease had a statistically significant increase in level and slope.



– According to evaluation participants, limited supply of comprehensive outpatient programs makes it difficult to prevent unnecessary readmissions.

F.1.2.1. Research Question 2.1. Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?

Exhibit F.7. Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (Percentage of Medicaid Beneficiaries with SMI/SED)



This quarterly metric was adapted from SMI/SED Monitoring Metric #4, which is an annual metric. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the quarter who had a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease during an index admission to an inpatient psychiatric facility (IPF).⁷⁹ Exhibit F.7 shows that the observed percentage of the unplanned, 30-day readmission rate for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease during an index admission to an IPF decreased over time during the pre-Demonstration period but increased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was an increasing trend over time under the Demonstration.

In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.⁸⁰ This means more opportunity to observe both index admissions and readmissions in the data.⁸¹

Also note that this metric is not well aligned to the goal because the numerator of the metric is not limited to preventable readmissions but includes any admission, for any reason, to an IPF or a short-stay acute care hospital, except for admissions that are considered planned.

⁷⁹ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

⁸⁰ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

⁸¹ It is possible that the newly covered beneficiaries are more likely to have readmissions because they may be less likely to receive follow-up care than previously covered beneficiaries.

Exhibit F.8. Effect on Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
The rate of unplanned, 30-day readmissions for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer’s disease	↓	11.68	8.50** (2.83)	0.75* (0.39)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

Exhibit F.8 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 8.50 percentage points in the unplanned, 30-day readmission rate for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer’s disease during an index admission to an IPF (level change in the predicted trend figure), from a baseline mean of 11.68%. In addition, this metric increased by 0.75 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are shown in Appendix Exhibit C.3.

Perspectives of evaluation participants. Evaluation participants did not perceive there to be a decrease in preventable readmissions to acute care and specialty hospitals and residential settings. Instead, evaluation participants noted that lack of comprehensive outpatient programs makes it difficult for beneficiaries to get the support they need following an inpatient stay. This lack of access to community-based services often resulted in the deterioration of beneficiaries’ behavioral health and readmission to acute care settings.

“We do an excellent job of taking someone who’s having an acute episode, restoring them to stability, and discharging them. And then they go back out into the world, and they don’t have employment, stable housing, medication support and management...If there was a comprehensive outpatient program where they can go and receive the supports they need to remain stable, it would reduce the need for hospitalization...In the absence of those post-hospital supports, they end up back in acute or tertiary hospital settings or being very self-destructive or disruptive to an orderly society. They wind up at CPEP, in the emergency rooms, in and out of acute care in-patient psychiatric facilities. Currently, because of the confusion/lack of coordination, there’s much greater demand for inpatient psychiatric care than there is supply.”

F.1.3. Goal 3. Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, and intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District

Takeaway: The Demonstration has achieved the goal of improving the utilization of crisis stabilization services.

Hypothesis 3.1: The Demonstration will increase the utilization of crisis-stabilization services.



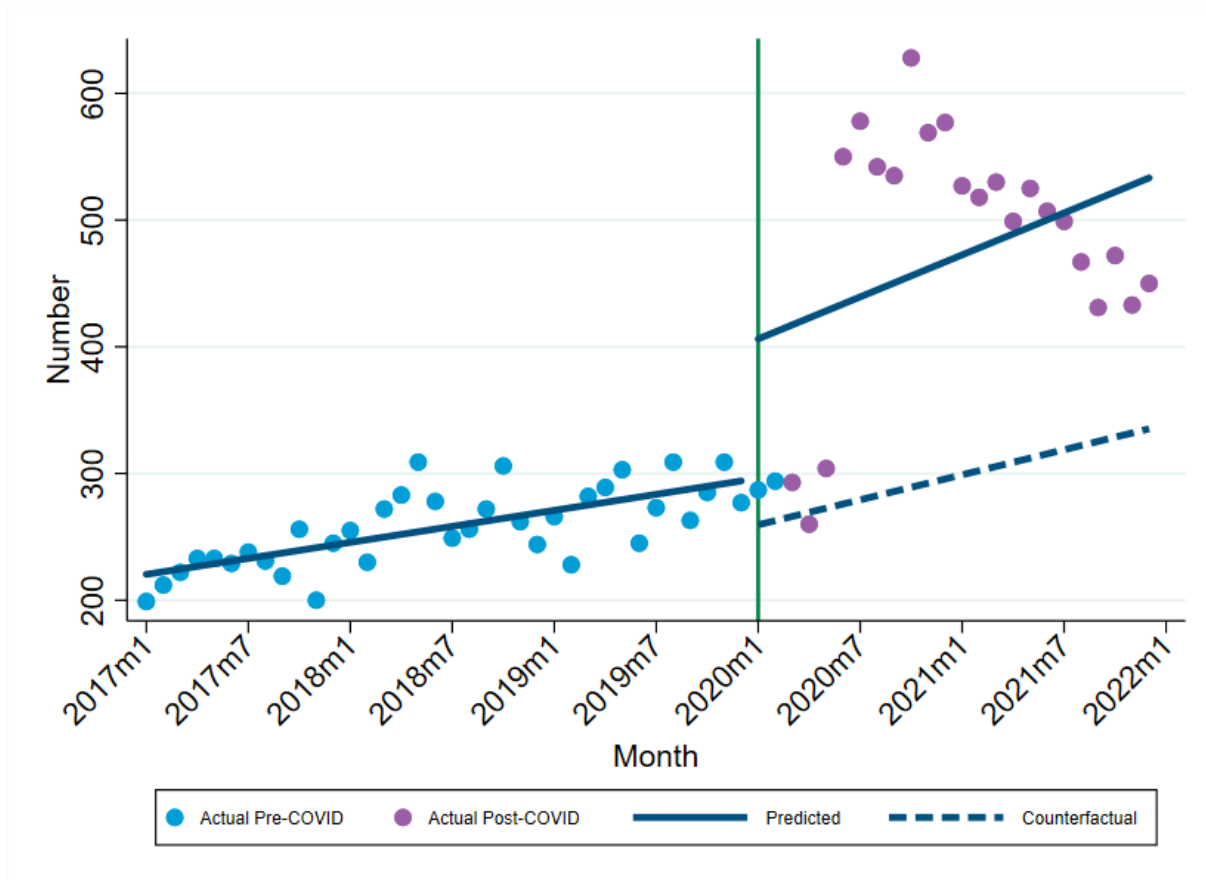
- The number of beneficiaries accessing any crisis stabilization services had a statistically significant increase in level, but we did not detect a statistically significant change in slope.
- The percentage of beneficiaries accessing any crisis stabilization services had a statistically significant increase in level, but we did not detect a statistically significant change in slope.
- The number of beneficiaries accessing CPEP had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was a statistically significant decrease.
- The percentage of beneficiaries accessing CPEP had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was a statistically significant decrease.
- For the number of beneficiaries accessing mobile crisis and outreach services, we did not detect a statistically significant change in level or slope.
- For the percentage of beneficiaries accessing mobile crisis and outreach services we did not detect a statistically significant change in level or slope.
- The number of beneficiaries accessing psychiatric crisis stabilization services, which became newly available under the Demonstration, had an increasing trend that was not statistically significant.
- The percentage of beneficiaries accessing psychiatric crisis stabilization services, which became newly available under the Demonstration, had an increasing trend that was not statistically significant.



- Evaluation participants reported that changes to the reimbursement methodology for crisis stabilization services have promoted increased access to these services by incentivizing new providers to pursue certification to deliver crisis stabilization services and by incentivizing existing crisis service providers to expand their delivery of these services.
- Beneficiaries seem to be aware of and using alternatives to emergency care when experiencing crises. Most respondents to the baseline beneficiary survey said that they would know how to get help for a behavioral health crisis without going to the ED or hospital. Most survey respondents said that they had received all the services they wanted or needed related to non-ED and non-hospital emergency care.

F.1.3.1. Research Question 3.1a. Was there an increase in the utilization of crisis stabilization services?

Exhibit F.9. Any Crisis Stabilization Service (Number of Medicaid Beneficiaries with SMI/SED)

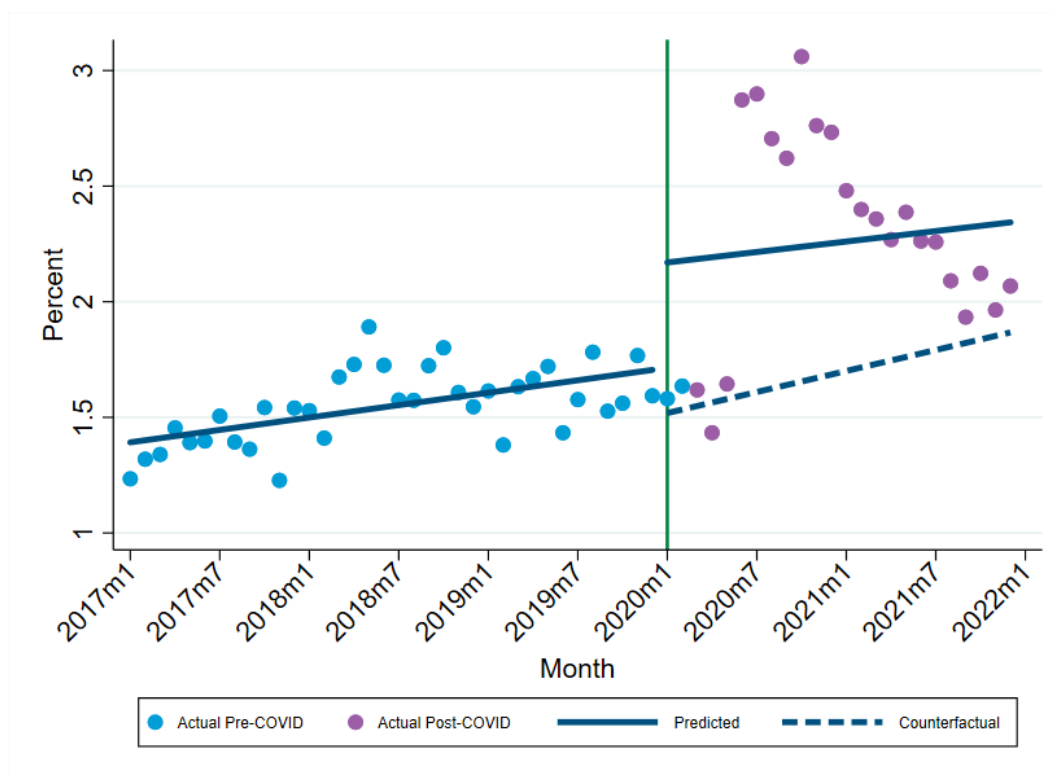


The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸² Exhibit F.9 shows that the observed number of beneficiaries accessing crisis stabilization services increased over time during both the pre-and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

⁸² To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

In interpreting this measure, note that the observed increases could be a combination of increased rates of mental health problems during the COVID-19 PHE as well as increased availability of services under the Demonstration, including psychiatric residential crisis stabilization, which is a newly added service under the Demonstration.⁸³

Exhibit F.10. Any Crisis Stabilization Service (Percentage of Medicaid Beneficiaries with SMI/SED)



The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸⁴ Exhibit F.10 shows that the observed percentage of beneficiaries accessing crisis stabilization services increased over time during both the pre- and post-Demonstration periods, and the rate of increase was smaller under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an

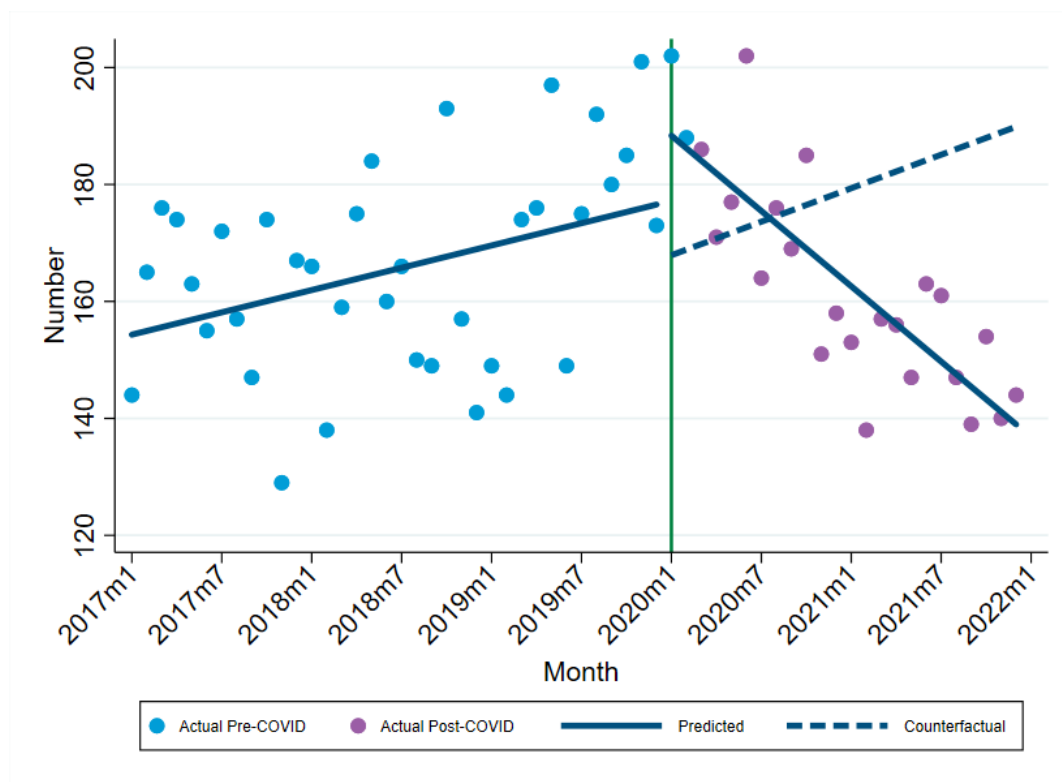
⁸³ National Center for Health Statistics. (2023). *U.S. Census Bureau, Household Pulse Survey, 2020–2023. Anxiety and Depression*. Generated interactively: from <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>

⁸⁴ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

increasing trend over time under the Demonstration. The rate of increase under the Demonstration was smaller than the counterfactual.

In interpreting this measure, note that the observed increases could be a combination of increased rates of mental health problems during the COVID-19 PHE as well as increased availability of crisis stabilization services under the Demonstration, including psychiatric residential crisis stabilization, which is a newly added service under the Demonstration.

Exhibit F.11. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Comprehensive Psychiatric Emergency Program

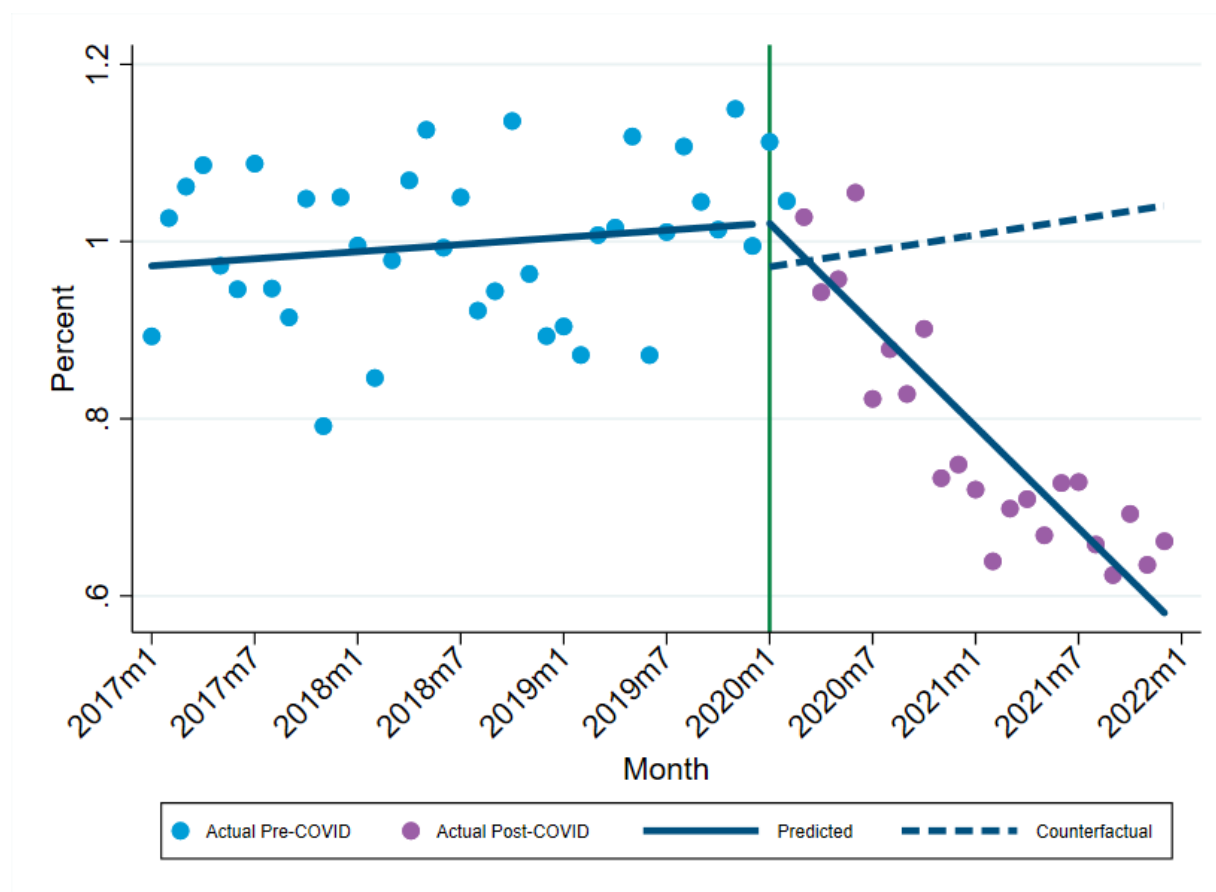


The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸⁵ Exhibit F.11 shows that the observed number of beneficiaries accessing CPEP increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary

⁸⁵ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

to the counterfactual, there was a decreasing trend over time under the Demonstration. An explanation for the decreasing trend during the post-Demonstration period could be certain billing changes for the one provider approved to bill for this service.⁸⁶

Exhibit F.12. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED) — Comprehensive Psychiatric Emergency Program



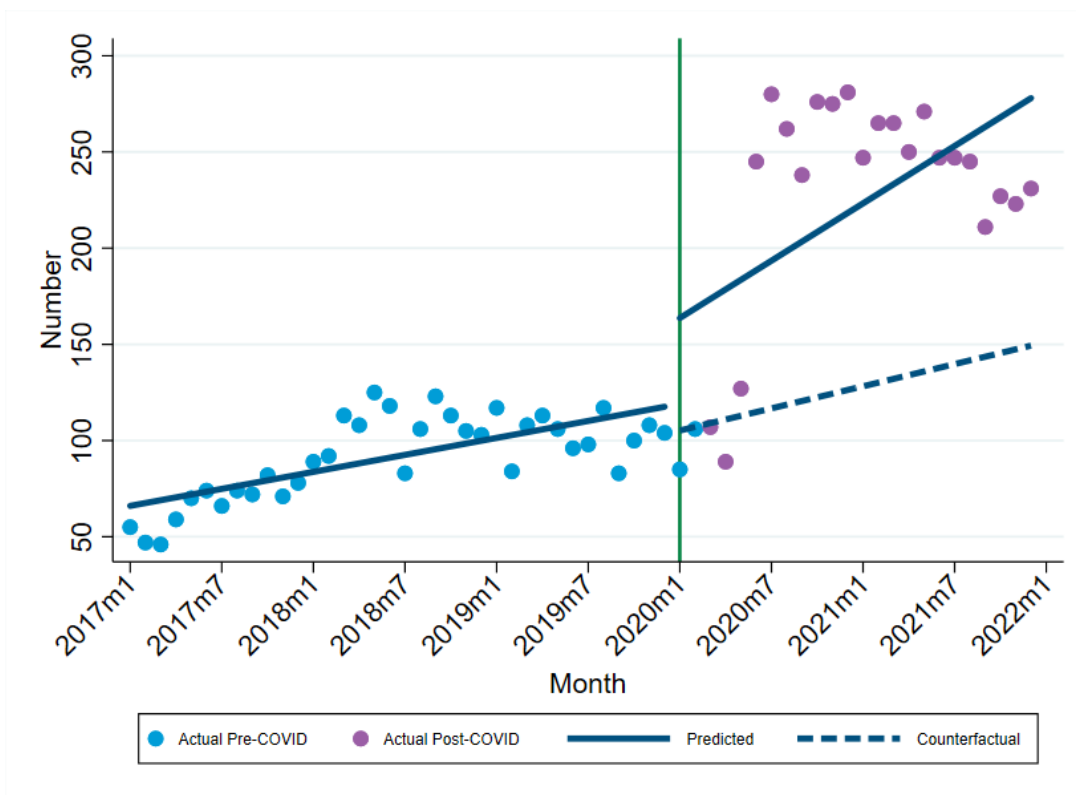
The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸⁷ Exhibit F.12 shows that the observed percentage of beneficiaries accessing CPEP slightly increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the

⁸⁶ New procedure codes became available for this service in June 2020, but the billing ramped up in March 2021. Most billing used historical procedure codes ended in February 2021.

⁸⁷ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

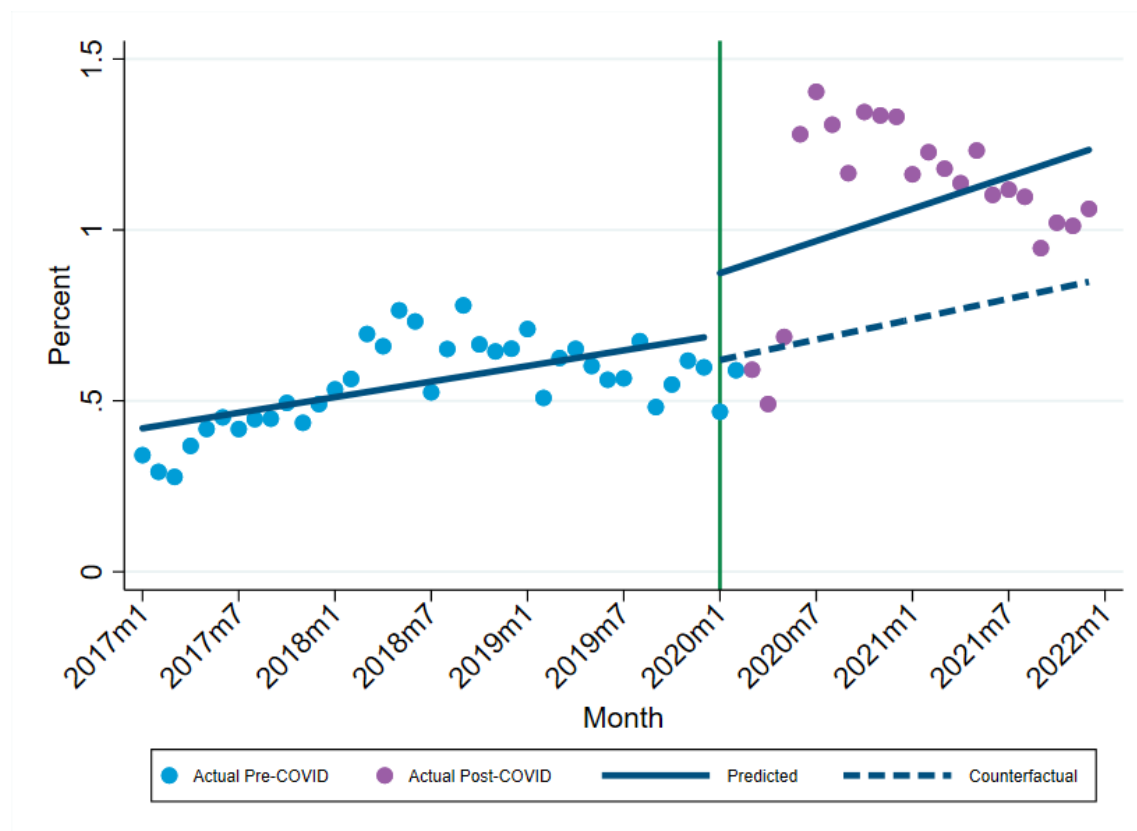
Exhibit F.13. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Mobile Crisis and Outreach



The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸⁸ Exhibit F.13 shows that the observed number of beneficiaries accessing mobile crisis and outreach services increased over time during both the pre- and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

⁸⁸ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

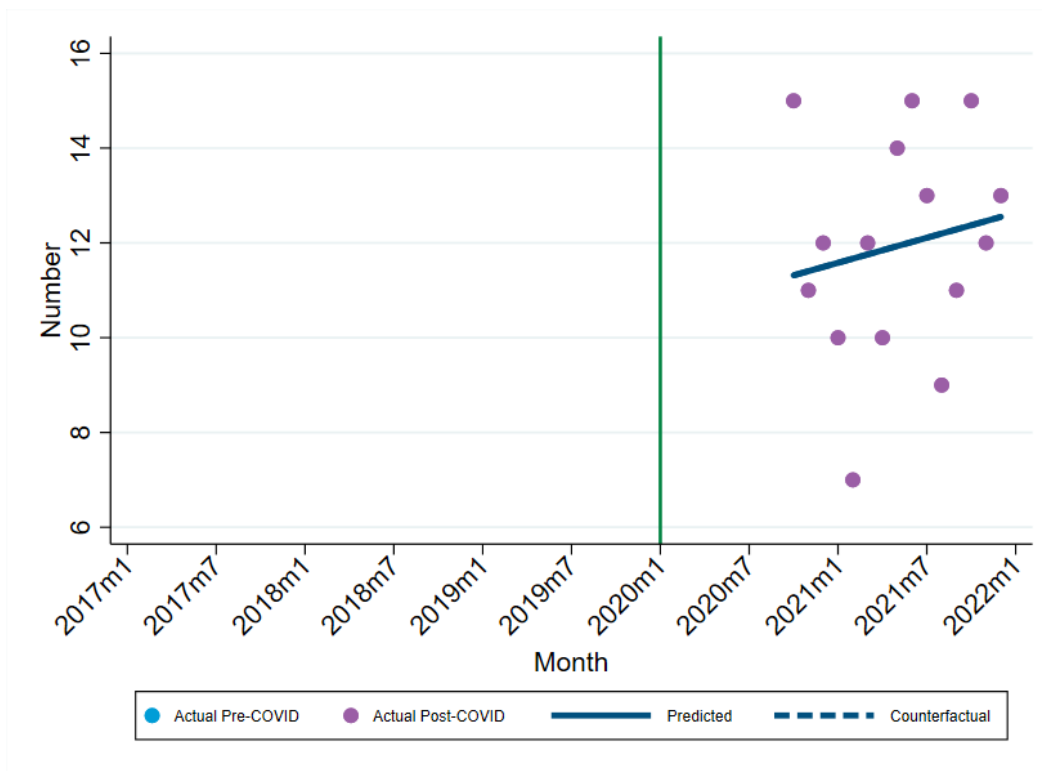
Exhibit F.14. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED)—Mobile Crisis and Outreach



The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁸⁹ Exhibit F.14 shows that the observed percentage of beneficiaries accessing mobile crisis and outreach services increased over time during the pre-Demonstration period and increased first and decreased thereafter in the post-Demonstration period. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

⁸⁹ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

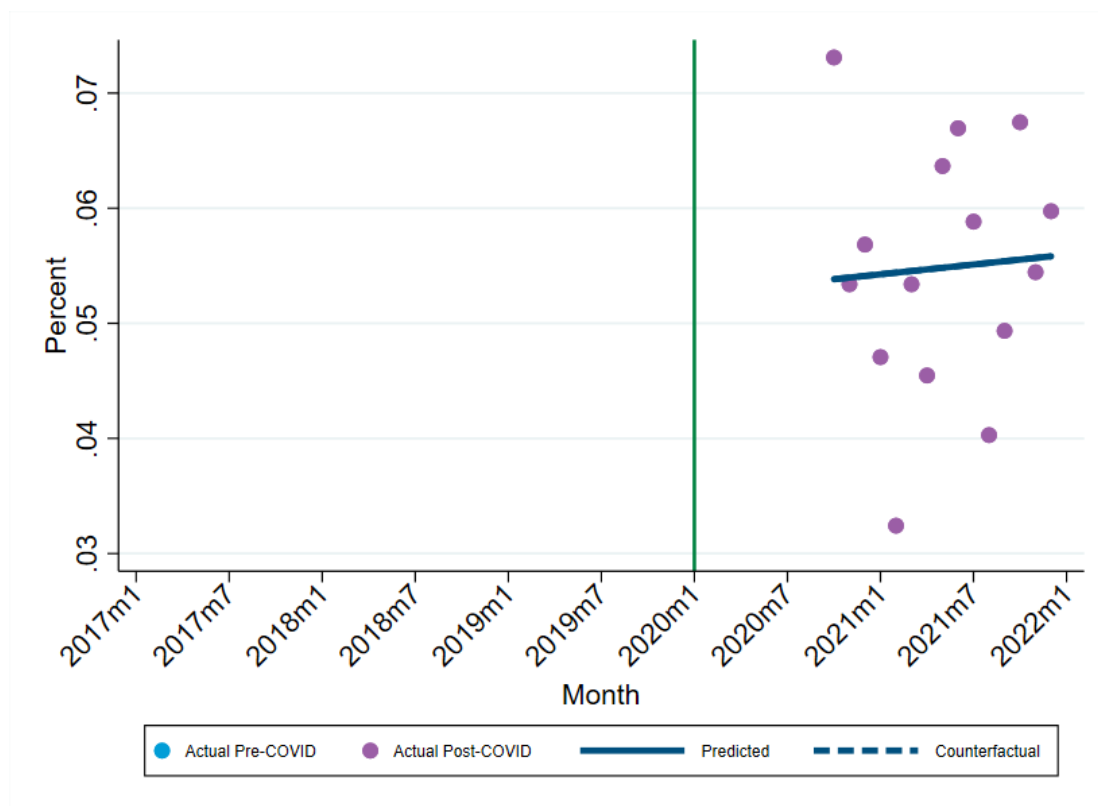
Exhibit F.15. Any Crisis Stabilization Service, by Setting (Number of Medicaid Beneficiaries with SMI/SED)—Psychiatric Residential Crisis Stabilization



Psychiatric residential crisis stabilization is a newly covered service under the Demonstration. Therefore, this measure does not have pre-Demonstration period data. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹⁰ Exhibit F.15 shows that the observed number of beneficiaries accessing psychiatric crisis stabilization services had an increasing trend during the post-Demonstration period. This was a new Demonstration service that began to be available only from June 1, 2020.

⁹⁰ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.16. Any Crisis Stabilization Service, by Setting (Percentage of Medicaid Beneficiaries with SMI/SED)—Psychiatric Residential Crisis Stabilization



Psychiatric residential crisis stabilization is a newly covered service under the Demonstration. Therefore, this measure does not have pre-Demonstration period data. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹¹ Exhibit F.16 shows that the observed percentage of beneficiaries accessing psychiatric crisis stabilization services had an increasing trend during the post-Demonstration period. The service began to be available only from June 1, 2020.

⁹¹ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.17. Effect on the Utilization of Crisis Stabilization Services

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries accessing crisis stabilization services	↑	257.28	141.88** (67.89)	6.78 (10.31)
Percentage of beneficiaries accessing crisis stabilization services	↑	1.55	0.67** (0.32)	-0.02 (0.05)
Number of beneficiaries accessing crisis stabilization services, by setting—CPEP	↑	165.44	27.25*** (8.21)	-9.44*** (1.22)
Percentage of beneficiaries accessing crisis stabilization services, by setting—CPEP	↑	1.00	0.10* (0.05)	-0.07*** (0.01)
Number of beneficiaries accessing crisis stabilization services, by setting—mobile crisis and outreach	↑	91.83	51.80 (37.56)	9.28 (5.78)
Percentage of beneficiaries accessing crisis stabilization services, by setting—mobile crisis and outreach	↑	0.55	0.24 (0.18)	0.02 (0.03)
Number of beneficiaries accessing crisis stabilization services, by setting—psychiatric crisis stabilization	↑	N/A	N/A	N/A
Percentage of beneficiaries accessing crisis stabilization services, by setting—psychiatric crisis stabilization	↑	N/A	N/A	N/A

N/A means not applicable because there were no observations during the pre-Demonstration period. *Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.17 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 141.88 in the number of beneficiaries accessing crisis stabilization services (level change in the predicted trend figure), from a baseline mean of 257.28. However, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are presented in Appendix Exhibit C.4.

The second row of Exhibit F.17 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 0.67 percentage points in the percentage of beneficiaries accessing crisis stabilization services (level change in the predicted trend figure) from a baseline mean of 1.55%. However, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit C.5.

The third row of Exhibit F.17 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 27.25 in the number of beneficiaries accessing CPEP (level change in the predicted trend figure), from a baseline mean of 165.44. In addition, this metric decreased by a statistically significant value of 9.44 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant decrease of 49.45 at the 1% level. If the current trend continues, while all other influential factors remain the same, the number of beneficiaries accessing CPEP could continue to show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results are presented in Appendix Exhibit C.6.

The fourth row of Exhibit F.17 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 0.10 percentage points in the percentage of beneficiaries accessing CPEP (level change in the predicted trend figure), from a baseline mean of 1.00%. In addition, this metric decreased by a statistically significant 0.07 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant decrease of 0.44 percentage points at the 1% level. If the current trend continues, while all other influential factors remain the same, the percentage of beneficiaries accessing CPEP could continue to show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results are presented in Appendix Exhibit C.7.

The fifth row of Exhibit F.17 indicates that the immediate or early post-Demonstration period change in the number of beneficiaries accessing mobile crisis and outreach services (level change in the predicted trend figure), from a baseline mean of 91.83, was not statistically significant. Additionally, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results can be found in Appendix Exhibit C.8.

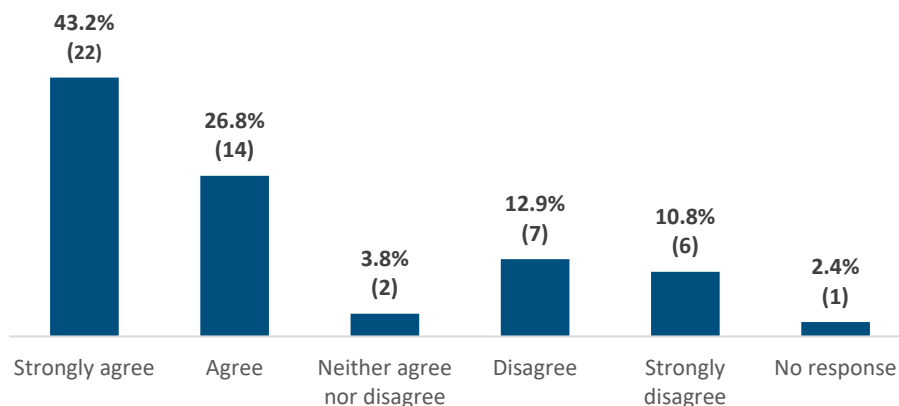
The sixth row of Exhibit F.17 indicates that the immediate or early post-Demonstration period change in the percentage of beneficiaries accessing mobile crisis and outreach services (level change in the predicted trend figure), from a baseline mean of 0.55%, was not statistically significant. Additionally, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results appear in Appendix Exhibit C.9.

As shown in the seventh and eighth rows of Exhibit F.17, because the psychiatric crisis stabilization services were available only under the Demonstration, an ITS analysis was not applicable. The slope changes in the predicted trend figures during the Demonstration period were not statistically significant.

F.1.3.2. Research Question 3.1b. Was there an increase in awareness of the availability of crisis stabilization services?

Baseline beneficiary survey data suggested that survey respondents were aware of and using alternatives to emergency care when experiencing crises. Sixty-four percent of all 358 survey respondents ($n = 228$) said they would know how to get help for a crisis or urgent problem related to their drug or alcohol use or mental health without going to the ED or hospital (Exhibit F.18). Fifteen percent of all survey respondents ($n = 52$) reported wanting or needing emergency care without going to a hospital ED when having a crisis or needing urgent help related to drug or alcohol use or mental health. Of the 52 survey respondents, 70% ($n = 36$) agreed that they were able to get all the services they wanted or needed for emergency care without going to a hospital ED.

Exhibit F.18. Were you able to get all the services you wanted or needed for emergency care without going to a hospital ED when you were having a crisis or needed urgent help related to drug or alcohol use or mental health?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.1.3.3. Research Question 3.1c. How does the Demonstration influence the availability of crisis stabilization services (i.e., CPEP, Psychiatric Crisis Stabilization Program, Youth Mobile Crisis Intervention, and Adult Mobile Crisis and Behavioral Health Outreach)?

Crisis stabilization services are 24 hours per day, 7 days per week, year-round services that address an unplanned event requiring a response when an individual struggles to manage their psychiatric or substance use–related symptoms without de-escalation or other intervention. The Demonstration implemented several changes to the crisis stabilization services available to beneficiaries with SMI/SED and SUD in the District. These changes included:

- more appropriately accounting for and valuing crisis stabilization services by revising the billing methodology for CPEP (from 15-minute increments to an hourly rate for brief crisis emergency visits and per diem for 23-hour crisis and extended observation visits) and adding mobile crisis and outreach services as separate from CPEP services with distinct billing structures, and
- providing a treatment alternative to psychiatric inpatient hospitalization by adding coverage for psychiatric residential crisis stabilization services that were previously funded through local dollars.

These reimbursement changes were effective as of June 1, 2020, as specified in the Second Chapter 86 Rulemaking. The newly created Chapter 80 of Title 22-A Rulemaking describes the provider certification requirements associated with crisis stabilization services.

Providers are broadly aware of the changes to crisis stabilization services and believe that these services have had a positive impact. Of note, several evaluation participants considered the changes to funding for crisis services to be the main impact of the Demonstration. The successes that evaluation participants reported include the following:

- *Improved beneficiary access to crisis stabilization services due to better understanding among providers of what is reimbursable.* Prior to the Demonstration, the interpretation of which crisis services were reimbursable varied across providers, and some patients were turned away from services because of perceived lack of reimbursement eligibility. Evaluation participants noted that the Demonstration helped clarify the rules and reimbursement rates for crisis services, making it easier for patients to access these services because more providers began referring patients to crisis stabilization providers. For example, one stakeholder noted that the policy clarifications widened the range of crisis stabilization providers who referred patients to their organization.

“We are a crisis service provider—we have been billing under chapter 80 now since March, we have noticed a change, more ways in which we can bill. I think, the city wants to increase the revenue coming into those programs and that's helpful, overall positive.”

- *Increased willingness to deliver crisis stabilization services.* Evaluation participants reported that the reimbursement changes have stabilized the budgets of providers who were already delivering crisis stabilization services and incentivized new providers to

pursue certification to deliver residential crisis stabilization services. For example, one stakeholder noted that they had opened up crisis stabilization services in their residential facility because of the Demonstration's added coverage for these services. Evaluation participants were optimistic that additional providers would begin offering crisis stabilization services, making it easier for a beneficiary to receive a full continuum of care by their "home" provider.

The few challenges that evaluation participants reported related to ongoing billing challenges for child crisis providers associated with the unique requirements for the child population and a lack of availability of crisis stabilization services in Wards 7 and 8 of the District.

F.1.4. Goal 4. Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI or SED, including through increased integration of primary and behavioral healthcare

Takeaway: The Demonstration has achieved the goal of improving access to community-based services to address chronic mental health care needs, including through the increased integration of primary and behavioral health care. The number of beneficiaries with SMI/SED who used any mental health services increased. The number of episodes of care where IMD providers billed for assessments or the treatment of physical conditions also increased. The total number of mental health providers did not increase.

Hypothesis 4.1: The Demonstration will increase access to specific community-based SMI/SED treatment services.

	– The total number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration had a statistically significant decrease in level and a statistically significant increase in slope. However, the combined effect of the level and slope changes at the end of 2 years was not statistically significant. – The regression analysis was not conducted for the number of psychiatric hospitals that delivered services to beneficiaries with SMI/SED under the Demonstration because the number of hospitals was too small. – The number of physicians or other practitioners who delivered services to beneficiaries with SMI/SED under the Demonstration had a statistically significant decrease in level and a statistically significant increase in slope. However, the combined effect of the level and slope changes at the end of 2 years was not statistically significant. – For the number of FQHCs that delivered services to beneficiaries with SMI/SED under the Demonstration, we did not detect a statistically significant change in level, but did identify a statistically significant increase in slope. – The number of other behavioral health clinics/entities that delivered services to beneficiaries with SMI/SED under the Demonstration had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was not statistically significant.
	– Not knowing where to go was a commonly reported reason for not being able to get all the services beneficiaries wanted or needed related to counseling or treatment for emotional or mental health or a traumatic event, which suggests that there is an opportunity to improve community knowledge of available community-based SMI/SED treatment and services. – Evaluation participants perceived that changes to the reimbursement methodology for TREM and TST have not improved access to these services because the services are cost prohibitive even with the reimbursement changes. – Evaluation participants who were aware of the new ability of independent licensed behavioral health clinicians to enroll in and receive reimbursement from Medicaid perceived that it has improved access to these clinicians because more practices are including these providers on their teams. – Evaluation participants perceived that implementation of FFP for short-term stays for acute care in IMD settings has expanded access to these services in the District.

Hypothesis 4.2: The Demonstration will increase utilization of specific community-based SMI/SED treatment services.

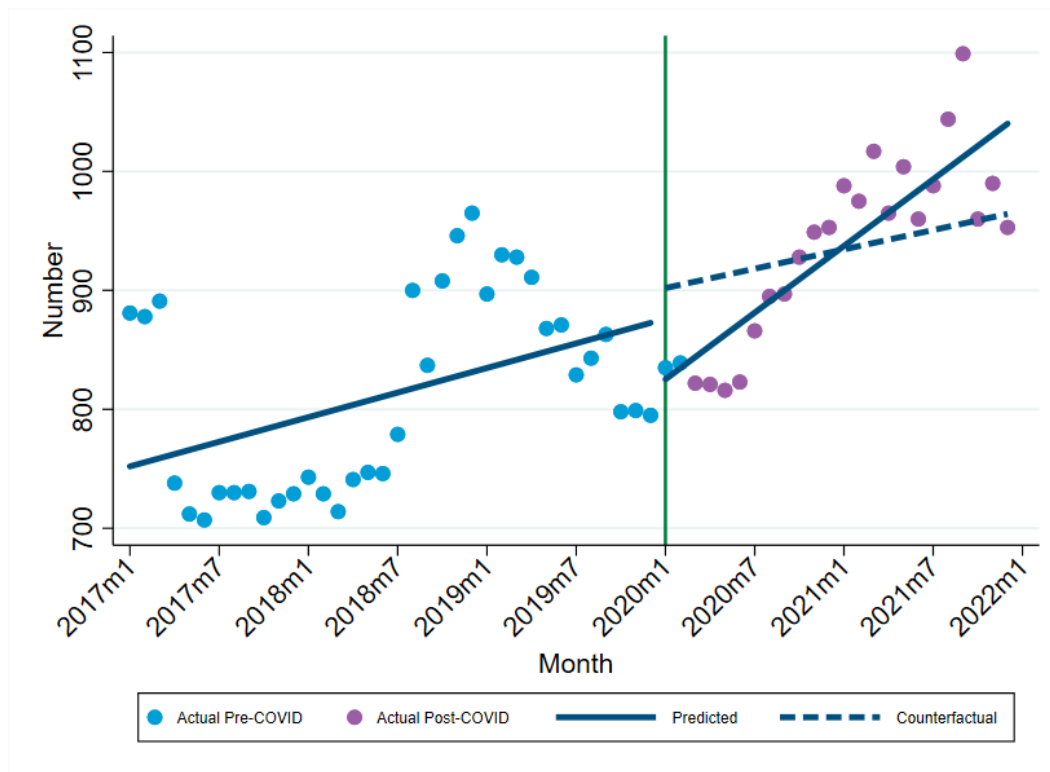
	– The number of beneficiaries with SMI/SED who used any services related to mental health during the measurement period had a statistically significant increase in level and slope. – The percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period had a statistically significant increase in level and slope.
	– The availability of the Clubhouse services has not increased utilization of SMI/SED treatment services because uptake of the Clubhouse services has been slower and lower than expected.

Hypothesis 4.3: The Demonstration will increase the integration of primary and behavioral health care.

	– The metric did not assess the integration of primary and behavioral health care directly. It assessed utilization patterns in the IMD setting to assess the integration of physical and behavioral health care. – The number of episodes of care where IMD providers billed for assessments or treatment of physical conditions had a statistically significant increase in level and a statistically significant decrease in slope. The combined effect of the level and slope changes at the end of 2 years was a statistically significant increase. – For the percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions, we did not detect a statistically significant change in level or slope.
	– Few evaluation participants who were providers reported that they had increased integration of primary and behavioral health care under the Demonstration. – Only half of beneficiary survey respondents indicated that they have received primary and behavioral health care from the same provider.

F.1.4.1 Research Question 4.1a. Was there an increase in access to community-based SMI/SED treatment services?

Exhibit F.19. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, in Total

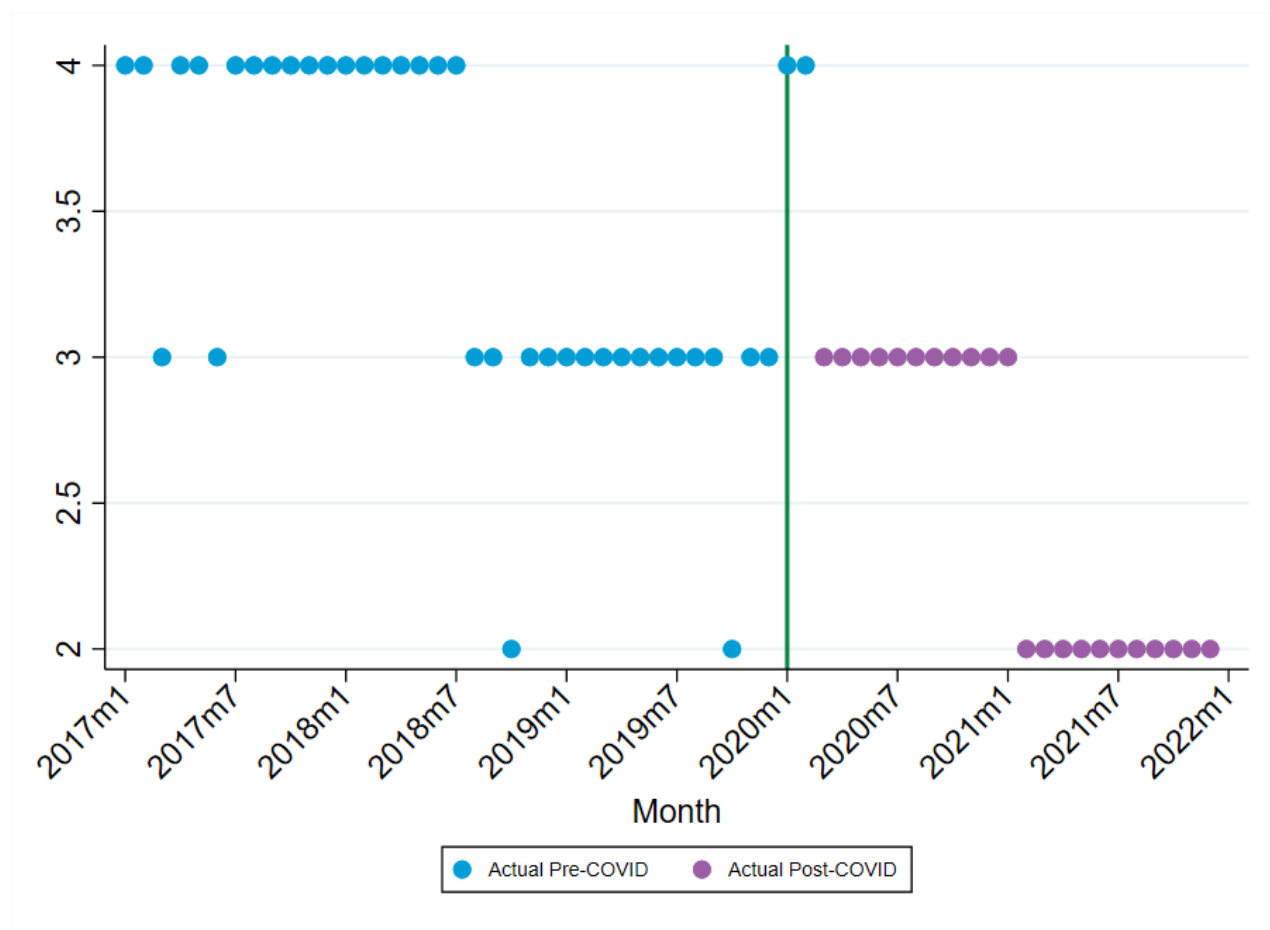


The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹² Exhibit F.19 shows that the observed number of mental health providers who delivered services to beneficiaries with SMI/SED, in total, increased over time during both the pre- and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

⁹² To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

In interpreting this measure, note that the measure may have undercounted the number of providers because information with sufficient granularity is not available in the claims data for certain types of providers. MHRS providers were at the entity and organization levels. When multiple individual practitioners were affiliated with the MHRS organization that submitted claims for the services, we counted them as one provider. Using the rendering provider information at both the header and the line levels did not alleviate this issue, because the rendering provider was likely just a default value filled by the system, and it was usually the same as the billing provider. However, because there exists no mapping between the entity and the associated providers, we cannot determine the degree of undercounting.

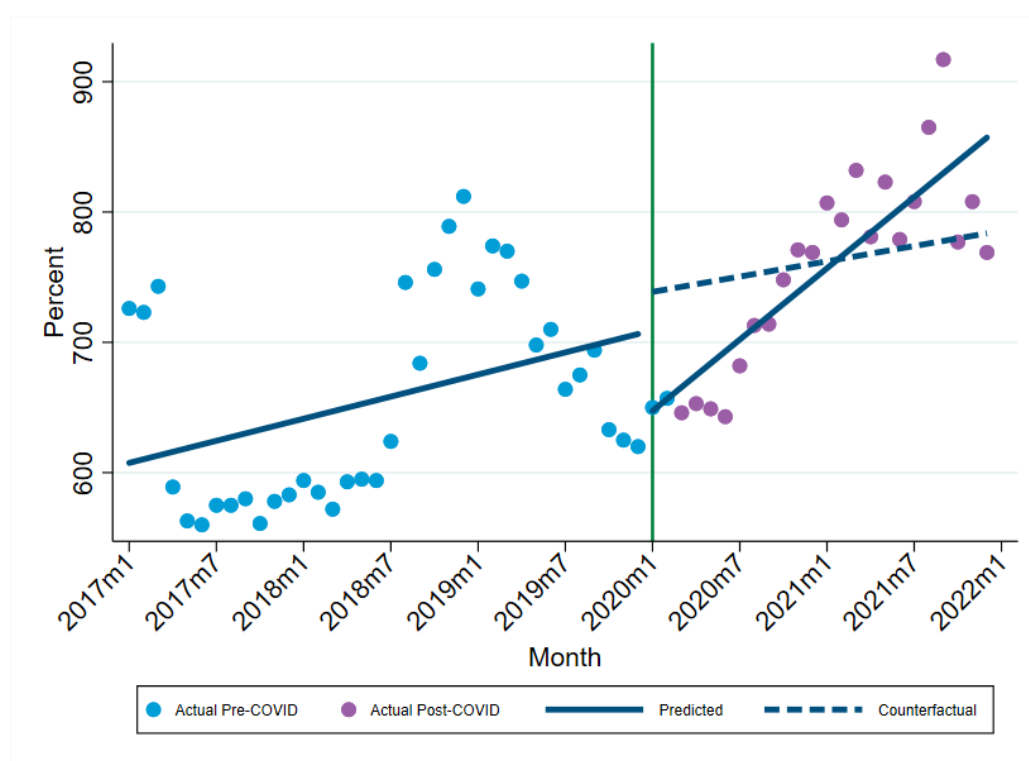
Exhibit F.20. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Psychiatric Hospital



The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹³ Exhibit F.20 shows that the observed number of psychiatric hospitals that delivered services to beneficiaries with SMI/SED decreased over time during both the pre- and post-Demonstration periods. Four psychiatric hospitals delivered services to beneficiaries with SMI/SED in 2017, and this number decreased to two psychiatric hospitals by 2021.

In interpreting this measure, note that in both the pre- and post-Demonstration periods, there were only two psychiatric hospitals in the District. These two hospitals account for the vast majority of psychiatric hospital utilization by the District’s Medicaid beneficiaries. The remaining one or two facilities per year that appear in the claims/encounter data reflect non-DC psychiatric hospitals covering a minuscule number of MCO or FFS beneficiaries with one-off service use.

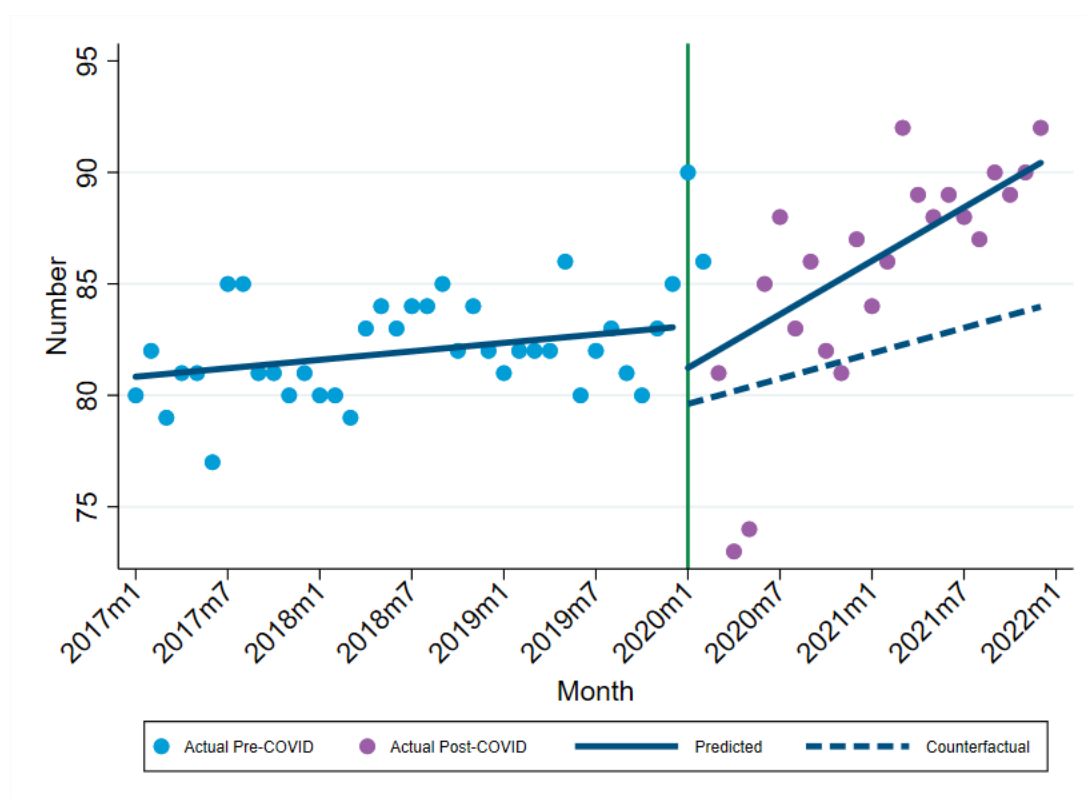
Exhibit F.21. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Physician or Other Practitioner



⁹³ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹⁴ Exhibit F.21 shows that the observed number of physicians or other practitioners who delivered services to beneficiaries with SMI/SED increased over time during both the pre- and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

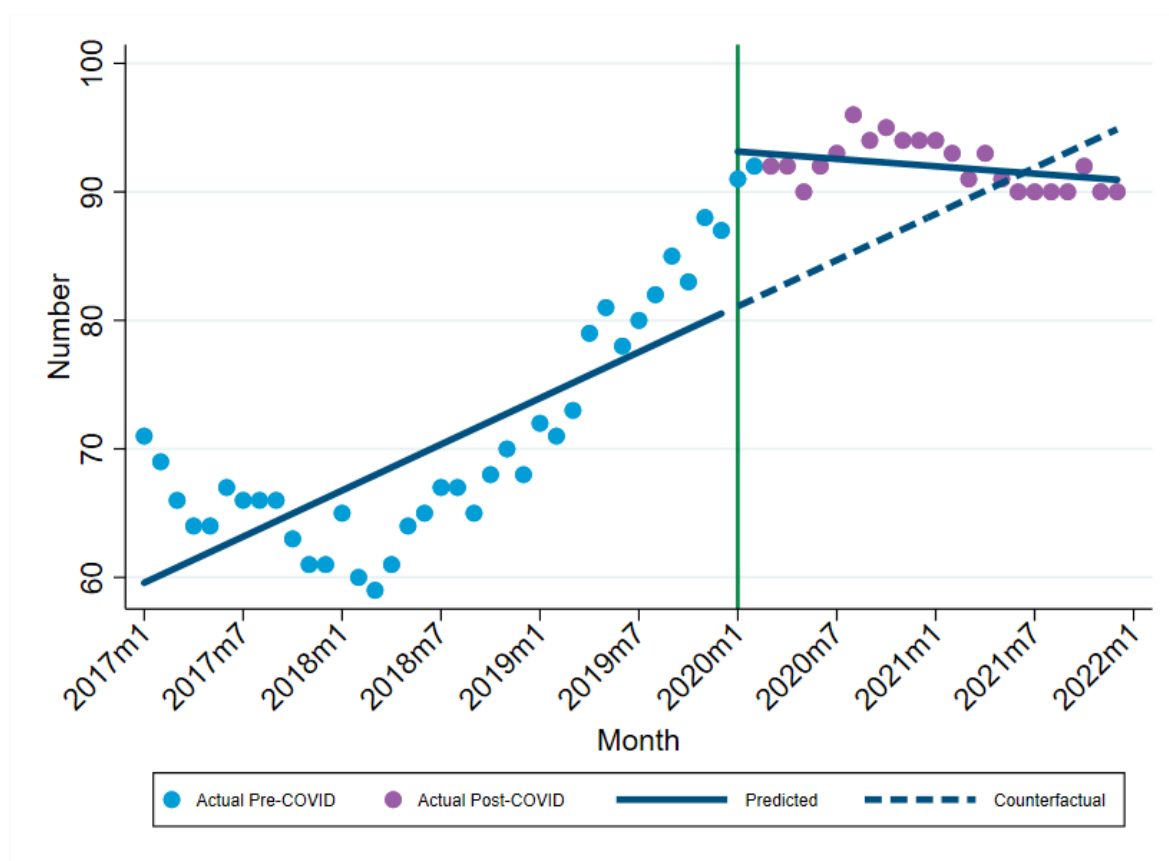
Exhibit F.22. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Federally Qualified Health Centers



⁹⁴ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹⁵ Exhibit F.22 shows that the observed number of FQHCs that delivered services to beneficiaries with SMI/SED increased over time during both the pre- and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

Exhibit F.23. Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration, by Type—Other Behavioral Health Clinic/Entity



⁹⁵ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹⁶ Exhibit F.23 shows that the observed number of other behavioral health clinics/entities that delivered services to beneficiaries with SMI/SED increased over time during the pre-Demonstration period but slightly decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a slight decreasing trend over time under the Demonstration.

Exhibit F.24. Effect on Number of Mental Health Providers Who Delivered Services to Medicaid Beneficiaries With SMI/SED Under the Demonstration

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, in total	↑	812.39	-91.26*** (25.99)	20.19*** (5.81)
Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, by type—psychiatric hospital	↑	3.42	N/A	N/A
Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, by type—physician or other practitioner	↑	656.97	-107.07*** (26.18)	21.81*** (5.78)
Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, by type—Federally Qualified Health Centers (FQHCs)	↑	81.94	1.16 (2.05)	0.64** (0.30)
Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, by type—Other behavioral health clinic/entity	↑	70.06	13.57*** (1.92)	-2.11*** (0.38)

⁹⁶ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

N/A means regression analysis was not conducted because the number of psychiatric hospitals was too small. *Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.24 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period decrease of 91.26 in the number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration, in total (level change in the predicted trend figure), from a baseline mean of 812.39. However, this metric increased by a statistically significant value of 20.19 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes did not result in a statistically significant change. However, if the current trend continues, while all other influential factors remain the same, the total number of mental health providers who delivered services to beneficiaries with SMI/SED could show a statistically significant net increase in the future in line with the Demonstration hypothesis. Subgroup analysis was not applicable for this measure.

The second row of Exhibit F.24 shows that the average number of psychiatric hospitals that delivered services to beneficiaries with SMI/SED during the pre-Demonstration period was 3.42. Given the small number, regression analysis was not conducted.

The third row of Exhibit F.24 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period decrease of 107.07 in the number of physicians or other practitioners who delivered services to beneficiaries with SMI/SED under the Demonstration by type (level change in the predicted trend figure), from a baseline mean of 656.97. However, this metric increased by a statistically significant value of 21.81 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes did not result in a statistically significant change. However, if the current trend continues, while all other influential factors remain the same, the total number of physicians or other practitioners who delivered services to beneficiaries with SMI/SED could show a statistically significant net increase in the future in line with the Demonstration hypothesis. Subgroup analysis was not applicable for this measure.

The fourth row of Exhibit F.24 shows that the immediate or early post-Demonstration period change in the number of FQHCs that delivered services to beneficiaries with SMI/SED under the

Demonstration (level change in the predicted trend figure), from a baseline mean of 81.94, was not statistically significant. However, this metric increased by a statistically significant value of 0.64 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis was not applicable for this measure.

The fifth row of Exhibit F.24 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 13.57 in the number of other behavioral health clinics/entities that delivered services to beneficiaries with SMI/SED under the Demonstration (level change in the predicted trend figure), from a baseline mean of 70.06. In addition, this metric decreased by a statistically significant value of 2.11 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes did not result in a statistically significant change. However, if the current trend continues, while all other influential factors remain the same, the number of other behavioral health clinics/entities that delivered services to beneficiaries with SMI/SED could show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis was not applicable for this measure.

Perspectives of evaluation participants. Gaining an accurate understanding of the District's capacity to meet the behavioral health needs of Medicaid beneficiaries has proven challenging. Data sources available to identify the number of providers that are available have significant limitations. For example, providers may be contracted under MCOs but not directly with DHCF; in such cases, DHCF will have encounters from MCOs for the services that were paid but may have limited information on the characteristics of the providers delivering the care. In addition, while DHCF has comprehensive data on paid MCO encounters, claims denied by MCOs are generally excluded from analyses (e.g., those related to 1115 waiver monitoring and evaluation) due to limitations that include varying file formats and processes for obtaining the information from plans. DBH-certified providers bill Medicaid at the facility level; these claims often do not include individual-level rendering clinicians, thus obscuring the capacity an organization has to deliver services. In addition, as part of reporting requirements for several federal programs, DHCF currently computes metrics that identify the number of behavioral health providers available in the District. However, the specifications for categorizing provider types and the data sources used to categorize and count providers vary across these reporting metrics. Differing specifications for provider availability metrics under various programs make it difficult for the District to interpret the different counts of providers reported by these programs. Finally, measures of capacity without accompanying measures of demand make it difficult to determine whether capacity is sufficient to meet beneficiaries' needs.

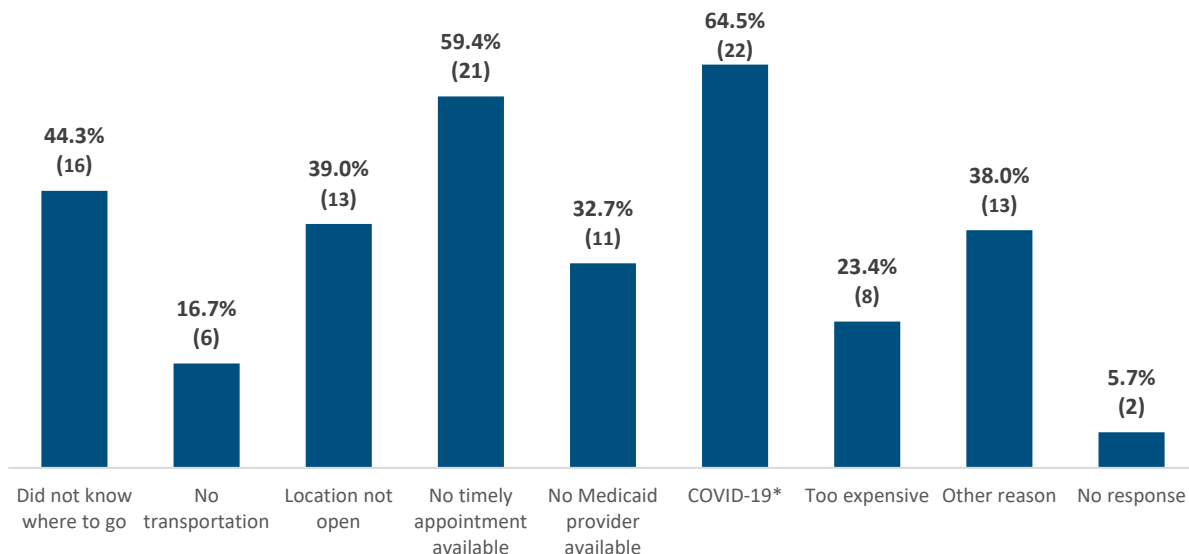
The best available data on provider capacity are inconsistent. The overall availability of mental health providers increased in the District between 2019 and 2021. However, there was a slight decline in the availability of certain provider types, such as Medicaid-enrolled psychiatrists and other practitioners authorized to prescribe psychiatric medications. In addition, providers noted that provider shortages were a significant problem in the District, particularly in Wards 7 and 8.

“Now’s the time to make an incremental improvement in supply and capacity in Ward 7 and 8, where demand is highest and patients are going to need it for the foreseeable future. If that makes sense. They are evaluating service mix now, and now’s the time to weigh in, if you have the opportunity, on capacity; Ward 7 and 8, in-patient acute services; outpatient care and treatment; as well as perhaps a CPEP service related to the opening of the new hospital. Link to it in some way.”

Many evaluation participants spoke of the limited availability of mental health providers and services as a significant challenge in the District. Areas where the availability of mental health providers and services continued to be a challenge, according to evaluation participants, included partial hospitalization, intensive outpatient, crisis stabilization, and inpatient psychiatric services.

Baseline beneficiary survey data suggested that most beneficiaries are receiving the mental health care they need. However, when they were unable to receive the care they needed, a sizable proportion of survey respondents reported that the reason was because they could not get an appointment as soon as they wanted or they could not find a provider who accepted their Medicaid. For example, of the survey respondents who disagreed that they were able to get all the counseling or treatment they wanted or needed for emotional or mental health, 59% and 33% cited not getting an appointment as soon as needed and an inability to find a provider who would take their Medicaid, respectively, as reasons for not getting all the services they wanted or needed (Exhibit F.25). This suggests that current providers’ capacity is lower than beneficiary demand for services.

Exhibit F.25. Which of the following, if any, was a reason that you did not get the services you needed for counseling or treatment for emotional or mental health?



* For example, you felt COVID-19 risk too great or location closed.

Note. Percentages are weighted and may not add up to 100% because respondents could choose multiple options.

To gain clearer insight into the District's capacity to meet beneficiaries' behavioral healthcare needs, DHCF has contracted with AIR to develop a comprehensive framework for assessing behavioral healthcare capacity and demand. The framework is informed by a systematic review of state, federal, and private approaches to these assessments, as well as the specific data sources and delivery system model in the District. The framework will inform future DHCF efforts to conduct accurate, consistent analyses of behavioral healthcare capacity and demand in the District.

In addition, the Demonstration's efforts to implement standardized assessment and placement tools may enable these analyses. Documentation of the results of evidence-based standardized assessments would provide an accurate and precise description of demand for the LOC acuity that is indicated. Combined with utilization data related to these levels of care, estimates of limited or excess capacity could be identified.

F.1.4.2. Research Question 4.1b. Was there an increase in community knowledge of available community-based SMI/SED treatment and services?

Baseline beneficiary survey data suggest that there is an opportunity for increased community knowledge of available community-based SMI/SED treatment and services. A substantial percentage of survey respondents reported not knowing where to go as a barrier to getting the mental health and trauma-related services they needed. Of the 35 survey respondents who

indicated that they were unable to get all of the services they wanted or needed for counseling or treatment for emotional or mental health, 16 (44%) indicated that they did not receive these services because they did not know where to go. Of the 27 survey respondents who indicated that they were unable to get all of the services they wanted or needed for counseling or treatment for a traumatic event, 12 (45%) reported that they did not receive these services because they did not know where to go. In addition, awareness of day treatment programs appeared to be low. Of the 23 survey respondents who indicated that they were unable to go someplace during the day to be with people, meet people who also wanted help with their drug or alcohol use or mental health, or connect with people for social support, 15 (66%) reported that they did not get these services because they did not know where to go.

F.1.4.3. Research Question 4.1c. How does the implementation of changes to the reimbursement methodology for TST and TREM influence access to TST and TREM services?

TREM counseling (for adult beneficiaries with SUD and/or SMI who have survived trauma) and TST (for youth and adolescent beneficiaries who have experienced traumatic events) were available to District beneficiaries before the Demonstration. The Demonstration made these specialty services distinct from the core counseling services that MHRS providers are required to deliver. This change was intended to improve tracking the utilization of these services, promote fidelity to the treatment models, and incentivize greater availability of these services via higher reimbursement rates. The new reimbursement rates were effective as of March 1, 2020, per the Demonstration's first Chapter 86 rulemaking. DBH rulemaking related to Chapters 34 and 63 of Title 22-A implement the certification criteria associated with being able to bill for these services.

Some evaluation participants were aware of the changes to the reimbursement methodology for TREM and TST. However, evaluation participants did not report expanding their offering of TREM and TST as a result of these changes. Instead, they reported that they were reluctant to offer TREM services because they perceived them to be cost-prohibitive to deliver. The specific challenges participants reported were that the TREM training required to certify providers was expensive and that clinicians with the licensure required to facilitate TREM groups did not want to deliver the model.

"A genuine TREM group requires a high level of licensure which we cannot afford. This is where DBH shoots itself in the foot. It states you can do TREM but need independently licensed clinicians. We have trouble hanging on to independently licensed clinicians for providing direct service...Although, we know TREM and we like it but it is a work-in-progress in terms of implementation because of DBH's requirement for the providers."

“Getting [Independent licensed providers] to do the work such as a TREM group or day-to-day psychotherapy with our consumers is challenging. As well as the rate of licensure of independent clinicians is such that the DBH rate does not support it. So, the cost to do TREM is not supported by the rate for TREM.”

F.1.4.4. Research Question 4.1d. How does the implementation of reimbursement for independent licensed behavioral health clinicians for SMI/SED services influence access to independent licensed behavioral health clinicians?

Before the Demonstration, licensed behavioral health clinicians were able to deliver Medicaid-reimbursable services only through freestanding mental health clinics, core service agencies, and FQHCs. Under the Demonstration, clinicians who were practicing independently could enroll in Medicaid and receive reimbursement. The behavioral health clinicians who are now eligible to enroll in Medicaid (as of January 1, 2020) are psychologists, licensed independent clinical social workers (LICSW), licensed professional counselors, and licensed marriage and family therapists. These clinicians can be reimbursed for relatively low-acuity outpatient services (e.g., assessment and screening, counseling and psychotherapy, and treatment planning and care coordination). When these clinicians were included in the state plan, effective January 1, 2022, services related to autism spectrum disorder were also included (these had been prohibited under the Demonstration).

Some evaluation participants were aware of the implementation of Medicaid reimbursement for independent licensed behavioral health providers. These evaluation participants spoke positively about the impact of this change on access to these clinicians. For example, the new reimbursement mechanism has led to some organizations adding behavioral health clinicians to their staff. One evaluation participant reported adding an LICSW and a clinical psychologist now that these providers could be reimbursed. Although they have not seen revenue from this yet, they anticipate that having these clinicians will help them expand services because social workers and psychologists can provide some evaluation and treatment services at a lower cost than psychiatrists. Evaluation participants also noted that they have observed a rise in primary care providers including behavioral health clinicians on their team, thereby expanding access to these clinicians in primary care settings.

“I know that psychologists and licensed clinical social workers are now getting reimbursed, and the rates—I have a rough idea of rates in relation to psychiatry rates. So we have been shifting our own model, and we now have a licensed credentialed social worker and a clinical psychologist. I don’t know that we have seen any revenue yet from it. But I know that is available. That will expand it.”

Some interviewees were unaware of the expanded reimbursement opportunities for independent licensed behavioral health clinicians. Those who were aware generally perceived the reimbursement rates to be insufficient; specifically, they noted that reimbursement rates

were still behind inflation and much lower than what clinicians were able to make in private practice. The low reimbursement rates made it challenging to provide sufficient care, because it was difficult to find licensed clinicians who would work for such low rates.

“The financial disparity for the licensed clinician is so profound, even people that are mission-driven are going to choose [to move into private practice].”

F.1.4.5. Research Question 4.1e. How does creating separate service definitions for TREM and TST influence access to TREM and TST services?

See section F.1.4.3. Discussions of how changes to the reimbursement methodology for TREM and TST, which included creating separate service definitions for billing purposes, influenced access to TREM and TST services are included in that section.

F.1.4.6. Research Question 4.1f. How does the implementation of FFP for short-term stays for acute care in IMD settings influence access to short-term stays for acute care in IMD settings?

DHCF implemented the Medicaid reimbursement for short-term stays for acute-care residential and inpatient treatment services in IMDs in the first Demonstration rule (effective November 19, 2019), which instituted Chapter 86 of Title 29 of the District of Columbia Municipal Regulations (DCMR). IMDs may receive reimbursement for an array of SMI and SUD services, including medically monitored withdrawal management. Reimbursement for these services was effective as of January 1, 2020. Prior authorization is required to receive reimbursement, which occurs as FFS payment. This reimbursement expands access to IMD services for FFS beneficiaries and for MCO beneficiaries with IMD stays longer than what is covered by the “in lieu of” benefit (which covers stays of up to 15 days). Previously, local funds stewarded by DBH were available for these beneficiaries’ IMD stays, but on a limited basis. In addition, the District intended expanded access to these IMD services to serve as an anchor for increased transition and care coordination support for beneficiaries’ community-based care.

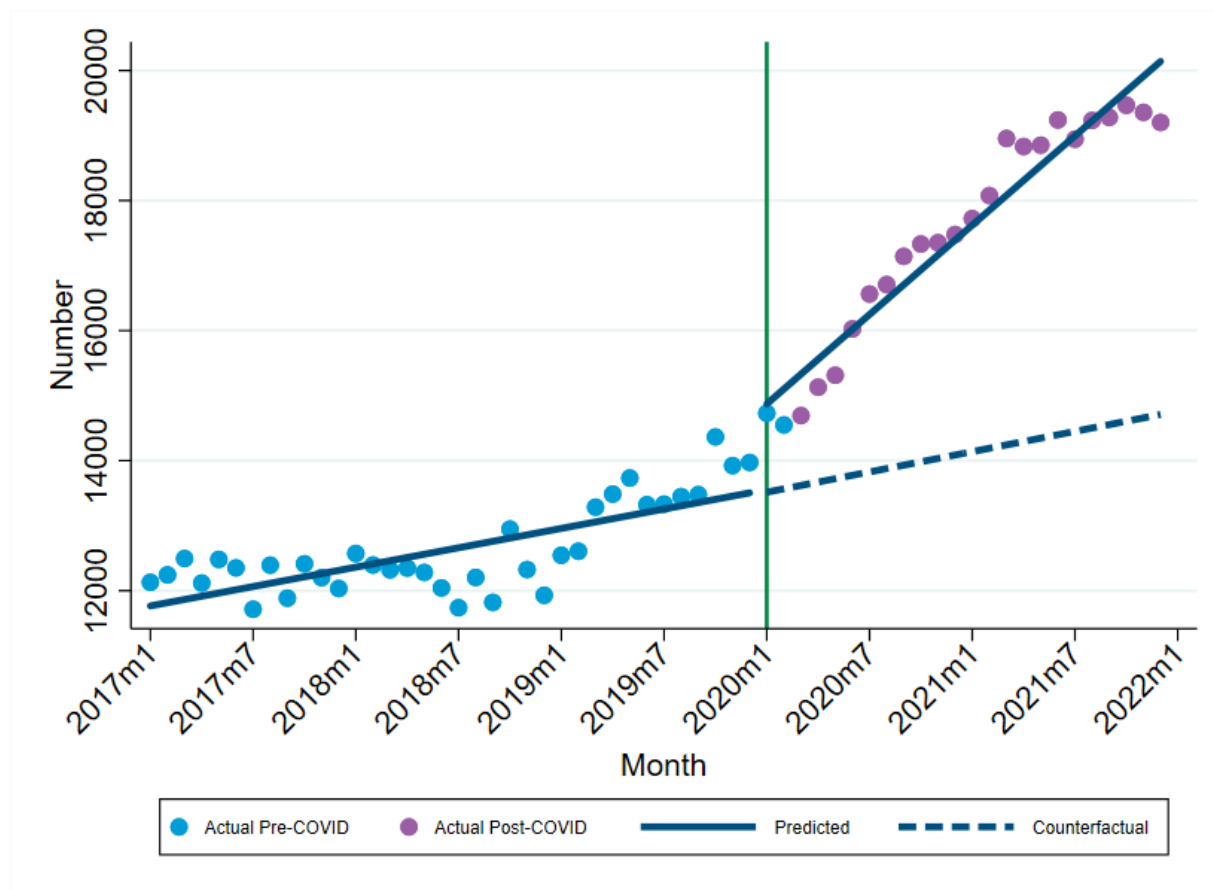
IMD providers were broadly aware of the reimbursement for short-term stays for acute care in IMD settings. However, expanded coverage for IMD stays was less applicable to one psychiatric IMD in the District whose patients typically exceeded the 60-day limit or otherwise did not qualify for Medicaid reimbursement (e.g., beneficiaries who are involuntarily committed to the IMD). However, interviewees expressed positive feedback about shifting the funding for shorter IMD stays from local to Medicaid dollars. These interviewees noted that Medicaid reimbursement for these stays expanded access to these services by stabilizing providers’ ability to offer these services.

“It was helpful for changing how we think about IMD services. Part of it is we got Medicaid to reimburse some things that weren’t easy to get reimbursed before...It’s changing the conversation around helping people return to community-based care and making those services more financially sustainable. I think the District struggled historically to make some services—particularly private hospital IMD and SUD residential stays—financially viable. It was good to see that change.”

The core challenge associated with the new IMD coverage, according to providers, was the administrative complexity of receiving authorization and billing for these services. The need for providers to switch from managed care to FFS billing if a beneficiary’s IMD stay exceeds 15 days poses an administrative burden. Providers must receive preauthorization for the extended IMD stay; this is in addition to any preauthorizations that MCOs require for beneficiaries’ entry into the IMD. The administrative burden associated with LOS requirements and preauthorization processes was further complicated in circumstances in which the beneficiary exceeded the 15-day in-lieu-of coverage over the course of multiple IMD stays within a calendar month, particularly if those stays were with different IMDs.

F.1.4.7. Research Question 4.2a. Was there an increase in utilization of community-based SMI/SED treatment services?

Exhibit F.26. Any Mental Health Services Utilization (Number of Medicaid Beneficiaries with SMI/SED)



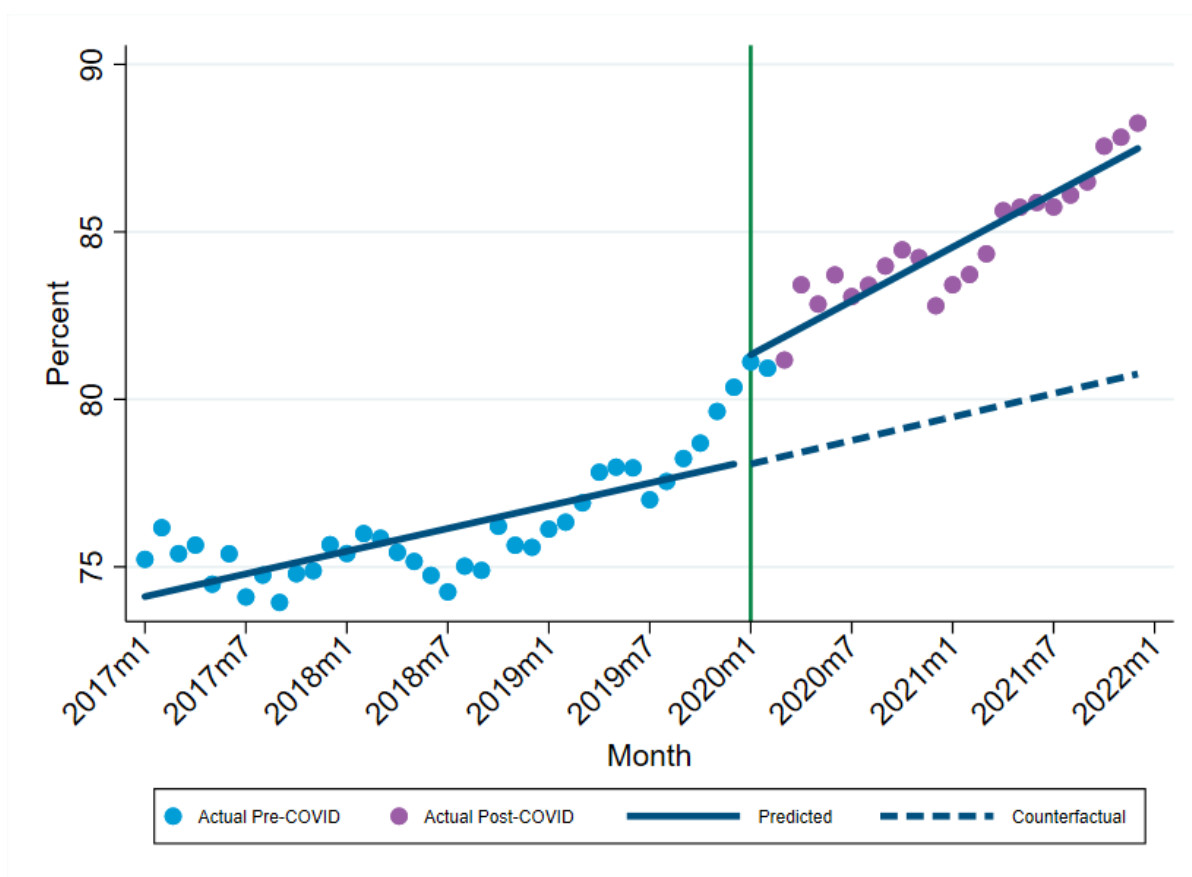
This monthly metric was adapted from SMI/SED Monitoring Metric #18 which is also a monthly metric. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the month.⁹⁷ Exhibit F.26 shows that the observed number of beneficiaries with SMI/SED who used any services related to mental health during the measurement period increased over time during both the pre-and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the

⁹⁷ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

In interpreting this measure, note that the observed increases could be a combination of increased rates of mental health problems during the COVID-19 PHE as well as increased availability of services under the Demonstration (e.g., newly available IMD services for Medicaid FFS beneficiaries ages 21–64).⁹⁸

Exhibit F.27. Any Mental Health Services Utilization (Percentage of Medicaid Beneficiaries with SMI/SED)



This monthly metric was adapted from SMI/SED Monitoring Metric #18, which is also a monthly metric. The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED

⁹⁸ National Center for Health Statistics. (2023). U.S. Census Bureau, Household Pulse Survey, 2020–2023. Anxiety and Depression. Generated interactively: from <https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm>

diagnoses during the month.⁹⁹ Exhibit F.27 shows that the observed percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period increased over time during both the pre-and post-Demonstration periods, and the rate of increase was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was larger than the counterfactual.

In interpreting this measure, note that the observed increases could be a combination of increased rates of mental health problems during the COVID-19 PHE as well as increased availability of services under the Demonstration (e.g., newly available IMD services for Medicaid FFS beneficiaries ages 21–64).

Exhibit F.28. Effect on Mental Health Services Utilization

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries with SMI/SED who used any services related to mental health during the measurement period	↑	12,635.69	970.32*** (330.60)	538.75*** (56.90)
Percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period	↑	76.09	2.93*** (0.50)	0.46*** (0.09)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

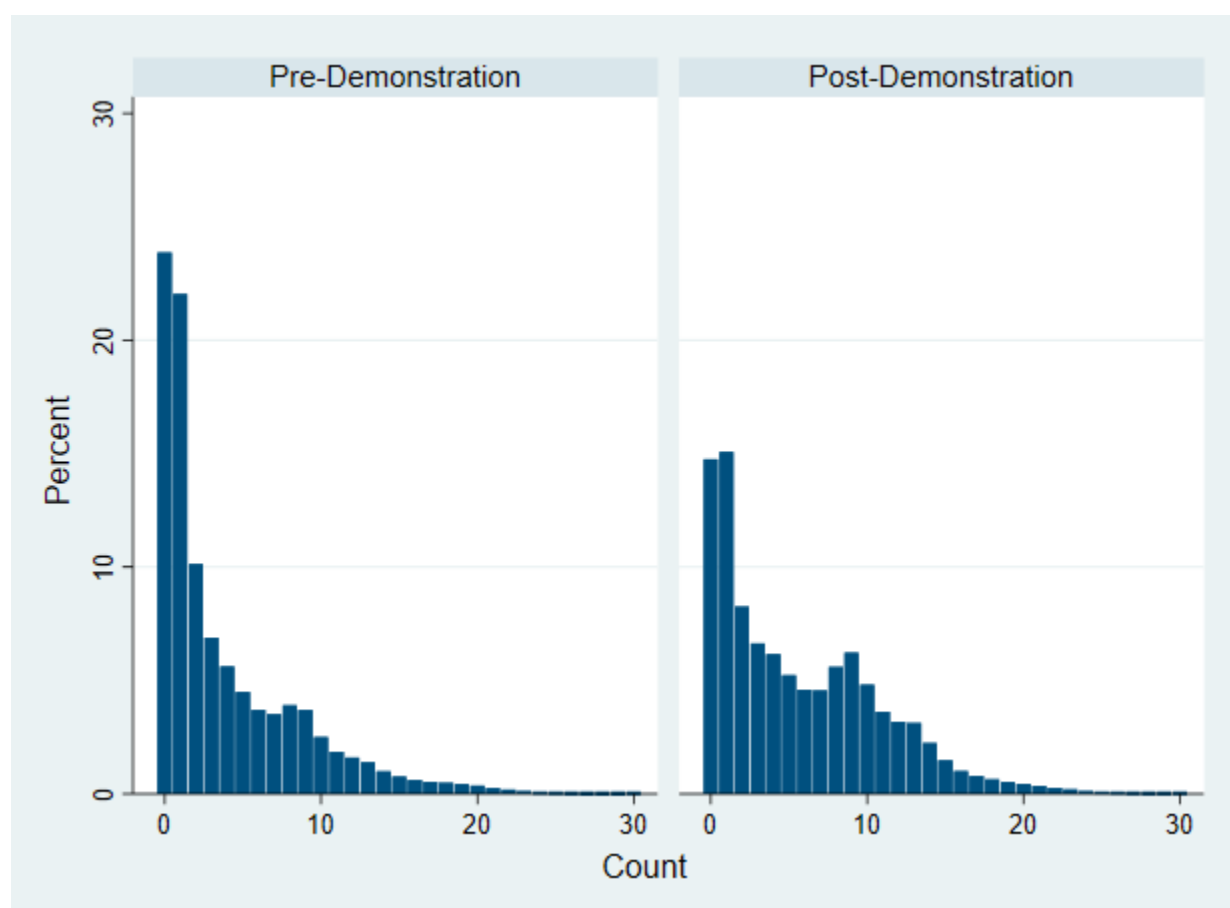
The first row of Exhibit F.28 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 970.32 in the number of

⁹⁹ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

beneficiaries with SMI/SED who used any services related to mental health during the measurement period (level change in the predicted trend figure), from a baseline mean of 12,635.69. In addition, this metric increased by a statistically significant value of 538.75 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results appear in Appendix Exhibit C.10.

The second row of Exhibit F.28 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 2.93 percentage points in the percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period (level change in the predicted trend figure), from a baseline mean of 76.09%. In addition, this metric increased by a statistically significant 0.46 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are presented in Appendix Exhibit C.11.

Exhibit F.29. Number of Mental Health Services Claims, PBPM, Among Medicaid Beneficiaries with SMI/SED



Note. Any value above 30 for the per beneficiary per month visits was recoded to 30.

We performed a supplemental individual-level analysis for this monthly measure. Exhibit F.29 displays the histograms of the number of monthly mental health services claims for the SMI/SED population, separately for the pre-Demonstration and post-Demonstration periods. Comparing the two graphs, the post-Demonstration period distribution shows increased frequencies of higher numbers of monthly services and decreased frequencies of zero or one monthly service per beneficiary. This is consistent with the increased utilization of any mental health services observed in the District-level analysis.

Exhibit F.30. Effect on Number of Mental Health Services Claims, PBPM, Among Medicaid Beneficiaries with SMI/SED

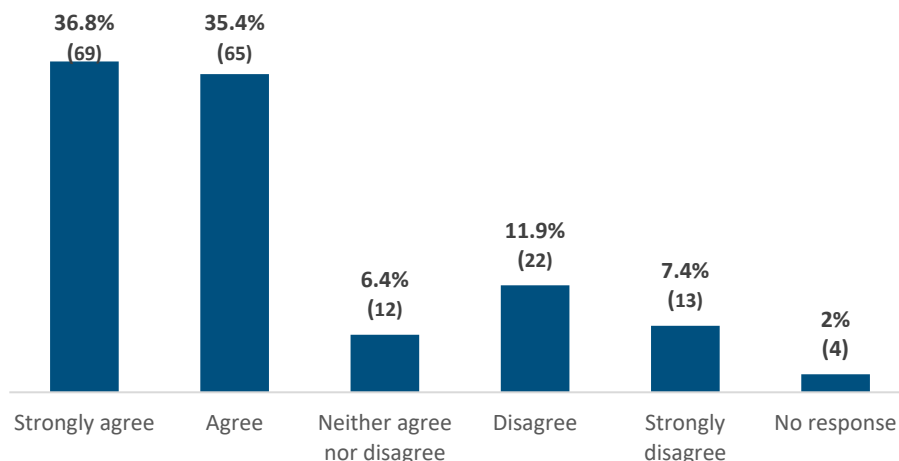
Measure Description	Hypothesized Direction	Baseline Mean (2017-2019)	Marginal Change Post-Demonstration from Count Model
For beneficiaries with SMI/SED, number of monthly services (claims) related to mental health during the measurement period	↑	3.88	0.68*** (0.02)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

Exhibit F.30 shows that the Demonstration was associated with a statistically significant increase of 0.68 mental health services per month for beneficiaries with SMI/SED. This is a meaningful change compared to the baseline mean of 3.88 visits and the positive effect is consistent with the District-level findings above. It is also consistent with the shift in the distribution toward higher numbers of visits observed in Exhibit F.29. Both the individual-level and District-level analyses show statistically significant increases in mental health services utilization for beneficiaries with SMI/SED.

Perspectives of evaluation participants. Baseline beneficiary survey data suggest that there are opportunities to improve utilization of community-based SMI/SED treatment services. Seventy-two percent ($n = 134$) of survey respondents who wanted or needed counseling or treatment for emotional or mental health agreed they had been able to get all the services they wanted or needed (Exhibit F.31).

Exhibit F.31. Were you able to get all the services you wanted or needed for counseling or treatment for emotional or mental health?

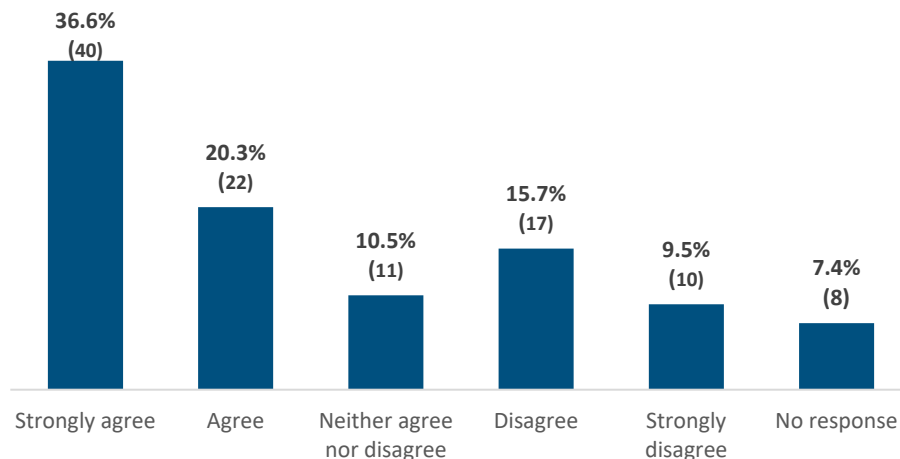


Note. Percentages are weighted and may not add up to 100% due to rounding.

F.1.4.8. Research Question 4.2b. How does the Demonstration influence utilization of TST and TREM services?

As described above in section F.1.4.3., evaluation participants who were behavioral health providers did not perceive that the Demonstration expanded access, and thus utilization, of TST and TREM services because the services remain cost prohibitive despite the changes to the reimbursement methodology. Regarding beneficiaries' self-reports of utilization of TST and TREM services, baseline beneficiary survey data suggests there are opportunities for improvement. Of the 108 survey respondents (30%) who wanted or needed counseling or treatment for a traumatic event, over half (57%) agreed they were able to get all the services they wanted or needed (Exhibit F.32). Twenty-five percent ($n=27$) disagreed that they got all the services they wanted or needed. These 27 survey respondents most commonly reported COVID-19 as the reason for not getting the services they wanted or needed ($n=17$), followed by not getting an appointment as soon as they needed ($n=15$).

Exhibit F.32. Were you able to get all the services you wanted or needed for counseling or treatment for a traumatic event?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.1.4.9. Research Question 4.2c. How does the availability of the Clubhouse influence utilization of SMI/SED treatment services?

Before the Demonstration, Clubhouses were restricted from operating in the District. The first Demonstration-related rulemaking for Chapters 34 and 39 of Subtitle A of 22 DCMR rescinded this restriction. The psychosocial rehabilitation services delivered at the Clubhouse became available to the District's Medicaid beneficiaries on January 1, 2020, as specified in the first Demonstration rule. Beneficiaries with SMI or co-occurring SMI and SUD are eligible to participate in the Clubhouse. The Clubhouse provides social networking, coping, and wellness strategies aimed at building competence and confidence in functioning in the community, particularly as it relates to seeking and retaining employment. Clubhouse staff and members work side by side to make decisions about how it runs and what community projects they take on. The District views these services as a potential alternative to day treatment. Clubhouse is a national model with established standards that has proven to be effective. The certification that DBH requires of Clubhouses includes accreditation by the organization that developed the standards, International Center for Clubhouse Development, or its successor Clubhouse International.

The availability of the Clubhouse services has not increased utilization of SMI/SED treatment services because uptake of the Clubhouse services has been slower and lower than expected. Evaluation participants reported the following reasons for the slow and low uptake of the Clubhouse services:

- It took an extended period of time for organizations to receive the necessary licensure and certification required to operate a Clubhouse.

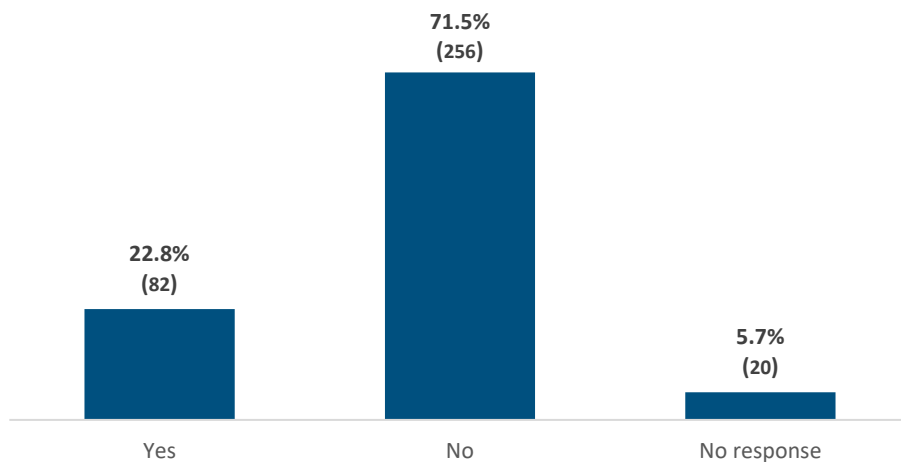
- COVID-19 precautions made it difficult to deliver Clubhouse services. The 3 hours per day of services required to receive reimbursement were difficult to provide with social distancing and mask requirements or via a virtual environment.

Most of the non-Clubhouse providers that participated in evaluation data collection have been educated on its services. These providers were very supportive of the Clubhouse because of its inclusion of peer supports. However, these providers also noted that they had not referred their clients to the Clubhouse and did not believe that many beneficiaries were participating in it.

“I’m aware of Clubhouse but I don’t know if we have anyone who is currently using their services. I think it’s a great and beneficial service, we worked closely with the one the District had years ago...Since the beginning of COVID, we have all new clinical directors and clinical managers. And then we were providing most services by telemedicine, so people were more likely to refer to a day program.”

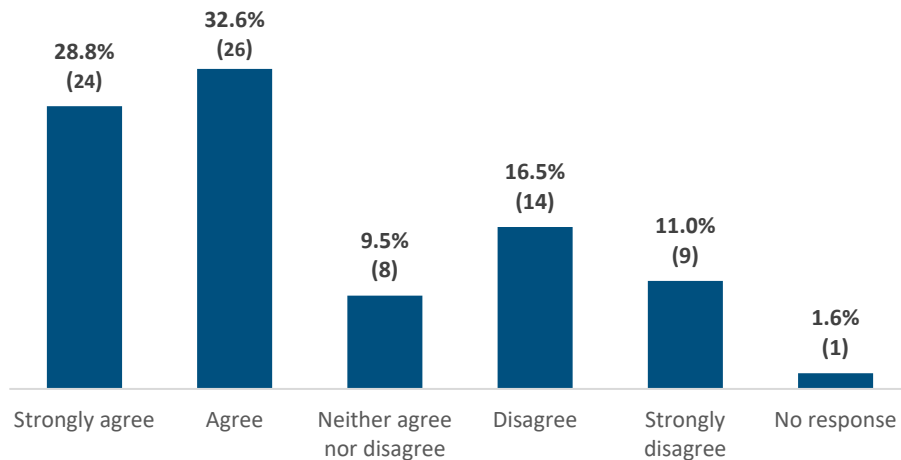
Because the Clubhouse had low utilization at the time of the interim evaluation report, we were unable to assess beneficiaries’ perspectives of the services provided through the Clubhouse. However, beneficiary survey data suggest that beneficiaries are interested in Clubhouse-like services but may not be aware of them. When asked, “In the past 12 months, have you felt you wanted or needed some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?”, 23% ($n = 82$) of survey respondents selected “Yes” (Exhibit F.33). However, 66% ($n = 15$) of the 23 survey respondents who reported that they were unable to receive these needed services (Exhibit F.34) said that they had not received these services because they did not know where to go (Exhibit F.35).

Exhibit F.33. In the last 12 months, have you felt you wanted or needed some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?



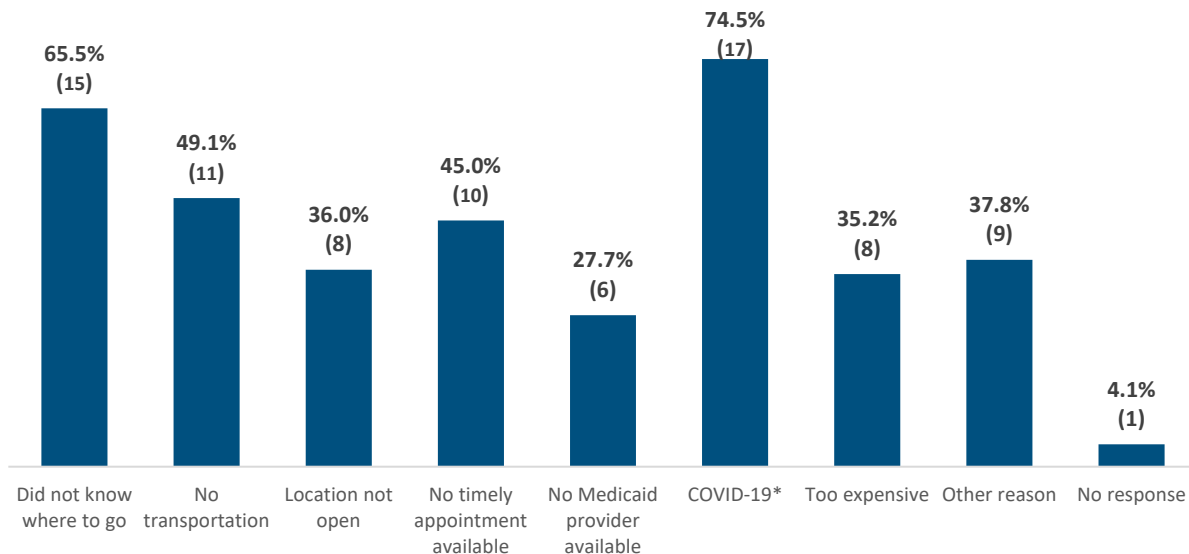
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.34. Were you able to get all the services you wanted or needed for some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?



Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.35. Which of the following, if any, was a reason that you did not get the services you needed for some place to go during the day to be with people, meet people who also want help with their drug or alcohol use or mental health, or connect with people for social support?



* For example, you felt COVID-19 risk too great or location closed.

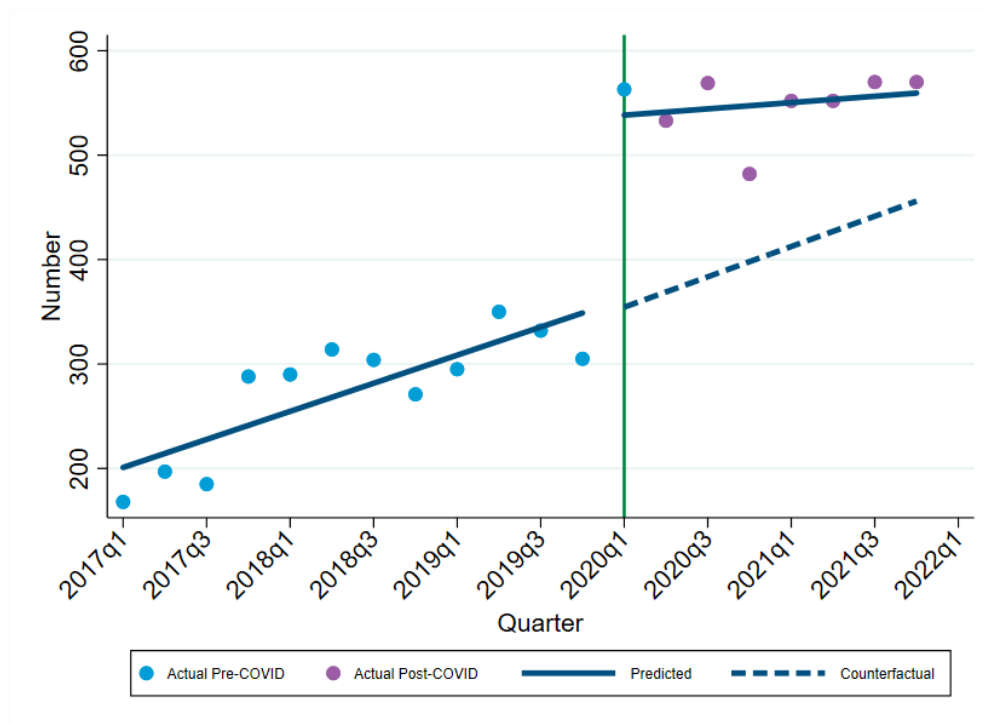
Note. Percentages are weighted and may not add up to 100% because respondents could choose multiple options.

F.1.4.10. Research Question 4.2d. How does the Demonstration influence utilization of independent licensed behavioral health clinicians by beneficiaries with SMI or SED?

Perceived utilization of independent licensed behavioral health clinicians by beneficiaries with SMI or SED is not available for the interim evaluation report. However, as noted above, evaluation participants perceived that the Demonstration increased access to independent licensed behavioral health clinicians by making it possible for these clinicians to receive Medicaid reimbursement for delivery of community-based services.

F.1.4.11. Research Question 4.3a. Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?

Exhibit F.36. Assessment of Physical Health During IMD Stay (Number of Episodes of Care Among Medicaid Beneficiaries with SMI/SED)

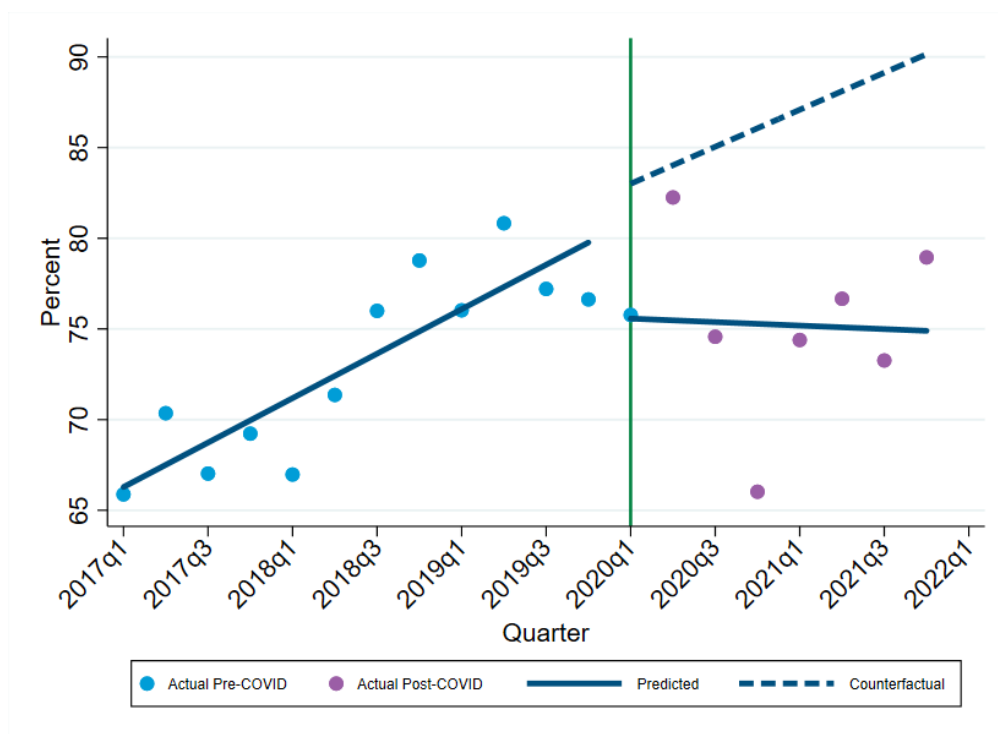


The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the quarter who had an IMD stay in the quarter.¹⁰⁰ Exhibit F.36 shows that the observed number of episodes of care where IMD providers billed for assessments or treatment of physical conditions increased over time during both the pre- and post-Demonstration periods, and the rate of increase was smaller under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under the Demonstration. The rate of increase under the Demonstration was smaller than the counterfactual. In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The

¹⁰⁰ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹⁰¹ This means there will be more opportunity to observe IMD stays and physical health assessment in the data.

Exhibit F.37. Assessment of Physical Health During IMD Stay (Percentage of Episodes of Care Among Medicaid Beneficiaries with SMI/SED)



The target population for this metric is beneficiaries enrolled in Medicaid with SMI/SED diagnoses during the quarter who had an IMD stay in the quarter.¹⁰² Exhibit F.37 shows that the observed percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the

¹⁰¹ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

¹⁰² To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹⁰³ This means there will be more opportunity to observe IMD stays and physical health assessment in the data. It is unclear, however, whether the newly covered beneficiaries would have been less likely to receive a physical health assessment than previously covered beneficiaries.

Exhibit F.38. Effect on Assessment of Physical Health During IMD Stay

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of episodes of care where IMD providers billed for assessments or treatment of physical conditions	↑	274.92	195.33*** (31.24)	-11.49** (4.49)
Percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions	↑	73.03	-6.32 (4.52)	-1.12 (0.71)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.38 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 195.33 in the number of episodes of care where IMD providers billed for assessments or treatment of physical conditions (level change in the predicted trend figure), from a baseline mean of 274.92. However, this metric decreased by a statistically significant value of 11.49 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects

¹⁰³ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant increase of 103.38 at the 5% level. However, if the current trend continues, while all other influential factors remain the same, the number of episodes of care where IMD providers billed for assessments or treatment of physical conditions could show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results appear in Appendix Exhibit C.12.

The second row of Exhibit F.38 shows that the immediate or early post-Demonstration period change in the percentage of episodes of care where IMD providers billed for assessments or the treatment of physical conditions (level change in the predicted trend figure), from a baseline mean of 73.03%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit C.13.

F.1.4.12. Research Question 4.3b. Did the Demonstration increase the integration of primary and behavioral healthcare for beneficiaries with SMI or SED?

Evaluation participants reported that an overlapping initiative in the District, the Integrated Care DC Program, was synergistic with the Demonstration's efforts to promote integration of primary and behavioral healthcare. DHCF in partnership with DBH manages the 5-year Integrated Care DC Program. This technical assistance program, funded in part by the 1003 SUPPORT Act Provider Capacity Planning Grant, is designed to enhance capabilities for delivering person-centered care across the care continuum; use population health analytics to address complex medical, behavioral health, and social needs; and engage leadership to support value-based care. The multiple mechanisms through which the Integrated Care DC Program delivers technical assistance include individual practice coaching, webinar sessions, learning collaboratives, and a virtual learning community.

Behavioral health providers affected by the Demonstration, such as DBH providers, FQHCs, FSMH providers, and MAT providers, are among the program's priority groups. Several providers who participated in evaluation data collection noted that they had taken advantage of the technical assistance available to them related to improving their care integration efforts. These evaluation participants were planning to integrate physical health services into their behavioral health practices and spoke positively about the support that they received to further these goals.

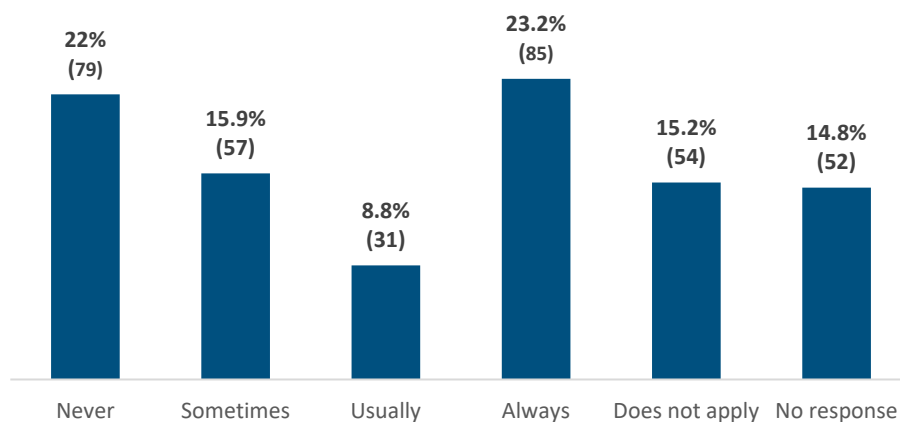
“There was an opportunity as part of the funding to apply for individualized agency technical assistance to do that integration. Largely, the majority of folks participating are medical providers looking to integrate SUD and mental health services. We’re doing a reverse integration. We were accepted into the technical assistance project. So far, we’ve only had one individual session and that was to go over the results of our survey. I’m very excited about it. I’ve wanted us to do the FQHC route for some time, but it’s been a long time coming....Why would I ask one of my patients to go to the other side of Ward Five for a medical appointment, when I can do it here?”

However, few providers discussed integrating physical and behavioral healthcare as a result of Demonstration changes. Of note, one provider expressed a willingness to integrate care but reported that they were reluctant to pursue integrated care because the documentation and billing systems were different for SUD care and mental healthcare.

“It’s always been a goal for us to provide some SUD services—not all of them, but MAT, outpatient. . . . but it’s another system for documentation, billing, certifications, and all that. They need to make it easier for providers who would be interested in doing some of this without having to use multiple systems for different services—being able to share information to get the information you need to be able to provide services to people.”

Baseline beneficiary survey data suggest that there is an opportunity for increased integration of physical and behavioral healthcare, from the perspective of beneficiaries. Forty-eight percent of all survey respondents ($n = 173$) received both physical healthcare and help for their drug or alcohol use or mental health from the same provider or place at least some of the time Exhibit F.39).

Exhibit F.39. How often did you receive both physical healthcare (such as checkups and treatment for being sick) and help for your drug or alcohol use or mental health from the same provider or place?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.1.5. Goal 5. Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities

Takeaway: Results were mixed for the goal of improving care coordination; continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities is especially mixed at this time. There was an increase in mental health-related follow-up visits after mental health-related ED visits, but not after mental health-related hospitalizations.

Hypothesis 5.1: The Demonstration will improve follow-up for beneficiaries with SMI/SED after episodes of acute care in hospitals.



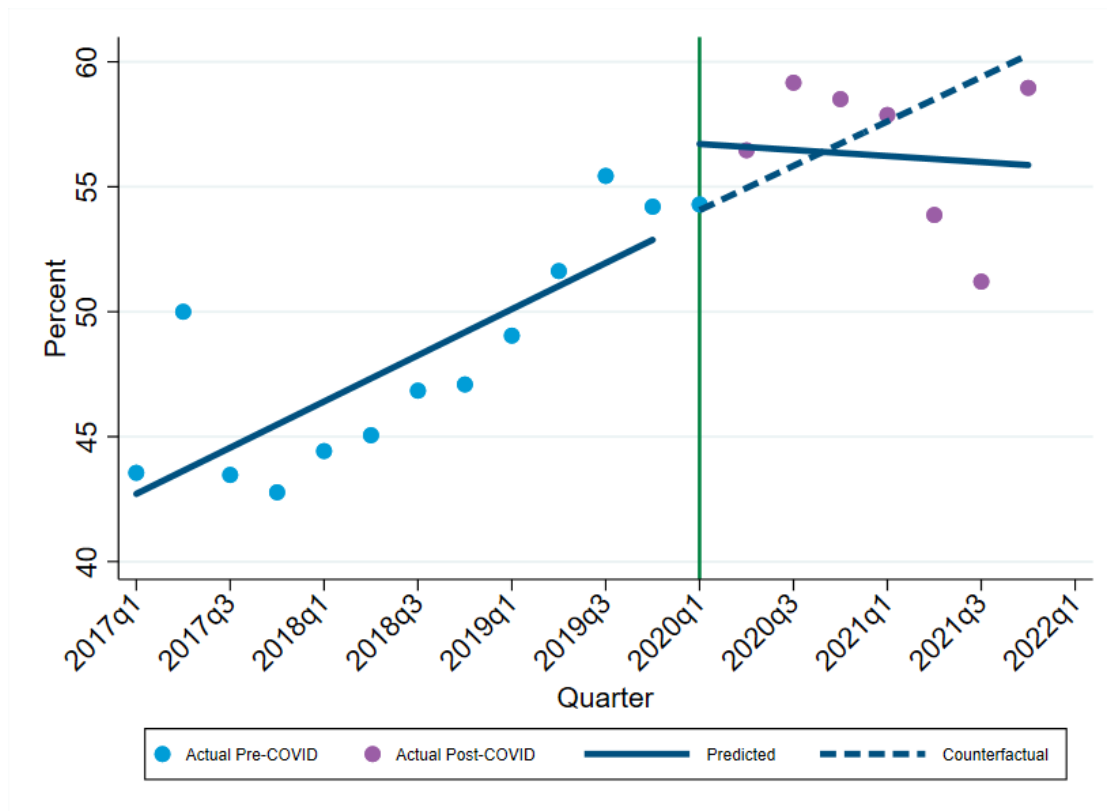
- For the percentage of discharges for beneficiaries aged 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 7 days, we did not detect a statistically significant change in level or slope.
- For the percentage of discharges for beneficiaries aged 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 30 days, we did not detect a statistically significant change in level, but did identify a statistically significant decrease in slope.
- The percentage of ED visits for beneficiaries aged 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 7 days of the ED visit had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was a statistically significant decrease.
- The percentage of ED visits for beneficiaries aged 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days of the ED visit had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was a statistically significant decrease.



- Most baseline beneficiary survey respondents who had experienced inpatient or residential stays reported that they had not been contacted by a healthcare provider after leaving the hospital to discuss follow-up care.
- According to evaluation participants, the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge has not improved care coordination in the District, nor has the new transition planning benefit.
- The District has made substantial progress towards improving the health IT infrastructure for care coordination in the District.
- Despite the multiple strategies the District has implemented, evaluation participants uniformly noted that integrated, coordinated care continues to be a significant weak point in the District's behavioral health service delivery system.

F.1.5.1. Research Question 5.1a. Was there an increase in utilization of follow-up services for beneficiaries with SMI/SED after episodes of acute care in hospitals?

Exhibit F.40. Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)—Within 7 Days



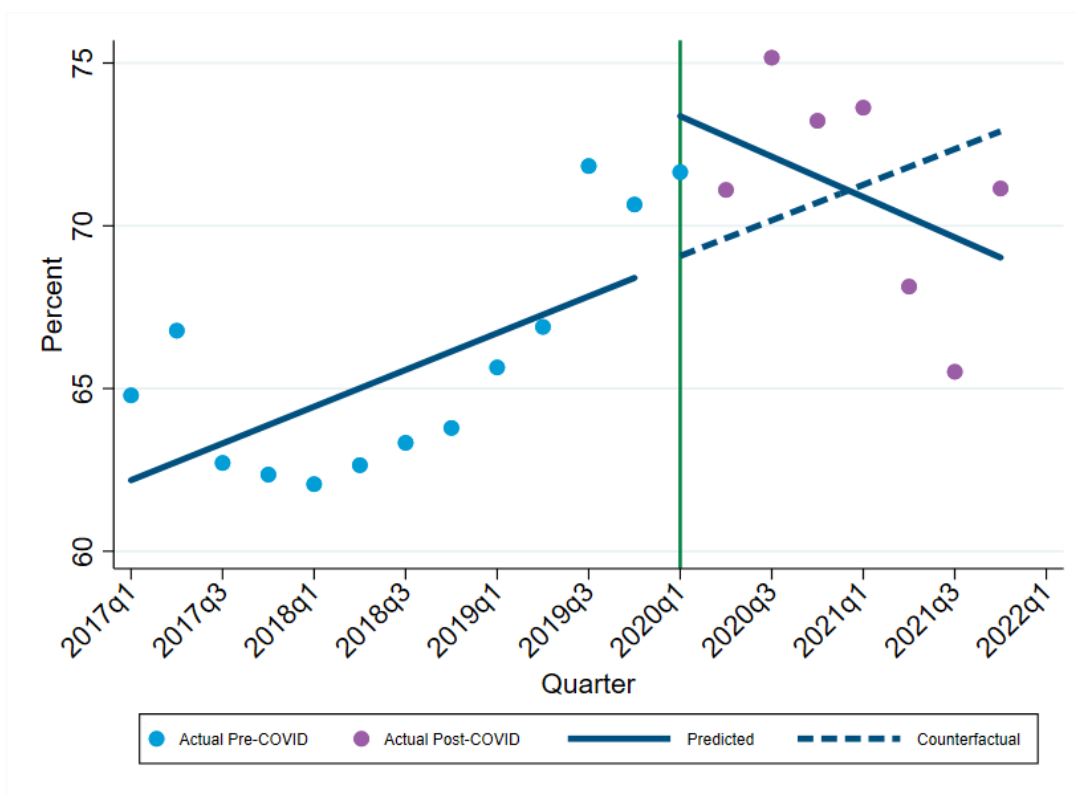
This quarterly metric was adapted from SMI/SED Monitoring Metric #8 which is an annual metric. The target population for this metric is beneficiaries ages 18 years and older enrolled in Medicaid with SMI/SED diagnoses during the quarter, who were discharged in the quarter from a hospitalization for treatment of selected mental illness diagnoses or intentional self-harm.¹⁰⁴ Exhibit F.40 shows that the observed percentage of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 7 days increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the

¹⁰⁴ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹⁰⁵ It is possible that the newly covered beneficiaries are less likely to receive follow-up care than previously covered beneficiaries.

Exhibit F.41. Follow-Up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)—Within 30 Days



This quarterly metric was adapted from SMI/SED Monitoring Metric #8 which is an annual metric. The target population for this metric is beneficiaries ages 18 and older enrolled in Medicaid with SMI/SED diagnoses during the quarter, who were discharged in the quarter from

¹⁰⁵ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

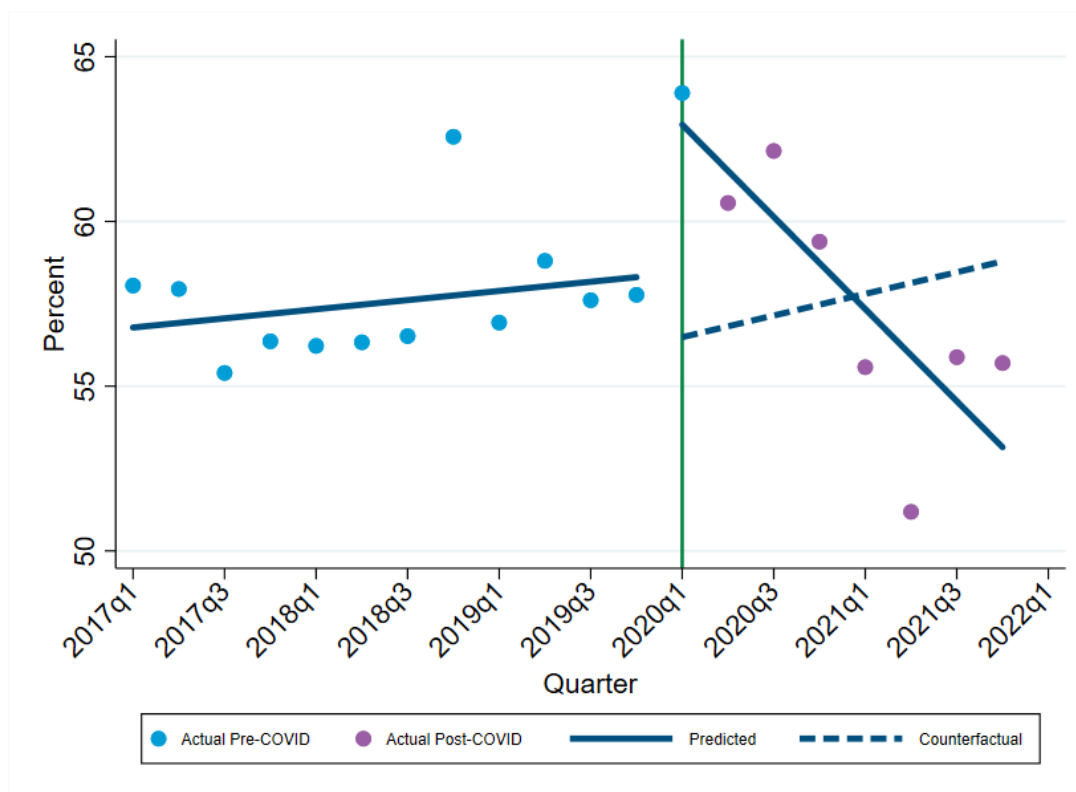
a hospitalization for treatment of selected mental illness diagnoses or intentional self-harm.¹⁰⁶ Exhibit F.41 shows that the observed percentage of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 30 days increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹⁰⁷ It is possible that the newly covered beneficiaries are less likely to receive follow-up care than previously covered beneficiaries.

¹⁰⁶ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

¹⁰⁷ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

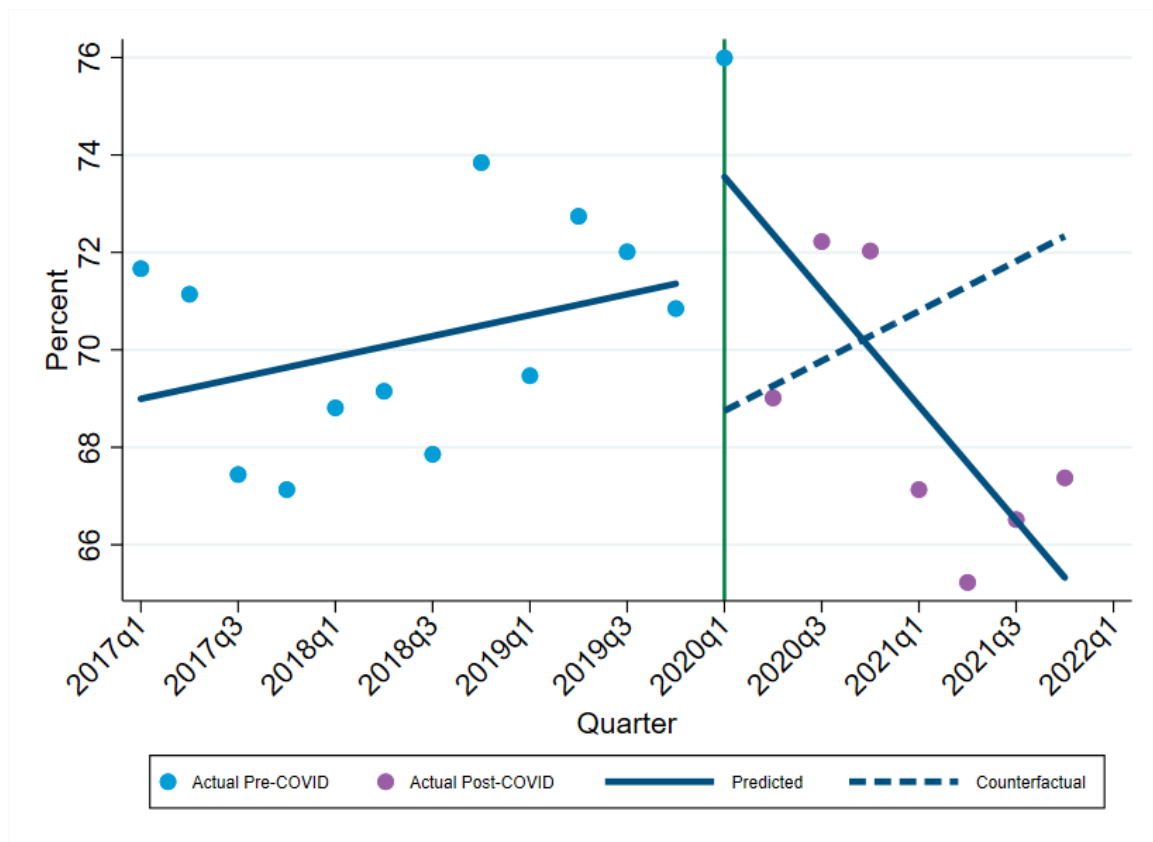
Exhibit F.42. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 7 Days



This quarterly metric was adapted from SMI/SED Monitoring Metric #10 which is an annual metric. The target population for this metric is beneficiaries aged 18 and older enrolled in Medicaid with SMI/SED diagnoses during the quarter, who had a principal diagnosis of mental illness or intentional self-harm in the quarter.¹⁰⁸ Exhibit F.42 shows that the observed percentage of ED visits for beneficiaries age 18 years and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 7 days of the ED visit increased over time during the pre-Demonstration period but decreased over time in the post-Demonstration period. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

¹⁰⁸ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.43. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 30 Days



This quarterly metric was adapted from SMI/SED Monitoring Metric #10 which is an annual metric. The target population for this metric is beneficiaries aged 18 and older enrolled in Medicaid with SMI/SED diagnoses during the quarter, who had a principal diagnosis of mental illness or intentional self-harm in the quarter.¹⁰⁹ Exhibit F.43 shows that the observed percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days of the ED visit increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

¹⁰⁹ To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications. Appendix A contains a list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition.

Exhibit F.44. Effect on Follow-Up Services After Hospitalization or ED Visits for Mental Illness

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Percentage of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner—within 7 days	↑	47.79	3.66 (3.35)	-1.01 (0.60)
Percentage of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner—within 30 days	↑	65.29	5.46 (3.40)	-1.17* (0.56)
Percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness—within 7 days of the ED visit	↑	57.55	8.17*** (1.40)	-1.73*** (0.32)
Percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness—within 30 days of the ED visit	↑	70.18	6.49*** (1.49)	-1.69*** (0.27)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.44 shows that the immediate or early post-Demonstration period change in the percentage of discharged beneficiaries age 18 years and older who were

hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 7 days (level change in the predicted trend figure), from a baseline mean of 47.79%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit C.14.

The second row of Exhibit F.44 shows that the immediate or early post-Demonstration period change in the percentage of discharged beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 30 days (level change in the predicted trend figure), from a baseline mean of 65.29% was not statistically significant. However, this metric decreased by a statistically significant 1.17 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are presented in Appendix Exhibit C.15.

The third row of Exhibit F.44 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 8.17 percentage points in the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 7 days of the ED visit (level change in the predicted trend figure), from a baseline mean of 57.55%. However, this metric decreased by a statistically significant 1.73 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant decrease of 5.64 percentage points at the 10% level. If the current trend continues, while all other influential factors remain the same, the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 7 days of the ED visit could continue to show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results are provided in Appendix Exhibit C.16.

The fourth row of Exhibit F.44 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 6.49 percentage points in the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days of the ED visit (level change in the predicted trend figure), from a baseline mean of 70.18%. However, this metric decreased by a statistically significant 1.69 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the

predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant decrease of 7.00 percentage points at the 5% level. If the current trend continues, while all other influential factors remain the same, the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days of the ED visit could continue to show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results are given in Appendix Exhibit C.17.

F.1.5.2. Research Question 5.1b. How does the implementation of the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge influence care coordination?

The Demonstration has implemented changes related to IMD follow-up requirements. Per Transmittal 19-31 (June 23, 2022), IMDs must deliver the following services for SMI stays:

- Assess beneficiaries' housing situations and coordinate with housing services providers, when needed and available.
- Contact beneficiaries and community-based providers within 72 hours after discharge.

In addition, while not specific to the Demonstration, a notable overlapping initiative to improve care coordination and transitions in the District was the Improving Transitions of Care to Reduce Hospital Readmissions project. This project:

- provided hospital transition of care and discharge data and workflow analysis, and an interactive dashboard for monitoring transitions of care and readmissions within the DC HIE and
- conducted a set of pilot interventions to improve transitions of care upon discharge as well as best-practice strategies to reduce 30-day all-cause hospital readmissions in the District.

The contractor's transition-of-care pilots were focusing in-depth on managing hospital discharges for individuals with multiple chronic conditions, particularly those with behavioral health conditions, to identify scalable best practices that can be successfully implemented in the District to reduce avoidable readmissions. At least one of the pilot sites had to offer inpatient behavioral health services, and all pilots had to engage at least one community-based behavioral health provider, as certified by DBH and/or as an FSMHC.

Evaluation participants were aware of the new follow-up requirements under the Demonstration. Yet, despite these changes and the multiple additional strategies the District has implemented, evaluation participants reported that coordinated care following an inpatient stay is an ongoing challenge. Evaluation participants representing different levels of acuity across the care continuum noted that they routinely engaged in efforts to connect beneficiaries to care following an inpatient stay, whether or not they were able to receive reimbursement specific to those efforts. However, these participants reported that referring inpatient providers were often unresponsive to requests for information about beneficiaries' health history and current status (e.g., diagnosis and medications).

Because very few survey respondents had experienced a hospital or residential facility stay for their behavioral health, it was difficult to assess how well follow-up care was occurring from the beneficiaries' perspective. However, baseline beneficiary survey data are consistent with the perceptions of providers who participated in the evaluation. Nine survey respondents indicated they had a hospital visit for their drug or alcohol use or mental health in the past year. Three of these survey respondents were contacted by a health care provider after leaving the hospital to discuss follow-up care. Six survey respondents, on the other hand, reported that they were not contacted or were not sure. Of the 3 survey respondents who reported that they were contacted, 2 were contacted within 14 days of their hospital visit.

F.1.5.3. Research Question 5.1c. How does the implementation of reimbursement for transition planning services influence care coordination?

The third Demonstration rule (effective October 23, 2020) created transition planning services, and the addition of Chapter 65 to DCMR 22A implemented provider certification requirements and service and eligibility standards for these services. The transition planning services connect individuals experiencing a behavioral health-related hospitalization or SUD residential treatment stay to continued treatment and support services ahead of their discharge, to promote recovery and prevent avoidable readmissions. The new transition planning services created under the Demonstration went into effect September 1, 2020. The transition planning service consists of activities related to developing a discharge plan, including assessing the client's/consumer's needs after discharge, and care coordination and case management related to implementation of the identified needs. Under the Demonstration, these services were to be conducted within 30 days of beneficiaries' discharge from an inpatient, residential, or other institutional setting. The time frame within which these services can be provided was expanded to include the 30 days following beneficiaries' discharge when these services were transitioned to the state plan. To avoid duplication of services, only beneficiaries who are not enrolled in managed care, a health home program, or a home and community-based services waiver program are eligible to receive these services.

Evaluation participants appreciated that the Demonstration recognized that it was critical to add and reimburse for care-connecting supports and believed that increased access to transition planning could be a positive change. They noted, for example, that linking case management to community-based and outpatient services as well as social workers and discharge planning teams could lead to success and increased engagement among patients seeking services. Discharging someone without planning for their reentry into the community was generally seen as a poor practice that led to worse outcomes than those of patients who had the added support of transition planning.

“If we’re really looking at a well-rounded system, where patients are going to be adequately linked up to aftercare, that kind of stepdown has to happen. You can’t just have someone going from an inpatient setting and then straight back into the community. That doesn’t work.”

However, evaluation participants commonly expressed concerns about and challenges with the new benefit and do not believe that it has improved care coordination in the District. Several providers interviewed were unaware of the new transition planning service, and called for more education on this benefit. Similarly, one outpatient provider expressed confusion about how and whether it could be reimbursed for transition- and discharge-related services it provided for its patients during an inpatient stay, particularly if a patient was admitted for an extended period. One provider certified to provide transition planning services described delaying implementation of the service, in part due to referral challenges and COVID-19 restrictions that made the monitoring of individuals eligible for the transition planning service difficult.

Another commonly reported concern was that the eligibility requirements excluding beneficiaries enrolled in managed care greatly limited the number of beneficiaries eligible for these services. Evaluation participants expected the transition planning benefit to be broader in scope and that a larger group of Medicaid beneficiaries would be eligible for the service.

“The transition planning services model does not make much sense as it is very restrictive on which clientele is eligible for service. Nobody’s eligible for it because it excludes anyone who has MCO coverage. Such a small number of patients are eligible.”

Providers also noted that the certification requirements were unnecessarily restrictive, particularly in relation to the reimbursement available for the services. This acted as a deterrent to pursuing certification for the services.

“The staffing that’s required and who’s eligible, it wasn’t even worth trying to get certified to do that. We looked at it but didn’t have the staff.”

F.1.5.4. Research Question 5.1d. How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SMI/SED?

To support increased and effective care coordination among the District’s behavioral health providers, the Demonstration has sought to:

- expand the number of behavioral health providers connected to the District’s HIE, which is CRISP DC; and
- expand the number of behavioral health providers actively using, in a bidirectional manner, CRISP DC.

“The District has been aggressive in investing in HIE through Medicaid, making sure the HIE is configured in a way that is useful for Medicaid providers and really helps the agencies have a good understanding of healthcare for Medicaid beneficiaries.”

The District has made substantial progress toward these goals. The number of behavioral health providers who are connected to, and are active users of, the HIE has steadily increased. A critical driver of this progress is the implementation of policy changes that require providers to participate in the HIE. These policy changes are as follows:

- DHCF issued a requirement that IMDs, as a condition of their reimbursement, connect to the HIE (effective as of July 1, 2020 per Transmittal 20-12). All IMDs are now connected to the HIE.
- DBH issued a requirement that all transition planning service providers connect to the HIE. The one provider certified to offer this benefit is in compliance.
- DBH issued a requirement that all DBH-certified providers have a bidirectional relationship with CRISP DC.

“I think that the policy requirement—the conditional payment for the IMDs to participate in the HIE—was absolutely essential. That is part and parcel to the 1115 waiver and it has made a huge difference in terms of patients by IMD in the HIE.”

To support providers’ adherence to these requirements as well as voluntary participation in the HIE, the District has sponsored outreach and technical assistance conducted by a third-party vendor as well as HIE staff. In addition to promoting comprehensive awareness and describing the benefits of participation, the technical assistance vendor and HIE staff also provided tactical support for implementing the necessary technologies and integrating them into clinical workflows.

Another critical driver of increased participation in the HIE was the development of tools that allowed noncertified electronic health record (EHR) systems, which many behavioral health providers in the District have, to interface with the HIE. The District also continues to promote providers’ adoption of certified-EHR platforms to streamline these connections.

Providers noted that the transition to participating in the HIE was difficult. It requires different workflows and expertise, which take time to get in place. In addition, making full use of the HIE can be challenging for providers, requiring multiple types of positions/skills to extract and interpret data and then use it to make clinical improvements (e.g., follow up with patients admitted to the hospital). However, providers' feedback on the HIE was largely positive. For example, one provider noted that their clinicians found the HIE more useful and easier to navigate for obtaining patient data than DBH's Web Infrastructure for Treatment Services EHR system, which they found difficult to use. In addition, several providers described the HIE as "amazing" and "game changing."

"CRISP is extremely helpful when a client goes missing, then I check immediately on CRISP to see if they've been admitted."

"My clinical team loves being able to get the CRISP data."

"We actively use it. We most recently were able to get our on-call specialist access. In the evenings and on the weekend when we get alerts, we can immediately call and follow up with the hospital or follow up with the individual directly to see how care is going. So those are the benefits."

Adoption is the first step along the continuum of leveraging health IT to support care coordination. It is also important that the tools have the information and functionality needed to facilitate coordination, preferably at the point of care, and that the appropriate data sharing protections are in place. These are areas that providers cited as ongoing gaps and that the District plans to continue to work on with their health IT vendors to advance progress. Providers acknowledged that they were primarily using the HIE to receive data rather than send data because of their limited capacity. The District continues to encourage providers to send data to the HIE in a routine and timely manner. In addition, the HIE is working on functionality to enable clinical referrals (right now the tool only enables referrals to social supports) and is piloting a process for consenting to sharing SUD-related health information.

"The whole point is not about just having an electronic medical record. It's having an electronic medical record that will have sufficiently standard data fields for the information we as a system care about, clinically. The care management. And then, to set the incentives in the right way and make sure that we have complete information for folks across the system."

"Even when we review CRISP, the information is not always there."

"Some of the cons are that sometimes we want to see the discharge or lab paperwork and it gets uploaded maybe like a month later."

"Yes, we can see into CRISP. Right now we are not providing information."

“It’s amazing one directional, not bidirectional... We just don’t have the capacity to integrate bidirectionally, us entering information because we are entering it in everywhere else.”

Evaluation participants viewed the consent management program as key to being able to leverage the HIE in support of care coordination goals. The pilot program helps providers develop workflows for obtaining consent from beneficiaries to share their EHR data via the HIE. In the first phase of the pilot program, the HIE would share provider attribution information, such as whether the beneficiary had been in an SUD program. In the second phase of the pilot program, the HIE would support the exchange of additional clinical information related to the beneficiaries’ care. Approximately a dozen providers signed up to participate in the pilot. However, implementation has been slow as providers diverted resources to address the PHE and engaged in fewer face-to-face interactions with beneficiaries. The HIE is in the process of developing a workflow to support consent capture that occurs during telemedicine encounters.

“That doesn’t change the fact that until we get this consent piece resolved and got more providers connected, the data was going to be so spotty.”

F.1.5.5. Research Question 5.1e. How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SMI/SED?

The Demonstration did not implement requirements that IMDs conduct medical screenings. While there is no formal policy regarding screening for, and providing access to, treatment related to co-morbid physical health conditions, SUDs, and suicidal ideation, DHCF and DBH staff believe that approach is common practice for one psychiatric IMD in the District. In addition, inpatient transition planning services include assessments of beneficiaries’ physical healthcare needs.

F.1.5.6. Research Question 5.1f. Did care coordination improve for beneficiaries with SMI/SED?

Despite the multiple strategies the District has implemented, evaluation participants uniformly noted that care coordination continues to be a significant weak point in the District’s behavioral health service delivery system. The scenarios that most likely resulted in beneficiaries’ inability to receive the appropriate care included transitions from inpatient and residential settings to outpatient care and nonclinical social supports. The drivers of these gaps appear to be multiple and complex. For example, the District’s health home programs facilitate care coordination, as do MCOs. However, evaluation participants noted that these programs may be better suited for meeting the physical healthcare coordination needs of beneficiaries than their behavioral healthcare coordination needs.

In addition, evaluation participants representing different levels of acuity reported challenges making contact with outpatient providers to determine their availability to provide services to beneficiaries in their care. Last, it appears that “cold handoffs,” particularly to providers the beneficiary was not familiar with or did not have a trusting relationship with, increased the likelihood that beneficiaries never connected with the service provider to which they had been referred. Beneficiaries who were homeless, according to evaluation participants, were most negatively impacted by cold handoffs.

“To be so intertwined with the system and still have so much difficulty getting information is frustrating... Trying to get everyone on the same page and to support each other would help our clients.”

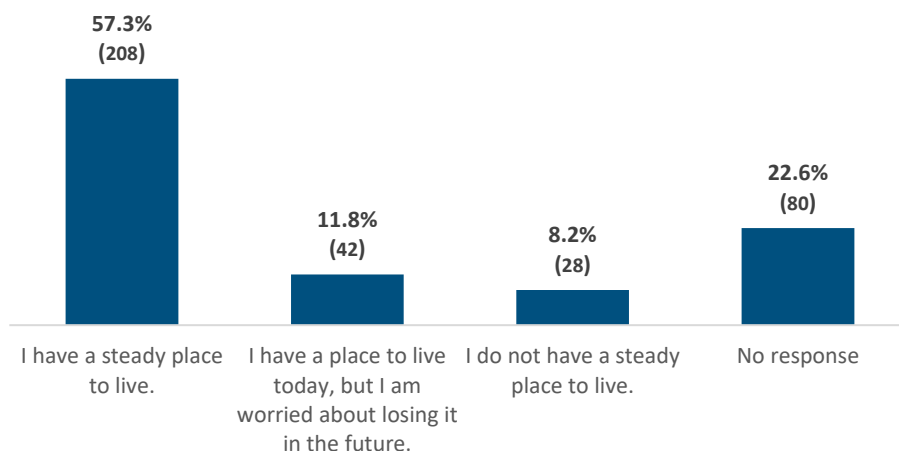
Providers discussed the need to better coordinate healthcare and social supports. Specifically, providers noted that housing was a critical component of whether a beneficiary would be able to get and stay well. Yet the current health and housing initiatives in the District remain distinct efforts that rely on individual providers to coordinate across sectors.

“Housing is health, and the rest won't fall into place without it.”

“The only thing I would add is that this group [of people/patients] is 2 minutes from being evicted because the rent is so high... If you're going to do housing, you have to do ACT team. Basic case management doesn't cut it; it needs people who are fully invested since they will be on the hook and need to garner community approval. They keep announcing in pieces things that should be working together.”

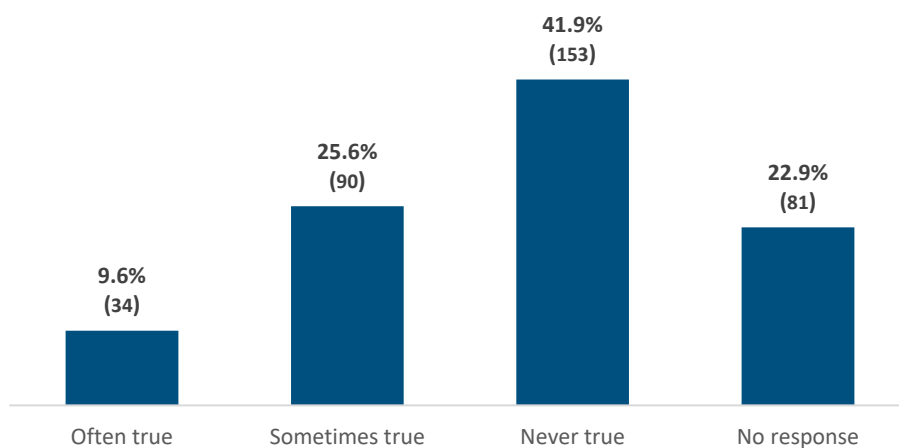
Beneficiary survey data suggest that support for housing stability may in fact be an area of need. Twenty percent ($n = 70$) of survey respondents reported that they either had a place to live but were worried about losing it or did not have a steady place to live at all (Exhibit F.45). Another area of social service coordination that may be helpful to integrate into behavioral healthcare is support for food security. Within the past 12 months, 35% of survey respondents ($n = 124$) reported that the food they bought did not last and they did not have money to get more, at least some of the time (Exhibit F.46).

Exhibit F.45. What is your living situation today?



Note. Percentages are weighted and may not add up to 100% due to rounding.

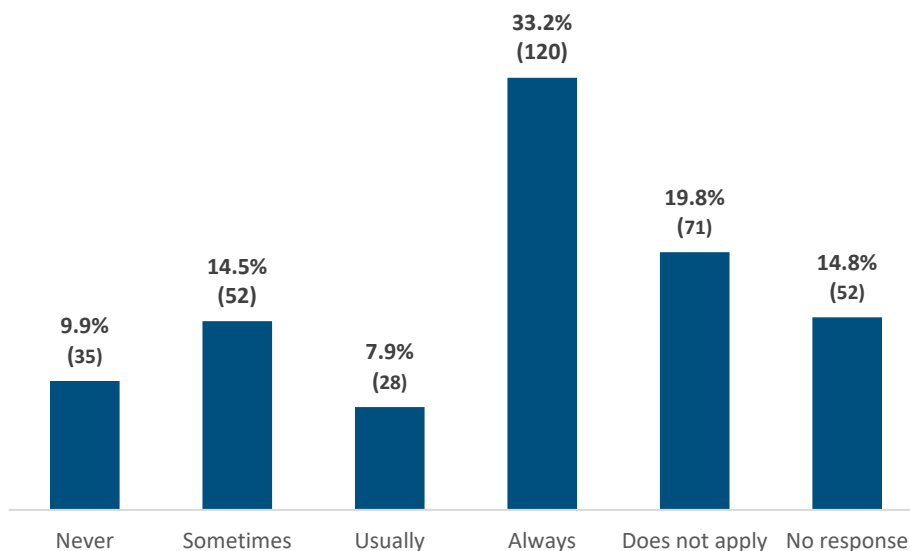
Exhibit F.46. Please select whether this statement is often true, sometimes true, or never true for you and your household. Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.



Note. Percentages are weighted and may not add up to 100% due to rounding.

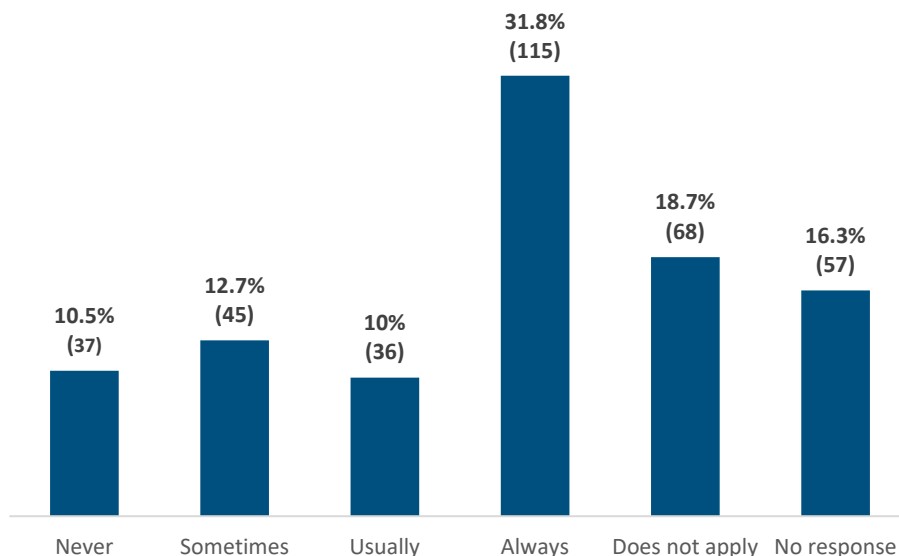
Other beneficiary survey data were also consistent with the lack of care coordination described by providers and MCOs. Baseline beneficiary survey data indicated that there are opportunities to improve care coordination. Forty-one percent of survey respondents ($n = 148$) reported that the providers who helped them with their drug or alcohol use or mental health always or usually knew about the medical care they had previously received for physical health problems (Exhibit F.47). Forty-two percent of survey respondents ($n = 151$) reported that the providers who helped them with physical health problems usually or always knew about the counseling, treatment, or medicine they had received for their drug or alcohol use or mental health (Exhibit F.48).

Exhibit F.47. How often did the providers who help you with your drug or alcohol use or mental health know about the medical care you received for any physical health problems you have, such as illness or injuries?



Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.48. How often did the providers who help you with medical care for your physical health problems, such as illness or injuries, know about the counseling, treatment, or medicine you received for your drug or alcohol use or mental health?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.2. Effects on SUD Goals

F.2.1. Goal 1. Increased Rates of Identification, Initiation, and Engagement in Treatment for SUD

Takeaway: Results were mixed for the goal of increasing rates of identification, initiation, and engagement in treatment for SUD. There was an increase in the number of beneficiaries who initiated SUD treatment. The number and percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service decreased. For context, note that the COVID-19 PHE impacted SUD service utilization considerably in the District, and more than it impacted SMI/SED service utilization.

Hypothesis 1.1: The Demonstration will increase rates of identification and initiation of treatment for SUD.

	– For the number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period, but not in the 3 months before the measurement period, we did not detect a statistically significant change in level, but did identify a statistically significant increase in slope. – For the percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period, but not in the 3 months before the measurement period, we did not detect a statistically significant change in level or slope.
	– Evaluation participants perceived that the decentralization of the assessment and intake functions of the ARC helped increase the identification and initiation of SUD treatment.

Hypothesis 1.2: The Demonstration will increase access to specific SUD treatment services.

	– The number of providers who were enrolled in Medicaid and qualified to deliver SUD services during the measurement period slightly decreased under the Demonstration.
	– Evaluation participants perceived that the implementation of reimbursement for services provided in IMD services, including withdrawal management, has stabilized providers' ability to offer SUD residential services, thereby improving access. – It is unclear how requirements related to offering or facilitating access to MAT has increased access to SUD treatment services based on evaluation participants' perspectives; some evaluation participants reported offering MAT while others were reluctant.

Hypothesis 1.3: The Demonstration will increase utilization of specific SUD treatment services.



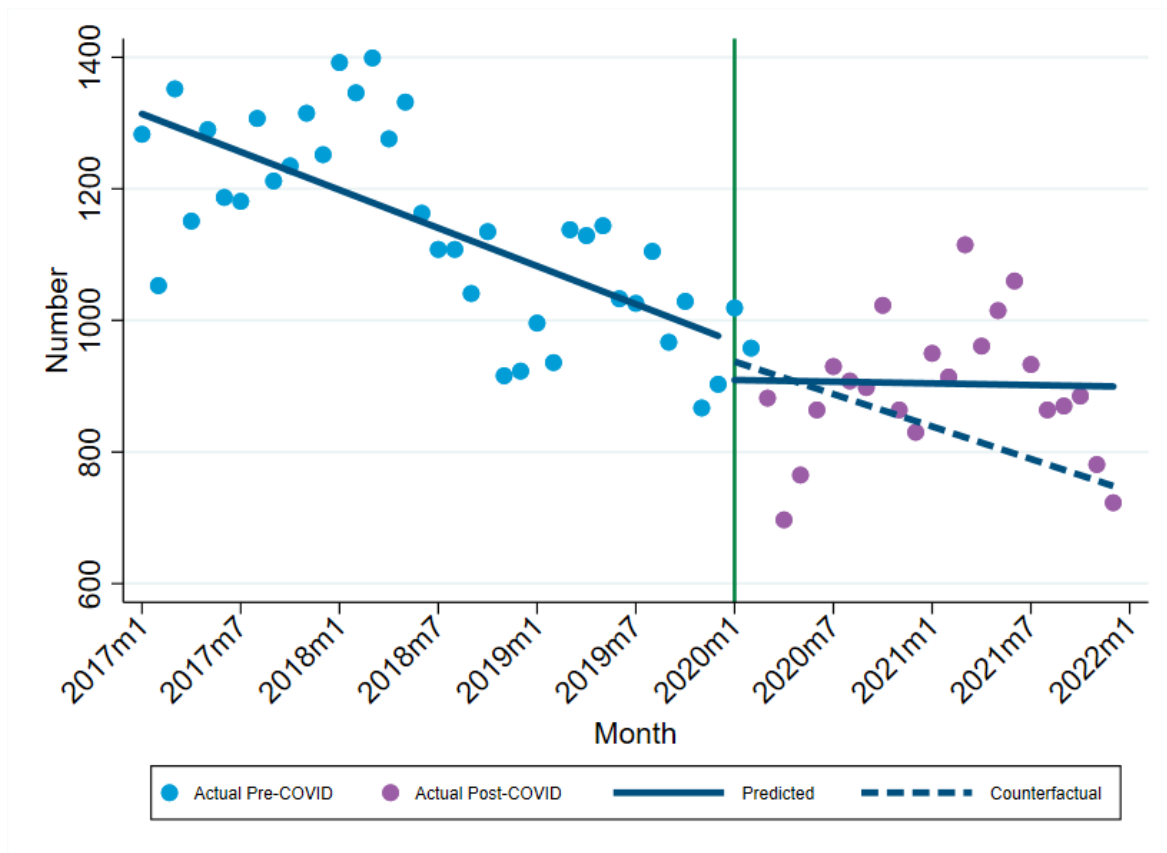
- For the number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period, we detected a statistically significant decrease in level, but did not detect a statistically significant change in slope.
- For the percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period, we did not detect a statistically significant change in level, but did detect a statistically significant decrease in slope.



- Most (81%) baseline beneficiary survey respondents who wanted or needed counseling or treatment for drug or alcohol use agreed that they had received all the services they wanted or needed.
- Not knowing where to go was the most commonly reported reason for baseline beneficiary survey respondents' not receiving all the services they wanted or needed for drug or alcohol use.

F.2.1.1. Research Question 1.1. Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?

Exhibit F.49. Newly Initiated SUD Treatment/Diagnosis (Number of Beneficiaries)



This monthly metric was adapted from SUD Monitoring Metric #2 which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹¹⁰ Exhibit F.49 shows that the observed number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period decreased over time during the pre-Demonstration period but remained relatively stable under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, which had a decreasing trend, there was a stable trend over time under the Demonstration.

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths.^{111,112} SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.¹¹³

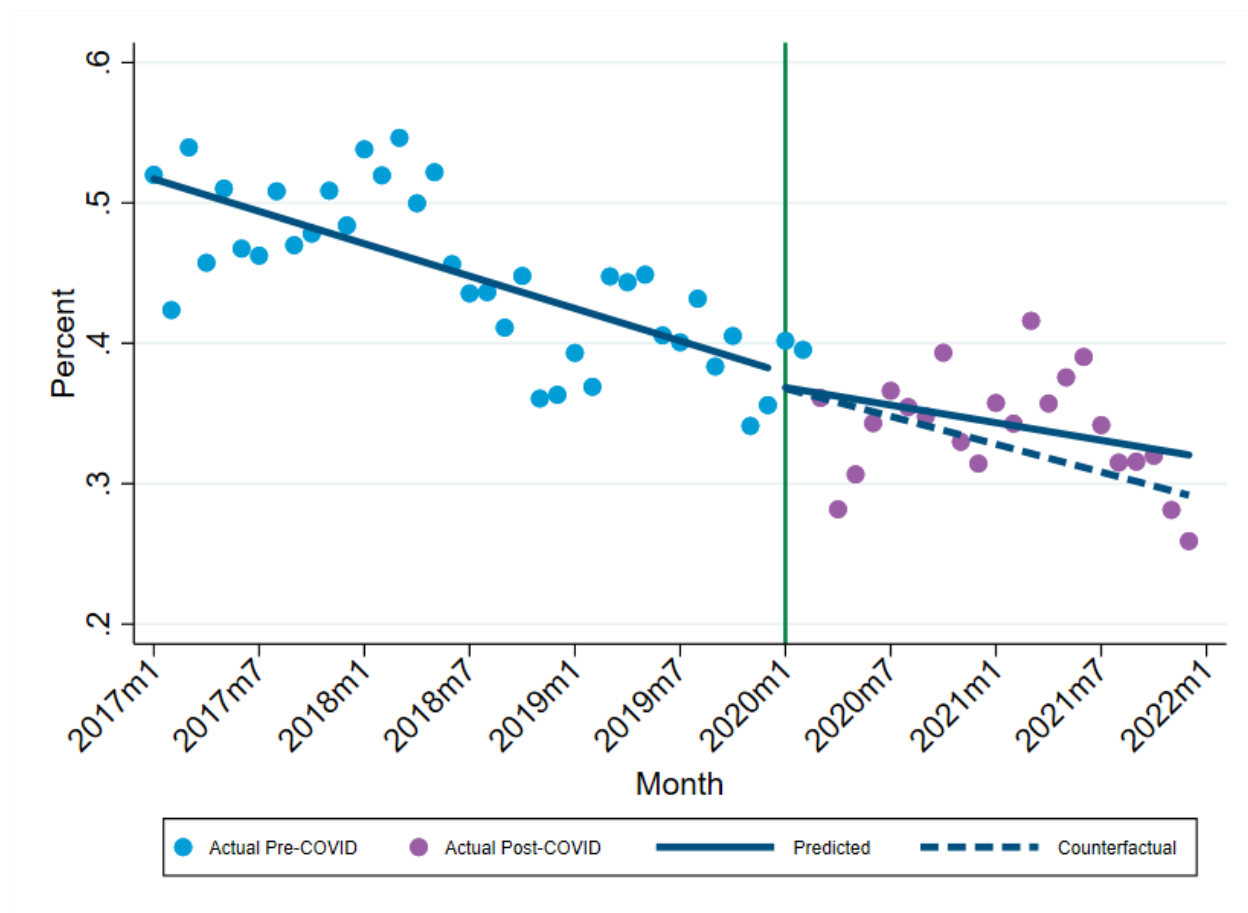
¹¹⁰ This is the same target population used in SUD Monitoring Metric #2.

¹¹¹ Roberts, A., Rogers, J., Mason, R., Siriwardena, A. N., Hogue, T., Whitley, G. A., & Law, G. R. (2021). Alcohol and other substance use during the COVID-19 pandemic: A systematic review. *Drug and Alcohol Dependence*, 229, 109150.

¹¹² Kaiser Family Foundation. (2023). Opioid overdose deaths and opioid overdose deaths as a percent of all drug overdose deaths. <https://www.kff.org/other/state-indicator/opioid-overdose-deaths/?currentTimeframe=2&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

¹¹³ Department of Behavioral Health & Department of Health Care Finance. (2022, October 28). *Behavioral health transformation demonstration post-award stakeholder forum*. https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/Post%20Award%20Forum%20October%202022%20Demonstration%20102822.pdf

Exhibit F.50. Newly Initiated SUD Treatment/Diagnosis (Percentage of Beneficiaries)



This monthly metric was adapted from SUD Monitoring Metric #2 which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹¹⁴ Exhibit F.50 shows that the observed percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period decreased over time during both the pre- and post-Demonstration periods. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend did not shift under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing trend over time under the Demonstration. The rate of decrease under the Demonstration was smaller than the counterfactual.

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The

¹¹⁴ This is the same target population used in SUD Monitoring Metric #2.

COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.51. Effect on Beneficiaries With Newly Initiated SUD Treatment/Diagnosis

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period	↑	1,145.28	-45.11 (54.92)	23.72** (9.67)
Percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period	↑	0.45	-0.00 (0.02)	0.00 (0.00)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.51 shows that the immediate or early post-Demonstration period change in the number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period (level change in the predicted trend figure), from a baseline mean of 1,145.28, was not statistically significant. However, this metric increased by a statistically significant value of 23.72 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are shown in Appendix Exhibit D.1.

The second row of Exhibit F.51 shows that the immediate or early post-Demonstration period change in the percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period (level change in the predicted trend figure), from a baseline mean of 0.45%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit D.2.

Perspectives of evaluation participants. Interview and listening session discussions with providers suggest that the Demonstration change that may have contributed to the leveling off of the decrease in new diagnoses and treatment for SUD was the decentralization of the assessment and intake functions of the ARC. As part of the Demonstration, DBH implemented a requirement that all SUD treatment providers provide intake and assessment services to beneficiaries (Chapter 63 of Subtitle A of Title 22 of the DCMR; final rule effective date June 17, 2020). Prior to the Demonstration, these services were primarily delivered by a few Assessment and Referral Centers (ARC). This complicated beneficiaries' entry into treatment.

Evaluation participants' feedback on this change was largely positive. Providers uniformly indicated that decentralization of the intake, assessment, and referral process improved patient access to services, noting that it avoided having to send patients who presented at their provider of choice to the ARC before starting treatment. In fact, one provider said that decentralized intake had had the largest impact of all waiver changes and that the change has been "dramatic"—enabling providers to reach patients in the community, offering patients more choice, and supporting the integration of SUD and SMI/SED.

Providers described how decentralizing intake increased the likelihood that patients made it into treatment. Spreading out the options for intake sped up the process, allowing intake to be completed during the often short window in which an individual was willing to enter treatment. In addition, decentralizing intake allowed providers using trauma-informed care or providers already familiar to patients to do their intake, which made them more likely to continue through the whole intake process.

"It is so much easier for a patient to walk in and do an assessment once, instead of doing one at an ARC and then going to a provider and doing that assessment all over again so that a licensed practitioner can then do a diagnostic and an ASAM determination."

"We all know that window of, 'I'm willing, I'm going to go into treatment' is so tiny and fragile. If you're at Point A, and you wait for 4 hours, and then you're at Point B, waiting for another hour—you're losing that window."

"Because to be honest, before with the single site, we got more people turned away with SMI and treated really disrespectfully. So it was really hard to talk with someone about getting into treatment because they had often been treated so horribly and rudely before. So having that embedded at providers who are doing the work and are welcoming and trauma-informed has been a pretty significant and positive difference."

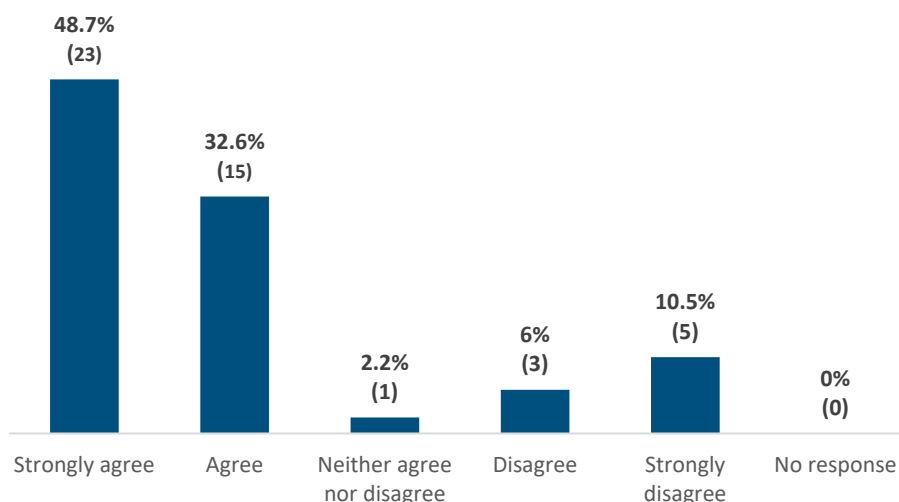
The challenges of expanded intake and assessment evaluation that participants identified related to certification requirements. For example, one evaluation participant indicated that the process for being certified as an intake and referral center was onerous enough to prevent

them from benefiting from the change, although they were developing the relevant services and strongly supported the policy. Other evaluation participants reported that they did not have the capacity to conduct the assessments as specified in the certification requirements. For example, one evaluation participant described an increased administrative burden associated with intake functions due to shifting from conducting those services twice a week to daily, and prior authorization requirements from MCOs. Another evaluation participant reported that they did not have the capacity to perform the medical assessments required, such as pregnancy testing and HIV screening.

“Doing intake has expanded to affect billing and administration since the system changed, and now we have to do more than just verify DC residency and Medicaid before we can bill for service. Now we also have to get preauthorization for MCO—and that only lasts for so many days—then it goes somewhere else, and then it needs approval every 14 days. Intake never stops now.”

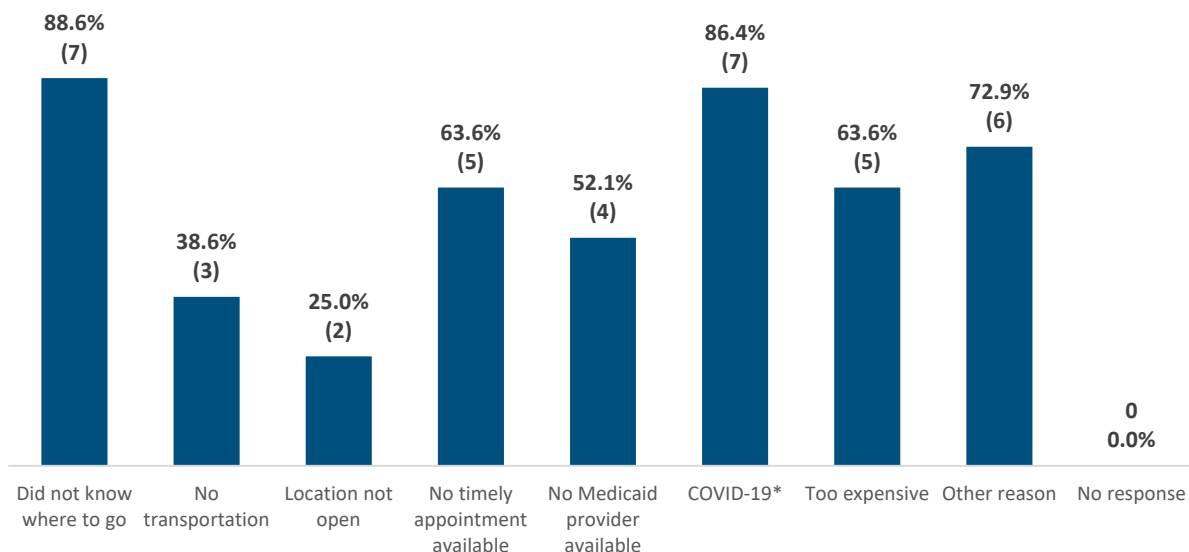
Baseline beneficiary survey data suggest that there may be other barriers preventing beneficiaries from accessing SUD treatment services. Eighty-one percent ($n = 38$) of survey respondents who wanted or needed counseling or treatment for drug or alcohol use agreed that they had received all the services they wanted or needed (Exhibit F.52). Of those who disagreed, the most commonly cited reason for not receiving the services was not knowing where to go (89%), followed closely by COVID-19 (86%) (Exhibit F.53).

Exhibit F.52. Were you able to get all the services you wanted or needed for counseling or treatment for drug or alcohol use?



Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.53. Which of the following, if any, was a reason that you did not get the services you needed for counseling or treatment for drug or alcohol use?



* For example, you felt COVID-19 risk too great or location closed.

Note. Percentages are weighted and may not add up to 100% because respondents could choose multiple options.

F.2.1.2. Research Question 1.2a. Did the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increase during the Demonstration period?

Exhibit F.54. Effect on SUD Provider Availability

Year	Number of providers who were enrolled in Medicaid and qualified to deliver SUD services during the measurement period
2017	500
2018	569
2019	663
2020	648
2021	653

This metric was adapted from SUD Monitoring Metric #13 which is an annual metric.¹¹⁵ The AIR team was unable to use the monitoring metrics specifications for SUD #13 because the public list (available on the website) and the confidential list of SAHMSA providers could not be obtained for prior years, even with assistance from DHCF. The only feasible way to create a

¹¹⁵ We were unable to adapt this annual measure to a quarterly measure because the data sources included claims and also the roster of providers maintained by DBH which is available annually.

metric comparable across the years for the number of providers was to identify providers based only on the claims associated with them for the respective year. Exhibit F.54 shows that the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increased from 2017 to 2019 but decreased slightly under the Demonstration. The slight decrease could have been because SUD providers took a big hit under COVID-19, as many of their services could not be delivered via telemedicine. DHCF increased payments to these providers to try to sustain them while volume was low, but it is likely that those supplements were not enough for some organizations.

Perspectives of evaluation participants. Section F.1.4.1. describes the challenges to assessing provider capacity to deliver behavioral health services in detail. These challenges are applicable to SUD capacity. Providers indicated that the District lacked sufficient provider capacity across the continuum of care for SUD services. However, evaluation participants did not identify initiation and engagement in treatment as key points in the care continuum where capacity was insufficient. Instead, they identified partial hospitalization and intensive outpatient services that bridge the transition between inpatient rehabilitation services and outpatient services as key points in the care continuum where capacity was insufficient. In addition, according to provider evaluation participants, there was a general shortage of SUD providers; and low salaries (driven by low reimbursement rates for SUD services) put them at a competitive disadvantage for attracting and retaining qualified personnel who had better paid opportunities elsewhere. These workforce recruitment and retention issues were exacerbated by the pandemic.

F.2.1.3. Research Question 1.2b. How does the implementation of reimbursement for services provided in IMD settings influence access to specific SUD treatment services?

As noted in section F.1.4.6 above, the Demonstration expanded access to IMD services by reimbursing IMD services for FFS beneficiaries and for MCO beneficiaries with IMD stays longer than what is covered by the “in lieu of” benefit (which covers stays of up to 15 days). This Demonstration change has had a slightly different influence on access to SUD services compared to SMI/SED services. In terms of perceived positive influences, evaluation participants noted that Medicaid reimbursement for IMD services has particularly stabilized providers’ ability to offer SUD residential services. The perceived negative influences are that the preauthorization requirements for receiving reimbursement for stays that exceed 15 days was particularly burdensome for SUD residential services delivered in an IMD.

F.2.1.4. Research Question 1.2c. How does the implementation of reimbursement for withdrawal management in IMD settings influence access to these SUD treatment services?

Sections F.1.4.6 and F.2.1.3 describe the implementation of changes to reimbursement in IMD settings and how those changes influence access to SUD treatment services. These findings are applicable to withdrawal management services, as it is included in the array of SMI/SED and SUD services that are eligible for the expanded Medicaid reimbursement under the Demonstration. One finding that is unique to withdrawal management services is that the administrative challenges related to providers needing to switch from managed care to FFS billing if a beneficiary's IMD stay exceeds 15 days poses less of an administrative burden for withdrawal management services because those services are typically associated with lengths of stay that are fewer than 15 days.

F.2.1.5. Research Question 1.2d. How does the implementation of requirements to offer or facilitate access to all FDA-approved medications for use in SUD influence access to these SUD treatment services?

The Demonstration has implemented a requirement that providers offer MAT. DBH included the following language in the final rulemaking for 22A DCMR Chapter 63 (6328.8): "All [residential treatment] providers shall offer all Food and Drug Administration ("FDA")-approved forms of MAT to any client who meets the criteria for and selects MAT as part of their Plan of Care, in accordance with certification under this chapter or other Federal and District laws and regulations. If a provider is not certified to offer the client's choice of medication in accordance with this chapter or under any other Federal and District laws and regulations, then the provider shall refer the client to another provider able to offer MAT that meets the client's needs."

It is unclear whether access to MAT has improved under the Demonstration. The residential treatment providers that participated in stakeholder interviews indicated they were in compliance with MAT requirements. For example, one provider noted that they were in the process of becoming certified as an opioid treatment provider; in the meantime, they were referring beneficiaries in need of methadone to other providers. In addition, as discussed above, a large majority of beneficiary survey respondents reported that they had been able to get the SUD medications they needed.

However, there could be an opportunity to further increase the availability of MAT. The requirements apply only to residential SUD treatment providers and some providers participating in the stakeholder interviews who expressed reluctance to offer MAT.

“If you’re interested in MAT we will work with you...If you come in with MAT, we welcome it. If you request one, we will educate and work with you—but we work long term at no [maintenance] substances.”

F.2.1.6. Research Question 1.2e. How does the implementation of reimbursement for independent licensed behavioral health clinicians providing SUD services influence access to specific SUD treatment services?

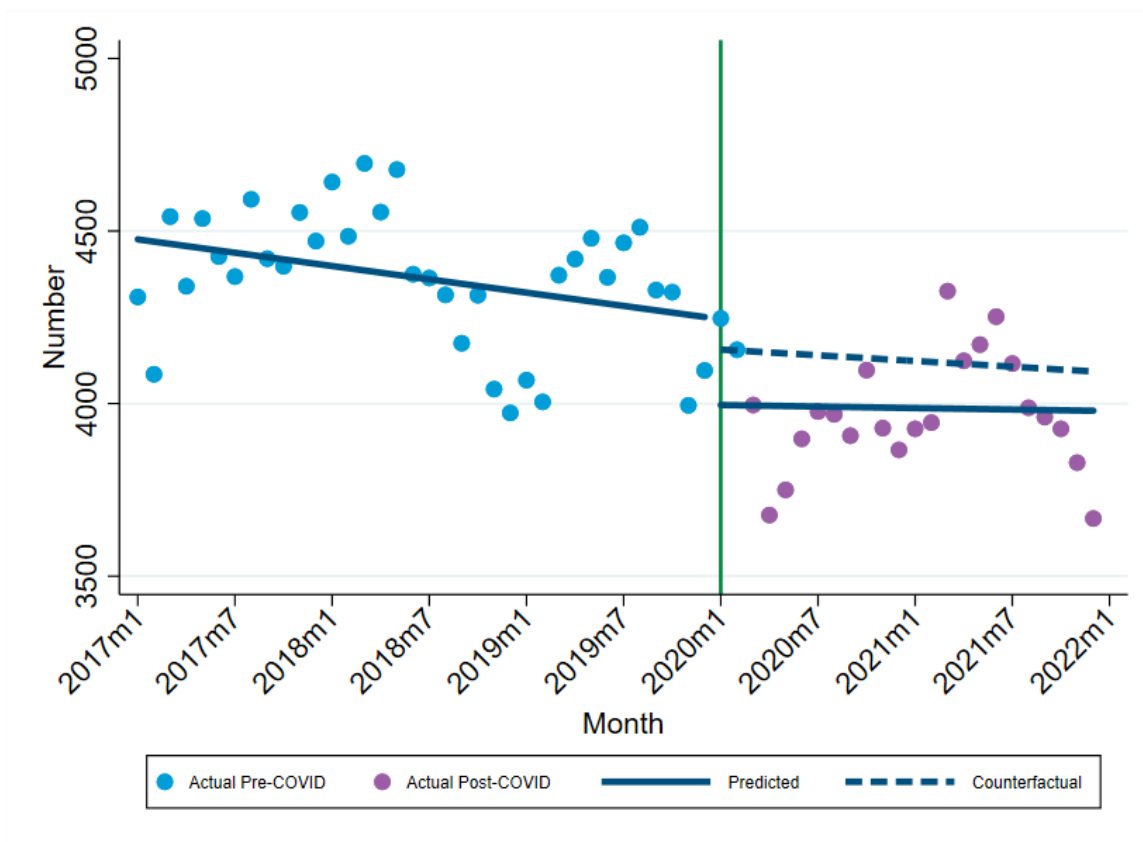
Section F.1.4.4. describes how the implementation of reimbursement for independent licensed behavioral health clinicians influenced access to behavioral health services. These results are applicable to SUD services as these newly Medicaid reimbursable clinicians are authorized to provide SUD treatment services. In addition, evaluation participants did not identify any differences in how these newly Medicaid reimbursable clinicians influenced SMI/SED versus SUD treatment services.

F.2.1.7. Research Question 1.3a. Was there an increase in community knowledge of available SUD treatment and services?

As noted in section F.2.1.1. above, baseline survey data suggest that lack of knowledge of available SUD treatment and services is a barrier to accessing SUD treatment and services.

F.2.1.8. Research Question 1.3b. Was there an increase in the utilization of specific SUD treatment services?

Exhibit F.55. Any SUD Treatment (Number of Beneficiaries)



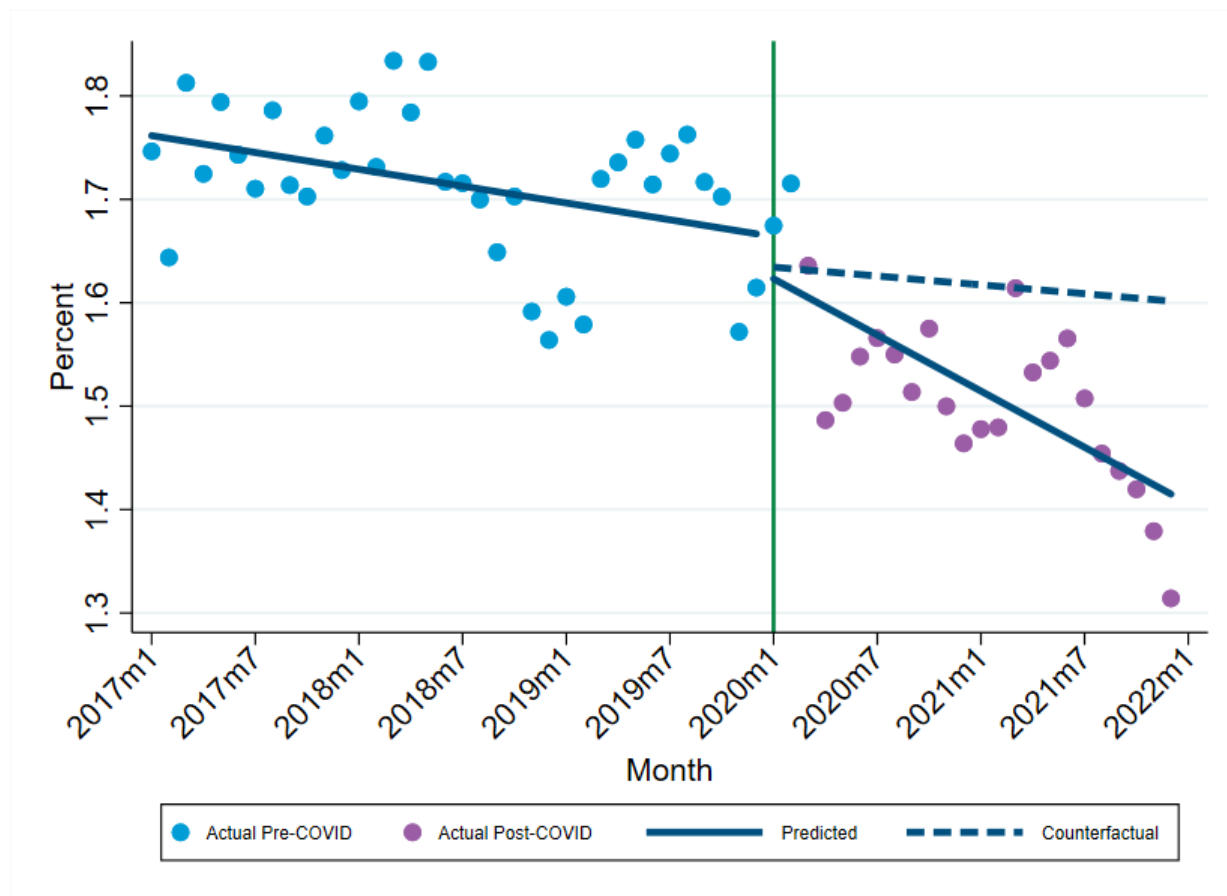
This monthly metric was adapted from SUD Monitoring Metric #6, which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹¹⁶ Exhibit F.55 shows that the observed number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period decreased over time during the pre-Demonstration period but remained relatively stable under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the Demonstration. Both the counterfactual and the predicted trends remained relatively stable over time under the Demonstration.

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The

¹¹⁶ This is the same target population used in SUD Monitoring Metric #6.

COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.56. Any SUD Treatment (Percentage of Beneficiaries)



This monthly metric was adapted from SUD Monitoring Metric #6 which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹¹⁷ Exhibit F.56 shows that the observed percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period decreased over time during both the pre- and post-Demonstration periods, and the rate of decrease was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward slightly under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing trend over time under the Demonstration. The rate of decrease under the Demonstration was larger than the counterfactual.

¹¹⁷ This is the same target population used in SUD Monitoring Metric #6.

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.57. Effect on SUD Treatment

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period	↑	4,363.44	-165.18* (94.66)	6.20 (14.99)
Percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period	↑	1.71	0.01 (0.03)	-0.02*** (0.01)

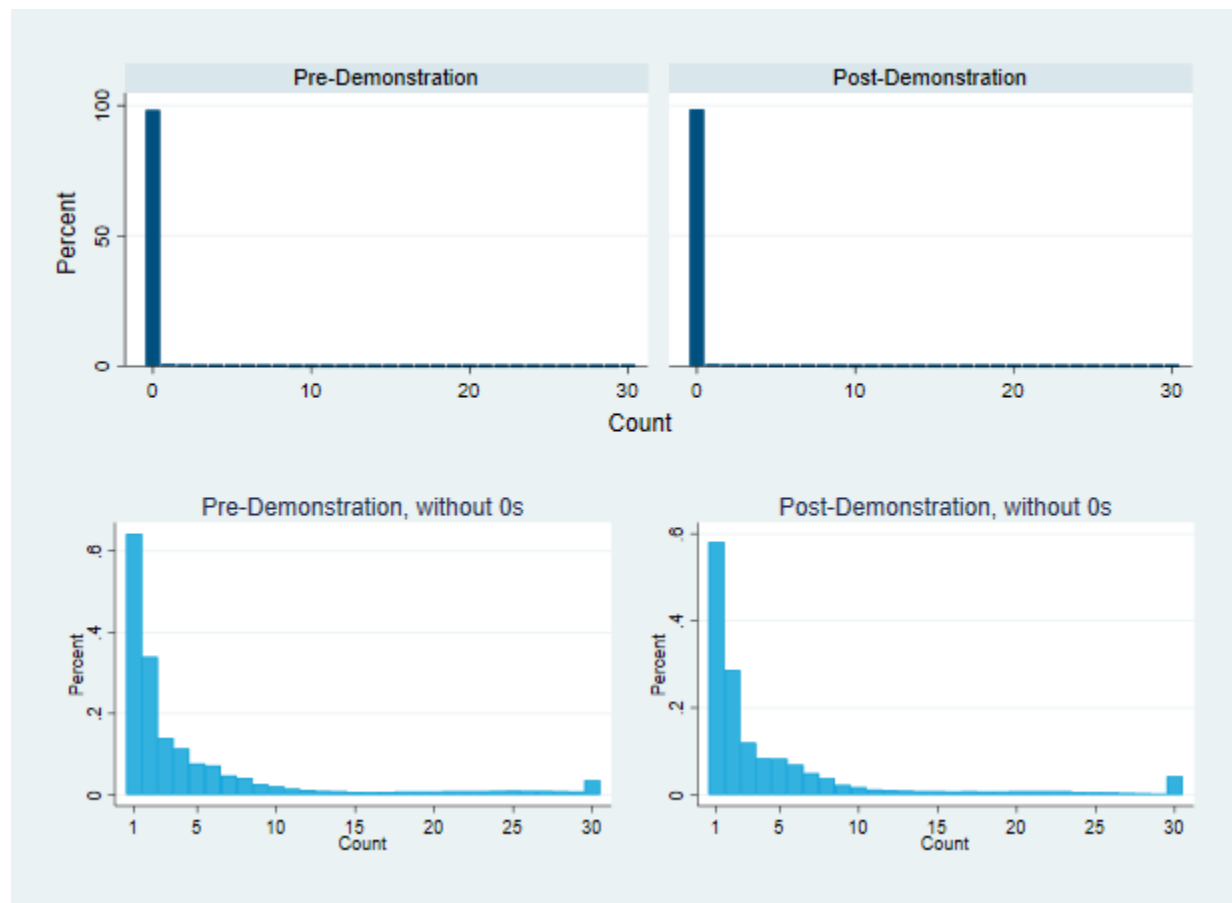
*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.57 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period decrease of 165.18 in the number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period (level change in the predicted trend figure), from a baseline mean of 4,363.44. However, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results appear in Appendix Exhibit D.3.

The second row of Exhibit F.57 shows that the immediate or early post-Demonstration period change in the percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period (level change in the predicted trend figure), from a baseline mean of 1.71%, was not statistically significant. However, this metric decreased by a statistically significant 0.02 percentage points

on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are presented in Appendix Exhibit D.4.

Exhibit F.58. Number of SUD Treatment Claims, PBPM



Note. Any value above 30 for the per beneficiary per month treatments was recoded to 30.

We performed a supplemental individual-level analysis for this monthly measure. Exhibit F.58 displays the histograms of the number of monthly SUD treatment services claims, facility claims, or pharmacy claims for the SUD population, separately for the pre-Demonstration and post-Demonstration periods. In consideration of the high percentage of zeroes, which is consistent with the magnitude of the percentage outcome in the District-level analysis (Exhibit F.56; less than 2% of beneficiaries with SUD received an SUD treatment in a month), we also include a zoomed-in version of each graph with the zero category left out. The distributions are very similar pre-Demonstration and post-Demonstration.

Exhibit F.59. Effect on Number of SUD Treatment Claims, PBPM

Measure description	Hypothesized direction	Baseline mean (2017-2019)	Marginal change post-Demonstration from count model
For beneficiaries with SUD, number of monthly SUD treatment services, facility claims, or pharmacy claims	↑	0.08	0.00 (0.00)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

Exhibit F.59 shows that the change in the monthly number of SUD treatment services claims, facility claims, or pharmacy claims was not statistically significant. This is in line with the mixed results of the District-level analysis above. It is also consistent with the observation from Exhibit F.59 that the distributions pre-Demonstration and post-Demonstration are very similar.

Perspectives of evaluation participants. Beneficiaries' self-reported utilization of SUD treatment and services is described in section F.2.1.1.

F.2.1.9. Research Question 1.3c. How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence the utilization of appropriate SUD services?

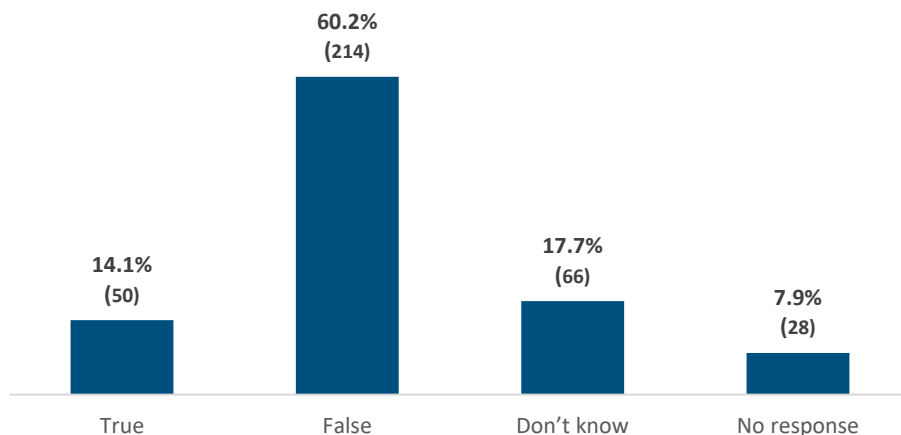
The District implemented the removal of the \$1 copay for prescriptions associated with MAT by releasing transmittal #19–27 (December 19, 2019). The decision to request waiver authority for this benefit change stemmed from stakeholder feedback that indicated that prescription copays served as a barrier to treatment for opioid use disorder (OUD). The copay removal is applicable to prescriptions other than methadone (which is dispensed during a clinic service within an opioid treatment program and thus was not subject to a copay prior to the Demonstration).

"The \$1 copay's [removal] has been really useful. I think it's worth saying, particularly since it's one of the things that actually required a waiver...I think it's great. There's no reason to create barriers for people participating in MAT...I think it's been really helpful."

Providers were aware of the elimination of the copay for MAT and believed it was very helpful in reducing barriers for beneficiaries. However, beneficiary survey responses showed that some beneficiaries were not aware that the copay had been removed (Exhibit F.60). Fourteen percent ($n = 50$) of beneficiary survey respondents reported that the following statement was true: "If my doctor prescribes medicine to help me stay off alcohol or drugs, I will have to pay for the medicine." An additional 18% ($n = 66$) indicated that they did not know whether the statement was true or false. Of the 50 beneficiaries who said "true," 10 reported that they would have to

pay between \$2 and \$10, five that they would have to pay between \$11 and \$50, and five that they would have to pay between \$51 and \$100.

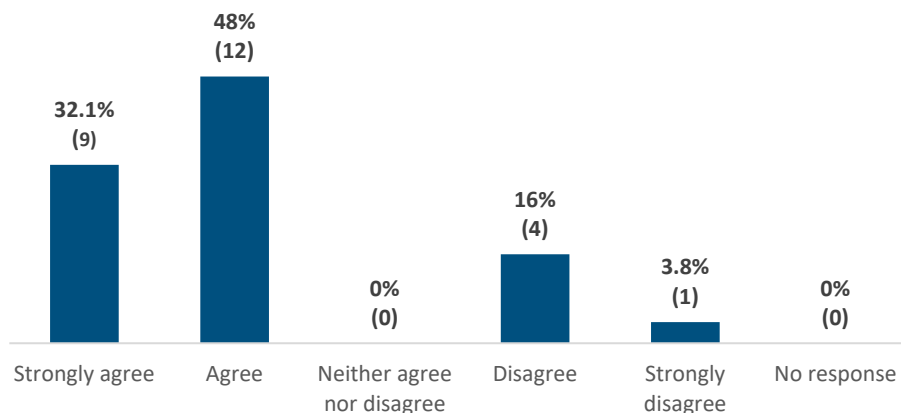
Exhibit F.60. If my doctor prescribes medicine to help me stay off alcohol or drugs, I will have to pay for the medicine.



Note. Percentages are weighted and may not add up to 100% due to rounding.

However, costs did not appear to be a major barrier to survey respondents' ability to access SUD-related prescriptions. Beneficiary survey respondents reported high access to prescription medicines for SUD. Of the 8% ($n = 26$) of survey respondents who said "yes" when asked whether they felt they wanted/needed prescription medicine to help them detox or stay off drugs or alcohol in the past 12 months, 80% ($n = 21$) agreed or strongly agreed that they were able to get the wanted/needed services (Exhibit F.61).

Exhibit F.61. Were you able to get all the services you wanted or needed for prescription medicine to help you detox or stay off drugs or alcohol?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.2.2. Goal 2. Increased Adherence to and Retention in Treatment.

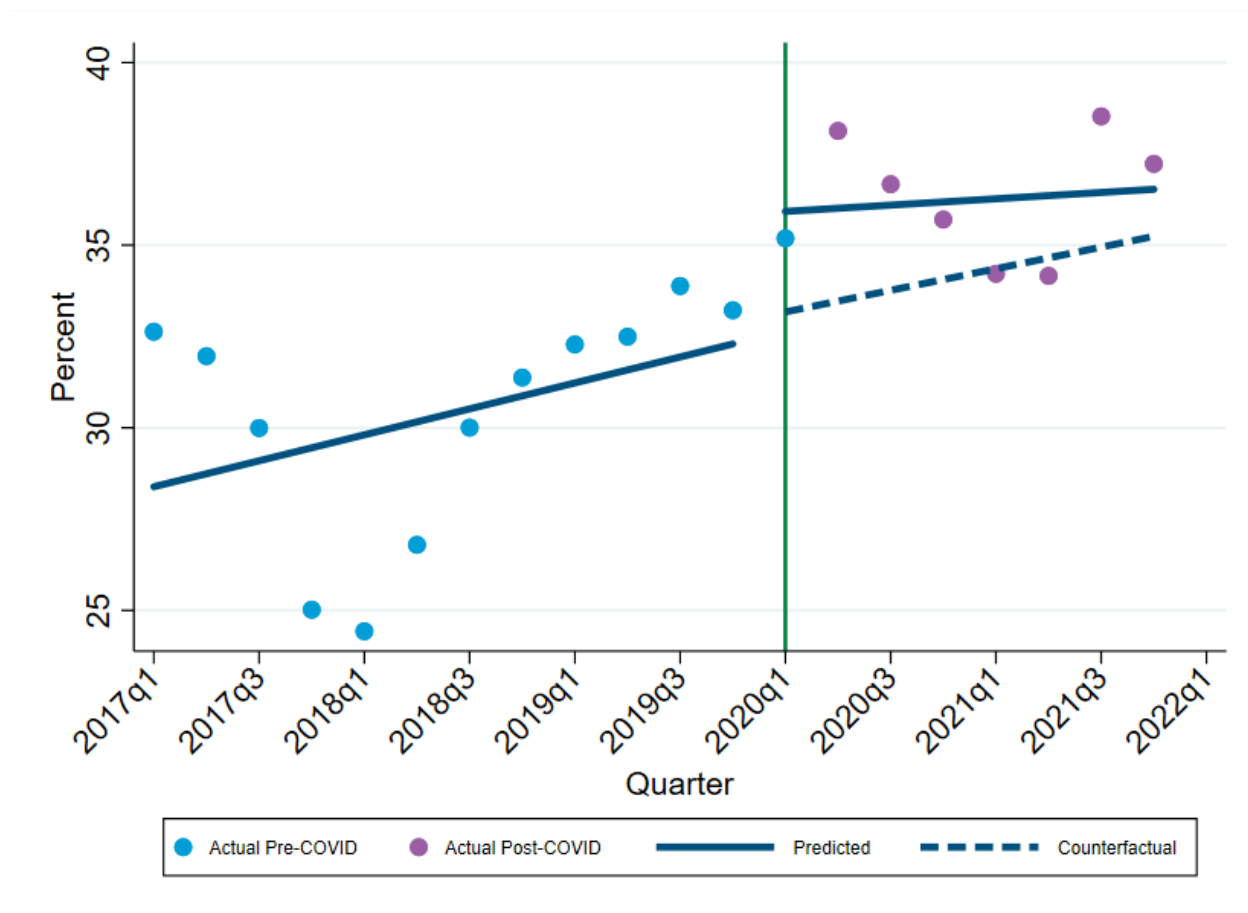
Takeaway: The Demonstration has not yet achieved the goal of increased adherence to and retention in SUD treatment. For context, note that the COVID-19 PHE impacted SUD service utilization considerably in the District, and more than it impacted SMI/SED service utilization.

Hypothesis 2.1: The Demonstration will increase adherence to and retention in SUD treatment.

	– For the percentage of beneficiaries with a new episode of alcohol or other drug (AOD) abuse or dependence who received initiation of AOD treatment, we did not detect a statistically significant change in level or slope. – The percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was not statistically significant. – For the number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days, we did not detect a statistically significant change in level, but did detect a statistically significant decrease in slope. – For the percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days, we did not detect a statistically significant change in level or slope.
	– About one third of baseline beneficiary survey respondents were unable to adhere to the care plans recommended by their providers. The most common barriers to these respondents' ability to adhere to their providers' care plan were not being able to get an appointment for follow up care and not being able to pay. This suggests that inability to access care is negatively influencing beneficiaries' retention in SUD treatment.

F.2.2.1. Research Question 2.1a. Did the Demonstration increase adherence to SUD treatment?

Exhibit F.62. Initiation of Alcohol and Other Drug Dependence Treatment (IET-AD)



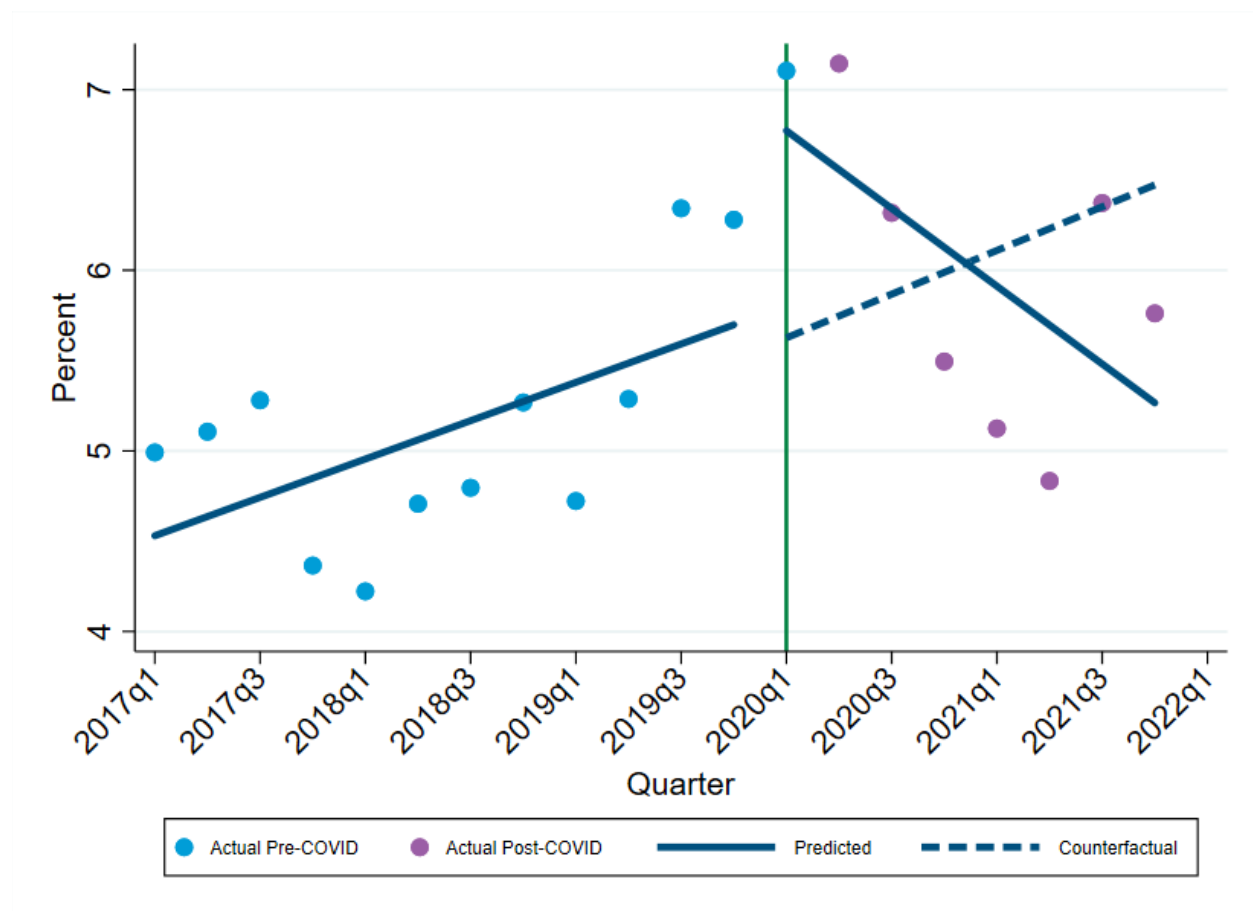
This quarterly metric was adapted from SUD Monitoring Metric #15 which is an annual metric. The target population for this metric is Medicaid beneficiaries ages 18 and older, enrolled for any amount of time during the quarter, who had a new episode of alcohol or other drug (AOD) abuse or dependence.¹¹⁸ Exhibit F.62 shows that the observed percentage of beneficiaries with a new episode of AOD abuse or dependence who received initiation of AOD treatment increased over time during both the pre- and post-Demonstration periods, and the rate of increase was smaller under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was an increasing trend over time under

¹¹⁸ This is the same target population used in SUD Monitoring Metric #15.

the Demonstration. The rate of increase under the Demonstration was smaller than the counterfactual.^{119, 120, 121}

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.63. Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)



¹¹⁹ A potential and partial explanation of the fluctuations observed over time is that this is an annual monitoring metric and, when adapting an annual measure to be a quarterly measure, we had to allocate observations in a calendar year to four quarters, which introduced random variation across quarters.

¹²⁰ The SUD initiation treatment measure under Research Question 1.1 showed an increase. That measure was about the number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period. However, this measure was different from that measure and was about the percentage of beneficiaries with a new episode of AOD abuse or dependence who received initiation of AOD treatment.

¹²¹ Although this measure was about initiation of AOD treatment, because it was part of the SUD Monitoring Metric #15, which has two measures, this measure was given under this research question rather than under Research Question 1.1.

This quarterly metric was adapted from SUD Monitoring Metric #15 which is an annual metric. The target population for this metric is Medicaid beneficiaries aged 18 and older enrolled for any amount of time during the quarter, who had a new episode of alcohol or other drug (AOD) abuse or dependence.¹²² Exhibit F.63 shows that the observed percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.¹²³

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.64. Effect on Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Percentage of beneficiaries with a new episode of alcohol or other drug (AOD) abuse or dependence who received initiation of AOD treatment	↑	30.34	2.96 (1.95)	-0.21 (0.41)
Percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit	↑	5.11	1.48* (0.79)	-0.34** (0.14)

* Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

¹²² This is the same target population used in SUD Monitoring Metric #15.

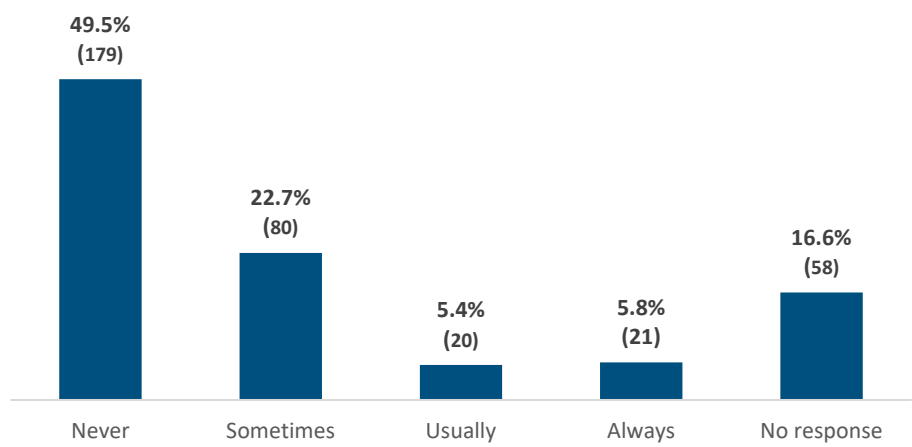
¹²³ A potential and partial explanation of the fluctuations observed over time is that this was an annual monitoring metric and, when adapting an annual measure to be a quarterly measure, we had to allocate observations in a calendar year to four quarters, which introduced random variation across quarters.

The first row of Exhibit F.64 shows that the immediate or early post-Demonstration period change in the percentage of beneficiaries with a new episode of AOD abuse or dependence who received initiation of AOD treatment (level change in the predicted trend figure), from a baseline mean of 30.34%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit D.5.

The second row of Exhibit F.64 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 1.48 percentage points in the percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit (level change in the predicted trend figure), from a baseline mean of 5.11%. However, this metric decreased by a statistically significant 0.34 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes did not result in a statistically significant change. However, if the current trend continues, while all other influential factors remain the same, the percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit could show a statistically significant net decrease in the future, as opposed to the Demonstration hypothesis. Subgroup analysis results are presented in Appendix Exhibit D.6.

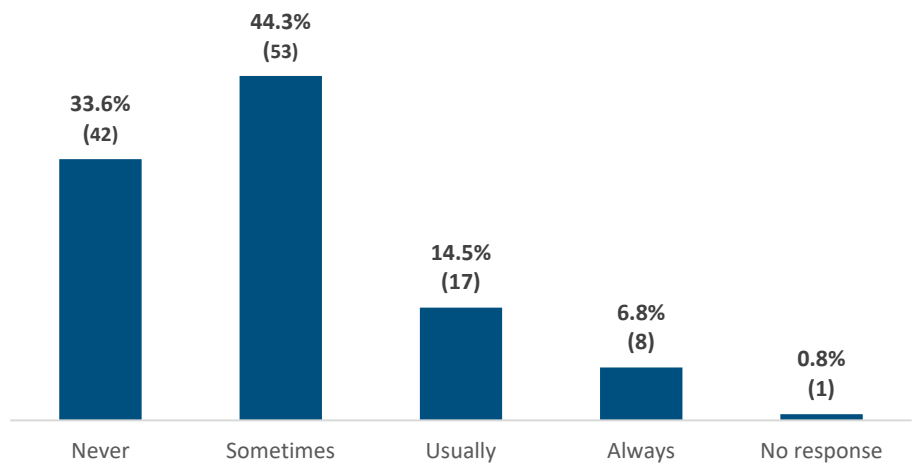
Perspectives of evaluation participants. Baseline beneficiary survey data suggest that adherence to the care plans recommended by their providers was moderate. Thirty-four percent of all survey respondents ($n = 121$) reported that they were unable to do what was necessary to follow their healthcare providers' treatment plans at least some of the time (Exhibit F.65). Sixty-six percent of these survey respondents ($n = 78$) reported that they were unable to do what was necessary to follow their treatment plan because they could not get an appointment for follow-up care at least some of the time (Exhibit F.66). Forty-eight percent of survey respondents ($n = 58$) who were unable to do what was necessary to follow their treatment plan at least some of the time reported they could not follow their treatment plans because they could not pay for something at least some of the time (Exhibit F.67).

**Exhibit F.65. How often was the following statement true for you during the past 12 months?
I was unable to do what was necessary to follow my healthcare provider’s treatment plans.**



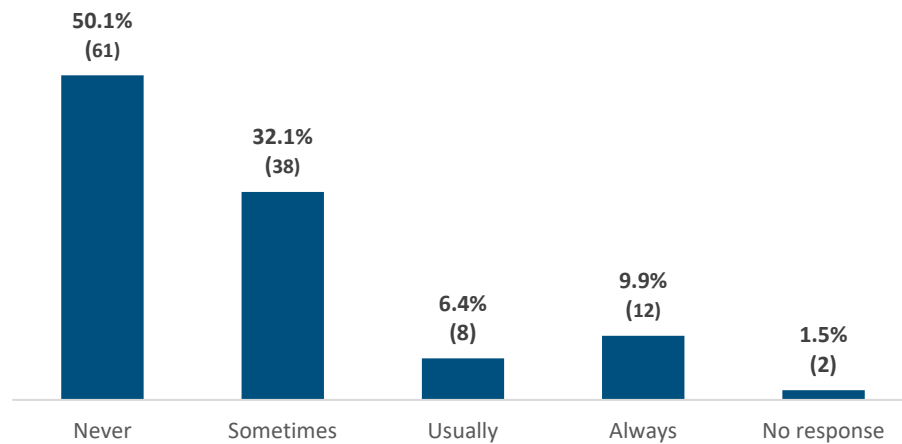
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.66 When you were unable to do what the healthcare provider told you to do, how often was it because you could not get an appointment you needed for follow-up care?



Note. Percentages are weighted and may not add up to 100% due to rounding.

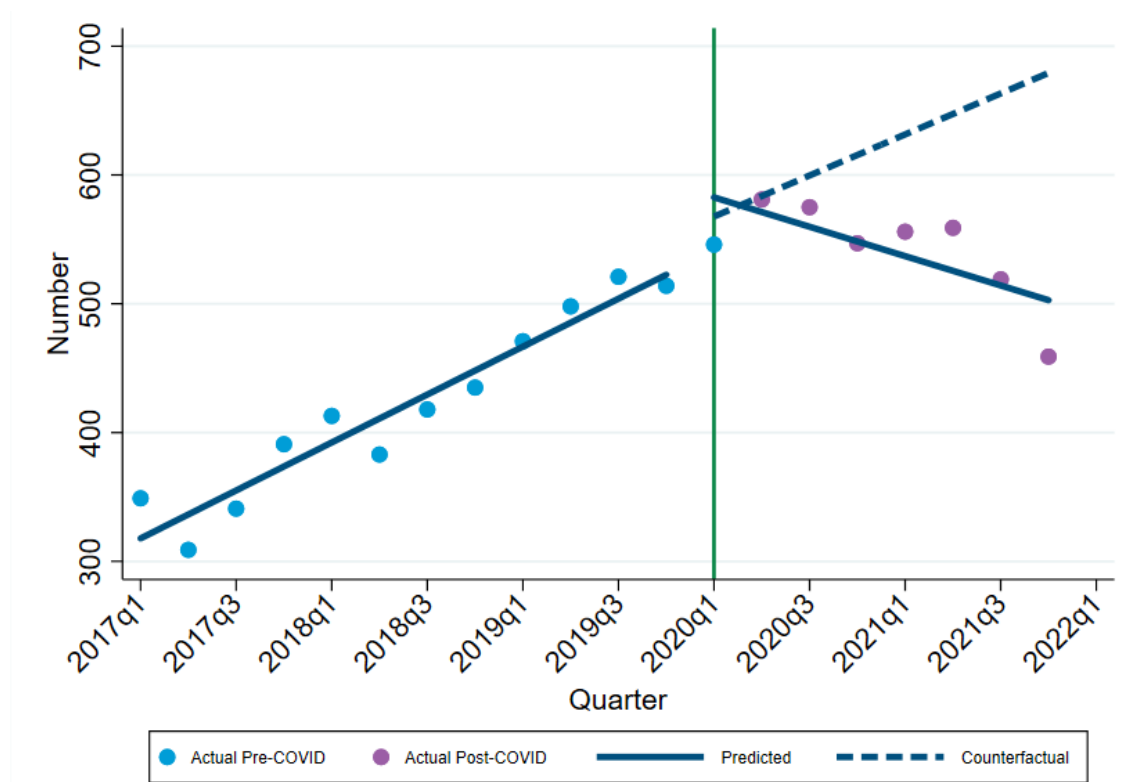
Exhibit F.67. When you were unable to do what the healthcare provider told you to do, how often was it because you could not pay for something, such as follow-up visits, medicine, or supplies?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.2.2.2. Research Question 2.1b. Did the Demonstration increase retention in SUD treatment?

Exhibit F.68. Continuity of Pharmacotherapy for Opioid Use Disorder (OD) (Number of Beneficiaries)



This quarterly metric was adapted from SUD Monitoring Metric #22 which is an annual metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the quarter who had a diagnosis of OUD and at least one claim for an OUD medication.¹²⁴ Exhibit F.68 shows that the observed number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted slightly upward under the Demonstration compared to what could have happened without the Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.^{125,126}

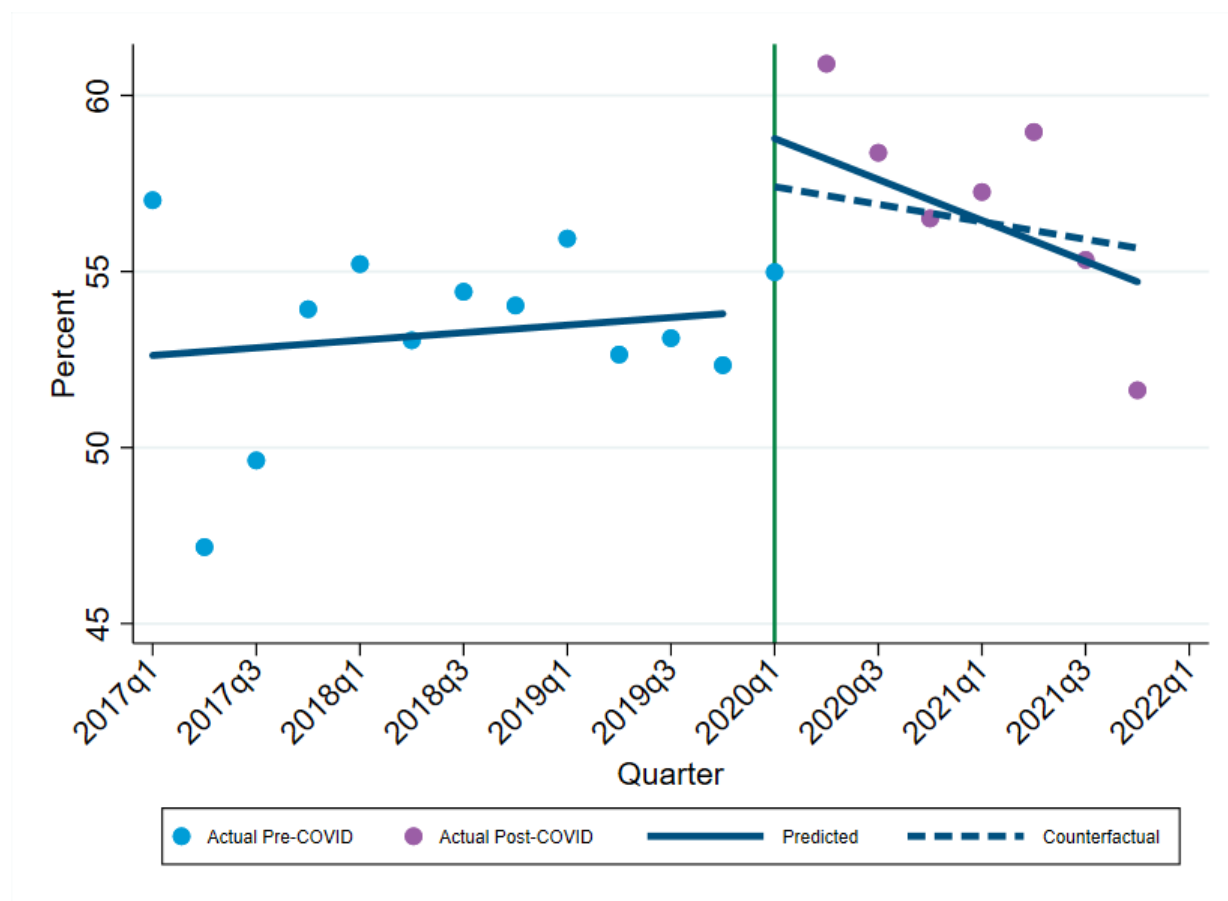
In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

¹²⁴ This is the same target population used in SUD Monitoring Metric #22.

¹²⁵ The quarter in this measure indicates the quarter in which pharmacotherapy started, and from the start date we counted 180 days, so the data for this measure extended into June 2022. We confirmed that missing data, arising from inadequacy of claims data run-out, cannot explain the decreasing trend during the Demonstration period.

¹²⁶ Because the quarter is defined based on when the pharmacotherapy started, the measure's datapoints in 2019 q3 and q4 reflect the continuation of pharmacotherapy observed under the Demonstration (at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days). This continuation of pharmacotherapy occurring in the Demonstration period may have been influenced by the Demonstration. However, there is no immediate change in pattern observed for 2019 q3 and q4 compared to the earlier periods; so this misalignment of the quarter assignment and the experience captured by the measure does not seem to have biased the evaluation.

Exhibit F.69. Continuity of Pharmacotherapy for OUD (Percentage of Beneficiaries)



This quarterly metric was adapted from SUD Monitoring Metric #22 which is an annual metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the quarter who had a diagnosis of OUD and at least one claim for an OUD medication.¹²⁷ Exhibit F.69 shows that the observed percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing trend over time under the Demonstration. The rate of decrease under the Demonstration was larger than the counterfactual.¹²⁸

¹²⁷ This is the same target population used in SUD Monitoring Metric #22.

¹²⁸ A potential explanation of the decrease is that, when adapting an annual measure to be a quarterly measure, we had to allocate observations in a calendar year to four quarters for both the numerator and the denominator, which resulted in the reduction in the ratio mechanically.

In interpreting this measure, note that the COVID-19 PHE coincided with an increase in substance use and associated deaths. SUD service utilization declined substantially in early 2020 due to the COVID-19 PHE and has not yet fully rebounded to pre-PHE levels in the District. The COVID-19 PHE impacted SUD service utilization patterns more than it did SMI/SED service utilization patterns.

Exhibit F.70. Effect on Continuity of Pharmacotherapy for OUD

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days	↑	420.25	42.25 (30.43)	-27.34*** (5.64)
Percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days	↑	53.21	1.70 (3.09)	-0.33 (0.55)

* Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.70 shows that the immediate or early post-Demonstration period change in the number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days (level change in the predicted trend figure), from a baseline mean of 420.25, was not statistically significant. However, this metric decreased by a statistically significant value of 27.34 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Subgroup analysis results are shown in Appendix Exhibit D.7.

The second row of Exhibit F.70 shows that the immediate or early post-Demonstration period change in the percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days (level change in the predicted trend figure), from a baseline mean of 53.21%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend

figure) for this metric was not statistically significant. Subgroup analysis results are presented in Appendix Exhibit D.8.

Exhibit F.71. Effect on Continuity of Pharmacotherapy for opioid use disorder, Individual Level

Measure Description	Hypothesized Direction	Baseline Mean (2017-2019)	Marginal Change Post-Demonstration from Logistic Regression
Quarterly indicator for whether a beneficiary has at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days	↑	0.53	0.00 (0.01)

* Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

We performed a supplemental individual-level analysis for this quarterly measure. Exhibit F.71 shows that the change in the probability of whether a beneficiary has continuity of pharmacotherapy for opioid use disorder, controlling for individual characteristics in a beneficiary-level logistic regression, was not statistically significant. This is in line with the mixed results of the District-level analysis above.¹²⁹

Perspectives of evaluation participants. As discussed in section F.2.2.1, thirty-four percent of all baseline survey respondents (n=259) reported they were unable to do what was necessary to follow their health care providers' treatment plans at least some of the time. Sixty-six percent of these survey respondents reported they were unable to do what was necessary to follow their treatment plan because they could not get an appointment for follow-up care at least some of the time (Exhibit F.66). This suggests that inability to access care is negatively influencing beneficiaries' retention in SUD treatment.

F.2.2.3. Research Question 2.1c. How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence adherence to and retention in SUD treatment?

Section F.2.1.9 describes the mechanisms through which the Demonstration removed the \$1 copay, provider and beneficiaries' awareness of this change, and perceptions of this change's influence on utilization of SUD treatment services.

¹²⁹ A graph is not included for this individual-level measure because with a 0/1 indicator the graph is similar to Exhibit F.81 on the percentage of beneficiaries with continuity of pharmacotherapy for opioid use disorder.

F.2.2.4. Research Question 2.1d. How does the availability of supported employment services influence adherence to and retention in SUD treatment?

SES for beneficiaries with SMI has been a longstanding service of DBH MHRS providers. Historically, these services were partially funded by local dollars and partially funded under the State Opioid Response (SOR) grant. Under the waiver, SES for SMI became eligible for Medicaid reimbursement. Medicaid reimbursement for SES for SMI became effective as of February 1, 2020, as specified in the Demonstration's first Chapter 86 rulemaking. SES for beneficiaries with SUD is a new benefit under the Demonstration. The District considered the waiver period a pilot for SES for SUD because the evidence base for SES is specific to mental health. The availability of SES for beneficiaries with SUD became available March 27, 2020, as specified in the Demonstration's second Chapter 86 rulemaking (effective April 24, 2020). SES service providers offer ongoing vocational and therapeutic supports to help beneficiaries prepare for, obtain, and maintain a part-time or full-time job that is permanent and garners at least minimum wage. These supports are provided to both beneficiaries and employers.

One positive outcome that evaluation participants reported relative to SES is that delivering the services virtually provided an opportunity to help clients improve the technological skills that may be needed during job interviews. However, evaluation participants primarily described significant barriers to delivering SES. These barriers included the following:

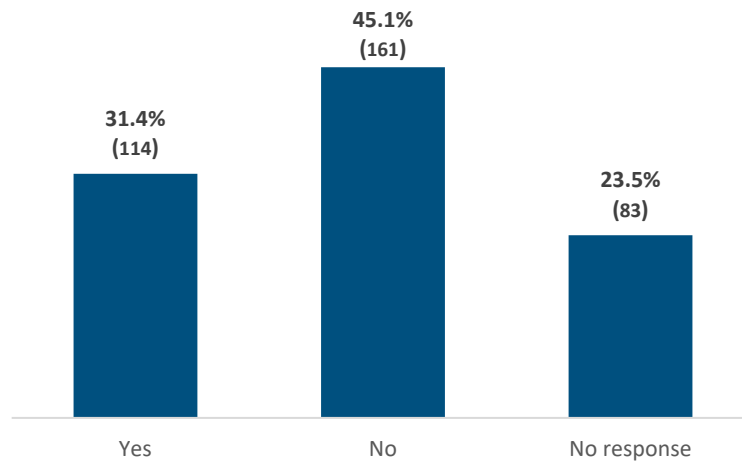
- The assessment process was burdensome and lengthy, so much so that clients who were interested in receiving the supports often did not complete it. As SES transitioned to a Medicaid-reimbursable benefit, additional requirements were implemented related to the assessment and referral process. It now includes an extensive assessment by the referring provider and DBH, which often takes a long time to conduct.
- The COVID-19 PHE made it difficult to sustain the services financially. Although some evaluation participants noted that they were able to successfully deliver SES virtually later in the PHE, early in the PHE it was difficult for providers to fund the employment specialist staff position, given that there were fewer clients interested in SES services, and job prospects were few during the early stages of the COVID-19 PHE.
- Low reimbursement rates made it difficult to sustain the services financially. Evaluation participants noted that the reimbursement rates for SES were insufficient for covering the costs associated with delivering the services. For example, one participant noted that every job they had supported a beneficiary in securing required \$9,000 in donated funds.

“[Telemedicine] works well for supported employment. We mostly do phone calls, but I’m trying to encourage more Zoom. We are getting more consumers now that [we] are engaging in-person, but we still have a lot of telemedicine. Sometimes the video part is hard for people, but we’ve been able to keep up. Interviews with employers can also use video calls. We also teach people how to use video features. It’s an ongoing process.”

“There are significant challenges with the new authorization process. DBH hired more people to assist, but communication breakdown and inability to get answers are very difficult and we have had very few referrals done in a timely manner. Having the right thing is also difficult; confusion about what was accepted as a submission to DBH was a holdup at first but now they will take psych evaluations and other things...Previously we did a quick 3- to 5-question tool, but now they want our diagnostic assessment and seem to do their own as well.”

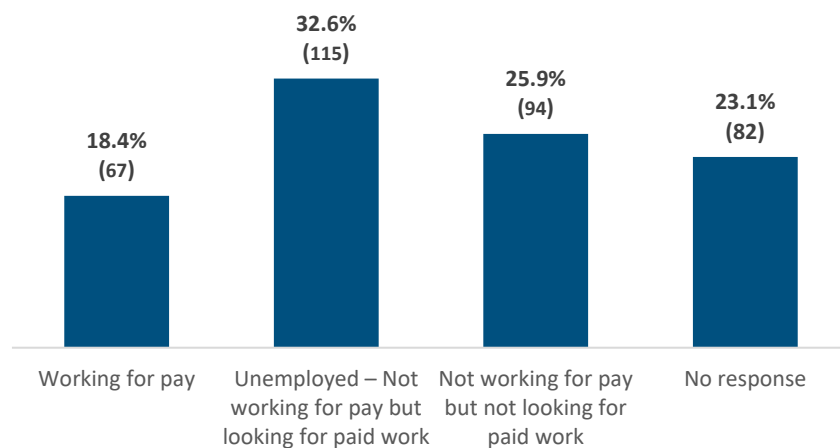
Beneficiary survey results suggest a need for SES, but there is mixed awareness of the availability of SES. Thirty-one percent ($n = 114$) of all survey respondents reported difficulty working at a job or business due to a physical, mental, or emotional condition lasting at least 6 months (Exhibit F.72). In addition, 33% ($n = 115$) of all survey respondents reported they were unemployed but looking for paid work (Exhibit F.73). However, only 45% of all survey respondents ($n = 163$) were aware they could get help finding a job through their healthcare providers. Forty-six percent ($n = 164$) of survey respondents reported they either could not or were unaware that they could get help finding a job through their healthcare providers (Exhibit F.74). However, forty-two percent ($n=68$) of these respondents reported that they had used this help (Exhibit F.75). Most respondents who had used SES found the services helpful; eighty-two percent ($n=56$) of these respondents reported that the services were very or somewhat helpful (Exhibit F.76).

Exhibit F.72. Because of a physical, mental, or emotional condition lasting 6 months or more, do you have any difficulty working at a job or business?



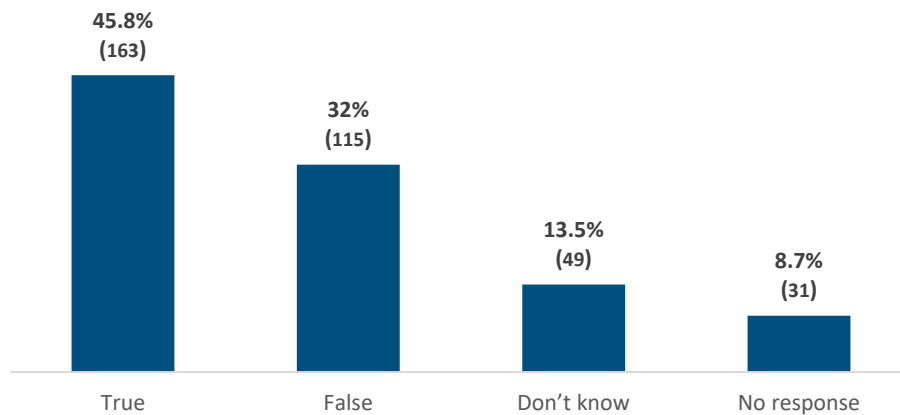
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.73. What is your current employment status?



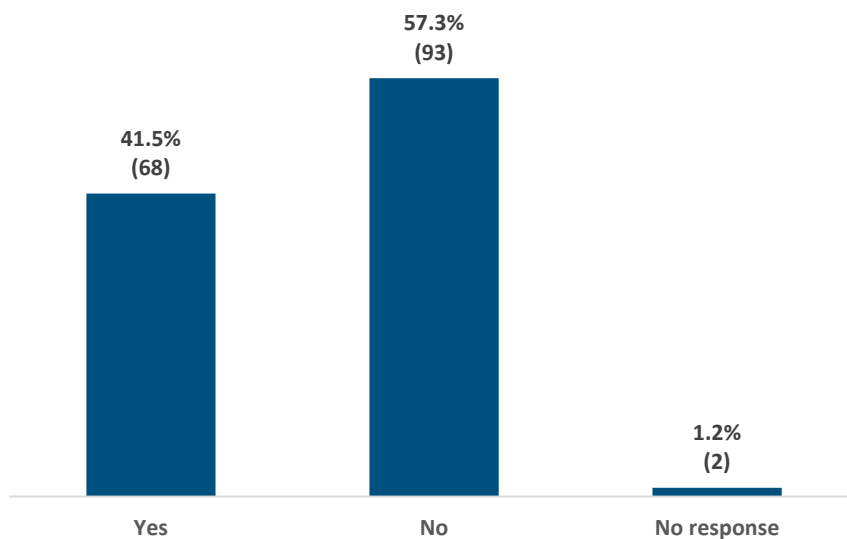
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.74. I can get help finding a job through my healthcare providers.



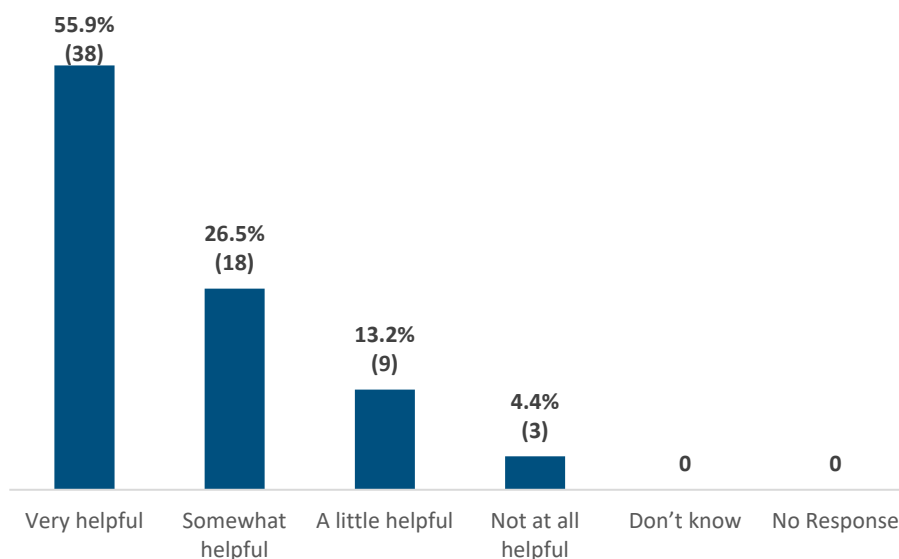
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.75. Have you used this help?



Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.76. How helpful was it?



Note. Percentages are weighted and may not add up to 100% due to rounding.

F.2.2.5. Research Question 2.1e. How does the availability of recovery support services influence initiation of, adherence to, and retention in SUD treatment?

Recovery support services (RSS) are a new benefit the District introduced under the Demonstration. These services became available to beneficiaries on January 1, 2020, via the Demonstration's first Chapter 86 rule. In addition, DBH implemented requirements via Chapter 63 that all core service agencies provide these services as a core service. Beneficiaries who have a diagnosis or have self-identified as having an SUD are eligible for RSS. These services are nonclinical strength-based supports designed to help beneficiaries maintain ongoing recovery and include services delivered by peer support specialists.

"We are happy that recovery support services are Medicaid reimbursable now. This opens up the opportunity for more people to access services and reduces interdependency. We have been certified to bill but hadn't been allowed, and now we can finally get paid for these services we've been providing for years."

Evaluation participants expressed positive views of the newly available RSS benefit but noted that there was limited use. Several challenges driving the limited use of RSS emerged in interview and listening session discussions. These challenges included:

- limited understanding of how peer RSS are organized under the waiver;
- RSS providers' older billing systems and limited administrative staff may make it difficult to adopt new billing practices; and

- restrictions on providers who are able to bill, the scope of billable services, and the locations where they can bill.

“We felt that peers should have a broader range of locations that they can work out of. For example, there are some [inaudible] in the city that have allowed them to work out of emergency rooms, programs for substance abuse, [and/or] psychiatric units. It was a good benefit to bring online, but the scope of the services was too limiting.”

“It was disappointing that we didn’t see some further unbundling to offer recovery support services, by organizations that are primarily peer operated. It’s still very much tied to organizations that are certified rehabilitation providers and largely clinically driven. We had hoped there would be more opportunity to see community recovery support services made available in a way that didn’t rely on connection to some other part of the treatment continuum.”

Billing for RSS may increase over time as District staff are actively encouraging providers to bill for RSS because the SOR grant funding that has historically supported peer recovery coaches is coming to an end.

F.2.2.6. Research Question 2.1f. How does the availability of transition planning services influence adherence to and retention in SUD treatment?

Section F.1.5.3. describes how the availability of transition planning services influences care coordination. These results are applicable to adherence to and retention in SUD treatment as evaluation participants noted that the challenges with transition planning benefit made it difficult to support continuity of care following an inpatient stay.

F.2.2.7. Research Question 2.1g. How does the availability of independent licensed behavioral health clinician services influence adherence to and retention in SUD treatment?

Section F.1.4.4. describes how the implementation of reimbursement for independent licensed behavioral health clinicians influenced access to behavioral health services. These results are applicable to SUD services as these newly Medicaid reimbursable clinicians are authorized to provide SUD treatment services. In addition, evaluation participants did not identify any differences in how these newly Medicaid reimbursable clinicians influenced SMI/SED versus SUD treatment services.

F.2.3. Goal 3. Reductions in Overdose Deaths, Particularly Those Due to Opioids

Takeaway: Goal not evaluated because of unavailability of data.



Hypothesis 3.1: The Demonstration will reduce the rate of overdose deaths.
Not evaluated in this report.

F.2.3.1. Research Question 3.1. Was there a decrease in the rate of overdose deaths?

This report did not evaluate this goal using a regression-based methodology because of the unavailability of the necessary mortality data. This measure will be evaluated in the summative evaluation report. As an alternative, Exhibit F.77 shows data on fatal opioid overdoses tracked by DBH between 2017 and 2022. The marked increase in fatal opioid overdoses starting in 2020 tracks national data showing a spike in overdose deaths after the start of the COVID-19 pandemic.¹³⁰ These trends are also likely to be reflected in the Medicaid population in the District.¹³¹

Exhibit F.77. Fatal Opioid Overdoses in the District, 2017–2022

Year	Fatal opioid overdoses
2017	281
2018	213
2019	281
2020	411
2021	427
2022	455

Source: Department of Behavioral Health Multi-Agency Opioid Dashboard. Internal data dashboard. Fatal opioid overdose profile.

¹³⁰ The Commonwealth Fund. (2021). *The spike in drug overdose deaths during the COVID-19 pandemic and policy options to move forward*. <https://www.commonwealthfund.org/blog/2021/spike-drug-overdose-deaths-during-covid-19-pandemic-and-policy-options-move-forward>

¹³¹ These figures pertain to individuals who had a history of SUD treatment through the public system. They don't necessarily account for all Medicaid beneficiaries who died of opioid overdose because they might not have ever had treatment.

F.2.4. Goal 4. Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services

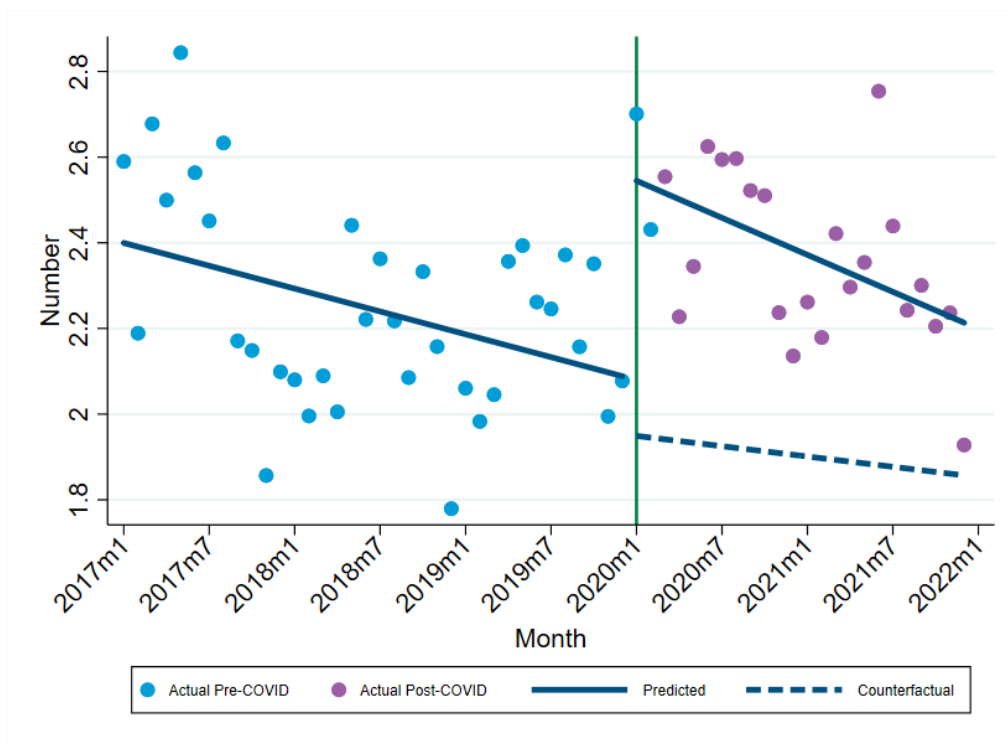
Takeaway: Results were mixed for the goal of reducing utilization of hospital EDs and inpatient hospital settings for treatment where the utilization was preventable or medically inappropriate through improved access to other continuum-of-care services. SUD-related inpatient and ED visits did not decrease. Inpatient hospital admissions for ambulatory care sensitive chronic conditions did not decrease.

Hypothesis 4.1: The Demonstration will reduce utilization of hospital EDs and inpatient hospital settings.

	– The total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period had a statistically significant increase in level and a statistically significant decrease in slope. However, the combined effect of the level and slope changes at the end of 2 years was a statistically significant increase. – For the total number of ED visits for SUD per 1,000 beneficiaries in the measurement period we detected a statistically significant increase in level, but did not detect a statistically significant change in slope. – For the inpatient hospital admissions for ambulatory care sensitive chronic conditions, we did not detect a statistically significant change in level or slope.
	– Evaluation participants perceived that the Demonstration has reduced ED service utilization by promoting increased access to crisis stabilization services.

F.2.4.1. Research Question 4.1a. Was there a reduction in ED or inpatient utilization for beneficiaries with SUD?

Exhibit F.78. Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries



This monthly metric was adapted from SUD Monitoring Metric #24 which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹³² Exhibit F.78 shows that the observed total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period decreased over time during both the pre- and post-Demonstration periods, and the rate of decrease was larger under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing trend over time under the Demonstration. The rate of decrease under the Demonstration was larger than the counterfactual.¹³³

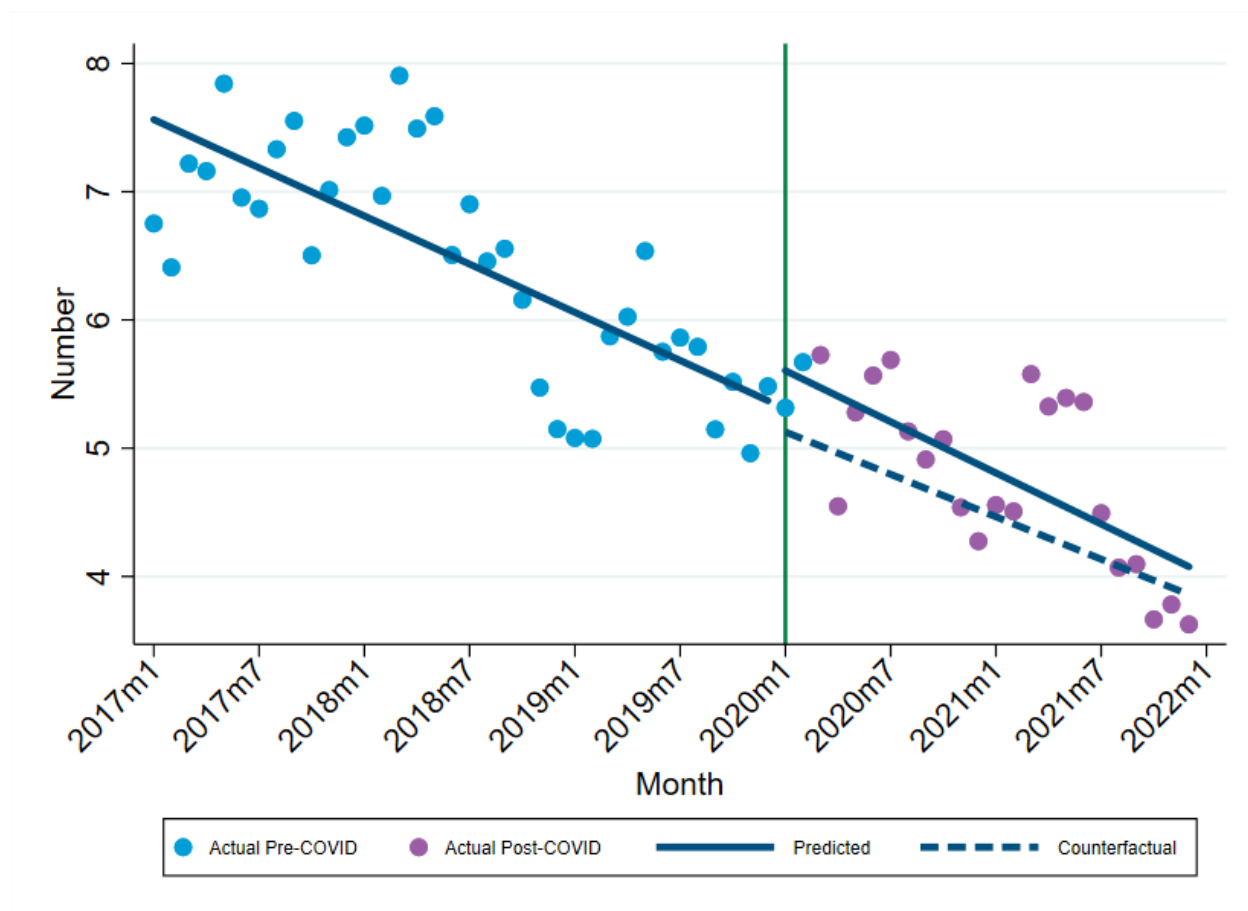
In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS

¹³² This is the same target population used in SUD Monitoring Metric #24.

¹³³ It should be noted that this measure, which is an SUD Monitoring Metric, included inpatient admissions in general and was not limited to inpatient treatment where the utilization was preventable or medically inappropriate. Therefore, the metric is not completely aligned with the goal it is intended to measure. It is also to be noted that this measure includes IMD admissions for which increases in the Demonstration period are an expected outcome.

beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹³⁴ This means more inpatient stays are likely to be observed.

Exhibit F.79. ED Utilization for SUD per 1,000 Medicaid Beneficiaries



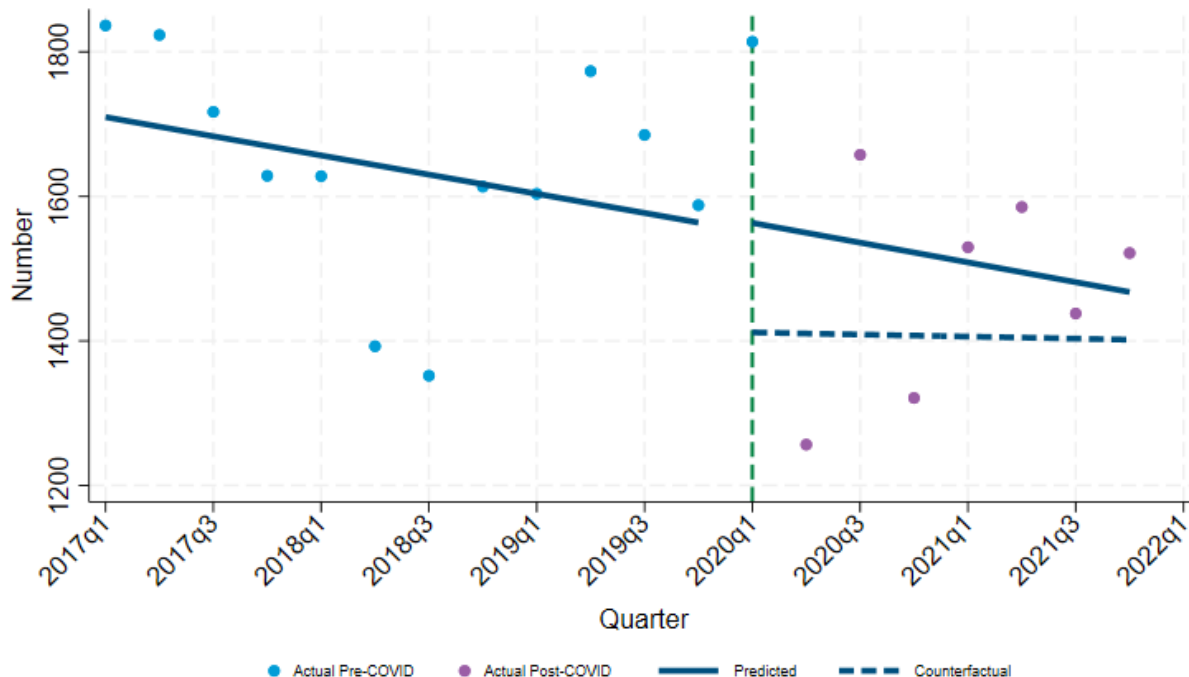
This monthly metric was adapted from SUD Monitoring Metric #23 which is also a monthly metric. The target population for this metric is all Medicaid beneficiaries enrolled for any amount of time during the month.¹³⁵ Exhibit F.79 shows that the observed total number of ED visits for SUD per 1,000 beneficiaries in the measurement period decreased over time during both the pre- and post-Demonstration periods, with similar rates of decrease. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted up under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing

¹³⁴ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

¹³⁵ This is the same target population used in SUD Monitoring Metric #23.

trend over time under the Demonstration. The rate of decrease under the Demonstration was similar to the counterfactual.

Exhibit F.80. Inpatient Hospital Admissions for Ambulatory Care Sensitive Chronic Conditions



This quarterly metric was an AIR-defined metric with input from DHCF (e.g., leveraging AHRQ PQI 92). The target population for this metric is beneficiaries with diagnosed SUD enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period. Exhibit F.80 shows that the inpatient hospital admissions for ambulatory care sensitive chronic conditions decreased over time during both the pre- and post-Demonstration periods, with similar rates of decrease. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted up under the Demonstration compared to what could have happened without the Demonstration. In contrast to the relatively stable trend in the counterfactual, there was a decreasing trend over time under the Demonstration.

Exhibit F.81. Effect on ED and Inpatient Utilization

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period	↓	2.24	0.62*** (0.08)	-0.03* (0.02)
Total number of ED visits for SUD per 1,000 beneficiaries in the measurement period	↓	6.47	0.50* (0.25)	-0.03 (0.04)
Inpatient Hospital Admissions for Ambulatory Care Sensitive Chronic Conditions	↓	1636.83	163.78 (124.00)	-12.23 (15.21)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

The first row of Exhibit F.81 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 0.62 in the total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period (level change in the predicted trend figure), from a baseline mean of 2.24. In addition, this metric decreased by a statistically significant value of 0.03 on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). Because the level and slope changes were in opposite directions and both the effects were statistically significant, the net effect at the end of the 2-year Demonstration period was assessed. The combination of the level change and 2 years (eight quarters) of additional quarterly changes resulted in a statistically significant increase of 0.37 at the 1% level. However, if the current trend continues, while all other influential factors remain the same, the total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period could show a statistically significant net decrease in the future in line with the Demonstration hypothesis. Subgroup analysis results are presented in Appendix Exhibit D.9.

The second row of Exhibit F.81 shows that the Demonstration was associated with a statistically significant immediate or early post-Demonstration period increase of 0.50 in the total number of ED visits for SUD per 1,000 beneficiaries in the measurement period (level change in the predicted trend figure), from a baseline mean of 6.47. However, the quarterly change (slope

change in the predicted trend figure) for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit D.10.

The third row of Exhibit F.81 shows that the immediate or early post-Demonstration period change in the number of inpatient hospital admissions for ambulatory care sensitive chronic conditions (level change in the predicted trend figure), from a baseline mean of 1,636.83, was not statistically significant. In addition, the quarterly change for this metric was not statistically significant. Subgroup analysis results are shown in Appendix Exhibit D.11.

F.2.4.2. Research Question 4.1b. How does the Demonstration influence preventable utilization of ED or inpatient care through improved access to other continuum-of-care services?

As noted in section F.1.1.2. and F.1.3.3., evaluation participants reported that the changes and clarifications related to crisis stabilization services have had a meaningful impact on reducing preventable utilization of ED care.

F.2.4.3. Research Question 4.1c. How does the Demonstration influence medically inappropriate utilization of ED or inpatient care through improved access to other continuum-of-care services?

As noted in section F.1.1.2. and F.1.3.3., evaluation participants reported that the changes and clarifications related to crisis stabilization services have had a meaningful impact on reducing inappropriate utilization of ED care.

F.3.5. Goal 5. Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate

Takeaway: The Demonstration has not yet achieved the goal of fewer readmissions. The measure used was SUD Monitoring Metric #25; it looked at all-cause readmissions and was not limited to readmissions that were preventable or medically inappropriate. For context, note that the COVID-19 PHE impacted SUD service utilization considerably in the District, and more than it impacted SMI/SED service utilization.

Hypothesis 5.1: The Demonstration will decrease preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD.



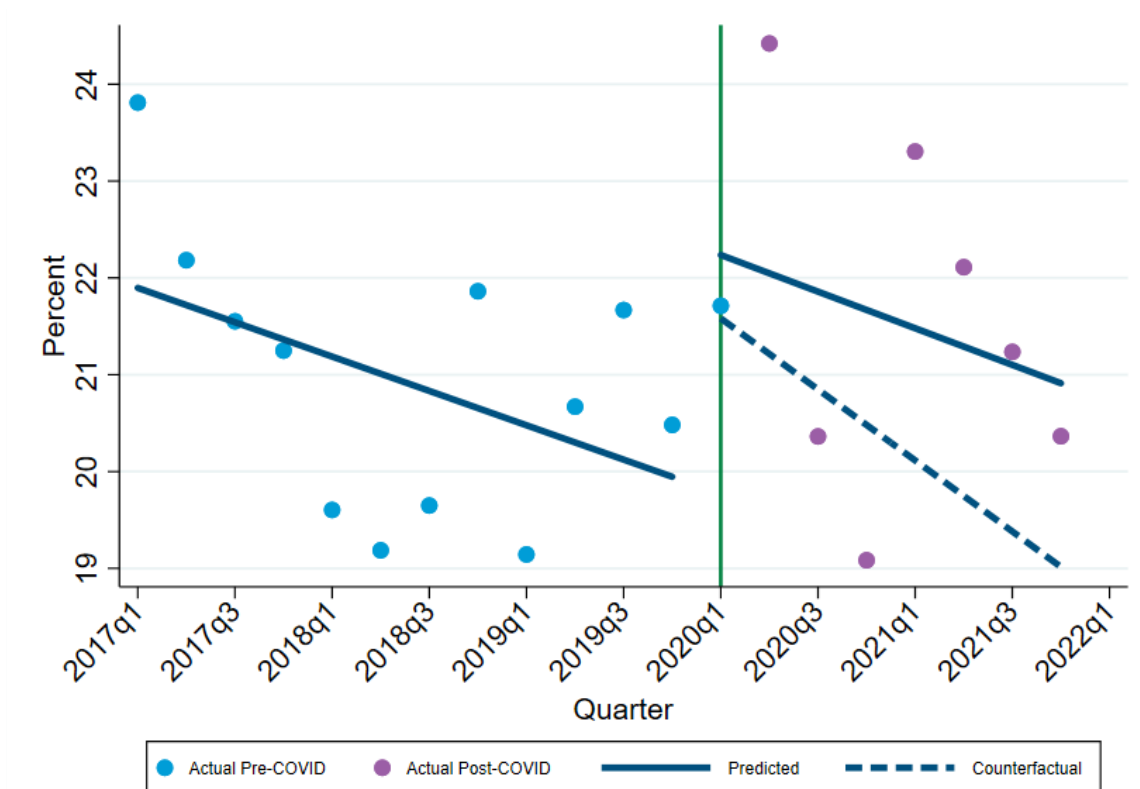
– For the rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD, we did not detect a statistically significant change in level or slope.



– According to evaluation participants, limited supply of comprehensive outpatient programs makes it difficult to prevent unnecessary readmissions.

F.3.5.1. Research Question 5.1. Was there a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD?

Exhibit F.82. Readmissions Among Beneficiaries With SUD



This quarterly metric was adapted from SUD Monitoring Metric #25 which is an annual metric. The target population for this metric is Medicaid beneficiaries, with an SUD diagnosis, enrolled for any amount of time during the quarter, with an index hospitalization in the quarter.¹³⁶ Exhibit F.82 shows that the observed rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD decreased over time during both the pre- and post-Demonstration periods, and the rate of decrease was slightly smaller under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted upward under the Demonstration compared to what could have happened without the Demonstration. Similar to the counterfactual, there was a decreasing trend over time under the Demonstration. The rate of decrease under the Demonstration was smaller than the counterfactual.

In interpreting this measure, note that there is a change in the composition of the population included between the pre- and post-Demonstration periods: The coverage of beneficiaries ages 21–64 receiving care via IMDs increased in the post-Demonstration period, with FFS beneficiaries ages 21–64 becoming newly eligible for the service under the Demonstration.¹³⁷ This means more opportunity to observe both index admissions and readmissions in the data. It is possible that the newly covered beneficiaries are more likely to have readmissions because they may be less likely to receive follow-up care than previously covered beneficiaries.

Also note that this metric is not well aligned to the goal because the numerator of the metric is not limited to preventable or medically inappropriate readmissions but includes acute readmissions for any diagnosis (i.e., all-cause readmissions).

Exhibit F.83. Effect on Readmissions Among Beneficiaries With SUD

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD	↓	20.92	0.48 (1.71)	0.18 (0.22)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

¹³⁶ This is the same target population used in SUD Monitoring Metric #25.

¹³⁷ Prior to the Demonstration, MCO beneficiaries were eligible to receive up to 15 days of stay in IMDs as an “in lieu of” benefit.

Exhibit F.83 shows that the immediate or early post-Demonstration period change in the rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD (level change in the predicted trend figure), from a baseline mean of 20.92%, was not statistically significant. In addition, the quarterly change (slope change in the predicted trend figure) for this metric was not statistically significant.¹³⁸ Subgroup analysis results are presented in Appendix Exhibit D.12.

Perspectives of evaluation participants. See section F.1.2.1. for a discussion of evaluation participants' perspectives on whether the Demonstration decreased preventable readmissions.

F.3.6. Goal 6. Improved access to care for physical health conditions among beneficiaries with SUD

Takeaway: The Demonstration has not yet achieved the goal of improving access to care for physical health conditions among beneficiaries with SUD.

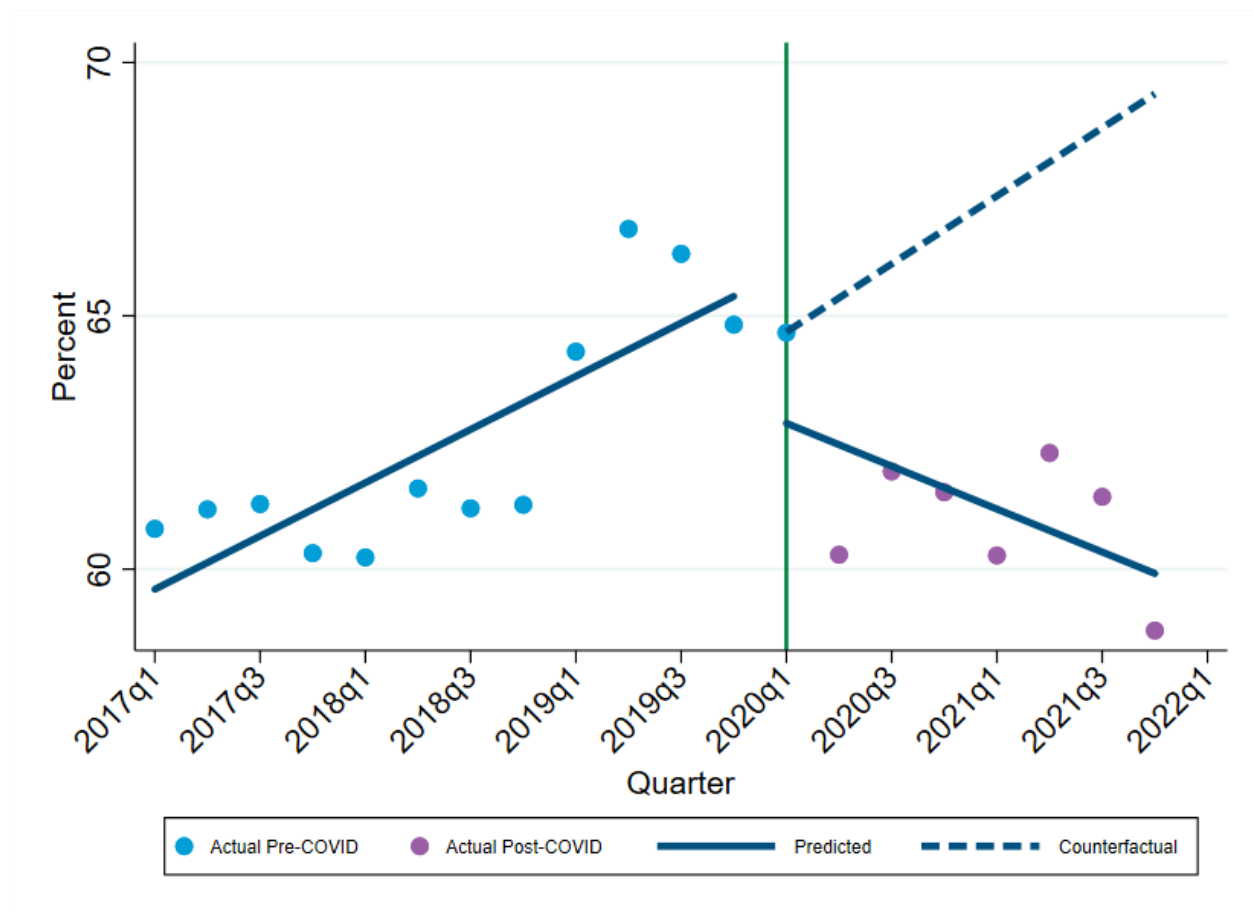
Hypothesis 6.1: The Demonstration will increase access to care for physical health conditions among beneficiaries with SUD.

	– For the percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period, we did not detect a statistically significant change in level, but did detect a statistically significant decrease in slope.
	– Few evaluation participants who were providers reported that they had increased integration of primary and behavioral health care under the Demonstration. – Only half of beneficiary survey respondents indicated that they have received primary and behavioral health care from the same provider.

¹³⁸ It is important to note that this measure captures all-cause readmissions rather than preventable or medically inappropriate readmissions; thus, the goal may not be adequately captured by the measure.

F.3.6.1. Research Question 6.1a. Was there an increase in access to care for physical health conditions among beneficiaries with SUD?

Exhibit F.84. Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD



This quarterly metric was adapted from SUD Monitoring Metric #32 which is an annual metric. The target population for this metric is Medicaid beneficiaries, with an SUD diagnosis, enrolled for any amount of time during the quarter.¹³⁹ Exhibit F.84 shows that the observed percentage of Medicaid beneficiaries with an SUD who had an ambulatory or preventive care visit during the measurement period increased over time during the pre-Demonstration period but decreased over time under the Demonstration. A comparison of the predicted trend and the counterfactual trend during the post-Demonstration period suggests that the trend shifted downward under the Demonstration compared to what could have happened without the

¹³⁹ This is the same target population used in SUD Monitoring Metric #32.

Demonstration. Contrary to the counterfactual, there was a decreasing trend over time under the Demonstration.

Exhibit F.85. Effect on Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD

Measure description	Hypothesized direction	Baseline mean (2017–2019)	Level change post-Demonstration	Additional quarterly change post-Demonstration
Percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period	↑	62.49	-0.71 (0.96)	-1.09*** (0.15)

*Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses.

Exhibit F.85 shows that the immediate or early post-Demonstration period change in the percentage of Medicaid beneficiaries with an SUD who had an ambulatory or preventive care visit during the measurement period (level change in the predicted trend figure), from a baseline mean of 62.49%, was not statistically significant. However, this metric decreased by a statistically significant 1.09 percentage points on average during each quarter of the first 2 years of the Demonstration (slope change in the predicted trend figure). The observed decrease in utilization of ambulatory health services may reflect the overall decrease in the utilization of these services on account of the COVID19 -pandemic.¹⁴⁰ Subgroup analysis results are shown in Appendix Exhibit D.13.

Perspectives of evaluation participants. Detailed discussion of beneficiaries’ receipt of behavioral health and physical health care from the same provider is in section F.1.4.12.

F.3.6.2. Research Question 6.1b. Did care coordination improve for beneficiaries with SUD?

The proposed measure for this research question was “use of new transition billing service by eligible beneficiaries.” However, no claims were billed for these services during this report’s measurement period. As described in Section F.1.5.3, few beneficiaries are eligible to receive the transition planning service. In addition, there was only one provider certified to deliver

¹⁴⁰ Mafi, J. N., Craff, M., Vangala, S., Pu, T., Skinner, D., Tabatabai-Yazdi, C., Nelson, A., Reid, R., Agniel, D., Tseng, C.-H., Sarkisian, C., Damberg, C. L., & Kahn, K. L. (2022). Trends in US ambulatory care patterns during the COVID-19 pandemic, 2019–2021. *JAMA*, 327(3), 237–247.

these services in the District, and their ability to identify and provide services to eligible beneficiaries was restricted by the service definition and COVID-19 restrictions that prevented in-person entry to the inpatient provider. Therefore, this report did not evaluate this goal. This measure will be evaluated in the summative evaluation report.

Perspectives of evaluation participants. See section F1.5.3. for detailed discussions of provider and beneficiary perspectives and experiences of care coordination under the Demonstration.

F.3.6.3. Research Question 6.1c. How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SUD?

Section F.1.5.4 describes how changes in care coordination infrastructure influenced care coordination in the District.

F.3.6.4. Research Question 6.1d. How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SUD?

Section F.1.5.5. describes how the implementation of requirements for IMDs to conduct psychiatric and medical screenings influenced access to physical health care for beneficiaries in the District.

F.3. Effect on Costs

Sections F.3.1 and F.3.2 discuss the effect of the SMI/SED and SUD Demonstration components on total costs, costs related to the diagnosis and treatment of targeted conditions, and the sources of cost drivers, respectively. In Section F.3.3, the Demonstration's administrative costs PBPM are compared to the change in total costs PBPM to put the effect estimates from Section F.3.1 and F.3.2 in perspective.

Interpretation of cost analysis findings. The target population for the SMI/SED cost analysis is Medicaid beneficiaries with an SMI/SED diagnosis or treatment, and the target population for the SUD cost analysis is Medicaid beneficiaries with an SUD diagnosis or treatment. We used a repeated cross-sectional approach that does not require minimum enrollment durations for beneficiaries to be included in the analysis. Beneficiaries were included in the analysis during the first month in which a relevant SMI/SED or SUD diagnosis or treatment claim was observed and for up to 11 additional months that did not include a relevant diagnosis or treatment claim. Once an individual has a period of 1 year with no relevant diagnosis or treatment claim, that beneficiary is excluded from further analyses, unless and until they have a subsequent relevant diagnosis or treatment claim. Setting the inclusion criteria this way results in an analysis that represents the costs of serving individuals in the target population with active treatment needs.

We first present the yearly averages of all cost measures and the percentage change from 2018 to 2021. Then, for each cost measure, ordered by the research question, we provide a scatter plot to depict the average PBPM costs at different points in time during the pre- and post-Demonstration periods. We then provide a table of the key parameters of interest (regression coefficients and standard errors) from the two-part model, and the marginal effects of the Demonstration. The “marginal effect” on the variable called “Demonstration period” shown in the regression table section called “two-part model” is the policy estimate of interest. It shows the change in costs under the Demonstration. It should be noted that the regression analysis, based on pre- and post-Demonstration trends, was estimating associations and not the causal impact of the Demonstration in the absence of a comparison group. Any regression coefficient that was statistically significant at the 10% level or lower was considered as showing a statistically significant effect.

The results reported are from the preferred ITS model, which captures changes in outcome trends after controlling for seasonality and the number of COVID-19 deaths. During the Demonstration period, COVID-19 PHE-related reimbursement rate increases, enhanced FMAP, and inflation resulted in cost increases, which are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases in addition to Demonstration-related changes. (See Section D.6.2 for a detailed discussion of COVID-19 PHE-related changes to costs.)

F.3.1 SMI/SED Costs

Takeaway: Because the Demonstration was hypothesized to increase SMI/SED care utilization in post-Demonstration costs, an increase in SMI/SED treatment costs was expected. The total costs PBPM for SMI/SED increased in the post-Demonstration period. This increase was both because the likelihood of beneficiaries incurring a positive expenditure increased and PBPM costs increased for those who had positive expenditures. Although there was an increase in costs for SMI/SED treatment, there was no increase in costs for non-SMI/SED treatment. There was a decrease in outpatient ED costs. In interpreting these findings, note that COVID-19 PHE-related rate increases, enhanced FMAP, and inflation resulted in increases in costs, which are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases, in addition to Demonstration-induced utilization changes.



Total Costs PBPM:

- Total PBPM costs increased by \$115.94 in the post-Demonstration period.
- Total federal PBPM costs increased by \$190.29 in the post-Demonstration period.



Costs related to diagnoses and treatment of SMI/SED:

- There was no statistically significant change in the non-SMI costs PBPM in the post-Demonstration period.
- SMI costs PBPM increased by \$62.17 in the post-Demonstration period.
- IMD costs PBPM increased by \$6.78 in the post-Demonstration period.
- Non-IMD SMI/SED costs increased by \$57.65 in the post-Demonstration period.



Source of treatment cost drivers:

- Non-ED outpatient costs PBPM increased by \$65.54 in the post-Demonstration period.
- Outpatient ED costs PBPM decreased by \$6.93 in the post-Demonstration period.
- Inpatient costs PBPM increased by \$50.57 in the post-Demonstration period.
- There was no change in pharmacy costs PBPM in the post-Demonstration period.
- Long-term care costs PBPM increased by \$23.92 in the post-Demonstration period.

Exhibit F.86 presents the average PBPM costs of various types each year from 2018–2021 for the target population of SMI/SED beneficiaries. These costs are expressed in current dollars and not expressed in constant dollars, indexing for inflation.¹⁴¹

¹⁴¹ Consumer Price Index for All Urban Consumers (CPI-U) increased by 12.48% (from 247.867 to 278.802) from January 2018 to December 2021. <https://www.bls.gov/data/#prices>

Exhibit F.86. Annual Average PBPM Costs for the Target Population of SMI/SED Beneficiaries

		Pre-Demonstration (\$)		Post-Demonstration (\$)		Percentage change from 2018–2021
		2018	2019	2020	2021	
Total costs	Total costs	2,280.00	2,321.97	2,455.74	2,475.80	8.6%
	Total federal costs	1,670.98	1,706.85	1,923.58	1,945.45	16.4%
SMI/SED cost drivers	Non-SMI/SED costs	1,950.01	1,967.71	2,013.07	2,013.04	3.2%
	SMI/SED costs	320.10	346.62	430.79	452.84	41.5%
	IMD SMI/SED costs	9.19	.91	17.68	19.43	111.4%
	Non-IMD SMI/SED costs	312.21	339.13	418.67	440.63	41.1%
Type or source of care cost drivers	Non-ED outpatient costs	1,145.70	1,192.93	1,285.22	1,344.32	17.3%
	Outpatient ED costs	79.45	80.37	73.25	86.05	8.3%
	Inpatient costs	436.36	432.98	474.59	457.98	5.0%
	Pharmacy costs	262.12	270.13	271.47	251.16	-4.2%
	Long-term care costs	404.76	394.20	413.44	395.39	-2.3%
Target Population	Number of Unique beneficiaries	46,446	48,216	48,962	50,949	9.7%

Note. COVID-19 PHE-related rate increases, enhanced FMAP, and inflation, which resulted in increases in costs, are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases.

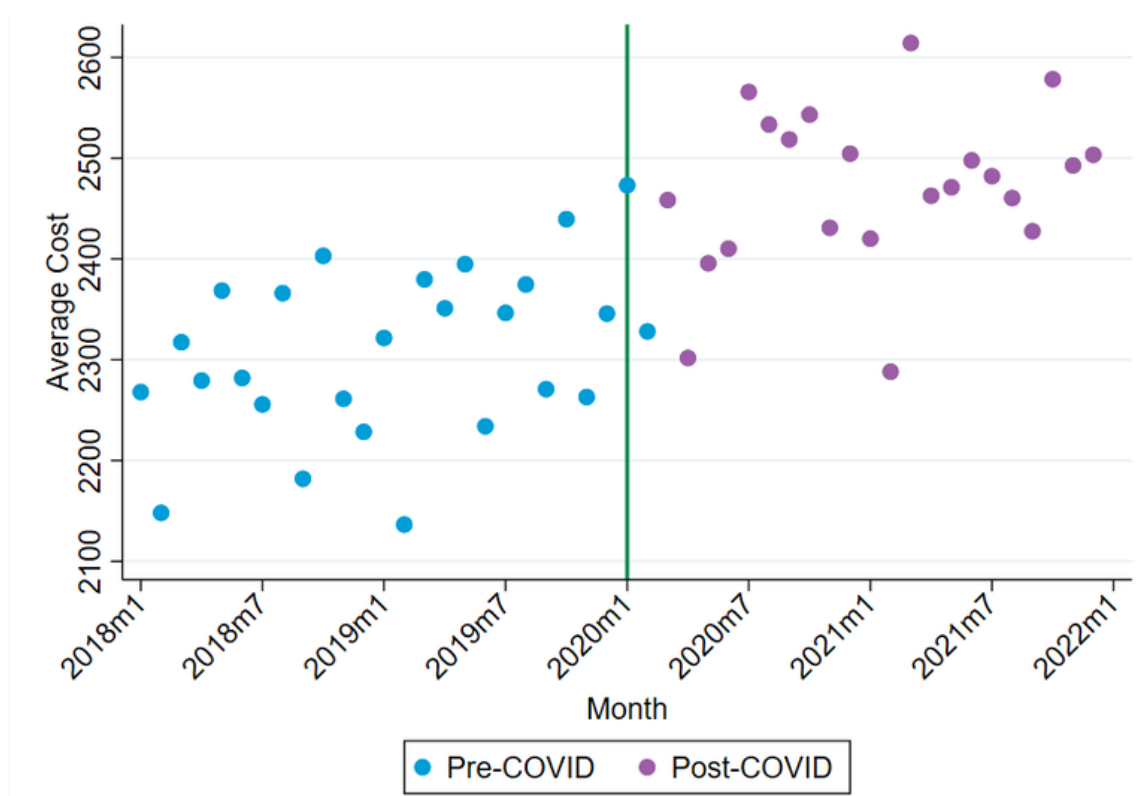
The average total costs PBPM increased from \$2,280.00 in 2018 to \$2,475.80 in 2021, which was an 8.6% increase. Total federal costs PBPM increased by 16.4% during the same period. SMI/SED costs increased by 41.5%, and most of the SMI/SED costs were non-IMD costs, which similarly increased by 41.1%. IMD costs were less than non-IMD costs, but they increased from \$9.19 in 2018 to \$19.43 in 2021. Both outpatient (ED and non-ED) and inpatient costs increased, but pharmacy and long-term care costs decreased in 2021 compared to 2018.

PBPM total cost and total federal cost measures covered only the cost of healthcare and excluded the Demonstration’s administrative costs. Administrative costs were not incorporated directly into total costs for the regression analysis because the two-part model we used for the regression analysis was designed to account for the large number of zero-cost observations

common in healthcare expenditure data.¹⁴² Section F.3.3 compares administrative costs PBPM allocated across all SMI/SED and SUD beneficiaries in the analytic sample to the marginal effects on total costs from the regression analysis to put the latter in perspective relative to the direct cost of implementing the Demonstration.

Research Question 1. Have total costs PBPM for the target population of SMI/SED beneficiaries increased, decreased, or stayed the same in the Demonstration period?

Exhibit F.87. Unadjusted Means of Total Cost Estimates for Individuals With SMI/SED, January 2018–December 2021

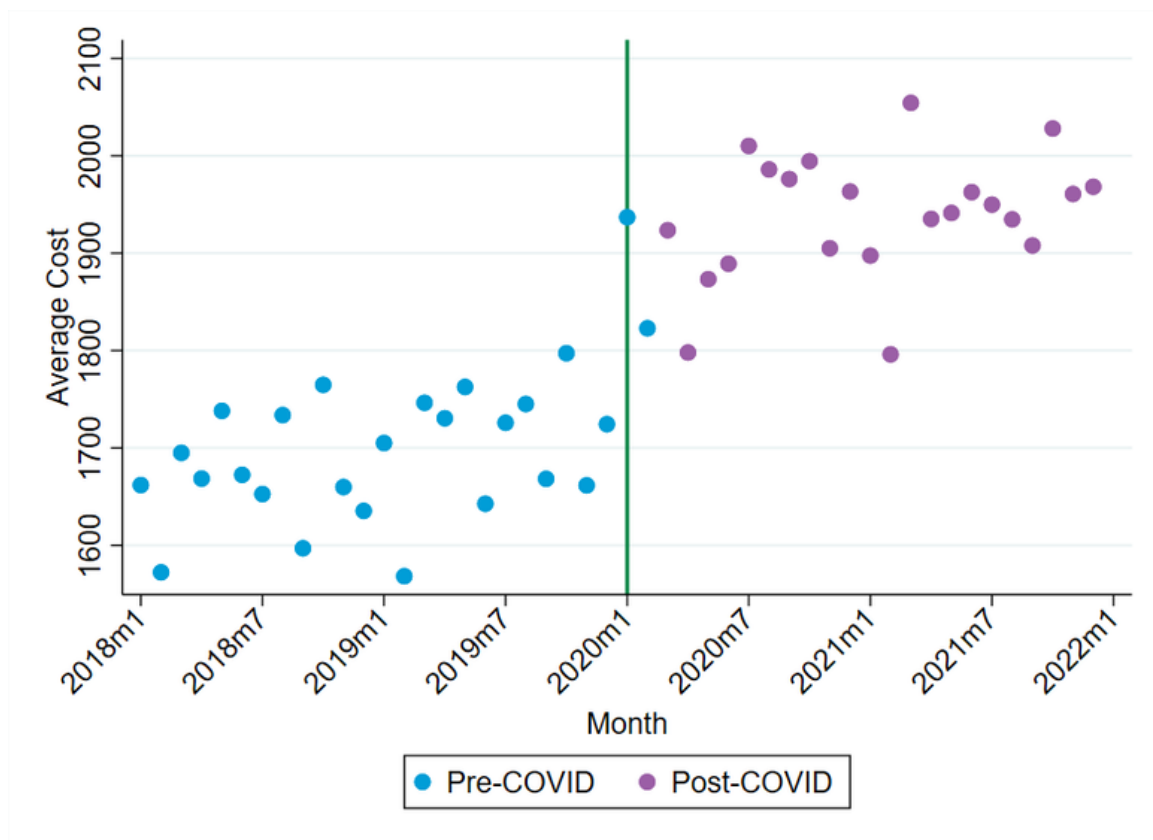


Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.87 shows that total costs PBPM increased over time during both the pre- and post-Demonstration periods.

¹⁴² Allocating administrative costs to all beneficiaries in the post-period would, by definition, change all zero-cost observations to positive-cost observations, making the two-part model infeasible. Furthermore, findings from a different regression model that incorporated the administrative costs through some allocation of the costs PBPM would not be directly comparable to the findings from the two-part model.

Exhibit F.88. Unadjusted Means of Total Federal Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.88 shows that total federal costs PBPM increased over time during both the pre- and post-Demonstration periods.

Exhibit F.89. Interrupted Time Series Results (Marginal Effects and Standard Errors), SMI/SED Demonstration

	Research Question 1 Change in total costs PBPM		Research Question 2 Change in SMI/SED treatment costs PBPM				Research Question 3 Drivers of total cost				
	Total costs	Total federal costs	Non-SMI/SED costs	SMI/SED costs	IMD SMI/SED costs	Non-IMD SMI/SED costs	Non-ED outpatient costs	Outpatient ED costs	Inpatient costs	Pharmacy costs	Long-Term care costs
Logit											
Coefficients											
Demonstration period	0.20*** (0.01)	0.20*** (0.01)	0.20*** (0.01)	0.10*** (0.01)	0.56*** (0.10)	0.10*** (0.01)	0.22*** (0.01)	-0.05*** (0.01)	0.16*** (0.02)	0.02* (0.01)	-0.04* (0.02)
Time (continuous)	0.03*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	0.01*** (0.00)	-0.03** (0.02)	0.01*** (0.00)	0.03*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.00** (0.00)	-0.01*** (0.00)
Demonstration period * time (continuous)	0.00* (0.00)	0.00* (0.00)	-0.02*** (0.00)	0.03*** (0.00)	0.07*** (0.02)	0.03*** (0.00)	0.01*** (0.00)	-0.02*** (0.00)	0.00 (0.00)	-0.01*** (0.00)	0.05*** (0.00)
Marginal effects											
Demonstration period	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.03*** (0.00)	0.00*** (0.00)	0.03*** (0.00)	0.04*** (0.00)	-0.00*** (0.00)	0.00*** (0.00)	0.00 (0.00)	-0.00 (0.00)
<i>Number of observations</i>	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671
GLM											
Coefficients											
Demonstration period	0.02*** (0.01)	0.08*** (0.01)	-0.04*** (0.01)	0.09*** (0.01)	-0.04 (0.10)	0.08*** (0.01)	0.01 (0.01)	-0.05*** (0.01)	-0.04* (0.02)	-0.02** (0.01)	0.08*** (0.01)
Time (continuous)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01*** (0.00)	0.01 (0.01)	0.01*** (0.00)	0.01*** (0.00)	0.02*** (0.00)	0.01** (0.00)	0.01*** (0.00)	0.00 (0.00)
Demonstration period * time (continuous)	0.02*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.01*** (0.00)	0.01 (0.02)	0.01*** (0.00)	0.02*** (0.00)	0.01*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.01*** (0.00)
Marginal effects											
Demonstration period	110.91*** (16.00)	208.71*** (12.37)	-53.87*** (19.65)	79.83*** (6.52)	-112.39 (990.27)	71.32*** (6.21)	49.83*** (8.20)	-28.18*** (9.62)	-285.03 (317.82)	0.45 (5.40)	805.71*** (85.36)
<i>Number of observations</i>	1,454,768	1,454,768	1,261,780	853,301	2,585	853,053	1,330,257	186,728	53,720	840,874	73,181

	Research Question 1 Change in total costs PBPM		Research Question 2 Change in SMI/SED treatment costs PBPM				Research Question 3 Drivers of total cost				
	Total costs	Total federal costs	Non-SMI/SED costs	SMI/SED costs	IMD SMI/SED costs	Non-IMD SMI/SED costs	Non-ED outpatient costs	Outpatient ED costs	Inpatient costs	Pharmacy costs	Long-Term care costs

Two-part model

Marginal effects

Demonstration period	115.94*** (13.08)	190.29*** (10.12)	-18.12 (13.97)	62.17*** (3.22)	6.78*** (1.34)	57.65*** (3.08)	66.54*** (6.20)	-6.93*** (1.32)	50.57*** (12.68)	0.69 (2.62)	23.92*** (6.24)
Number of observations	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671	1,785,671

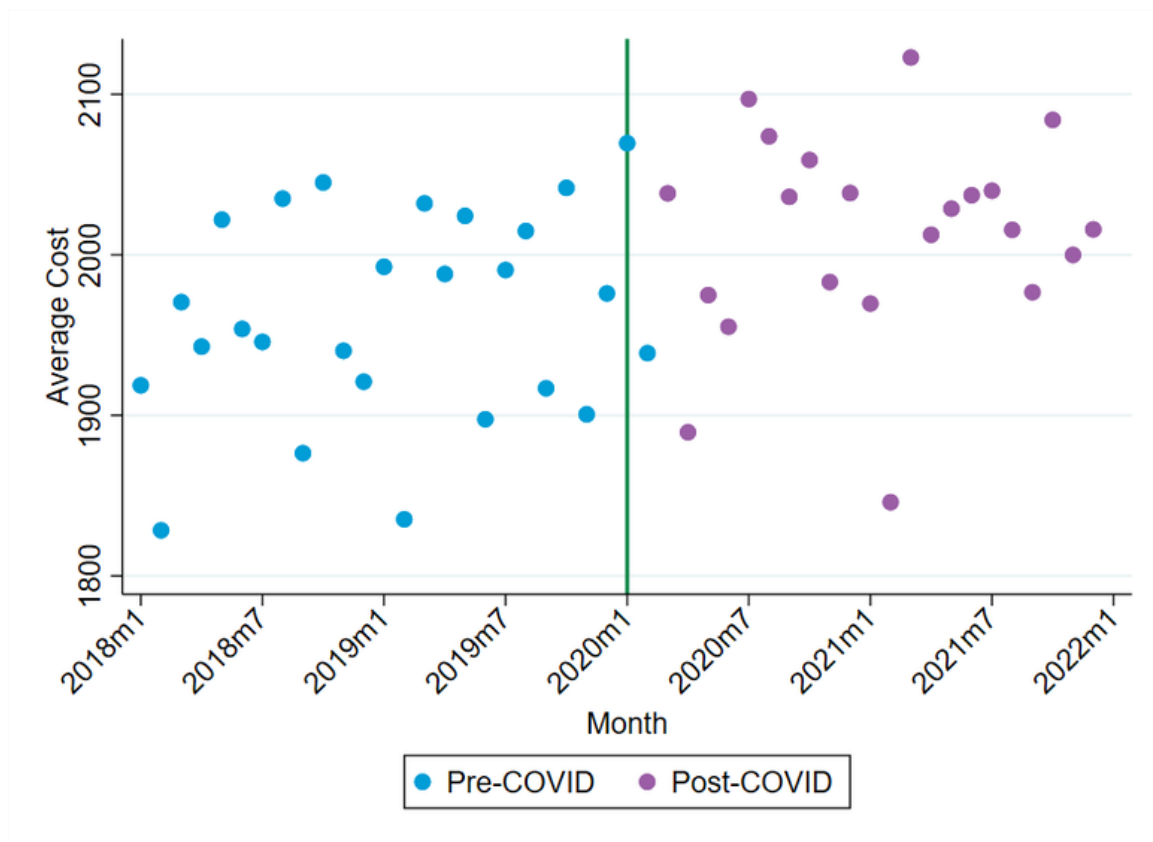
Note. ED = emergency department; GLM = generalized linear model; IMD = Institutions for Mental Diseases; SMI/SED = serious mental illness/serious emotional disturbance; SUD = substance use disorder. Standard errors in parentheses. * Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses. Where a statistically significant cell does not show a value different from 0.00, it is because the number at the third decimal was less than 5 and was rounded off.

Exhibit F.89 shows ITS analysis findings (marginal effects and standard errors) on total costs and total federal costs for beneficiaries with SMI/SED. Total costs PBPM increased by \$115.94 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in costs for those who already had a positive cost (\$110.91). The probability of a beneficiary having a positive cost (newly incurring healthcare costs) also increased by 3%. Total federal costs PBPM increased by \$190.29 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$208.71). The probability of a beneficiary having a positive cost also increased by 3%.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

Research Question 2. Have the costs related to the diagnosis and treatment of SMI/SED increased, decreased, or stayed the same during the Demonstration period?

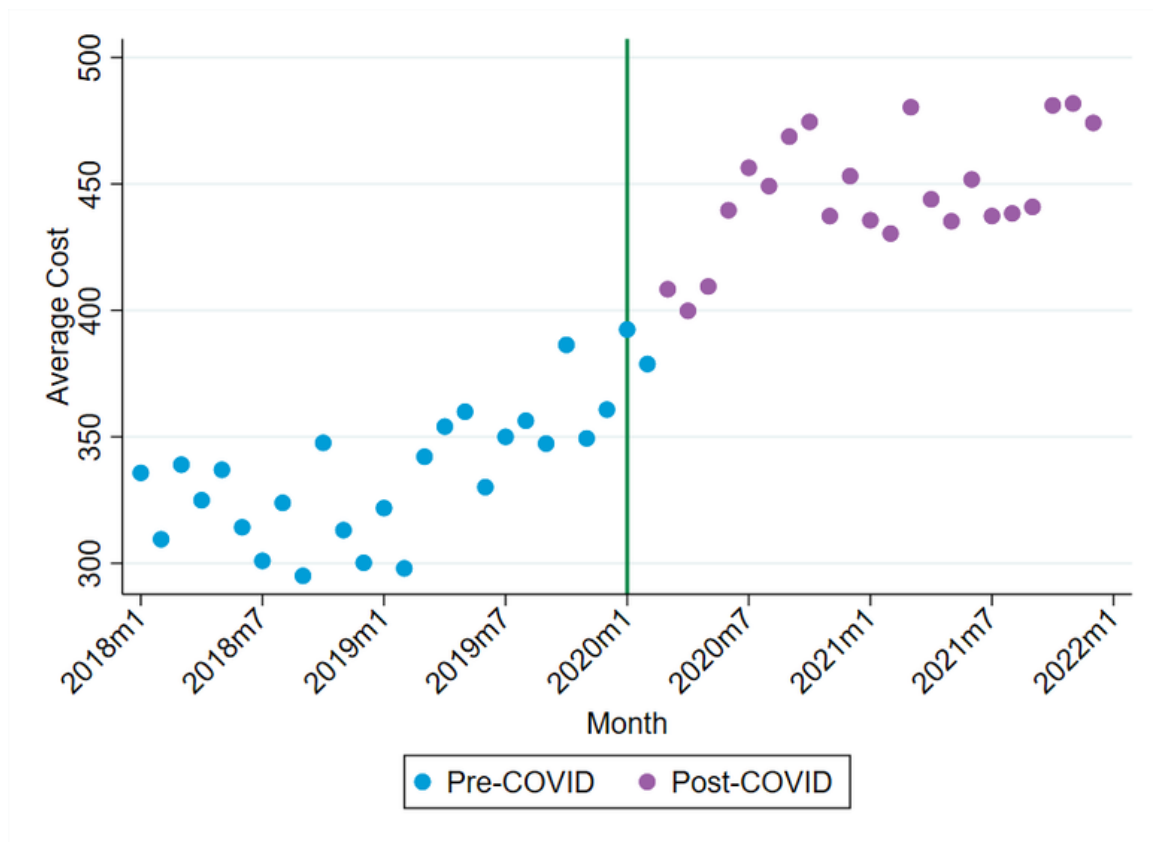
Exhibit F.90. Unadjusted Means of Non-SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.90 shows that non-SMI/SED costs PBPM did not show much change in trend over time during both the pre- and post-Demonstration periods.

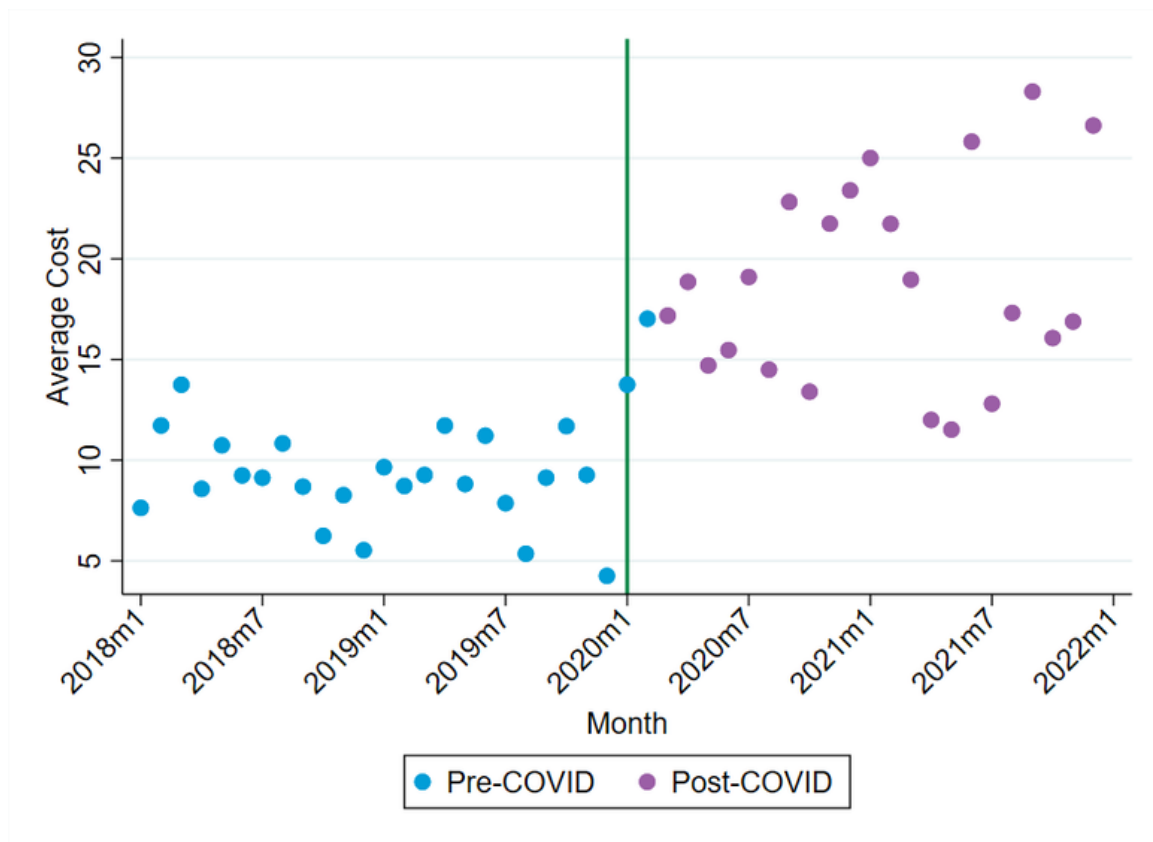
Exhibit F.91. Unadjusted Means of SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.91 shows that SMI/SED costs PBPM increased over time during both the pre- and post-Demonstration periods.

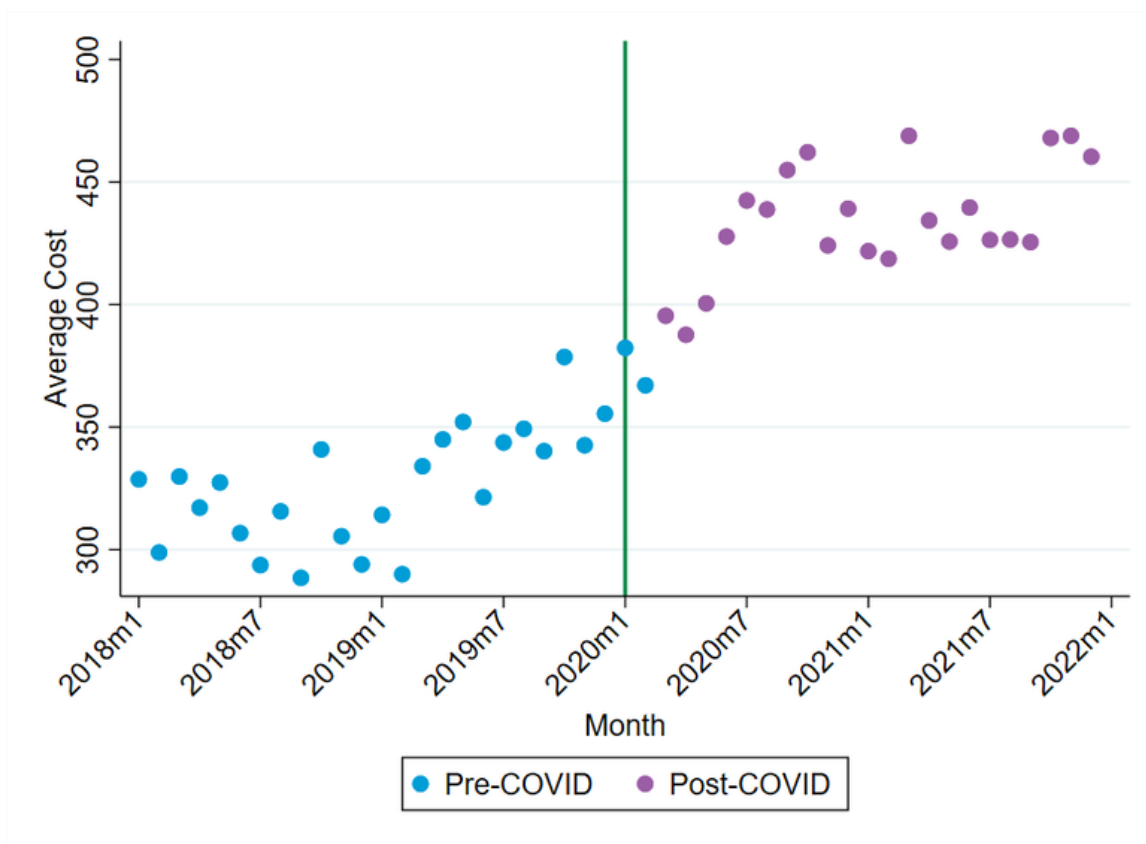
Exhibit F.92. Unadjusted Means of IMD SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.92 shows that IMD SMI/SED costs PBPM were relatively stable in the pre-Demonstration period and increased over time during the post-Demonstration period.

Exhibit F.93. Unadjusted Means of Non-IMD SMI/SED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.93 shows that non-IMD SMI/SED costs PBPM increased over time during both the pre- and post-Demonstration periods.

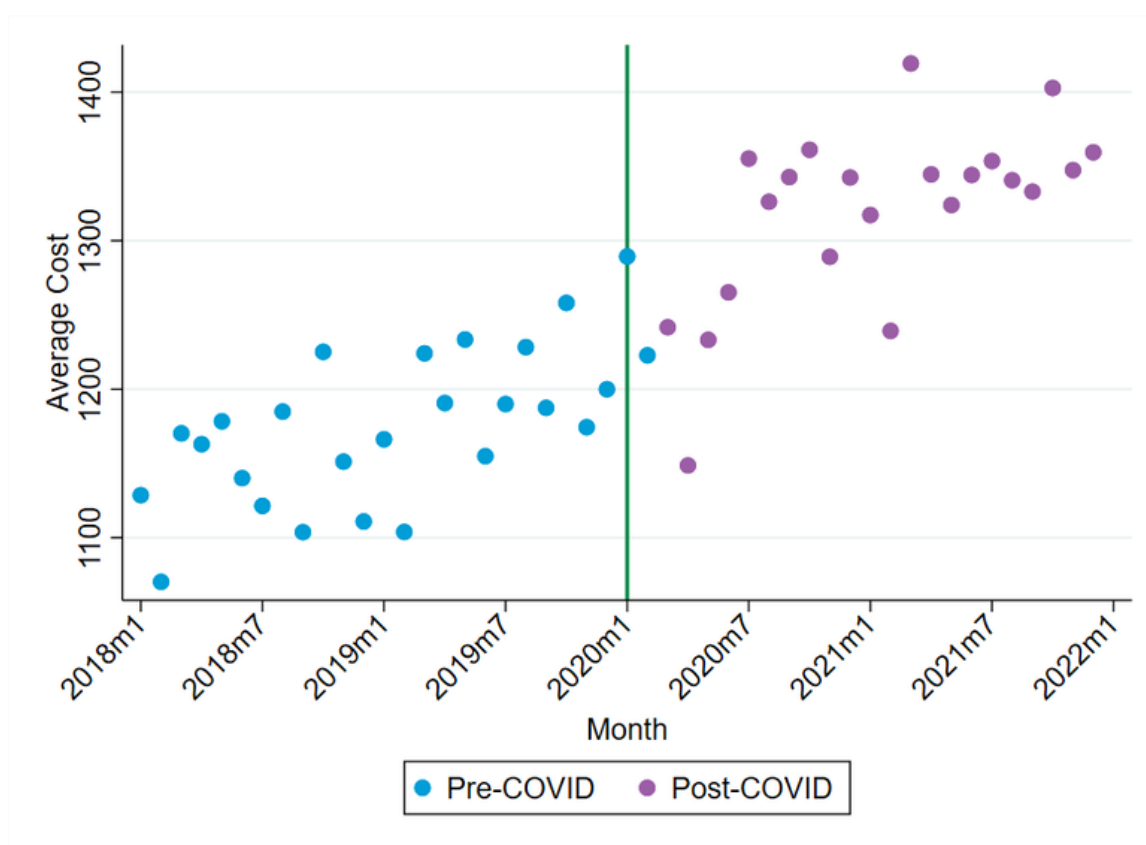
Exhibit F.89 shows ITS analysis findings (marginal effects and standard errors) on SMI/SED and non-SMI/SED costs for beneficiaries with SMI/SED. We did not detect a statistically significant change in non-SMI/SED costs PBPM in the post-Demonstration period. On the other hand, SMI/SED costs PBPM increased by \$62.17 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$79.83). The probability of a beneficiary having a positive cost also increased by 3%. IMD costs PBPM increased by \$6.78, which was statistically significant at the 1% level. Although there was no statistically significant change in cost for those who had a positive cost, the probability of a beneficiary having a positive cost increased. Non-IMD SMI/SED costs increased by \$57.65, which was statistically significant at the 1% level. Most of

this increase was from the increase in cost for those who had a positive cost (\$71.32). The probability of a beneficiary having a positive cost also increased by 3%.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

Research Question 3. What are the sources of treatment cost drivers for the target population of SMI/SED beneficiaries in the Demonstration period?

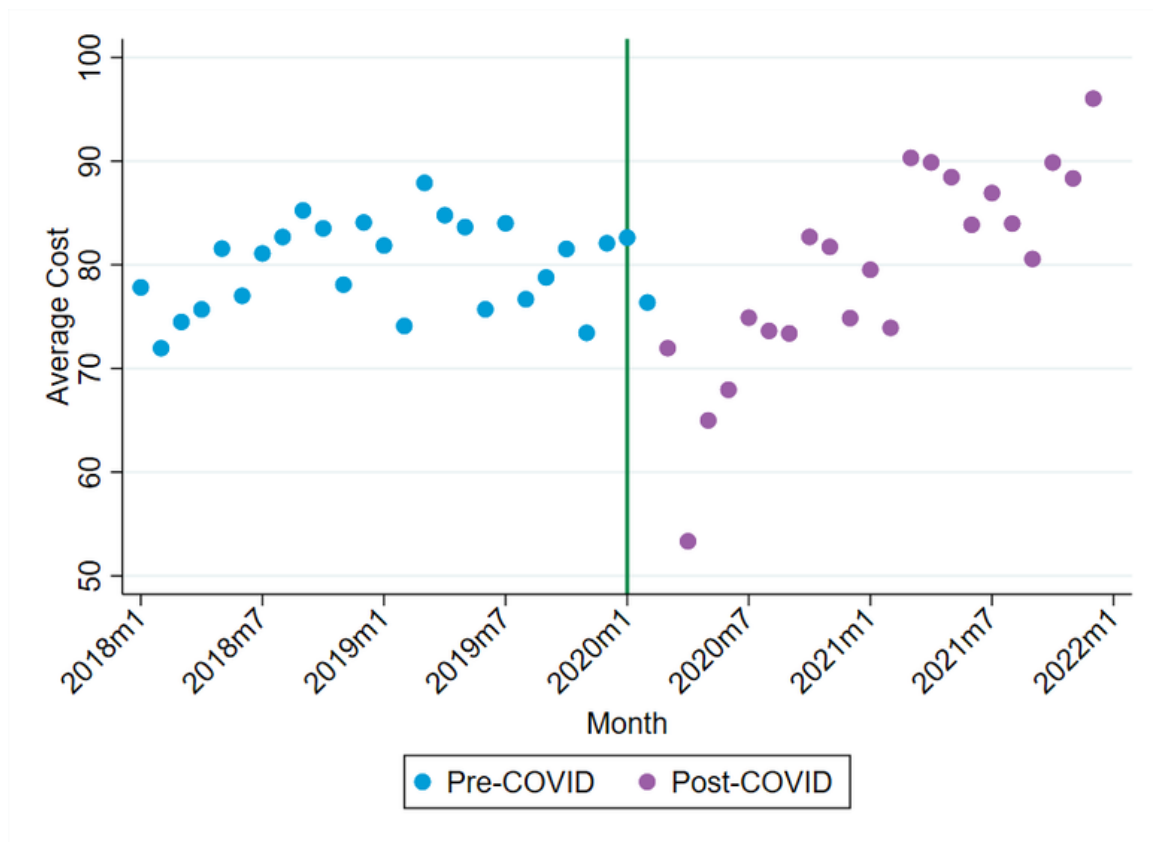
Exhibit F.94. Unadjusted Means of Non-ED Outpatient Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.94 shows that non-ED outpatient costs PBPM increased over time during both the pre- and post-Demonstration periods.

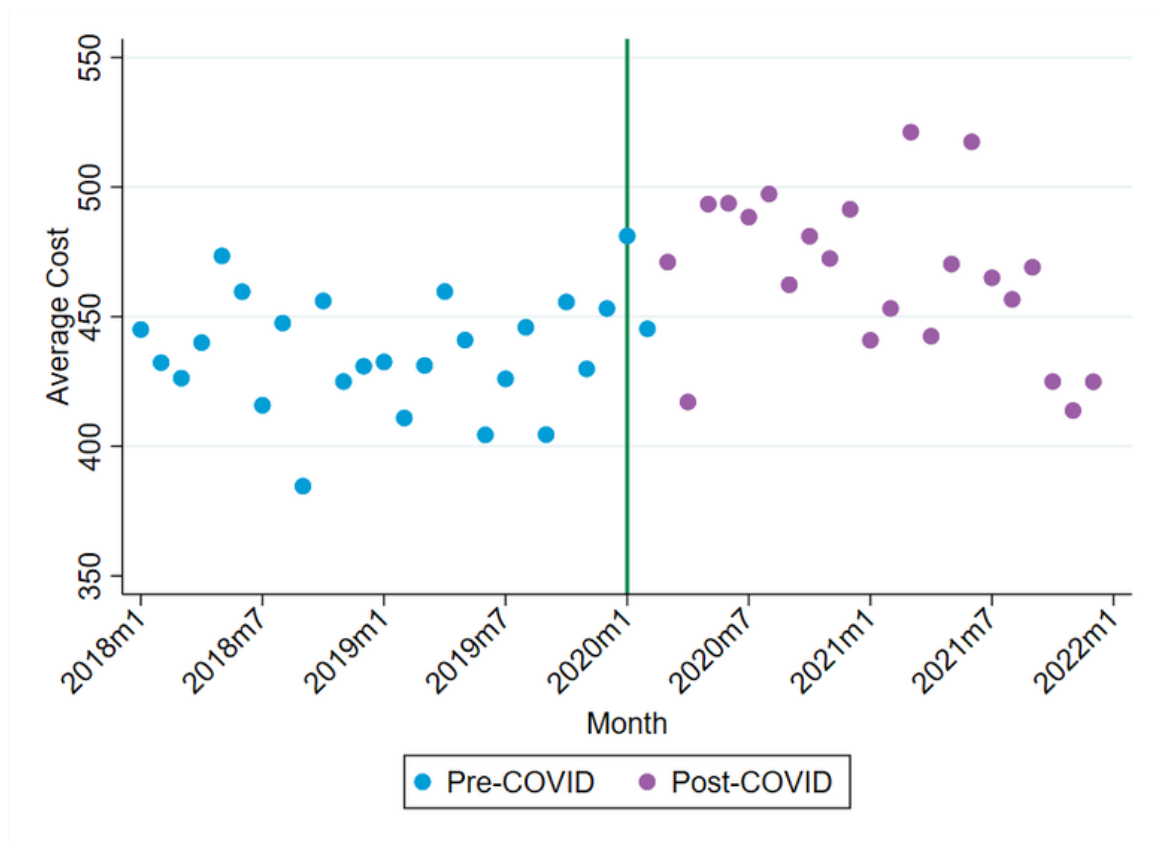
Exhibit F.95. Unadjusted Means of Outpatient-ED Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.95 shows that outpatient-ED costs PBPM remained stable during the pre-Demonstration period. They initially decreased over the post-Demonstration period and increased from the second half of 2020 onward.

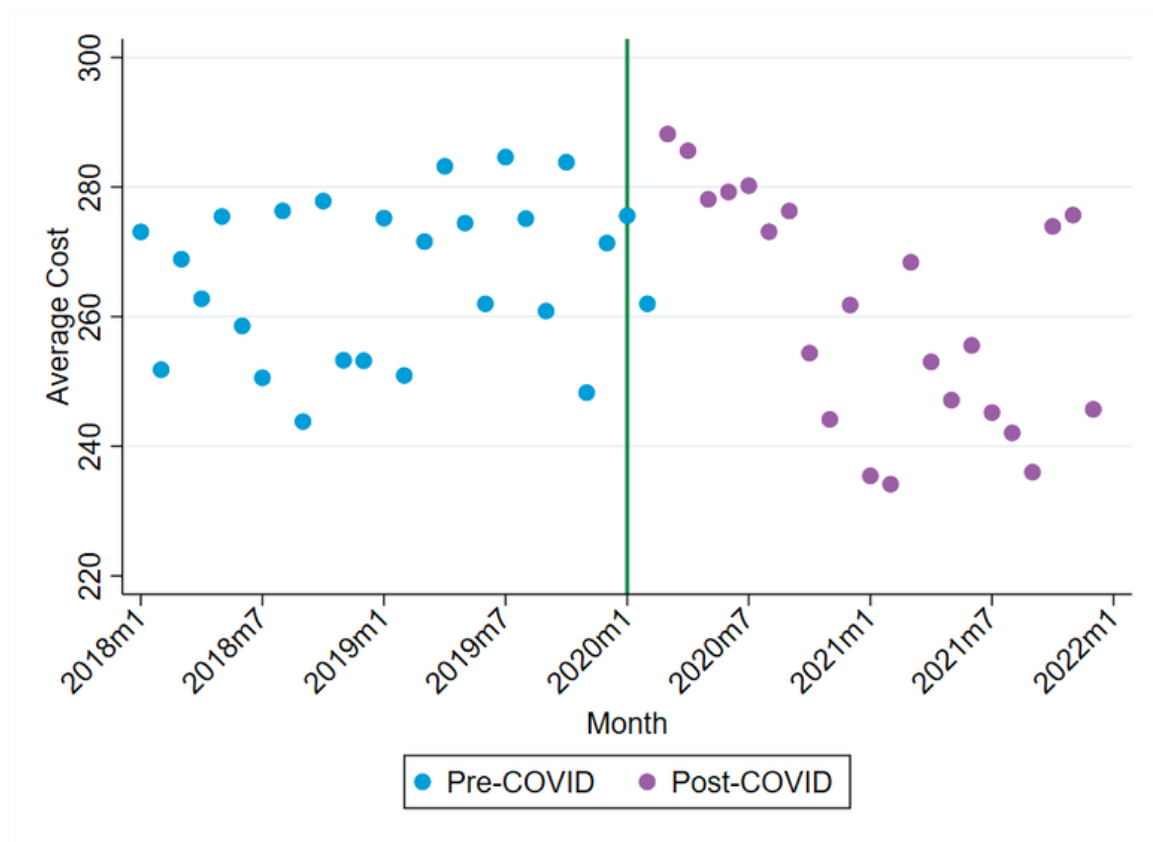
Exhibit F.96. Unadjusted Means of Inpatient Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.96 shows that inpatient costs PBPM remained stable over time during the pre-Demonstration period. They initially increased over the post-Demonstration period and decreased from the second half of 2020 onward.

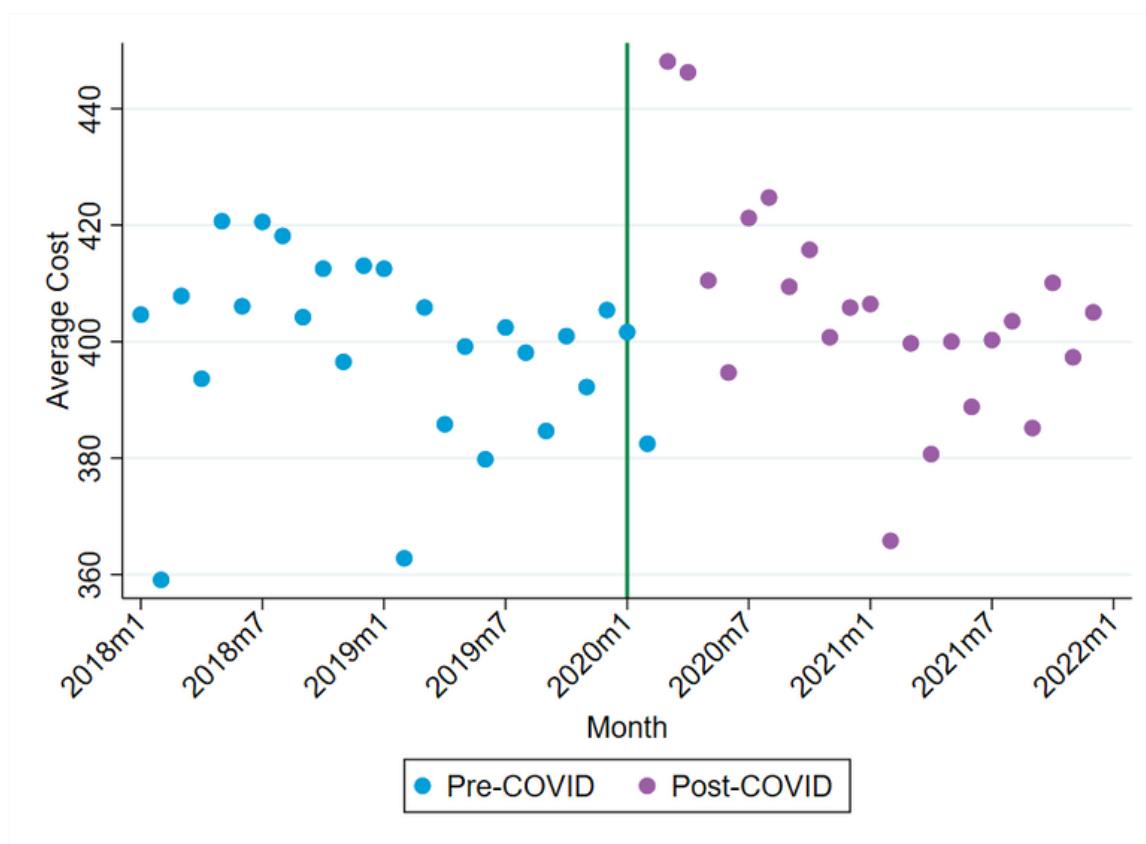
Exhibit F.97. Unadjusted Means of Pharmacy Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.97 shows that pharmacy costs PBPM fluctuated over time during the pre-Demonstration period and decreased over time in the post-Demonstration period.

Exhibit F.98. Unadjusted Means of Long-Term Care Cost Estimates for Individuals With SMI/SED, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.98 shows that long-term care costs PBPM decreased over time during the pre-Demonstration period but fluctuated over time under the Demonstration following an initial increase in 2020.

Exhibit F.89 shows ITS analysis findings (marginal effects and standard errors) on the cost drivers for beneficiaries with SMI/SED. Non-ED outpatient costs PBPM increased by \$65.54 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$49.83). The probability of a beneficiary having a positive cost also increased by 4%. However, outpatient ED costs PBPM decreased by \$6.93 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this decrease was from the decrease in cost for those who had a positive cost (\$28.18). The probability of a beneficiary having a positive cost also decreased. Inpatient costs PBPM increased by \$50.57 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Although there was no statistically

significant change in cost for those who had a positive cost, the probability of a beneficiary having a positive cost increased. We did not detect a statistically significant change in pharmacy costs PBPM in the post-Demonstration period. Similarly, there was no statistically significant change in cost for those who had a positive cost or in the probability of a beneficiary having a positive cost. Long-term care costs PBPM increased by \$23.92 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$805.71). The probability of a beneficiary having a positive cost had no statistically significant change.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

F.3.2 SUD Costs

Takeaway: Because the Demonstration was hypothesized to increase SUD care utilization in post-Demonstration costs, an increase in SUD treatment costs was expected. Total costs PBPM for SUD beneficiaries increased in the post-Demonstration period. This increase was both because the likelihood of beneficiaries incurring a positive expenditure increased and because the PBPM costs increased for those who had positive expenditures. Costs increased for both SUD treatment and non-SUD treatment. The SUD treatment cost increase was mostly attributable to increased IMD costs. There was a decrease in outpatient ED costs. In interpreting these findings, note that COVID-19 PHE-related rate increases, enhanced FMAP, and inflation resulted in increases in costs, which are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases, in addition to Demonstration-induced utilization changes.



Total Costs PBPM:

- Total costs PBPM increased by \$134.91 in the post-Demonstration period.
- Total federal costs PBPM increased by \$195.85 in the post-Demonstration period.



Costs related to diagnoses and treatment of SUD:

- Non-SUD costs PBPM increased by \$91.87 in the post-Demonstration period.
- SUD costs PBPM increased by \$44.44 in the post-Demonstration period.
- IMD costs PBPM increased by \$38.37 in the post-Demonstration period.
- There was no statistically significant change in non-IMD SUD costs PBPM in the post-Demonstration period.



Source of treatment cost drivers:

- Non-ED outpatient costs PBPM increased by \$69.87 in the post-Demonstration period.
- Outpatient ED costs PBPM decreased by \$7.57 in the post-Demonstration period.
- Inpatient costs PBPM increased by \$87.38 in the post-Demonstration period.
- There was no statistically significant change in pharmacy costs PBPM in the post-Demonstration period.
- There was no statistically significant change in long-term care costs PBPM in the post-Demonstration period.

Exhibit F.99 presents the average PBPM costs each year from 2018–2021 for the target population of SUD beneficiaries. Average total costs PBPM increased from \$2,035.54 in 2018 to \$2,767.90, which was a 36.0% increase. Total federal costs increased by 44.9% during the same period. SUD costs increased by 56.0%, and the majority of SUD costs were non-IMD costs, which similarly increased by 46.8%. IMD costs were smaller than non-IMD costs but increased from 16.27 in 2018 to 63.20 in 2021. Outpatient (both ED and non-ED), inpatient, pharmacy, and long-term care costs all increased from 2018 to 2021.

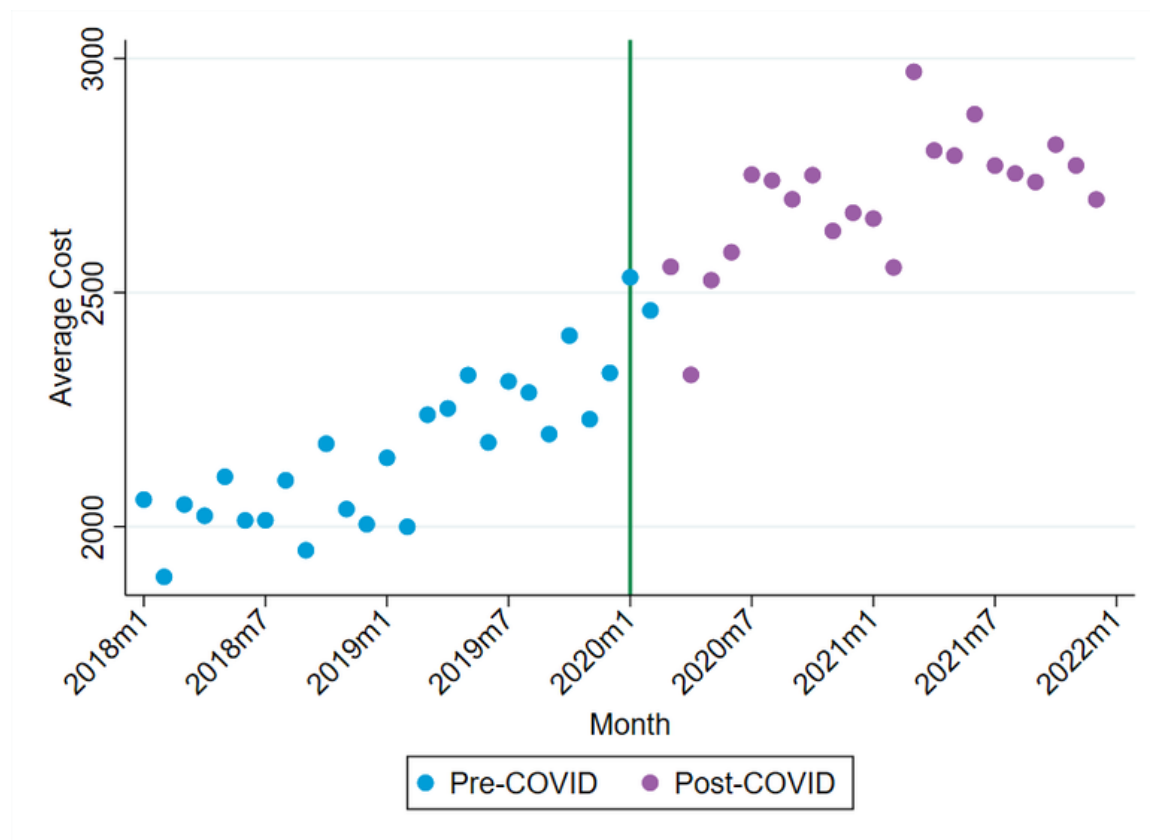
Exhibit F.99. Annual Average PBPM Costs for the Target Population of SUD Beneficiaries

		Pre-Demonstration (\$)		Post-Demonstration (\$)		Percentage change from 2018–2021
		2018	2019	2020	2021	
Total costs	Total costs	2,035.54	2,240.14	2,600.39	2,767.90	36.0%
	Total federal costs	1,536.57	1,696.97	2,078.41	2,226.50	44.9%
SUD cost drivers	Non-SUD costs	1,576.77	1,714.20	1,961.82	2,067.47	31.1%
	SUD costs	427.47	501.22	605.96	666.83	56.0%
	IMD SUD costs	16.27	21.51	59.37	63.20	288.4%
	Non-IMD SUD costs	411.52	480.05	546.52	604.21	46.8%
Type or source of care cost drivers	Non-ED outpatient costs	815.35	912.44	1,074.12	1,169.84	43.5%
	Outpatient ED costs	125.09	129.07	132.77	156.35	25.0%
	Inpatient costs	692.97	769.07	926.52	983.28	41.9%
	Pharmacy costs	274.83	305.41	330.20	323.67	17.8%
	Long-term care costs	168.04	189.14	229.29	243.00	44.6%
Target Population	Number of unique beneficiaries	26,818	24,827	22,018	21,243	-20.79%

Note. COVID-19 PHE-related rate increases, enhanced FMAP, and inflation, which resulted in increases in costs, are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases.

Research Question 1. Have total costs PBPM for the target population of SUD beneficiaries increased, decreased, or stayed the same in the Demonstration period?

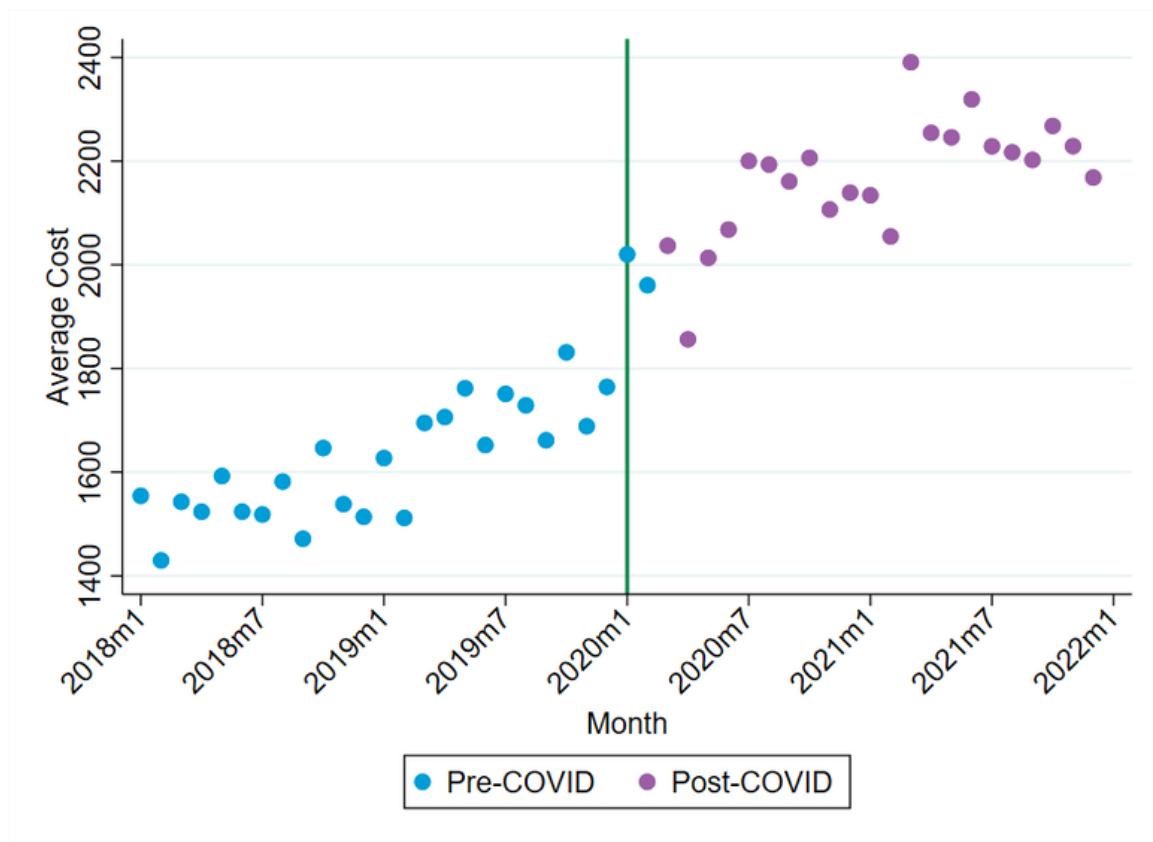
Exhibit F.100. Unadjusted Means of Total Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.100 shows that total costs PBPM increased over time during both the pre- and post-Demonstration periods.

Exhibit F.101. Unadjusted Means of Total Federal Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.101 shows that total federal costs PBPM increased over time during both the pre- and post-Demonstration periods.

Exhibit F.102. Interrupted Time Series Results (Marginal Effects and Standard Errors), SUD Demonstration

	Research Question 1 Change in total costs PBPM		Research Question 2 Change in SUD treatment costs PBPM				Research Question 3 Drivers of total cost				
	Total costs	Total federal costs	Non-SUD costs	SUD costs	IMD SUD costs	Non-IMD SUD costs	Non-ED outpatient costs	Outpatient ED costs	Inpatient costs	Pharmacy costs	Long-term care costs
Logit											
Coefficients											
Demonstration period	0.26*** (0.02)	0.26*** (0.02)	0.27*** (0.02)	0.00 (0.01)	1.12*** (0.05)	-0.02 (0.01)	0.30*** (0.01)	0.01 (0.02)	0.18*** (0.03)	0.00 (0.01)	-0.11*** (0.04)
Time (continuous)	0.04*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	0.02*** (0.00)	0.07*** (0.01)	0.02*** (0.00)	0.05*** (0.00)	-0.01*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.02*** (0.01)
Demonstration period * time (continuous)	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	-0.06*** (0.01)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01** (0.00)	0.01* (0.00)	-0.02*** (0.00)	0.10*** (0.01)
Marginal effects											
Demonstration period	0.03*** (0.00)	0.03*** (0.00)	0.04*** (0.00)	-0.00 (0.00)	0.01*** (0.00)	-0.00* (0.00)	0.05*** (0.00)	0.00 (0.00)	0.01*** (0.00)	0.00 (0.00)	-0.00 (0.00)
Number of observations	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400
GLM											
Coefficients											
Demonstration period	0.03** (0.01)	0.08*** (0.01)	0.01 (0.01)	0.07*** (0.02)	-0.05 (0.04)	0.01 (0.02)	0.01 (0.01)	-0.06*** (0.02)	-0.06** (0.03)	-0.04** (0.02)	0.07*** (0.02)
Time (continuous)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	-0.01* (0.01)	0.02*** (0.00)	0.02*** (0.00)	0.03*** (0.00)	0.01** (0.00)	0.01*** (0.00)	-0.01*** (0.00)
Demonstration period * time (continuous)	0.04*** (0.00)	0.03*** (0.00)	0.05*** (0.00)	0.03*** (0.00)	-0.00 (0.01)	0.03*** (0.00)	0.04*** (0.00)	0.00 (0.00)	0.02*** (0.00)	0.06*** (0.00)	0.02*** (0.00)

	Research Question 1 Change in total costs PBPM		Research Question 2 Change in SUD treatment costs PBPM				Research Question 3 Drivers of total cost				
	Total costs	Total federal costs	Non-SUD costs	SUD costs	IMD SUD costs	Non-IMD SUD costs	Non-ED outpatient costs	Outpatient ED costs	Inpatient costs	Pharmacy costs	Long-term care costs
Marginal effects											
Demonstration period	135.34*** (27.06)	223.49*** (21.63)	81.60*** (21.28)	176.19*** (41.91)	-167.41 (134.72)	50.47 (41.42)	55.12*** (10.18)	-46.83*** (13.77)	-595.74 (369.72)	-9.11 (8.27)	791.59*** (203.84)
Number of observations	583,989	583,989	570,459	198,999	10,162	195,874	524,862	123,833	40,745	363,157	16,682
Two-part model											
Marginal effects											
Demonstration period	134.91*** (20.64)	195.85*** (16.52)	91.87*** (15.92)	44.44*** (11.64)	38.37*** (2.90)	5.10 (11.35)	69.87*** (7.19)	-7.57*** (2.72)	87.38*** (25.37)	-4.03 (4.08)	5.19 (5.90)
Number of observations	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400	773,400

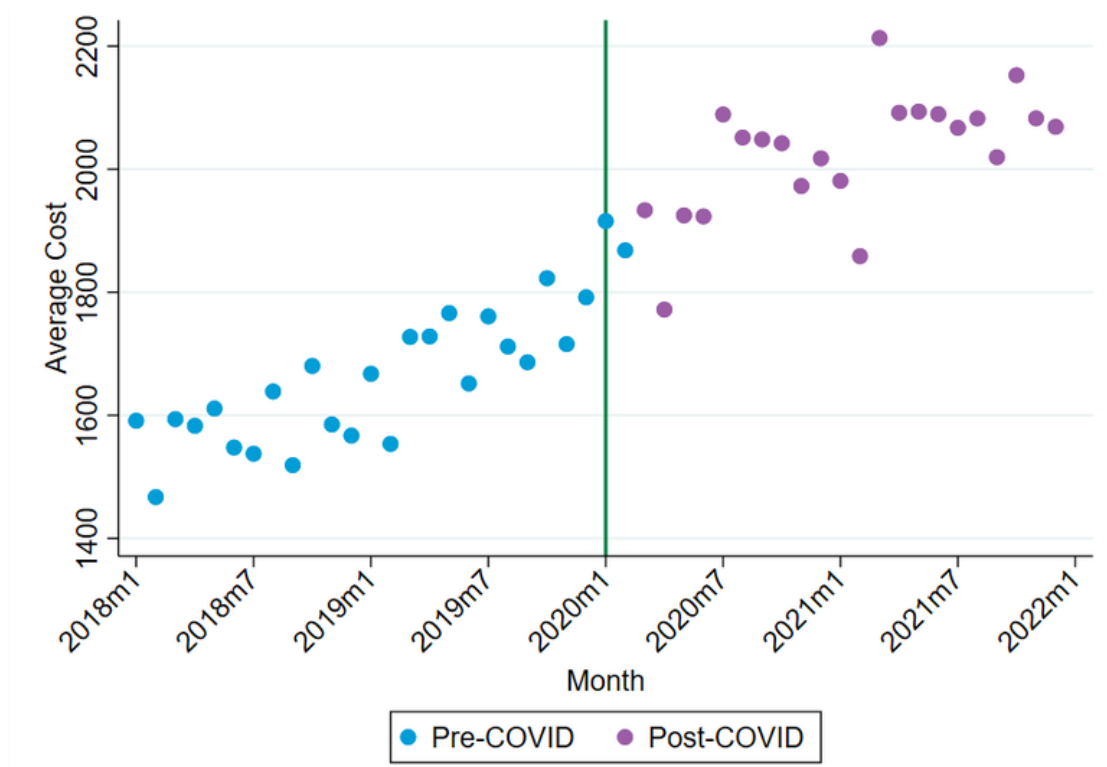
Notes: ED = emergency department; GLM = generalized linear model; IMD = Institutions for Mental Diseases; SMI/SED = serious mental illness/serious emotional disturbance; SUD = substance use disorder. Standard errors in parentheses. * Statistically significant at the 10% level; **statistically significant at the 5% level; ***statistically significant at the 1% level. Robust standard errors are in parentheses. Where a statistically significant cell does not show a value different from 0.00, it is because the number at the third decimal was less than 5 and was rounded off.

Exhibit F.102 shows ITS analysis findings (marginal effects and standard errors) on total costs and total federal costs for beneficiaries with SUD. Total costs PBPM increased by \$134.91 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$135.34). The probability of a beneficiary having a positive cost also increased by 3%. Total federal costs PBPM increased by \$195.85 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$223.49). The probability of a beneficiary having a positive cost also increased by 3%.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

Research Question 2. Have costs related to the diagnosis and treatment of SUD increased, decreased, or stayed the same during the Demonstration period?

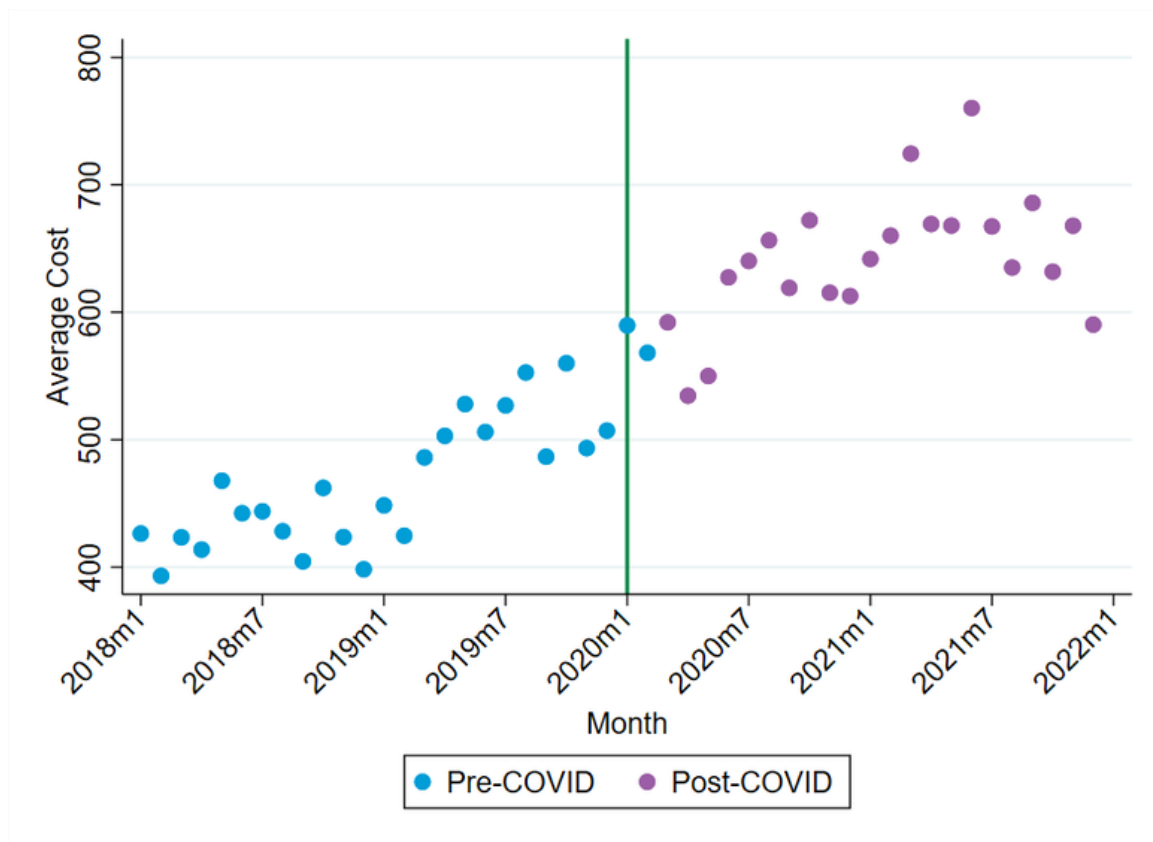
Exhibit F.103. Unadjusted Means of Non-SUD Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.103 shows that non-SUD costs PBPM increased over time during both the pre- and post-Demonstration periods.

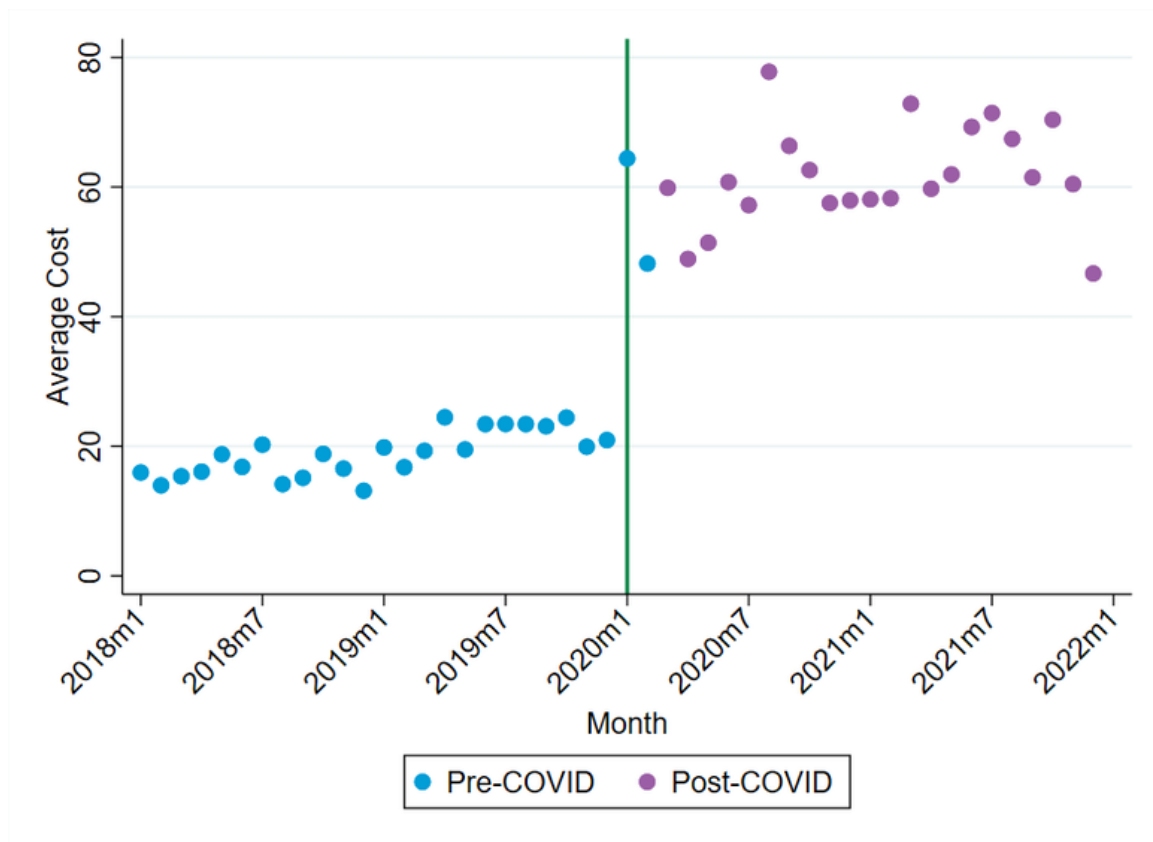
Exhibit F.104. Unadjusted Means of SUD Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.104 shows that SUD costs PBPM increased over time during the pre-Demonstration period. They initially increased over the post-Demonstration period and decreased in the second half of 2021.

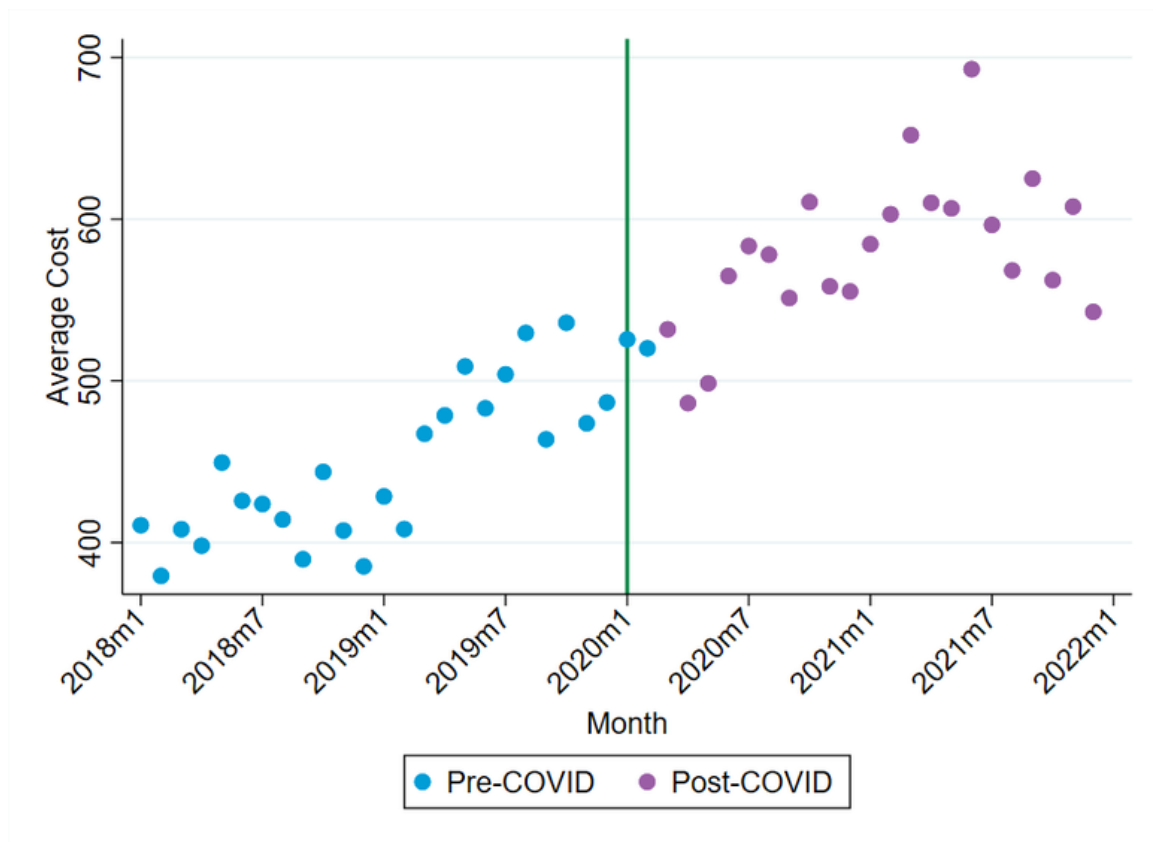
Exhibit F.105. Unadjusted Means of IMD Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.105 shows that IMD SUD costs PBPM increased slightly over time during the pre-Demonstration period and fluctuated during the post-Demonstration period. The trend shifted upward under the Demonstration.

Exhibit F.106. Unadjusted Means of Non-IMD SUD Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.106 shows that non-IMD SUD costs PBPM increased over time during the pre-Demonstration period. They initially increased over the post-Demonstration period and decreased in the second half of 2021.

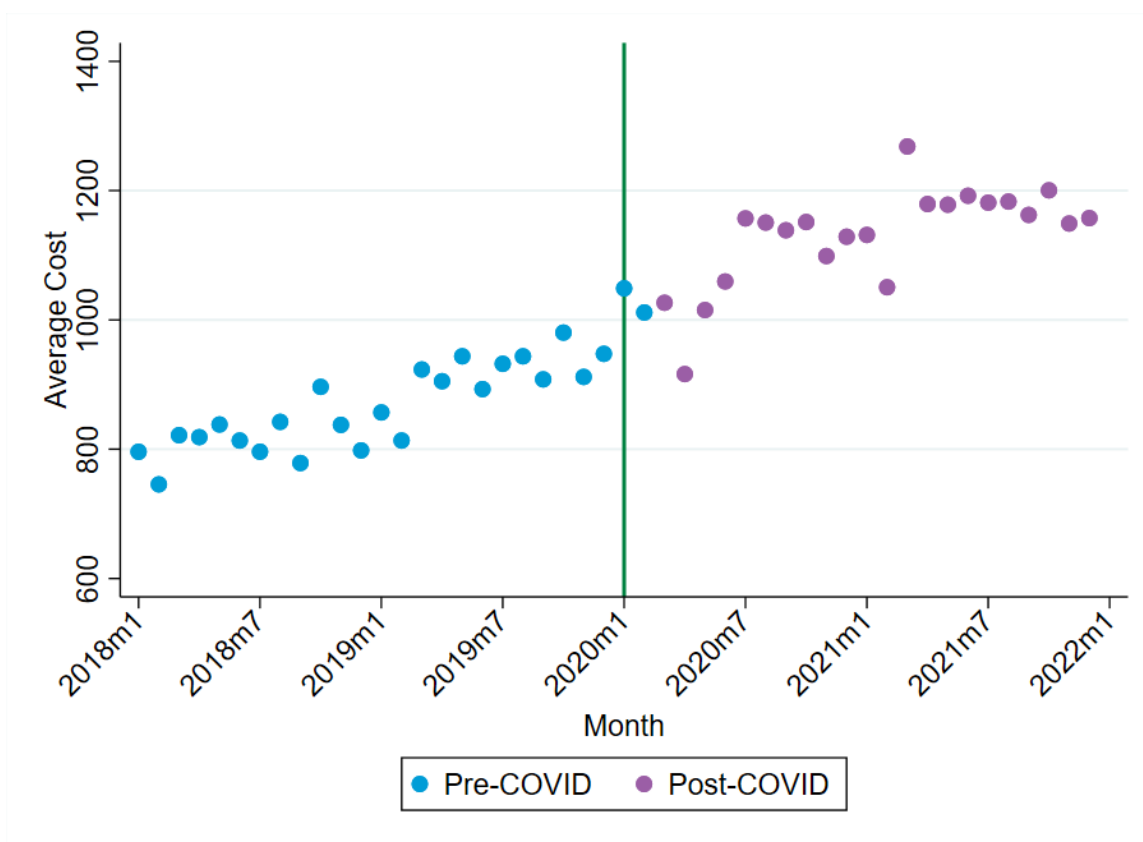
Exhibit 102 shows ITS analysis findings (marginal effects and standard errors) on SUD and non-SUD costs for beneficiaries with SUD. Non-SUD costs PBPM increased by \$91.87 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$81.60). The probability of a beneficiary having a positive cost also increased by 4%. SUD costs PBPM increased by \$44.44 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$176.19), although the probability of a beneficiary having a positive cost had no statistically significant change. IMD costs PBPM increased by \$38.37, and the effect was statistically significant at the 1% level. Although there was no statistically significant change in

cost for those who had a positive cost, the probability of a beneficiary having a positive cost increased by 1%. However, we did not detect a statistically significant change in non-IMD SUD costs PBPM in the post-Demonstration period. Similarly, there was no statistically significant change in cost for those who had a positive cost, although the probability of a beneficiary having a positive cost decreased.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

Research Question 3. What are the sources of treatment cost drivers for the target population of SUD beneficiaries in the Demonstration period?

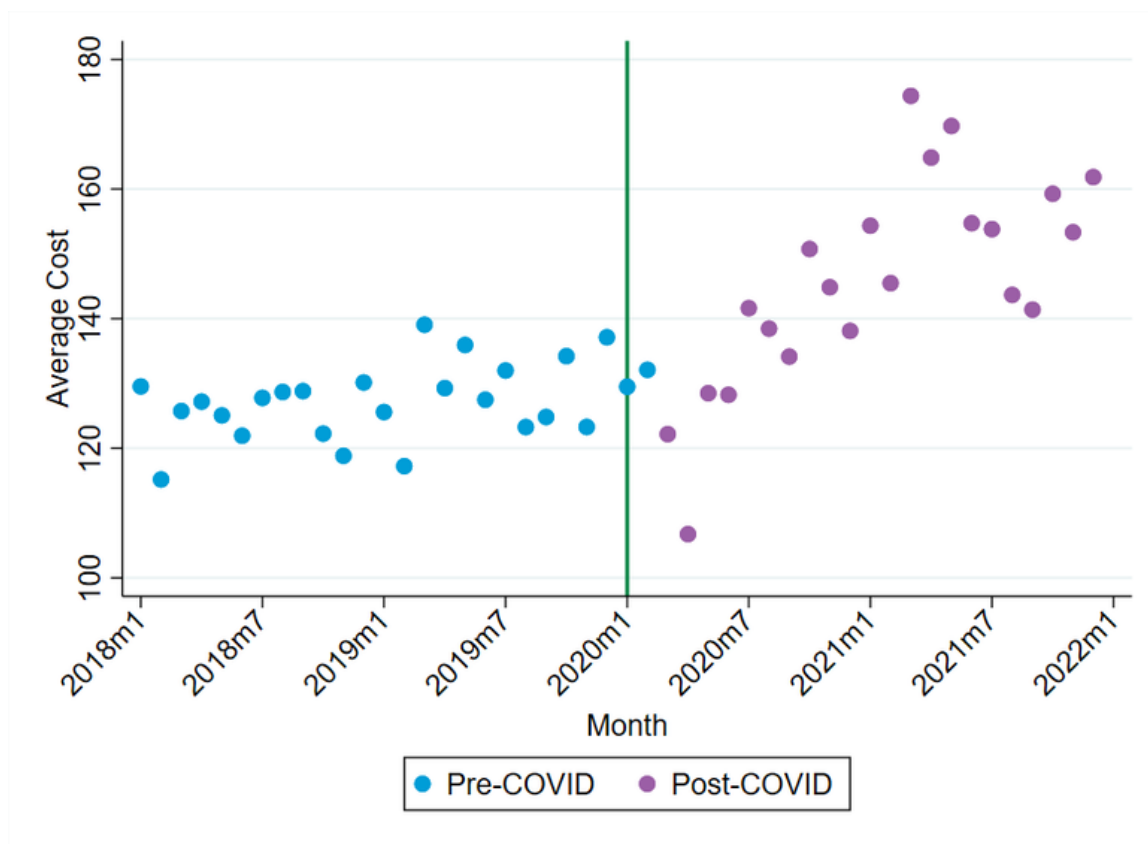
Exhibit F.107. Unadjusted Means of Non-ED Outpatient Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.107 shows that non-ED outpatient costs PBPM increased over time during both the pre- and post-Demonstration periods.

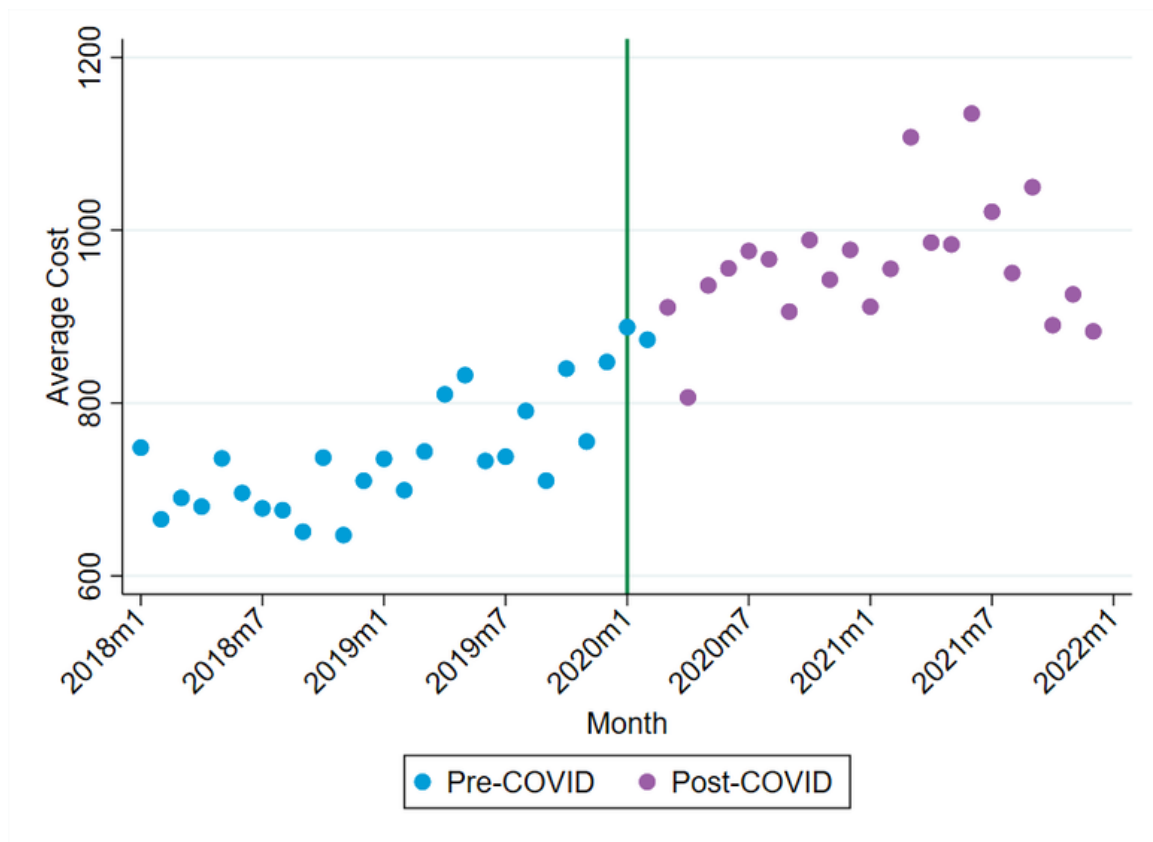
Exhibit F.108. Unadjusted Means of Outpatient ED Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.108 shows that outpatient ED costs PBPM increased over time during both the pre- and post-Demonstration periods.

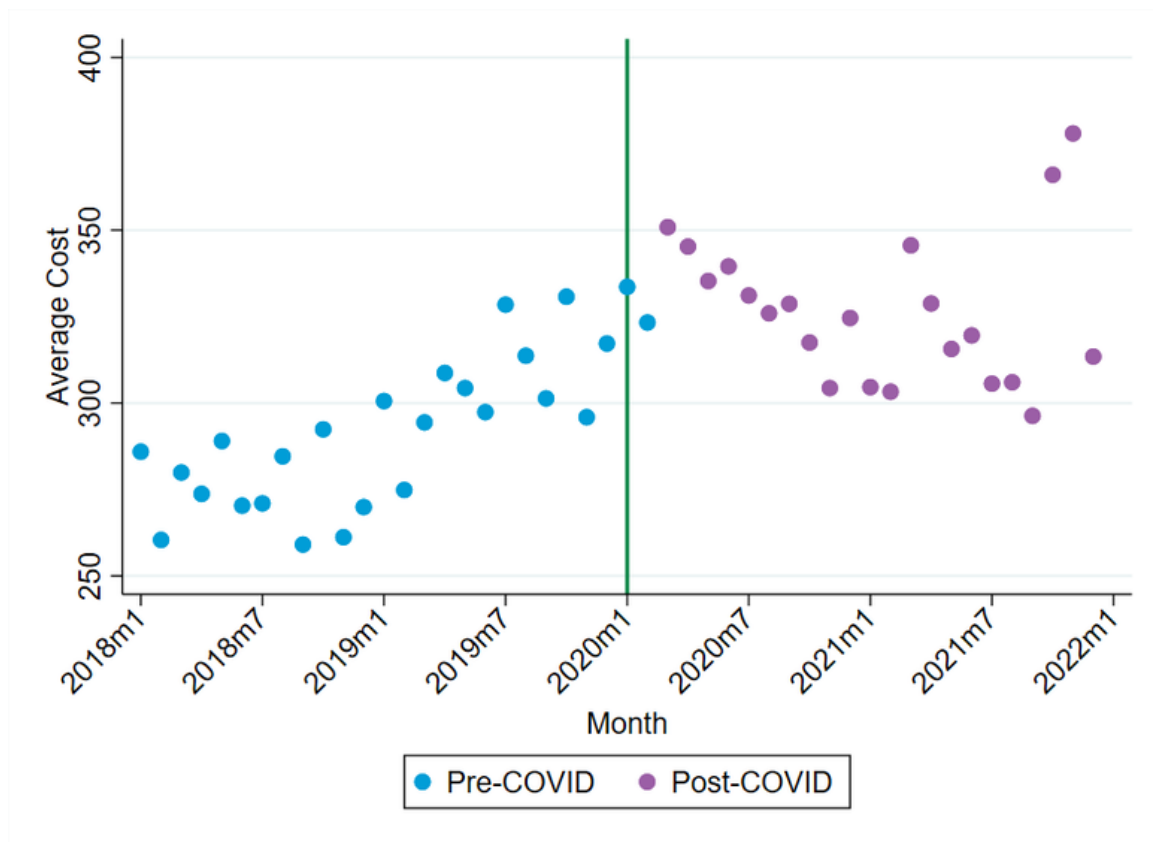
Exhibit F.109. Unadjusted Means of Inpatient Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.109 shows that inpatient costs PBPM increased over time during the pre-Demonstration period. They initially increased over the post-Demonstration period and decreased in the second half of 2021.

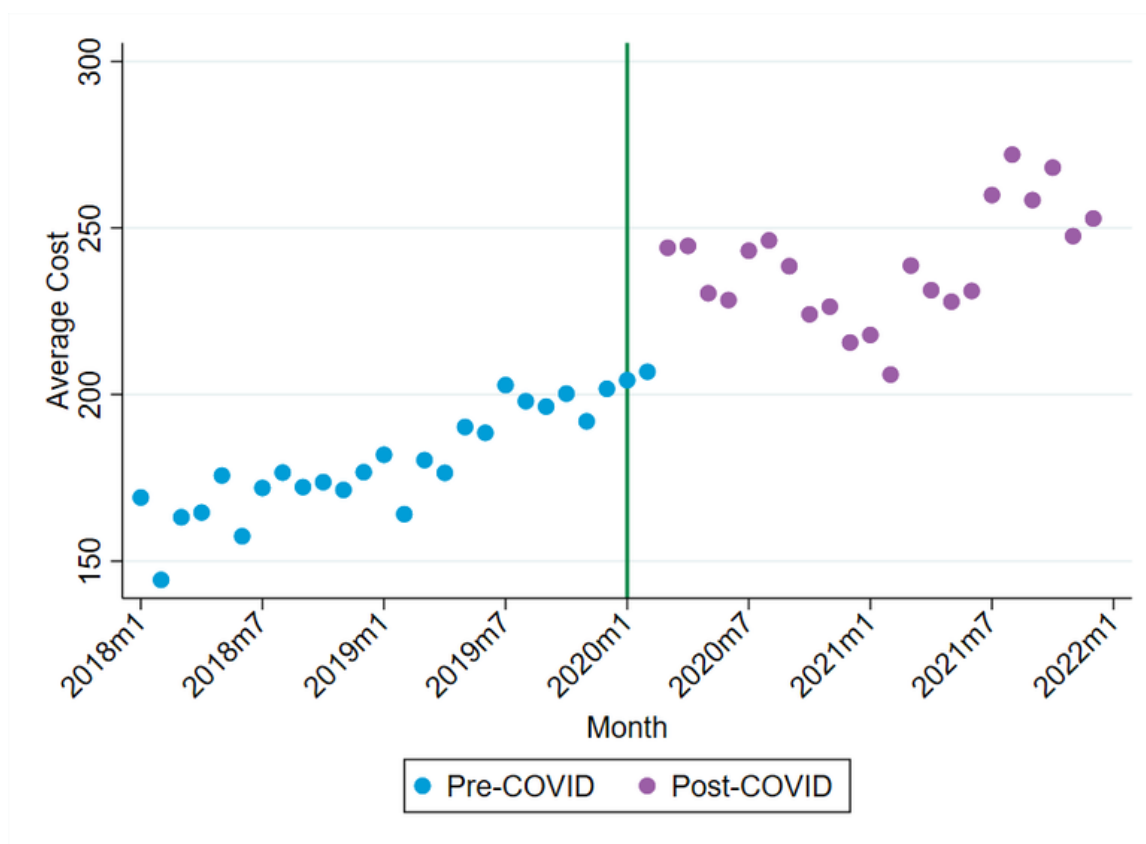
Exhibit F.110. Unadjusted Means of Pharmacy Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.110 shows that pharmacy costs PBPM increased over time during the pre-Demonstration period and fluctuated during the post-Demonstration period.

Exhibit F.111. Unadjusted Means of Long-Term Care Cost Estimates for Individuals With SUD, January 2018–December 2021



Note. The cost variable was top-coded—any value over the 99th percentile was replaced with the value at the 99th percentile.

Exhibit F.111 shows that long-term care costs PBPM increased over time during both the pre- and post-Demonstration periods.

Exhibit F.102 shows ITS analysis findings (marginal effects and standard errors) on the cost drivers for beneficiaries with SUD. Non-ED outpatient costs PBPM increased by \$69.87 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this increase was from the increase in cost for those who had a positive cost (\$55.12). The probability of a beneficiary having a positive cost also increased by 5%. However, outpatient ED costs PBPM decreased by \$7.57 in the post-Demonstration period, and the effect was statistically significant at the 1% level. Most of this decrease was from the decrease in cost for those who had a positive cost (\$46.83). The probability of a beneficiary having a positive cost had no statistically significant change. Inpatient costs PBPM increased by \$87.38 in the post-Demonstration period, and the effect was statistically significant at the 1% level. There was no statistically significant change in cost for those who had a positive cost or the probability of a

beneficiary having a positive cost. We did not detect a statistically significant change in pharmacy costs PBPM in the post-Demonstration period. Similarly, there was no statistically significant change in cost for those who had a positive cost and the probability of a beneficiary having a positive cost. There was also no statistically significant change in long-term care costs PBPM in the post-Demonstration period. However, there was a statistically significant increase in cost for those who had a positive cost (\$791.59). The probability of a beneficiary having a positive cost had no statistically significant change.

In interpreting these findings, note that changes in costs seen are inclusive of COVID-19 PHE-related per-unit price increases, in addition to Demonstration-induced utilization changes.

F.3.3 Effect of Administrative Costs

To understand the administrative costs of the Demonstration in perspective, we computed the PBPM administrative costs by dividing total administrative costs by the sum of SMI/SED and SUD beneficiary-months in the cost analysis sample. As Exhibit F.112 shows, PBPM administrative costs in the post-Demonstration period were \$1.93, compared to the estimated \$115.94 and \$134.91 in additional total costs PBPM for beneficiaries with SMI/SED and SUD, respectively. On average, administrative costs PBPM were less than 1.7% and 1.4% of additional total costs PBPM for beneficiaries with SMI/SED and SUD, respectively.

Exhibit F.112. Comparison of Administrative Costs and Marginal Effects of Total Costs, PBPM

Administrative cost	SMI/SED beneficiary-months	SUD beneficiary-months	Administrative cost PBPM	Additional total costs PBPM for SMI/SED beneficiaries	Additional total costs PBPM for SUD beneficiaries
\$2,481,277.29	930,713	356,681	\$1.93	\$115.94	\$134.91

Although total costs PBPM for both SMI/SED beneficiaries and SUD beneficiaries increased under the Demonstration and are inclusive of COVID-19 PHE-related per-unit price increases, some of the cost increase could be explained by increased utilization of needed services, some of which were not previously available. Such increases in healthcare costs resulting from increased use of necessary services could be considered benefits of the Demonstration or utility gains to society, although it is hard to pin down the exact dollar amounts. Given the relatively small proportion of administrative costs in comparison to total healthcare costs, it seems that the Demonstration is a cost-effective way to provide more services to more people with behavioral health needs.

F.4. COVID-19 Public Health Emergency's Influence on Demonstration Implementation

Takeaway: The COVID-19 PHE had a substantial impact on the Demonstration implementation.



- Implementing agencies were forced to divert resources to address pressing public health concerns.
- Most evaluation participants who were providers described experiencing significant disruption to their care delivery, increased lengths of stay in inpatient settings, and increased costs associated with accommodating social distancing guidelines and personal protective equipment.
- These disruptions likely contributed to the evaluation results that demonstrate a decrease in utilization of services that must be delivered in person.
- In addition, baseline beneficiary survey data demonstrate that COVID-19 was the most commonly reported reason for their inability to get the treatment services they needed.

Research Question 1. How does the COVID-19 Public Health Emergency influence the implementation of the Demonstration?

The COVID-19 PHE had a substantial impact on the Demonstration based on the perspectives of evaluation participants. Implementing agencies (DHCF and DBH) were forced to divert resources from Demonstration implementation to address pressing public health concerns—for example, issuing policy flexibilities regarding telemedicine and temporarily adjusting payment rates for SUD providers. In addition, most providers experienced significant disruption from COVID-19, including the following:

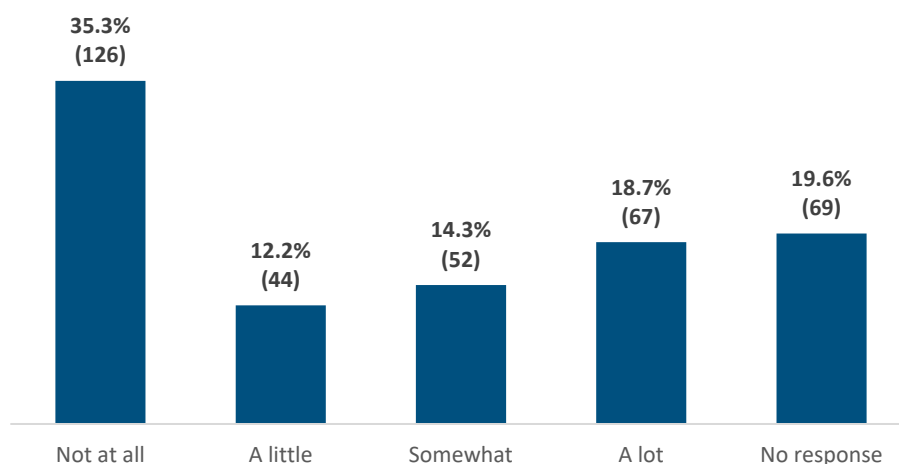
- Fewer patients seeking care;
- Fewer inpatient beds available due to COVID-19 public health restrictions;
- A difference in or discontinuation of visitation in inpatient facilities;
- Suspended transportation services from inpatient to community settings;
- Confusion about which provider was responsible for COVID-19 testing when beneficiaries were transitioning care (e.g., on discharge or admission);
- Disruption to established or preferred methods of follow-up;
- Longer lengths of stay due to delays in care transition planning; and
- Increased expenditures on cleaning services, transportation (e.g., for individual taxis rather than facility-based shuttles), and personal protective equipment.

These disruptions likely contributed to some of the results of the impact analyses presented in Sections F.1. and F.2., particularly trends that demonstrated a decrease in the utilization of services that must be delivered in person (such as inpatient, partial hospitalization, and residential treatment services). Providers did take advantage of telemedicine, but as discussed in more detail in Section F.5., they did so selectively based on their perspective of whether the treatment modality was appropriate for the type of service.

Beneficiary survey data suggest that the COVID-19 PHE also had a sizable impact on beneficiaries. The most commonly reported reason for an inability to get the treatment services they needed was COVID-19. In addition, when asked whether COVID-19 had affected them:

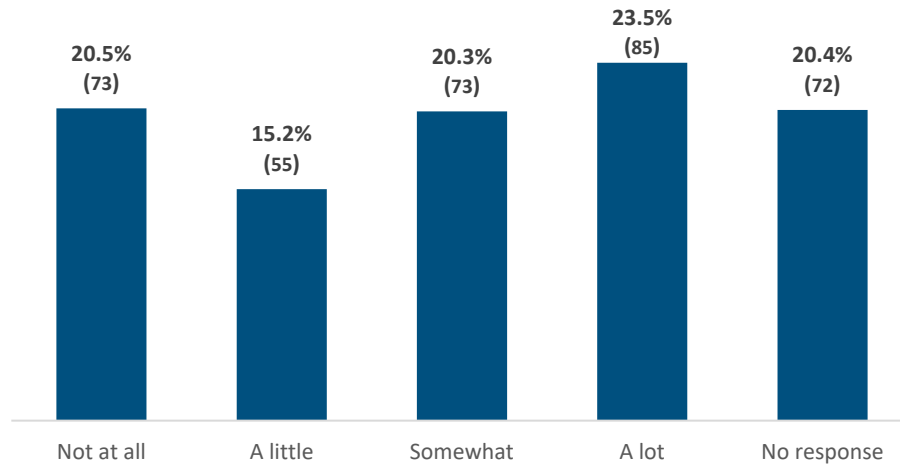
- Nineteen percent ($n = 67$) of survey respondents reported that it had affected their physical health a lot (Exhibit F.113).
- Twenty-four percent ($n = 85$) of survey respondents reported that it had affected their mental health a lot (Exhibit F.114).
- A few survey respondents ($n = 21$, 6%) reported that COVID-19 had affected their ability to stay off drugs and alcohol a lot (Exhibit F.115).

Exhibit F.113. How much has your physical health been affected by COVID-19?



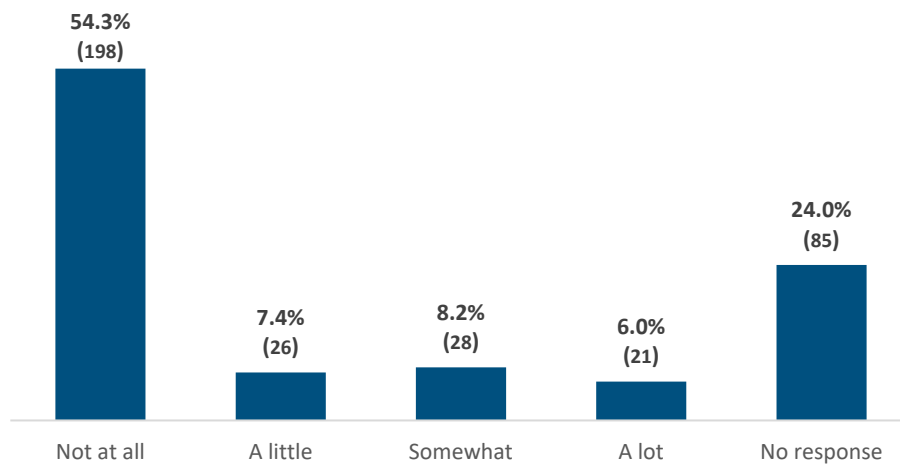
Note: Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.114. How much has your mental health been affected by COVID-19?



Note: Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.115. How much has your ability to keep from using drugs or alcohol been affected by COVID-19?



Note: Percentages are weighted and may not add up to 100% due to rounding.

F.5. Other Non-Waiver and Expenditure Authority Systems Changes' Influence on Demonstration Implementation

Takeaway: Non-waiver and expenditure authority systems changes under the Demonstration helped mitigate the influence of COVID-19 and supported the delivery of evidence-based SMI/SED and SUD treatment services.



- Finalizing reimbursement and guidance for telemedicine (approving audio-only visits) allowed providers to deliver services under COVID-19 PHE that they would otherwise have been unable to deliver.
- Evaluation participants who were providers reported that they were using the District-required evidence-based assessment tools to refer beneficiaries to the appropriate level of care.
- Requirements to query the Prescription Drug Monitoring Program before prescribing or dispensing an opioid or benzodiazepine, integrating the PDMP platform with EHRs and the HIE, and providing technical assistance on opioid prescribing promoted safe prescribing practices.
- Developing and enforcing licensing, certification, and accreditation requirements created a regulatory foundation for reimbursing Demonstration services such as TREM, TST, SES, transition planning, and crisis services and provided a mechanism for promoting the evidence-based delivery of these services. However, evaluation participants perceived these requirements to be burdensome.
- Evaluation participants expressed both positive and negative perspectives on the Demonstration guidance regarding utilization review policies and procedures.

Research Question 1. What other non-waiver and expenditure authority systems changes influenced the implementation of the Demonstration?

Research Question 2. How did these systems changes influence the implementation of the Demonstration?

In addition to implementing changes to services that fall under the Demonstration's expenditure and waiver authorities, the District also reinforced and improved other components of the behavioral health system to support Demonstration efforts. Throughout sections F.1. and F.2., we discuss how these changes related to decentralizing assessment and referral; care coordination requirements and technical assistance; Health IT adoption, use, and interoperability; provider capacity assessment; and MAT requirements influenced Demonstration implementation and impact. In this section, we describe how the following additional behavioral health systems changes supported Demonstration efforts:

- Reimbursement methodology for telemedicine
- Requirements related to evidence-based assessment tools and practices
- Requirements related to participation in the PDMP and technical assistance and training on opioid prescription practices

- Enforcement of applicable District licensing, certification, and accreditation requirements for new providers, as needed
- Reinforcement of utilization review policies and procedures

Reimbursement Methodology for Telemedicine

Before the Demonstration, the District was providing FFS telemedicine reimbursement for behavioral health services based on an emergency rule. Under the Demonstration, the District finalized this rule and issued updated guidance on telemedicine. This additional guidance was developed, in part, based on the need to deliver services virtually during the pandemic. Specifically, audio-only telemedicine allowed beneficiaries to receive telemedicine services at home as opposed to only in a clinical setting. In addition, via the SOR grant, several behavioral health providers in the District were piloting a TeleMAT program, which builds on the phone-based medication assisted treatment (MAT) induction that occurred during the PHE. Early findings suggest that the volume of demand for TeleMAT is low; two pilot program grantees are exploring ways to combine their services to achieve feasible economies of scale.

Telemedicine—particularly for mental health services—increased substantially during the PHE and has maintained a high level of use. Evaluation participants’ feedback on telemedicine was mixed. They noted that it was difficult or inappropriate to deliver some services via telemedicine. For example, participants reported that in addition to inpatient and residential services, assertive community treatment (ACT) services and nonclinical support services such as filling out housing or social services forms were difficult to provide via telemedicine. In addition, certain populations, such as people who are experiencing homelessness, cannot be served via telemedicine. Thus, these providers and their patients were unable to take advantage of the telemedicine policy and payment flexibilities.

Evaluation participants also noted that beneficiaries and some providers had difficulty with the technologies. For example, some beneficiaries lacked familiarity with how to use the software tools. In addition, cell phone data limits and the limited internet bandwidth of home computers made using video difficult. Further, telemedicine fatigue was an issue among some clinicians, exacerbating challenges with workforce retention. Providers implemented strategies to address these challenges, such as:

- setting up spaces at the providers’ facility where beneficiaries could come in and use laptops set up with Zoom for telemedicine appointments with providers who were working from home so that they could have someone available to help them with the technology, and
- issuing laptops to clinicians and increasing their at-home IT supports.

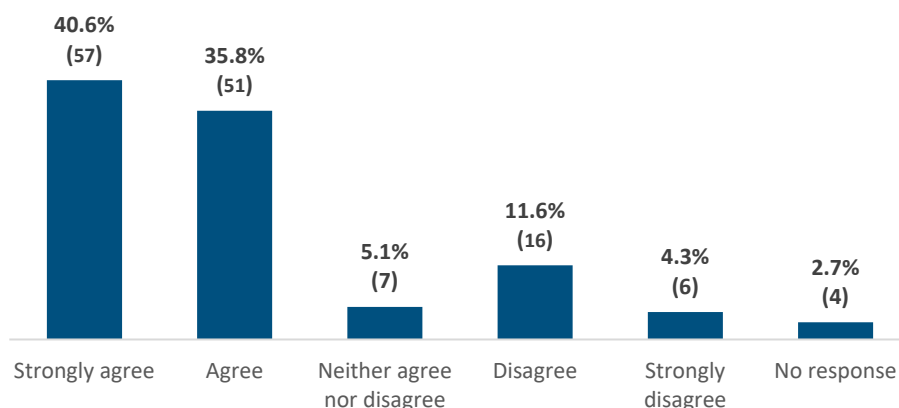
Despite these challenges, the consensus was that in circumstances where telemedicine is appropriate, working to overcome technological barriers was valuable, given that providers and beneficiaries appreciate the flexibility that telemedicine affords.

“Telemedicine has really been successful for us. We use it with our prescribers, our psychiatrists, our APRNs—now we’re hybrid, but we generally have prescribers in the office sometimes; a lot can be hidden over the phone in a psych assessment. People on both sides like it, though, especially in the medication clinic and for individual counseling. Folks who have trouble doing video can come into our office and have people in the clinic help connect if the doctor is remote. Phone calls and audio only are useful for community support, but it tends to be more useful in person—filling out documents, tasks that are easier in person. But it’s great to have it as an option either way.”

Beneficiary survey results suggest that they have had positive experiences with telemedicine. Thirty-nine percent of all survey respondents ($n = 141$) had used telemedicine to get help with their drug or alcohol use or mental health, including a healthcare visit over video or phone, within the past 12 months. The majority of survey respondents’ experiences with their telemedicine visits had been positive. Of the respondents who had had a telemedicine visit in the last 12 months:

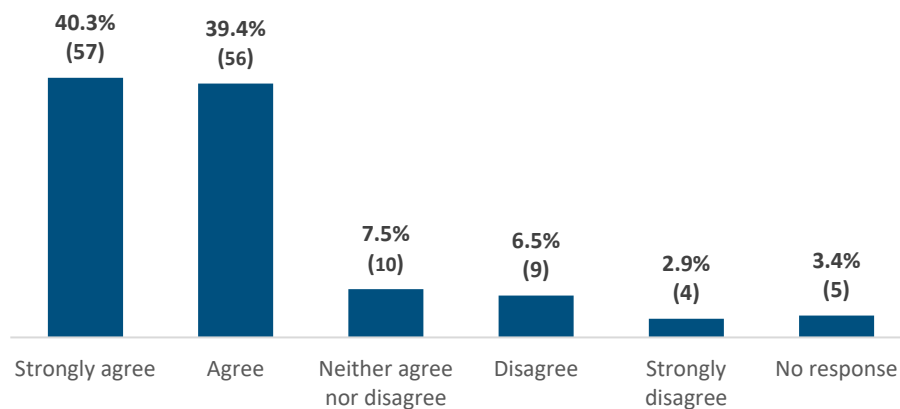
- seventy-six percent ($n = 108$) reported that the telemedicine visit had been as good as an in-person visit (Exhibit F.116),
- eighty percent ($n = 113$) reported that the telemedicine visit had made it easier for them to see a healthcare provider (Exhibit F.117),
- seventy-five percent ($n = 105$) reported that they had found telemedicine to be an acceptable way to receive services (Exhibit F.118), and
- eighty-one percent ($n = 115$) reported that they had felt comfortable talking about their healthcare issues using telemedicine services (Exhibit F.119).

Exhibit F.116. The telemedicine visit was as good as an in-person visit.



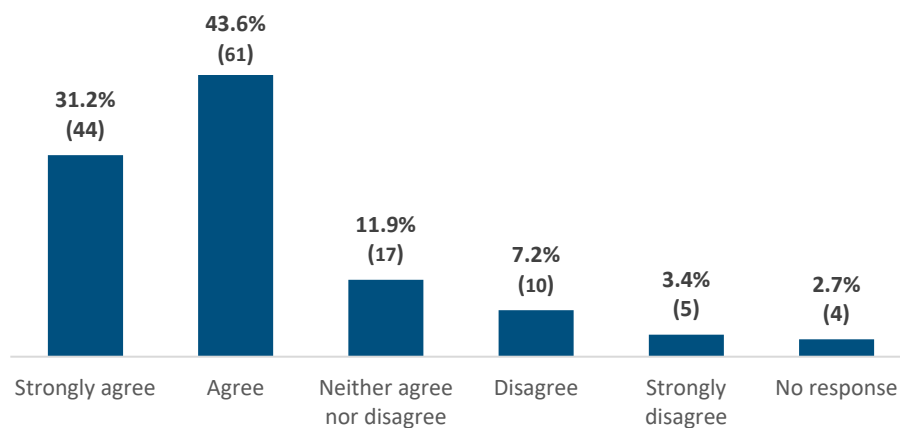
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.117. Telemedicine made it easier for me to see a healthcare provider.



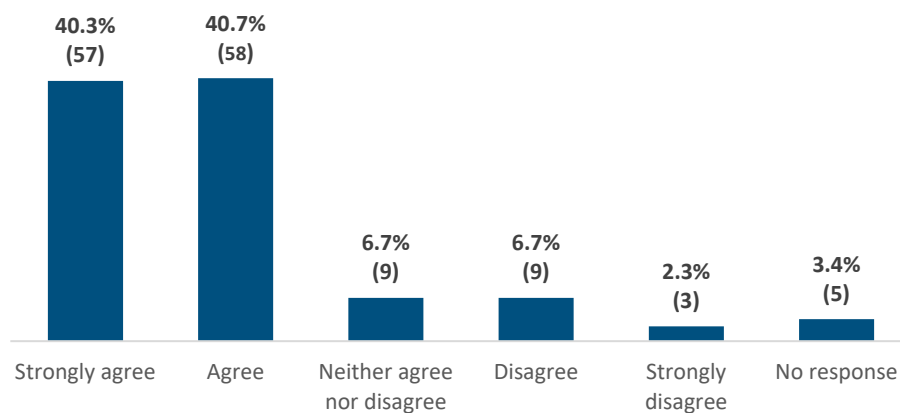
Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.118. I find telemedicine an acceptable way of receiving care.



Note. Percentages are weighted and may not add up to 100% due to rounding.

Exhibit F.119. I felt comfortable talking about my healthcare issues using telemedicine services.



Note. Percentages are weighted and may not add up to 100% due to rounding.

Requirements Related to Evidence-Based Assessment Tools and Practices

Under the Demonstration, the District has incorporated requirements to use District-selected evidence-based tools and practices as part of the intake and assessment process. For example, DBH included the following language in the final rulemaking for 22A DCMR Chapter 63 (6328.1): “All individuals seeking SUD services must be assessed and referred to a particular LOC [level of care] in accordance with the Department-approved assessment tool(s) and ASAM criteria.” The assessment tool that SUD providers must use is called the Treatment Assignment Protocol (TAP). Other providers are required to use the Level of Care Utilization System (LOCUS) tool. Providers confirmed that they routinely used these tools; however, they noted that there were other evidence-based tools they preferred (e.g., the DLA-20 Functional Assessment Tool¹⁴³ and GAIN-SS¹⁴⁴). In some instances, providers opted not to use these tools because they were unable to align the use of the tools with the reporting requirements driven by the TAP structure. In other instances, providers opted to use multiple tools.

“We’re still required to use the TAP...There are much better tools that can be completed by the patient, reviewed with the patient by the clinician, or a clinic-administered assessment.”

Requirements Related to Participation in the Prescription Drug Monitoring Program (PDMP) and Technical Assistance and Training on Opioid Prescription Practices

PDMP registration was required of all prescribers in the District before the Demonstration. However, not all prescribers were in fact registered. Thus, DC Health issued reminder notices related to this requirement to providers who were not registered for the PDMP. According to DHCF staff, prescriptions for Medicaid beneficiaries that exceeded morphine milligram equivalent limits decreased after the law was enacted. In addition, as of March 16, 2021, DC law (23–251) requires all District prescribers and dispensers to query the PDMP before prescribing or dispensing an opioid or benzodiazepine for more than 7 consecutive days and every 90 days thereafter, either while the course of treatment or therapy continues, or before dispensing another refill after 90 days. Other changes that occurred under the Demonstration include the following:

- Integrating the DC PDMP platform, District EHRs, and the District’s HIE via a service called the PMP Gateway. The District provides financial support for licensing fees associated with EHR integration with the PMP Gateway. Many EHR vendors have completed the PMP Gateway integration development work.

¹⁴³ More information about the DL-20 Functional Assessment Tool can be found at <https://www.thenationalcouncil.org/product/dla-20-functional-assessment-guide>

¹⁴⁴ More information about the GAIN-SS can be found at <https://gaincc.org/instruments/>

- DC Health conducted approximately 15 educational webinars on safe prescribing practices with provider organizations and medical boards in 2021.

Collectively, these changes promote safe prescribing practices. They also enable providers to determine whether patients have been filling the prescriptions they receive and are thereby following through with recommended care.

Enforcement of Applicable District Licensing, Certification, and Accreditation Requirements for New Providers, as Needed

Under the Demonstration, CMS requires the District to enforce applicable licensing, certification, and accreditation requirements for new providers, as needed. In addition, DBH has collaborated with DHCF to implement Demonstration policies by issuing new or revised certification requirements associated with Demonstration services. These changes to certification requirements include:

- requiring all treatment providers to provide intake and assessment services and become certified to deliver these services (Chapter 63 of Subtitle A of Title 22 of the DCMR; final rule effective date June 17, 2020);
- updating Chapter 34 (effective date January 14, 2020) to designate specific certification for the Trauma Recovery and Empowerment Model (TREM) and Trauma Systems Therapy (TST) to enable higher reimbursement rates for these services;
- adding Chapter 37 (effective date February 7, 2020), which describes certification standards for SES for SMI;
- adding Chapter 65 (effective date September 28, 2020), which establishes certification requirements and service and eligibility standards for transition planning services for SUD and SMI/SED services during or following an inpatient or residential SUD treatment stay; and
- adding Chapter 80 (effective date October 7, 2020), which establishes certification requirements for crisis service providers.

Evaluation participants commonly noted that certification requirements acted as a deterrent to providers offering certain services. For example, providers described reluctance to become certified to deliver residential SUD services and crisis stabilization services. In addition, the consensus among evaluation participants was that there are no providers of intensive outpatient services in the District because it is difficult to adhere to the operating rules associated with those services. Intensive outpatient services must be available 6 hours a day; providers indicated that this certification requirement was not financially viable at current reimbursement rates for this LOC. Key informants recognized that the lack of intensive day treatment services was the result of operating rules that are difficult to adhere to (e.g., open 7 days a week), but they believed the partial hospitalization programs helped to address this service gap.

“The certification process seemed pretty onerous when we first looked at it and continues to look onerous.”

Reinforcement of Utilization Review Policies and Procedures

Utilization review policies and procedures relevant to the Demonstration relate primarily to IMD stays. To facilitate appropriate utilization, the District issued several transmittals educating providers about:

- which Demonstration services qualify for IMD reimbursement (psychiatric hospitalization, SUD residential treatment, and withdrawal management),
- prior authorization requirements for receiving reimbursement for IMD stays associated with Demonstration services,
- procedures for requesting these prior authorizations, and
- LOS requirements (less than 60 days) for receiving reimbursement for SMI-related IMD stays associated with Demonstration services.

FFS Medicaid utilization review is currently conducted through a contract with DHCF’s Quality Improvement Organization (QIO). The current QIO, Comagine Health, uses the InterQual criteria for IMD authorizations and concurrent reviews.

As mentioned above, evaluation participants expressed concern about the administrative burden associated with the utilization review processes for patients admitted to IMDs, given the different payment mechanisms associated with different lengths of stay. In addition, key informants acknowledged that prior authorization requirements for residential IMD stays for SUD was new for these providers and therefore required both a cultural shift and significant changes to clinical workflows. Evaluation participants had differing views of the impact of IMD utilization review processes on beneficiaries. For example, one stakeholder noted treatment delays due to prior authorization and the criteria for determining who will cover services in the IMD setting and for how long. However, two stakeholders reported a positive result of the utilization review policy changes. One health plan said that the utilization review policy changes for IMD admissions necessitated the health plan to enter into a contract with the District’s public mental health hospital, which in turn gave the health plan access to previously unavailable data on its members who had been admitted to this hospital during their stay. This health plan noted that access to these data supports its care coordination efforts. Other evaluation participants reacted positively to the introduction of a standardized patient assessment tool as a way to focus the residential stay as one time-limited step for patients, with the goal of returning patients to the community.

G. Conclusions

At the 2.5-year mark, the 5-year Behavioral Health Transformation Demonstration, which began January 1, 2020, is showing substantial progress in achieving its overarching goals of expanding the District Medicaid program's continuum of behavioral health services and supports, bolstering the District's fight against the opioid epidemic, and moving Medicaid toward a more patient-centered and integrated model of physical and behavioral healthcare delivery.

The Demonstration, targeting Medicaid beneficiaries with SMI/SED and/or SUD, authorized payment for services provided in an IMD setting and added new community-based behavioral health services, including for crisis stabilization, care transition and coordination, recovery support and rehabilitation, and employment support. It eliminated the \$1 copayment for MAT prescriptions. All the Demonstration services were implemented in phases in the first year of the Demonstration, with most services being effective from January 1, 2020. The MHRS and ASURS services authorized under the Demonstration transitioned to permanent state plan authority with effect from January 1, 2022. The IMD services and the MAT copay waiver continue under the Demonstration.

The evidence on the Demonstration's implementation progress and effectiveness was collected from implementing entities, providers, provider associations, health plans, and Medicaid beneficiaries and also identified through the quantitative analysis of Medicaid claims, other administrative data, and beneficiary surveys. The evaluation does not have a comparison group, but it uses the ITS design, which is a robust evaluation method for population-level interventions with a clearly defined time period and targeted health outcomes, such as this Demonstration, in the absence of a comparison group. The quantitative analyses account for the influence of the COVID-19 PHE and certain of the overlapping programs to some extent, but not completely. Since the Demonstration effect estimates could be capturing the combined effect of the Demonstration as well as that of the pandemic and concurrent external efforts to some extent, the results indicate associations of outcomes of interest with the Demonstration rather than precise causal impacts.

G.1. Effect on SMI/SED Goals

The SMI/SED Demonstration had three goals related to improved access to, utilization of, and better coordination of care and two goals related to improved health outcomes. Both of the

access-related goals were achieved by the end of 2 Demonstration years, while the results were mixed for the care coordination–related goal.¹⁴⁵

- *Improved availability of crisis stabilization services.* This goal was achieved. The number and percentage of beneficiaries accessing any crisis stabilization services increased in the Demonstration period. The crisis stabilization services provided under the Demonstration included CPEP, youth mobile crisis, adult mobile crisis and behavioral outreach services, and psychiatric residential crisis stabilization services (a newly introduced service under the Demonstration).
- *Improved access to community-based services.* This goal was achieved. There was an increase in the number and percentage of beneficiaries with SMI/SED who used any services related to mental health during the Demonstration period. The aim of increased integration of physical and behavioral healthcare under the Demonstration was assessed using the number and percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions. The number of episodes of care where IMD providers billed for assessments or treatment of physical conditions increased, but the change in the percentage was not statistically significant. At the end of 2 Demonstration years, the net increase in the total number of mental health providers was not statistically significant. However, after an initial decrease in the total number of providers, there have been quarterly increases over time. Results are similar for the number of physicians or other providers.
- *Improved care coordination.* The goal of improving care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities, showed mixed results. There was an increase in the percentage of beneficiaries ages 18 and older with a principal diagnosis of mental illness or intentional self-harm who had a follow-up visit for mental illness within 7 days and 30 days of an ED visit. Such an increase is not observed for follow-up after hospitalization.

Evaluation participants' perspectives suggest that a few Demonstration changes have had a widespread positive influence on SMI/SED goals:

- *Changes to the reimbursement methodology for crisis stabilization services.* Several providers described the changes to the crisis stabilization services as having a substantial impact on their ability to deliver these services and thus their ability to prevent unnecessary emergency department use. Evaluation participants attributed this impact to increased referrals to crisis stabilization providers and the financial

¹⁴⁵ Though the regression analysis includes a control variable to account for the severity of the COVID-19 PHE, some of the increase in mental health service utilization could be due to pandemic-related changes such as increases in mental health problems.

stabilization of these providers that occurred as a result of clear and adequate reimbursement.

- *The ability of independent licensed behavioral health clinicians to enroll in Medicaid.* This change has expanded beneficiaries' access to clinicians who are in settings outside of FQHCs, FSMHCs, and MHRS and ASURS providers. Of note, evaluation participants described instances of newly enrolled behavioral health clinicians being located in primary care settings, which suggests progress toward the District's goal of more integrated care.
- *Revising and clarifying reimbursement methodology for telemedicine.* Finalizing telehealth flexibilities has had a substantial impact on behavioral healthcare delivery in the District. It took some time for providers to assess what services were appropriate for this modality and to create the workflows and technological supports needed for its delivery. However, telemedicine use has been high, suggesting that these flexibilities mitigated some of the impact of the PHE.
- *Expanded adoption of health IT.* Participation in the District's HIE has increased substantially over the course of the Demonstration due to a number of different policy requirements as well as technical assistance efforts sponsored by DHCF and the HIE. While providers described the process of getting connected to the HIE and implementing workflows to use it as difficult and resource intensive, they praised the HIE's ability to support their tracking of beneficiaries' care use. Evaluation participants are optimistic that it will become even more useful over time as timely bidirectional use increases and providers and beneficiaries become more comfortable with data sharing.

Only one of the two goals of the SMI/SED Demonstration related to improving healthcare outcomes was achieved by the end of the second Demonstration year.

- *Reduction in the utilization of ED services.* This goal was achieved. The number and percentage of beneficiaries with SMI/SED who used ED services for mental health decreased during the Demonstration period. However, the change in the length of ED stay was not statistically significant.
- *Reduction in readmissions.* The goal of reducing preventable readmissions has not yet been achieved. However, goal assessment is based on SMI/SED Monitoring Metric 4, which counts all readmissions other than planned readmissions following a psychiatric admission to an IPF.

Evaluation participants' perspectives suggest that the following Demonstration changes have not influenced SMI/SED goals as much as intended:

- *Transition planning services.* These services were intentionally narrowly defined to avoid duplication of services. However, this resulted in few beneficiaries being eligible. Combined with the rigid service delivery requirements and inability to enter the inpatient setting during COVID 19, these eligibility requirements have resulted in very little delivery of these services.
- *Reimbursement for SES.* The incorporation of SES into the state plan resulted in new requirements to ensure consumer choice. These requirements underlie the administrative burden evaluation participants identified as a barrier to timely and successful delivery of these services. Consumer choice requirements were operationalized in a way that increased the length of the SES assessment tool and added an independent assessor to the process.
- *Clubhouse.* Providers held the Clubhouse in high regard, largely because they involved peer supports. But uptake has been slow and low. The challenges for the Clubhouse have been the certification requirements.

In addition, evaluation participants uniformly lamented lack of care coordination and capacity as a persistent and significant weak point in the District’s behavioral health delivery system despite the Demonstration’s efforts to address this issue. Evaluation data suggest these core challenges:

- overall shortage of workers, in both clinical and nonclinical roles, which is common for organizations that rely on Medicaid funding and has been exacerbated by the COVID 19 PHE;
- limited capacity at certain points in the care continuum, such as stepdown care following an ED visit, inpatient stay, or residential stay; and
- lack of timely and efficient collaboration between providers (through either traditional or health IT–enabled workflows) to communicate beneficiaries’ health status and care needs as the beneficiary is transitioning along the care continuum.

G.2. Effect on SUD Goals

Unlike the SMI/SED Demonstration, for which most of the goals were achieved at the time of the interim evaluation, none of the SUD Demonstration goals were achieved. Three of the Demonstration goals were about increasing access and utilization of SUD services, and three were about improving health outcomes. Results were mixed for one of the access and utilization–related goals, while the other two goals were not achieved.

- *Increased rates of identification of, initiation of, and engagement in SUD treatment.* Evaluation participants praised the decentralization of the SUD assessment and referral

functions of the ARC for expanding beneficiaries' access to these services. However, the goal of increasing identification, initiation, and engagement in SUD treatment showed mixed results. There was an increase in the number of beneficiaries initiating SUD treatment as measured by the number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period, but not in the 3 months before the measurement period. The change in the percentage of beneficiaries was not statistically significant. On the other hand, the change in the number and percentage of beneficiaries receiving any SUD treatment service, facility claim, or pharmacy claim during the Demonstration period was not statistically significant. The number of providers who were enrolled in Medicaid and qualified to deliver SUD services, which was used as an access measure, slightly decreased under the Demonstration.

- *Increased adherence to and retention in treatment.* The goal of increasing adherence to and retention in SUD treatment has not yet been achieved. The net change in the percentage of beneficiaries who were engaged in ongoing AOD treatment within 34 days of the initiation visit at the end of 2 Demonstration years was not statistically significant, with there being an increase in the percentage immediately on the Demonstration startup and quarterly decreases thereafter. The change in the number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days was not statistically significant. On the other hand, the quarterly numbers decreased over time. The change in the percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy for OUD was not statistically significant. In addition, baseline beneficiary survey data suggest that respondents' adherence to the care plans recommended by their providers was moderate. About one third of survey respondents reported they were unable to do what was necessary to follow their healthcare providers' treatment plans at least some of the time.
- *Improved access to care for physical health conditions among beneficiaries with SUD.* The goal of improving access to care for physical health conditions has not yet been achieved. The measure used to assess this goal was the percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period. This measure showed a decrease in the Demonstration period rather than an increase.

Similar to the results for the SMI/SED goals, evaluation participants perceived that the following Demonstration changes positively influenced SUD goals: the ability of independent licensed behavioral health clinicians to enroll in Medicaid; revising and clarifying reimbursement methodology for telemedicine; and the expanded adoption and use of Health IT. In addition, evaluation participants perceived that decentralizing the intake and assessment functions of

the ARC greatly improved the identification and initiation of treatment for beneficiaries. This Demonstration change expanded and eased beneficiaries' access to intake and assessment services. In addition, evaluation participants noted that this change improved beneficiaries' experience with the intake and assessment process because they could receive these services from providers they knew and trusted and who were aware of their needs for trauma- and culturally informed care.

Of the three goals targeting improved health outcomes, one showed mixed results, one could not be achieved, and one could not be assessed.

- *Reductions in overdose deaths, particularly those due to opioids.* This goal could not be assessed using regression analysis because the overdose death data were not available at the time of the interim evaluation. Data on fatal opioid overdoses, tracked by DBH between 2017 and 2022, showed an increase in overdoses of around 46% in 2020 (411 deaths) relative to the prior year (281 deaths). Fatal opioid overdoses continued to increase and reached 455 deaths in 2022. These trends track national data, which show a spike in overdose deaths after the start of the pandemic.¹⁴⁶
- *Reduced utilization of EDs and inpatient hospital settings.* The goal of reducing utilization of hospital EDs and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services, showed mixed results. The measures used to assess utilization of ED and inpatient hospital settings were the total number of SUD-related inpatient stays and ED visits per 1,000 beneficiaries. The use of these measures assumed that SUD-related inpatient stays and ED visits are preventable. These measures do not capture whether inpatient stays and ED visits were preventable or medically inappropriate. The number of inpatient stays showed a net increase at the end of 2 Demonstration years, while the number of ED visits did not have a statistically significant change. The change in the inpatient hospital admissions for ambulatory care sensitive chronic conditions was not statistically significant.
- *Reduction in preventable or medically inappropriate readmissions.* The goal of fewer readmissions to the same or higher LOC where the readmission is preventable or medically inappropriate has not yet been achieved. However, the metric used to assess the goal includes all-cause readmissions and not just preventable or medically inappropriate readmissions.

¹⁴⁶ These figures pertain to individuals who had a history of SUD treatment through the public system. They don't necessarily account for all Medicaid beneficiaries who died of opioid overdose because they might not have ever had treatment.

Similar to the findings for the SMI/SED goals, evaluation participants reported that the transition planning benefit and reimbursement for SES have not positively influenced SUD goals as intended. In addition, evaluation participants reported that RSS has not positively influenced SUD goals because the uptake among providers has been low. According to evaluation participants, the challenges for RSS have been confusion and limited capacity related to billing. In addition, evaluation participants expressed general frustration with the District's limitations on the types of organizations within which peer supports could be embedded and receive reimbursement.

G.3. Effect on Costs

In the post-Demonstration period, total costs PBPM increased by \$115.94 for SMI/SED beneficiaries and by \$134.91 for SUD beneficiaries. For both the targeted populations, the Demonstration increased the likelihood of beneficiaries incurring healthcare costs. Furthermore, the average amount of healthcare costs increased for beneficiaries who had positive costs in the post-Demonstration period.

As hypothesized, the Demonstration increased utilization of SMI/SED and SUD services. This increase was reflected in increased SMI/SED and SUD treatment costs in the post-Demonstration period. IMD costs increased for both the populations which is an expected change considering FFP for IMD services being a major component of the Demonstration. While non-IMD SMI/SED costs increased, non-IMD SUD costs didn't increase.

Non-SMI/SED costs didn't increase in the post-Demonstration period for SMI/SED beneficiaries, while non-SUD costs increased for SUD beneficiaries.

In terms of the drivers of total costs, ED costs slightly decreased for both populations (by \$6.93 PBPM for SMI/SED and by \$7.57 PBPM for SUD), while inpatient costs increased (by \$50.57 PBPM for SMI/SED and by \$87.38 PDPM for SUD). Non-ED outpatient costs increased for both populations (by \$65.54 PBPM for SMI/SED and by \$69.87 PBPM for SUD). Pharmacy costs didn't change for the two populations. There was an increase in long-term care costs for SMI/SED beneficiaries (by \$23.92 PBPM) but not for SUD beneficiaries.

During the Demonstration period, COVID-19 PHE-related rate increases, enhanced FMAP, and inflation resulted in increases in costs, which are not adjusted for in this analysis. Therefore, any increases in total costs seen are inclusive of these per-unit price increases in addition to Demonstration-related utilization changes.

G.4. COVID-19 PHE's Influence on Demonstration Implementation

The COVID-19 PHE had a substantial impact on the Demonstration implementation. Implementing agencies were forced to divert resources to address pressing public health concerns. Most evaluation participants who were providers described experiencing significant disruption to their care delivery, increased lengths of stay in inpatient settings, and increased costs associated with accommodating social distancing guidelines and personal protective equipment. These disruptions likely contributed to the evaluation results that demonstrate a decrease in utilization of services that must be delivered in person. In addition, baseline beneficiary survey data demonstrate that COVID-19 was the most commonly reported reason for their inability to get the treatment services they needed.

G.5. Other Non-Waiver and Expenditure Authority Systems Changes' Influence on Demonstration Implementation

According to evaluation participants, non-waiver and expenditure authority systems changes under the Demonstration helped mitigate the influence of the COVID-19 PHE and supported the delivery of evidence-based SMI/SED and SUD treatment services:

- Finalizing reimbursement and guidance for telemedicine (approving audio-only visits) allowed providers to deliver services under the COVID-19 PHE that they would otherwise have been unable to deliver.
- Evaluation participants who were providers reported that they were using the District-required evidence-based assessment tools to refer beneficiaries to the appropriate level of care.
- Requirements to query the Prescription Drug Monitoring Program before prescribing or dispensing an opioid or benzodiazepine, integrating the PDMP platform with EHRs and the HIE, and providing technical assistance on opioid prescribing promoted safe prescribing practices.
- Developing and enforcing licensing, certification, and accreditation requirements created a regulatory foundation for reimbursing Demonstration services such as TREM, TST, SES, transition planning, and crisis services and provided a mechanism for promoting the evidence-based delivery of these services. However, evaluation participants perceived these requirements to be burdensome.
- Evaluation participants expressed both positive and negative perspectives on the Demonstration guidance regarding utilization review policies and procedures.

G.6. Overall Conclusions

Providers, provider associations, and health plans broadly acknowledged the Demonstration services as being designed to address specific challenges that stakeholders were facing in the delivery of adequate, timely, and coordinated care across the behavioral healthcare continuum, particularly as a way to address the opioid epidemic unfolding in the District. The depth of their awareness of the components of the Demonstration and associated regulatory changes varied among evaluation participants depending on the relevance of the particular components for the services they provide.

Evaluation participants considered the ability of independent licensed behavioral health clinicians to enroll in Medicaid, revising and clarifying reimbursement methodology for telemedicine, reimbursement methodology for crisis stabilization services, and decentralizing the intake and assessment functions of the ARC as the Demonstration services with most influence on delivery of care. Promotion of health IT under the Demonstration was also considered influential, though bidirectional data sharing is still not widely adopted due to privacy concerns and insufficient technological capabilities.

A few of the Demonstration services that could have made substantial improvements to the well-being of the target population continue to face the challenge of low volume even after 2.5 years. These include transition planning services, SES, Clubhouse services, and RSS. Barriers to more widespread take-up of these services are stringent design features (transition planning), adoption of tools and workflows needed to meet billing requirements (RSS), and increased assessment processes (SES), in addition to the COVID-19 pandemic (Clubhouse).

Assessment of beneficiary utilization data indicate that the Demonstration goal of increased utilization of SMI/SED services is being achieved, while the goals related to identification of, adherence to, and retention in SUD treatment show mixed findings. Some of these less-than-anticipated results could be due to the disruption caused by the COVID-19 pandemic. The regression methodology attempts to account for this, but it is unlikely that all the effects of the pandemic are being controlled. While the COVID-19 PHE affected utilization patterns of both SMI/SED and SUD services, the effect was larger for the latter. Although there is progress in the reduction of ED use among the target populations of SMI/SED and SUD beneficiaries, there is no significant reduction in readmissions, which are the two costly and preventable use goals of the Demonstration.

While the Demonstration did not have specific hypotheses related to changes in total costs and its various components, the increase in SMI/SED costs for beneficiaries with SMI/SED, SUD costs for beneficiaries with SUD, and total costs for both types of beneficiaries are not unexpected. This is because the Demonstration targets increased utilization of SMI/SED/SUD treatment and more

integrated physical and behavioral healthcare; increased utilization means higher costs. The small decreases observed for the costly ED visits are not large enough to compensate for the increase in costs for the other services. IMD costs increased for both populations under the Demonstration, as expected, and this increase contributed to the increase in inpatient costs.

In sum, at the interim evaluation point halfway through the Demonstration, the Demonstration implementation has progressed as planned, with the District making timely regulatory and sub regulatory changes necessary, including prompt action with COVID-19 regulatory flexibilities. The situation is more mixed in terms of Demonstration goal achievement. Progress has been better on the SMI/SED component of the Demonstration compared to the SUD component. The District could focus more on promotion of the SUD Demonstration goals of improved identification of, adherence to, and retention in SUD treatment in the second half of the Demonstration.

G.7. Recommendations for the District

Below are a few recommendations for the District's consideration as it explores renewing and revising the Demonstration. Renewing the Demonstration may result in a more accurate impact estimation as it provides a longer period to isolate the Demonstration's effect from that of the effect of the pandemic. It will also allow for accurate estimation of the effect of certain Demonstration services that have been lagging in uptake.

Explore opportunities to clarify service delivery requirements in ways that ease provider burden and that allow providers to make informed decisions about service offerings. The District has implemented policies to ensure that the Demonstration services that beneficiaries are receiving are medically necessary, standardized across providers, and delivered with fidelity. Evaluation data suggest that some providers choose not to offer some Demonstration services because they believe that these policies are cost prohibitive or challenging to implement. For some services, such as residential SUD care, burdens may ease as providers gain more experience with new procedures and tools for assessing clinical appropriateness and solidify workflows. For other services, it may be valuable for agency staff to clarify service delivery requirements to ensure that providers have complete and accurate information to inform their decisions about which services to provide. For example, several providers believed that TREM service delivery requires a higher level of clinical licensure than they currently have on staff or could afford to recruit. In addition, providers reported that there are unique requirements related to youth mobile outreach services that are challenging to adhere to. It may be valuable to educate providers about service delivery requirements so that they do not opt out of providing services because of an inaccurate understanding of service delivery requirements.

Continue to build the policy, payment, and delivery system infrastructure for telemedicine.

Telemedicine utilization increased substantially during the COVID-19 PHE, particularly for mental health services. The fact that increased telemedicine use continues to persist despite lifting of in-person COVID-19 restrictions and that beneficiary survey respondents reported positive experiences with telemedicine suggests that this delivery model should be permanently supported. By implementing policies that will permanently allow audio-only telemedicine visits and allow beneficiaries to participate in telemedicine visits from home, the District has a solid foundation for supporting expanded delivery of telemedicine. However, providers varied in their perspectives on which services were appropriate to deliver via telemedicine. In addition, both providers and patients faced challenges to utilizing telemedicine technologies. The following are additional supports the District could consider:

- Issue guidance on which services are likely appropriate for telemedicine to promote broader access to care, when appropriate.
- Expand, as needed, support for beneficiaries who face barriers to utilizing telemedicine by increasing availability of cell phone minute and data vouchers and telemedicine stations. For example, it may be valuable to learn from, and build on, DBH's new initiative to provide cell phones to the District's most vulnerable populations to promote their telemedicine engagement.
- Educate providers on which software tools may be best suited for telemedicine, for example, those that are user-friendly from the perspective of both clinicians and patients and that require lower internet bandwidth.

Expand access to peer supports. Peer-provided services are an evidence-based model for behavioral health. In addition, there was widespread support for these services among providers. However, the Demonstration's interventions related to peer services were limited. As providers who offer peer supports become more familiar with how to bill for peer services and put billing procedures into practice, utilization of the Clubhouse and RSS may increase. The District could consider expanding the settings in which peer services may receive Medicaid reimbursements beyond DBH-certified providers.

In addition, DBH offers a Peer Certification Program for individuals with lived experience of mental health, SUD, and family/caregiver support to individuals with behavioral health needs, to aid them in becoming part of the behavioral health workforce. As part of their Behavioral Health System Transformation and Comprehensive Rate Study, the District is in the process of implanting a stand-alone peer service, which could be included as a distinct intervention on a person-centered treatment plan. The District is hopeful that the subsequent training and

education associated with implementing this service will increase utilization and reach across the service delivery system.

Review care coordination services provided by MCOs to assess whether they are likely to meet the needs of beneficiaries with SUD, SMI, and SED. Evaluation participants were optimistic that some of the current gaps related to care transition and coordination that beneficiaries experience would improve once behavioral health services are carved into MCO contracts in October 2023. The carve-in may incentivize MCOs to incorporate enrollees' higher acuity behavioral healthcare into existing care management strategies. However, it is unclear whether MCOs have services that are similar to the Demonstration's transition planning service or the care management programs funded by the SOR grant and whether there is a need to modify the MCOs' care coordination approaches to be suitable for higher acuity behavioral health needs. For example, there may be a need for MCOs to:

- familiarize themselves with the services available and historical referral patterns across the behavioral health ecosystem in the District,
- conduct more proactive and frequent outreach and follow-up to ensure that beneficiaries are connecting with needed services, and
- train care managers on how to effectively interact with patients who have behavioral health diagnoses.

Conduct a special study on access and delivery challenges associated with SUD for future rounds of evaluation data collection. Generally speaking, the Demonstration has not had much influence on SUD-related goals thus far. As we described above, this is likely due in part to the challenges associated with caring for beneficiaries with the unique demographic characteristics of the District's beneficiary population and the COVID-19 PHE. However, tailoring services to the District's population did not come up in evaluation discussions, and SUD service utilization has not reached pre-COVID-19 rates despite in-person restrictions having been lifted. Thus, we believe that further attention to SUD will help the evaluation team to gain a better understanding of the impact estimation results and help to inform the District's future SUD strategy. For example, lingering effects of the COVID-19 PHE may need to be addressed, such as beneficiaries who may have become sicker during the pandemic and need increased help to reconnect to care. There may also be delivery system barriers that were not addressed by the Demonstration that are interfering with progress independent of the pandemic. We propose prioritizing exploration into the lack of SUD outcome progress in future rounds of data collection by focusing on SUD providers for listening sessions and developing discussion guides that solicit information about the barriers and bright spots related to SUD care in the District. We may also explore the feasibility and utility of conducting interviews and listening sessions with peer support specialists

and beneficiaries in recovery to gain a better understanding of the lived experience of SUD care in the District. Areas of focus to explore with SUD providers and beneficiaries include culturally attuned service availability and delivery, ED and hospitalization follow-up, treatment adherence and retention, and telemedicine adoption and utilization. We also will conduct a descriptive analysis of the demographic characteristics of SUD patients who did or did not receive follow-up care after an ED visit or hospitalization.

H. Interpretations, Policy Implications, and Interactions With Other District Initiatives

In this section, we identify relevant Medicaid and other program changes that coincide with the Demonstration and discuss their implications for accurately estimating the effects of the Demonstration. Some of these programs are similar to the drivers implemented under the Demonstration and have similar outcomes (e.g., increased initiation of SUD treatment) as those targeted by the Demonstration. Where possible, particularly for the individual-level regressions, we use control variables to account for the confounding effects of these programs on Demonstration effect estimates (e.g., MCO and FFS status of beneficiaries). However, due to the lack of a comparison group and the small sample size available for the ITS analysis (District-quarter level observations), we are unable to isolate the Demonstration effects from the effect of some of these programs. Therefore, the regression estimates from the ITS analysis are interpreted as associations rather than causal impacts.

The Demonstration could be considered as being implemented in two phases, with the Demonstration's first 2 years covering all the waiver services and the last 3 years covering only IMD waiver services. All waiver services but MAT copay and IMD services transitioned from the waiver to the state plan authority starting January 1, 2022.¹⁴⁷ This transition of billing authority is not expected to have a substantial effect on provider or beneficiary behavior and outcomes of interest for the evaluation. However, in the quantitative component of this interim evaluation, we limit the data coverage for the regression analysis to the period from January 1, 2020, to December 31, 2021. This data restriction allowed us to assess the effects of the Demonstration with all its original services in the Interim Evaluation Report, while the Summative Evaluation Report will cover the combined effect of both the phases of the Demonstration.

The Demonstration is one component of a larger behavioral health redesign in the District.¹⁴⁸ The District has established a multiyear phased approach encompassing behavioral health service expansion (Phase I), managed care integration (Phase II), and integrated care payment

¹⁴⁷ On March 21, 2022, CMS provided time-limited approval to the Managed Care Risk Mitigation COVID-19 Public Health Emergency (PHE) section 1115 demonstration application as an amendment to the Demonstration. Since this demonstration amendment has separate monitoring and evaluation requirements, it is not discussed in this Interim Evaluation Report.

¹⁴⁸ Department of Behavioral Health & Department of Health Care Finance. (2022 October 28). *Behavioral Health Transformation Demonstration Post-Award Stakeholder Forum*.

models (Phase III).¹⁴⁹ Exhibit H.1 lists two substantial changes to DC Medicaid's structure that are occurring contemporaneously with the Demonstration.

The first change is the transition of Medicaid FFS beneficiaries with complex conditions to managed care, which occurred in October 2020 during the first year of the Demonstration. The number of beneficiaries using certain Demonstration services decreased when approximately 17,000 beneficiaries (largely adults with disabilities who were not dually enrolled in Medicare and who were contributing disproportionately to Medicaid program costs) transitioned to managed care in an effort to grant these beneficiaries access to case management services offered by the MCOs. The transition resulted in few payment and service delivery changes for behavioral health services. However, it did result in fewer beneficiaries being eligible for some Demonstration services (e.g., transition planning) and posed an administrative hurdle for certain providers (e.g., home health agencies.)

The second change is the integration of behavioral health services previously available only via FFS payment into managed care, which is scheduled to occur in October 2023. Preparations for this transition are currently underway and are consuming a considerable amount of resources, from the perspective of key informants from the implementing agencies and stakeholders who participated in evaluation data collection, such as the providers, provider associations, and MCOs. For example, some providers were not previously contracted with some or any MCOs or had different contractual relationships with different MCOs. This caused uncertainty because providers were not sure what the MCOs would pay for, what the reimbursement amounts would be, which services would be allowed, and so on. In addition, these types of changes often required redesign of infrastructure that affected providers' bottom line, requiring time to make appropriate adjustments. It is noteworthy that, despite the confusion and billing challenges, providers reported that the managed care transition had not impacted their implementation of Demonstration changes.

We will have a better understanding of the impact of this transition on care delivery, utilization, and outcomes by the time of the Summative Evaluation Report. The individual-level regression analysis controls for beneficiaries' FFS/MCO program status and accounts for some of the potential effects of the October 2021 transition of certain FFS beneficiaries to managed care. However, the District-level ITS regression results are confounded by this transition to the extent that it affected FFS and MCO beneficiaries' access to and receipt of various services.

¹⁴⁹ Department of Health Care Finance. (2021, December 2). *Medicaid director letter (MDL #21-06)*. <https://dbh.dc.gov/sites/default/files/dc/sites/dmh/publication/attachments/MDL%2021-06%20BH%20Transformation%20Update%20Timeline%2020211202-signed.pdf>

Exhibit H.1. Medicaid Program Changes coinciding with the Demonstration, 2017–2025

Program name	Program start date	Program end date
Transition of certain fee-for-service beneficiaries to managed care	October 2020	N/A
Carve-in of additional behavioral health services to managed care	October 2023 (start of FY 2024)	N/A

Exhibit H.2 lists other programs that coincided with the Demonstration. These include federally funded programs such as SOR grants and SUPPORT Act grants as well as the District’s own initiatives such as LIVE.LONG.DC, its strategic plan for reducing opioid use, misuse, and related deaths. Key informants and stakeholders who participated in the evaluation data collection noted that these programs are intended to achieve many of the same goals as the Demonstration and thus are likely synergistic to Demonstration changes’ influence on perceived or quantifiable changes in beneficiary or provider outcomes. The time variables included in the regression models account for the effect of the programs that started in the baseline period and are continuing into the Demonstration, provided their effects over time remain constant. The effects of the other programs on Demonstration outcomes, if any, confound the Demonstration effect estimates. Therefore, caution is warranted in interpreting the effect estimates.

Exhibit H.2. Other Programs Coinciding With the Demonstration, 2017–2025

Program name	Program start date	Program end date
Substance Abuse and Mental Health Services Administration’s State Opioid Response Grant (three rounds of 2-year grants)	FY 2018	FY 2024
LIVE.LONG.DC. (District’s Opioid Strategic Plan)	December 2018	Ongoing
Integrated Care DC	January 2021	September 2025
Emergency department SBIRT and buprenorphine induction	May 2019	N/A
PDMP requirement (mandatory query by prescribers/pharmacists before prescribing and dispensing opioids/benzodiazepines)	March 2021	N/A
New DHCF prior authorization process for SUD residential services	January 2022	N/A
HIE connectivity grant	October 2019	September 2021
Consent management within HIE	July 2022	N/A
Bidirectional relationship with HIE required for DBH providers	October 2023	N/A

DBH = Department of Behavioral Health; DHCF = Department of Health Care Finance; HIE = Health Information Exchange; PDMP = prescription drug monitoring program; SBIRT = screening, brief intervention, and referral to treatment; SUD = substance use disorder.

The launch of the Demonstration in January 2020 coincided with the beginning of the COVID-19 PHE in March 2020, which has had a substantial impact on the Demonstration. DHCF authorized

telehealth flexibilities related to reimbursing for audio-only visits and allowing home as an originating site in March 2020. The District also authorized a temporary payment increase for certain nonwaiver SUD services and secured approval for a COVID-19 waiver to renegotiate provider rates to further address COVID-19 challenges. The PHE has affected utilization patterns, particularly for services that must be delivered in person. However, telemedicine utilization for behavioral health services, particularly for mental health, substantially increased. While utilization levels of SMI/SED services have mostly returned to pre-pandemic levels, that is not yet the case with SUD services. The PHE's effect on Medicaid enrollment and changes in healthcare needs and utilization patterns could confound the estimation of the Demonstration's effects. To isolate the Demonstration's effect from that of the COVID-19 pandemic, as much as feasible given the policy timing, we used COVID-related deaths as a control variable in the regression analyses. We also collected primary data through interviews, listening sessions, and the beneficiary survey to collect stakeholder perspectives on how the pandemic affected the Demonstration implementation and outcomes. These data show that the pandemic reduced providers' volume, disrupted typical care delivery patterns, negatively impacted beneficiaries' physical and mental health, and prevented beneficiaries from getting the behavioral health services they needed.

Overall, these findings suggest that concurrent federal and state programs are synergistic. The stakeholder engagement and research activities of the SUPPORT Act and SOR grant helped inform the District's strategies under the Demonstration. In addition, the Demonstration provided a path to expanding and sustaining services initially piloted and funded through the SOR grant and via local funds stewarded by DBH. Federal flexibilities related to the COVID-19 PHE, such as allowing states to issue telehealth flexibilities and to revisit provider rate setting, helped mitigate some of the impact of COVID-19 and prompted longer term delivery system improvements. It may be helpful for states designing 1115 waiver applications to review activities occurring in related initiatives in order to identify opportunities to scale, sustain, and rigorously evaluate activities that are widely supported or that fill gaps in the states' Medicaid state plan. Federal agencies could consider promoting similar approaches as they advise states interested in pursuing 1115 waivers.

I. Lessons Learned and Recommendations

This section covers the lessons learned from the first 2.5 years of the Demonstration and associated recommendations that could be of use to other states that may be interested in implementing a similar approach and to CMS. The lessons learned and recommendations are grouped under three topics:

- Demonstration design,
- Demonstration implementation, and
- Evaluation.

Demonstration design. As states look to design and revise their 1115 waivers, lessons learned from the District’s Demonstration may provide insights into areas of the behavioral healthcare delivery system on which to focus. For example, it may be valuable to include policies related to crisis stabilization services. The District implemented several policy changes associated with crisis stabilization, including modifying and clarifying payment methodology for specialized crisis stabilization services, introducing new specialized crisis stabilization services, and including general crisis support as a core service for DBH-certified providers. These changes likely contributed to the increased utilization of these services. In addition, evaluation participants believed the increased delivery and utilization of these services to be the reason why ED visits for mental health have decreased in the District post-Demonstration.

Another area of 1115 waiver design that states may want to consider based on the interim results of the Demonstration evaluation is intake and assessment for SUD needs. The District decentralized these functions by requiring all SUD providers to offer these services. This policy change may be contributing to the increase in new SUD diagnoses observed in the District post-Demonstration. This change may also increase beneficiaries’ satisfaction with these services, according to evaluation participants, because it makes it easier for beneficiaries to reconnect with service providers they know and trust.

There was also an increase in physical health screenings conducted in IMDs post-Demonstration. This suggests that states may want to explore how to engage IMD settings in their goals to promote more integrated care for beneficiaries with behavioral health diagnoses.

Demonstration implementation. Clear, detailed, and frequent communication with providers has been essential to the timely implementation of the Demonstration. Early in the Demonstration, there was confusion about some of the Demonstration services. The District responded to this confusion by issuing a series of bulletins to clarify the policies and provide

guidance on how to put these policies into practice. The District also provided individualized support to providers as they adopted new tools and workflows related to Demonstration policies. These ongoing efforts helped to ensure that policies were implemented in practice by providers. States implementing 1115 waivers may want to assess the need for similar guidance documents and targeted one-on-one support.

Evaluation. The following lessons learned indicate ways to improve the accuracy and usefulness of Demonstration evaluations.

- **Adapting SMI/SED and SUD monitoring metrics for evaluation.** CMS evaluation guidance suggests the selection of evaluation measures from nationally recognized sources and national measure sets. SMI/SED and SUD Demonstration Monitoring Metrics, which states have to routinely report to CMS under Demonstrations, is a good source for such measures. The availability of codes for generating the metrics also makes the monitoring metrics an attractive source for evaluations. However, a couple of monitoring metrics used in this report are not well aligned to Demonstration goals (SMI/SED Monitoring Metric #4 and SUD Monitoring Metric #25), though they cover generally similar concepts. In such cases, CMS could consider offering additional measure specifications that adapt the standard metrics to better align with Demonstration goals. For example, to assess progress on SUD Goal 5 (fewer readmissions to the same or higher LOC where the readmission is preventable or medically inappropriate), CMS could provide an adapted version of SUD Monitoring Metric #25, which is the rate of all-cause readmissions during the measurement period among beneficiaries with SUD and not limited to readmissions that are preventable or medically inappropriate. Adding these adaptations in the SMI/SED and SUD Monitoring Metrics Technical Specifications documents is an efficient solution that ensures standardization across states and reduces states' coding burden.
- **Improved capture of rendering provider information.** An important Demonstration strategy to improve access to SMI/SED/SUD services is increasing the number of mental health and SUD providers. Therefore, it is important to accurately capture the number of providers offering services at various levels and settings of care. However, certain claims data limitations may lead to undercounting of certain types of providers. For example, MHRS organizations bill at the entity level even when care is provided by individual practitioners affiliated with the organization. The rendering provider field in the claim is usually populated with the billing provider information, leading to undercounting of individual clinicians in the case of these types of organizational providers. CMS/states could encourage accurate capture of rendering provider information in the claims data to reduce this miscounting. CMS could also encourage states to promote all behavioral health clinicians at billing providers to enroll in

Medicaid, so that they can be the rendering provider on the claim. This would enable better insight into the range and capacity of clinicians providing behavioral services.

- **Routine provision of T-MSIS data for evaluation.** For estimating causal impacts from observational data, a comparison group is needed. However, in the case of Demonstrations such as the District's, where the intervention covers all eligible Medicaid beneficiaries in the jurisdiction and their participation begins at the same time, it is not feasible to find an appropriate comparison group within the state. In such situations, CMS may encourage the use of T-MSIS data to generate a comparison group from a comparable state or through innovative methods such as synthetic controls. While the data lag in T-MSIS Research Identifiable Files (TAF RIFs) does not allow use of the data for interim evaluation reports, use of the data is feasible for summative evaluation reports to estimate the causal impact of the early years of the Demonstration. To encourage the use of T-MSIS data for evaluations, CMS could give state evaluators access to TAF RIF data free of cost and publicize its routine availability for the purpose to state Demonstration applicants. States may also be encouraged to include TAF RIF data in their evaluation scope of work.¹⁵⁰
- **Extension of Demonstration period.** For Demonstrations that mostly overlapped with the emergence of the COVID-19 PHE, the use of control variables or other methods does not guarantee the complete removal of the pandemic's confounding effect on impact estimates. In such cases, extending the Demonstration period beyond the original duration set in the pre-pandemic period could be considered. The longer Demonstration period, where the impacts of the pandemic are waning or are known and stable, would allow for less biased impact estimation.

¹⁵⁰ Use of T-MSIS data was out of scope for this evaluation. Furthermore, since the COVID-19 pandemic was just unfolding at the time the evaluation design was being prepared, it was difficult to determine which state (or metropolitan area) could potentially be a good comparison group.

J. Attachment: CMS-Approved Evaluation Design

See at the end of this report.

Appendix A. SMI/SED Diagnosis Codes Used to Identify the SMI/SED Target Population

DHCF defines the SMI population for purposes of monitoring (including ages, diagnosis groups and associated service use requirements) as the population that has:

1. An ICD-10-CM diagnosis from the list on the next page during the measurement period and age 21 or older at the start of the measurement period, or
2. A claim with a provider type of “D05” (residential treatment center) during the measurement period and age 21 or older at the start of the measurement period, or
3. A claim with a provider type of “D02” or “D03” (public and private psychiatric hospitals) that meets the criteria of the inpatient stay HEDIS value set during the measurement period and age 21 or older at the start of the measurement period.

DHCF defines the SED population for purposes of monitoring as the population that has:

1. An ICD-10-CM diagnosis from the list on the next page during the measurement period and under age 21 at the start of the measurement period, or
2. A claim with a provider type of “D05” (residential treatment center) during the measurement period and under age 21 at the start of the measurement period, or
3. A claim with a provider type of “D02” or “D03” (public and private psychiatric hospitals) that meets the criteria of the inpatient stay HEDIS value.

The AIR team uses the following list of ICD-10-CM diagnosis codes for identifying the target population for the SMI/SED evaluation metrics. To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI. These codes differ from the diagnosis codes used in the Standardized Definition of SMI specified in the CMS Technical Specifications.

Appendix Exhibit A.1. List of Diagnosis Codes Used to Identify the Target Population for SMI/SED Evaluation Metrics

Diagnosis code	Diagnosis description
F20.0	PARANOID SCHIZOPHRENIA
F20.1	DISORGANIZED SCHIZOPHRENIA
F20.2	CATATONIC SCHIZOPHRENIA
F20.5	RESIDUAL SCHIZOPHRENIA
F20.81	SCHIZOPHRENIFORM DISORDER
F20.89	OTHER SCHIZOPHRENIA
F20.9	SCHIZOPHRENIA, UNSPECIFIED
F22	DELUSIONAL DISORDERS
F25.9	SCHIZOAFFECTIVE DISORDER, UNSPECIFIED
F29	UNSPECIFIED PSYCHOSIS NOT DUE TO A SUBSTANCE OR KNOWN PHYSIOLOGICAL CONDITION
F30.10	MANIC EPISODE WITHOUT PSYCHOTIC SYMPTOMS, UNSPECIFIED
F30.11	MANIC EPISODE WITHOUT PSYCHOTIC SYMPTOMS, MILD
F30.12	MANIC EPISODE WITHOUT PSYCHOTIC SYMPTOMS, MODERATE
F30.13	MANIC EPISODE, SEVERE, WITHOUT PSYCHOTIC SYMPTOMS
F30.2	MANIC EPISODE, SEVERE WITH PSYCHOTIC SYMPTOMS
F30.3	MANIC EPISODE IN PARTIAL REMISSION
F30.4	MANIC EPISODE IN FULL REMISSION
F30.8	OTHER MANIC EPISODES
F31.10	BIPOLAR DISORDER, CURRENT EPISODE MANIC WITHOUT PSYCHOTIC FEATURES, UNSPECIFIED
F31.11	BIPOLAR DISORDER, CURRENT EPISODE MANIC WITHOUT PSYCHOTIC FEATURES, MILD
F31.12	BIPOLAR DISORDER, CURRENT EPISODE MANIC WITHOUT PSYCHOTIC FEATURES, MODERATE
F31.13	BIPOLAR DISORDER, CURRENT EPISODE MANIC WITHOUT PSYCHOTIC FEATURES, SEVERE
F31.2	BIPOLAR DISORDER, CURRENT EPISODE MANIC SEVERE WITH PSYCHOTIC FEATURES
F31.30	BIPOLAR DISORDER, CURRENT EPISODE DEPRESSED, MILD OR MODERATE SEVERITY, UNSPECIFIED
F31.31	BIPOLAR DISORDER, CURRENT EPISODE DEPRESSED, MILD
F31.32	BIPOLAR DISORDER, CURRENT EPISODE DEPRESSED, MODERATE

Diagnosis code	Diagnosis description
F31.4	BIPOLAR DISORDER, CURRENT EPISODE DEPRESSED, SEVERE, WITHOUT PSYCHOTIC FEATURES
F31.5	BIPOLAR DISORDER, CURRENT EPISODE DEPRESSED, SEVERE, WITH PSYCHOTIC FEATURES
F31.60	BIPOLAR DISORDER, CURRENT EPISODE MIXED, UNSPECIFIED
F31.61	BIPOLAR DISORDER, CURRENT EPISODE MIXED, MILD
F31.62	BIPOLAR DISORDER, CURRENT EPISODE MIXED, MODERATE
F31.63	BIPOLAR DISORDER, CURRENT EPISODE MIXED, SEVERE, WITHOUT PSYCHOTIC FEATURES
F31.64	BIPOLAR DISORDER, CURRENT EPISODE MIXED, SEVERE, WITH PSYCHOTIC FEATURES
F31.73	BIPOLAR DISORDER, IN PARTIAL REMISSION, MOST RECENT EPISODE MANIC
F31.74	BIPOLAR DISORDER, IN FULL REMISSION, MOST RECENT EPISODE MANIC
F31.75	BIPOLAR DISORDER, IN PARTIAL REMISSION, MOST RECENT EPISODE DEPRESSED
F31.76	BIPOLAR DISORDER, IN FULL REMISSION, MOST RECENT EPISODE DEPRESSED
F31.77	BIPOLAR DISORDER, IN PARTIAL REMISSION, MOST RECENT EPISODE MIXED
F31.78	BIPOLAR DISORDER, IN FULL REMISSION, MOST RECENT EPISODE MIXED
F31.81	BIPOLAR II DISORDER
F31.9	BIPOLAR DISORDER, UNSPECIFIED
F32.0	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, MILD
F32.1	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, MODERATE
F32.2	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, SEVERE WITHOUT PSYCHOTIC FEATURES
F32.3	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, SEVERE WITH PSYCHOTIC FEATURES
F32.4	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, IN PARTIAL REMISSION
F32.5	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, IN FULL REMISSION
F32.8	OTHER DEPRESSIVE EPISODES
F32.9	MAJOR DEPRESSIVE DISORDER, SINGLE EPISODE, UNSPECIFIED
F33.0	MAJOR DEPRESSIVE DISORDER, RECURRENT, MILD
F33.1	MAJOR DEPRESSIVE DISORDER, RECURRENT, MODERATE
F33.2	MAJOR DEPRESSIVE DISORDER, RECURRENT SEVERE WITHOUT PSYCHOTIC FEATURES
F33.3	MAJOR DEPRESSIVE DISORDER, RECURRENT, SEVERE WITH PSYCHOTIC SYMPTOMS
F33.41	MAJOR DEPRESSIVE DISORDER, RECURRENT, IN PARTIAL REMISSION

Diagnosis code	Diagnosis description
F33.42	MAJOR DEPRESSIVE DISORDER, RECURRENT, IN FULL REMISSION
F33.9	MAJOR DEPRESSIVE DISORDER, RECURRENT, UNSPECIFIED
F34.1	DYSTHYMIC DISORDER
F34.8	OTHER PERSISTENT MOOD [AFFECTIVE] DISORDERS
F39	UNSPECIFIED MOOD [AFFECTIVE] DISORDER
F43.10	POST-TRAUMATIC STRESS DISORDER, UNSPECIFIED
F43.12	POST-TRAUMATIC STRESS DISORDER, CHRONIC

Appendix B. Evaluation Measures

B.1. Evaluation Measures—SMI/SED Goals

For the claims-based SMI/SED metrics used to evaluate the Demonstration's effectiveness in achieving the SMI/SED goals, generally, the target population is Medicaid beneficiaries with SMI/SED enrolled in Medicaid for any amount of time during the measurement period of the metric. To identify beneficiaries with SMI/SED, we used the set of diagnosis codes for SMI/SED adopted by DHCF for the monitoring metrics, when reporting under the State-specific definition of SMI for the monitoring metrics. Appendix A contains the list of SMI/SED diagnosis codes adopted by DHCF for the State-specific definition of SMI.

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 1: Reduced utilization and lengths of stay in hospital emergency departments (EDs) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)							
Primary Driver: <i>Reduce ED admissions /readmissions for SUD and SMI/SED</i>	Research question 1.1a: Was there a decrease in ED services by beneficiaries with SMI/SED?						
	Mental Health Services Utilization—ED (number and percentage of beneficiaries)	Number and percentage of beneficiaries with SMI/SED who use emergency department services for mental health during the measurement period	CMS-constructed SMI Monitoring Metric #16	The total number of unique beneficiaries (de-duplicated total) who have a claim for emergency services for mental health during the measurement period	Medicaid beneficiaries with SMI/SED enrolled for any amount of time during the measurement period (<i>Denominator</i>)	Claims Data	- ITS - Descriptive statistics
	Research question 1.1b: How does the Demonstration influence ED service utilization among Medicaid beneficiaries with SMI/SED (e.g., through improved access to other continuum of care services)?						
	Perceptions of how the Demonstration has reduced utilization of ED services		AIR defined, with input from DHCF	Number of beneficiaries who report that they know they can get help when in crisis outside of the ED	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
			N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	
Primary Driver: <i>Reduce ED admissions/readmissions for SUD and SMI/SED</i>	Research question 1.2a: Was there a decrease in the length of stay in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings?						
	ED length of stay (LOS) (in hours)	LOS in EDs for Medicaid beneficiaries	AIR defined, with input from DHCF	LOS for Medicaid beneficiaries receiving treatment for SMI/SED in emergency departments	Medicaid beneficiaries receiving treatment for SMI/SED in emergency departments (<i>Denominator</i>)	• DC Hospital Association	• Descriptive Statistics • Regression Analysis
	Perceptions of whether there was a decrease in the LOS in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Research question 1.2b: How does the Demonstration influence the length of stay in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings (e.g., through improved access to other continuum of care services)?						
	Perceptions of how the Demonstration has reduced LOS in hospital EDs		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 2: Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)							
Primary Driver: <i>Reduce ED admissions/readmissions for SUD and SMI/SED</i>	Research question 2.1: Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?						
	Readmission following psychiatric hospitalization in an inpatient psychiatric facility (percentage of beneficiaries)	The rate of unplanned, 30-day readmissions for demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease	Inpatient Psychiatric Facility Quality Reporting (IPFQR), NQF #2860 SMI Monitoring Metric #4	The count of 30-day readmissions. A readmission is defined as any admission, for any reason, to an IPF or a short-stay acute care hospital (including critical access hospitals) that occurs within 30 days after the discharge date from an eligible index admission to an IPF, except those considered planned. The measure uses the CMS 30-day Hospital-Wide Readmission (HWR) Measure Planned Readmission Algorithm, Version 4.0.	The count of index hospital admissions to IPFs among Medicaid beneficiaries with SMI/SED and a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics
	Perceptions of whether there was a decrease in preventable readmissions to acute care and specialty hospitals and residential settings	N/A, Qualitative Measure				- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 3: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)							
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 3.1a: Was there an increase in the utilization of crisis stabilization services?						
	Any crisis stabilization service (number and percentage of beneficiaries)	Number and percentage of beneficiaries accessing crisis stabilization services	AIR defined, with input from DHCF	Number and percentage of beneficiaries accessing crisis stabilization services	Medicaid beneficiaries with SMI/SED enrolled for any amount of time during the measurement period (Denominator)	Claims Data	- ITS - Descriptive Statistics
	Any crisis stabilization service, by setting (number and percentage of beneficiaries: - comprehensive psychiatric emergency program (CPEP) - mobile crisis and outreach - psychiatric crisis stabilization	Number and percentage of beneficiaries accessing crisis stabilization services: - CPEP - mobile crisis and outreach - psychiatric crisis stabilization	AIR defined, with input from DHCF	Number of beneficiaries receiving crisis stabilization service in the specified setting	Number of beneficiaries, enrolled in Medicaid with SMI/SED diagnoses during the month (Denominator)	Claims Data	- ITS - Descriptive Statistics

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 3.1b: Was there an increase in awareness of the availability of crisis stabilization services?						
	Awareness of available crisis stabilization services		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
Secondary Driver: <i>Revise/clarify reimbursement for crisis stabilization services, TREM, TST, and telemedicine</i>	Research question 3.1c: How does the Demonstration influence the availability of crisis stabilization services (i.e., CPEP, Psychiatric Crisis Stabilization Program, Youth Mobile Crisis Intervention, and Adult Mobile Crisis and Behavioral Health Outreach)?						
	Content of changes to the reimbursement methodology for crisis stabilization services		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
	Awareness of changes to the reimbursement methodology for crisis stabilization services		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis
	Perceptions of the extent to which reimbursement changes incentivize or facilitate increased availability of crisis stabilization services		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis
	Perceptions of how the Demonstration influenced availability of crisis stabilization services		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 4: Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral healthcare. (SMI/SED-4 in STCs)							
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 4.1a: Was there an increase in access to community-based SMI/SED treatment services?						
	Number of mental health providers: - In total - Psychiatric hospital - Physician or other practitioner - Federally Qualified Health Centers (FQHC) - Other behavioral health clinic/entity	Number of mental health providers who delivered services to beneficiaries with SMI/SED under the Demonstration: - In total - Psychiatric hospital - Physician or other practitioner - Federally Qualified Health Centers (FQHC) - Other behavioral health clinic/entity	AIR defined, with input from DHCF	Total number of eligible mental health practitioners delivering services to SMI/SED beneficiaries (includes stratifications for provider type)	SMI/SED providers who were enrolled in Medicaid and qualified to deliver Medicaid services during the measurement period <i>(Population of interest)</i>	- Provider Enrollment Database - Claims Data	- ITS - Descriptive Statistics
	Capacity of newly enrolled Medicaid providers qualified to deliver SMI/SED services		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Increase in newly enrolled Medicaid providers qualified to deliver SMI/SED services relative to overall increase in providers qualified to deliver SMI/SED services in the District	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Change in beneficiary self-report of barriers to treatment	AIR defined, with input from DHCF	Number of beneficiaries who report a barrier to treatment	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Site Visits - Beneficiary Interviews	- Descriptive Statistics - Thematic Analysis - Triangulation
		N/A, Qualitative Measure					
	Research question 4.1b: Was there an increase in community knowledge of available community-based SMI/SED treatment and services?						
	Change in beneficiary awareness of SMI treatment and services	AIR defined, with input from DHCF	Number of beneficiaries indicating they know where to go to receive treatment for SMI	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Site Visits - Beneficiary Interviews	- Descriptive Statistics - Thematic Analysis - Triangulation
		N/A, Qualitative Measure					
	Secondary Driver: Revise/clarify reimbursement methodology for crisis stabilization services, TREM, TST, and telemedicine						
	Content of the changes to the reimbursement methodology for TST and TREM	N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation	
	Awareness of changes to the reimbursement methodology for TST and TREM	N/A, Qualitative Measure			Site Visits	Thematic Analysis	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Expanded TST and TREM services as reported by providers		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis
	Perceptions of the extent to which changes to the reimbursement methodology for TST and TREM incentivized or facilitated expanded access to TST and TREM		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis
Secondary Driver: <i>Provide Medicaid reimbursement for independent licensed BH clinicians</i>	Research question 4.1d: How does the implementation of reimbursement for independent licensed providers for SMI/SED services influence access to independent licensed behavioral health clinicians?						
	Availability of reimbursement for independent licensed BH clinicians for SMI/SED services		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
	Awareness of reimbursement to independent licensed BH clinicians for SMI/SED services		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis
	Perceptions of the extent to which reimbursement of independent licensed BH clinicians for SMI/SED services incentivized or facilitated expanded access to SMI/SED treatment services		N/A, Qualitative Measure			• Site Visits	• Thematic analysis

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Revise/clarify reimbursement methodology for crisis stabilization services, TREM, TST, and telemedicine</i>	Research question 4.1e: How does creating separate service definitions for TREM and TST influence access to TREM and TST treatment services?						
	Content of changes to the definitions or to the regulations for TREM and TST	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of changes to the definitions or regulations for TREM and TST	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which changes to the definitions or regulations for TREM and TST incentivized or facilitated expanded access to TREM and TST treatment services	N/A, Qualitative Measure				Site Visits	Thematic analysis
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services</i>	Research question 4.1f: How does the implementation of FFP for short-term stays for acute care in IMD settings influence access to short-term stays for acute care in IMD settings?						
	Availability of FFP for short-term stays for acute care in IMD settings	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Content of reimbursement policy for short-term stays for acute care in IMD settings (e.g., eligible services, payment rate)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of reimbursement for short-term stays for acute care in IMD settings	N/A, Qualitative Measure				Site Visits	Thematic Analysis

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to short-term stays for acute care in IMD settings		N/A, Qualitative Measure			Site Visits	Thematic Analysis
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 4.2a: Was there an increase in utilization of community-based SMI/SED treatment services?						
	Any mental health services utilization (number and percentage of beneficiaries)	Number and percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period.	CMS-constructed SMI Monitoring Metric #18	Number of unique beneficiaries (de-duplicated total) with a service claim for any services related to mental health during the measurement period	Medicaid beneficiaries with SMI/SED enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	Claims Data	- ITS - Descriptive Statistics
	Change in self-reported utilization of SMI treatment and services		AIR defined, with input from DHCF	Number of beneficiaries who report receiving the SMI services that they wanted or needed	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 4.2b: How does the Demonstration influence utilization of TST and TREM?						
	Perceptions of whether the Demonstration increased utilization of TST and TREM		N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of how the Demonstration increased utilization of TST and TREM		N/A, Qualitative Measure			Site Visits	Thematic Analysis

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Research question 4.2c: How does the availability of the Clubhouse influence utilization of SMI/SED treatment services?						
	Availability of the Clubhouse		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Resources and services available at the Clubhouse		N/A, Qualitative Measure			- Document Reviews - Site Visits	- Thematic Analysis - Triangulation
	Perceptions of the resources and services provided through the Clubhouse		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
	Perceptions of the extent to which the availability of the Clubhouse increased utilization of SMI/SED treatment services		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	Thematic Analysis
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 4.2d: How does the Demonstration influence utilization of independent licensed behavioral health clinicians by beneficiaries with SMI or SED?						
	Perceptions of whether the Demonstration increased utilization of independent licensed BH clinicians by beneficiaries with SMI or SED		N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of how the Demonstration increased utilization of independent licensed BH clinicians by beneficiaries with SMI or SED		N/A, Qualitative Measure			Site Visits	Thematic Analysis

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Primary Driver: <i>Improve care transitions and behavioral/ physical health coordination</i>	Research question 4.3a: Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?						
	Assessment of physical health during IMD stay (number and percentage of episodes of care)	Number and percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions	AIR defined, with input from DHCF	Number of IMD stay episodes with a physical condition diagnosis	Number of IMD stay episodes during the measurement period, among Medicaid beneficiaries with SMI/SED diagnoses (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics
	Research question 4.3b: Did the Demonstration increase integration of primary and behavioral healthcare for beneficiaries with SMI or SED?						
	Perceptions of whether the Demonstration increased integration of primary and behavioral healthcare for beneficiaries with SMI or SED	N/A, Qualitative Measure				- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Descriptions of ways primary and behavioral healthcare are integrated for beneficiaries with SMI or SED	N/A, Qualitative Measure				- Key Informant Interviews - Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
	Beneficiary self-reported receipt of behavioral health and physical healthcare from same provider		AIR defined, with input from DHCF	Number of beneficiaries who report they have received behavioral health and physical healthcare from same provider	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			Beneficiary Interviews	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 5: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)							
Primary Driver: <i>Improve care transitions and behavioral/ physical health coordination</i>	Research question 5.1a: Was there an increase in utilization of follow-up services for beneficiaries with SMI/SED after episodes of acute care in hospitals?						
	Follow-up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD) - within 7 days - within 30 days	Percentage of discharges for beneficiaries ages 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner - within 7 days - within 30 days	NCQA, NQF #0576 SMI Monitoring Metric #8	A follow-up visit with a mental health practitioner within 7 or 30 days after discharge	Number of discharges for beneficiaries ages 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm, among Medicaid beneficiaries with SMI/SED diagnoses <i>(Denominator)</i>	Claims Data	- ITS - Descriptive Statistics

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD) - within 7 days - within 30 days	Percentage of emergency department (ED) visits for beneficiaries ages 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness - within 7 days of the ED visit - within 30 days of the ED visit	NCQA, NQF #2605 SMI Monitoring Metric #10	A follow-up visit with any practitioner, with a principal diagnosis of a mental health disorder or with a principal diagnosis of intentional self-harm and any diagnosis of mental health disorder within 7 or 30 days after the ED visit	Number of ED visits for beneficiaries ages 18 and older with a principal diagnosis of mental illness or intentional self-harm, among Medicaid beneficiaries with SMI/SED diagnoses (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Research question 5.1b: How does the implementation of the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge influence care coordination?						
	Whether and through what mechanisms the District implements requirements for psychiatric hospitals and residential treatment settings to initiate contact within 72 hours of discharge with the beneficiary and community-based providers	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Perceived facilitators and barriers to initiating contact within 72 hours of discharge with the beneficiary and community-based providers	N/A, Qualitative Measure				Site Visits	Thematic Analysis

Driver	Measure name or research domain		Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services</i>	Research question 5.1c: How does the implementation of reimbursement for transition planning services influence care coordination?							
	Availability of reimbursement for transition planning activities			N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Content of reimbursement policy for transition planning activities (e.g., eligible beneficiaries, reimbursement rates)			N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of the availability of reimbursement for transition planning activities			N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of whether the available reimbursement for discharge-planning activities incentivized or facilitated improved care coordination			N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Utilization of transition planning service	Use of new transition planning service by eligible beneficiaries with SMI/SED		AIR defined, with input from DHCF	Number and percentage of eligible beneficiaries using the new transition planning service for beneficiaries with SMI/SED	Medicaid beneficiaries eligible for the service (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics
	Research question 5.1d: How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SMI/SED?							
	Strategies implemented by the District to facilitate health IT adoption and interoperability (e.g., via improvements to the HIE)			N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Drivers: <i>Offer technical assistance and training on clinical care coordination. Leverage existing grants and stakeholder collaborations to expand provider adoption of health IT</i>	Challenges and facilitators to adopting and using health IT		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Workflows for integrating HIE data into care coordination efforts		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Perceptions of information available via HIE		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Content, format, and reach of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Perceptions of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure			• Site Visits	• Thematic Analysis • Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Research question 5.1e: How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SMI/SED?						
	Whether and through what mechanisms the District implements requirements for IMDs to conduct psychiatric and medical screenings		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Perceptions of the extent to which requiring IMDs to conduct psychiatric and medical screenings influenced care coordination for beneficiaries with SMI/SED		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Perceived facilitators and barriers to conducting psychiatric and medical screenings in IMDs for beneficiaries with SMI/SED		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	Thematic Analysis
	Research question 5.1f: Did care coordination improve for beneficiaries with SMI/SED?						
	Care coordination for beneficiaries with SMI/SED	Beneficiary perceptions of how their healthcare providers work together	AIR defined, with input from DHCF	Number of beneficiaries who rate their providers’ collaboration highly	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	Descriptive Statistics
	Beneficiaries’ experiences with coordinated care		N/A, Qualitative Measure			Beneficiary Interviews	Thematic Analysis
	Providers’ experiences coordinating care		N/A, Qualitative Measure			Site Visits	Thematic Analysis

B.2 Evaluation Measures—SUD Goals

For the claims-based SUD metrics used to evaluate the Demonstration’s effectiveness in achieving the SUD goals, generally, the target population is all Medicaid beneficiaries enrolled in Medicaid for any amount of time during the measurement period of the metric.

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Goal 1: Increased rates of identification of, initiation of, and engagement in treatment for SUD. (SUD-1 in STCs)							
Primary Driver: <i>Increase identification of SUD and SMI/SED</i>	Research question 1.1: Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?						
	Newly initiated SUD treatment/diagnosis (number and percentage of beneficiaries)	Number and percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period	CMS-constructed SUD Monitoring Metric #2	Number of unique beneficiaries (de-duplicated total) enrolled in the measurement period who receive MAT or have qualifying facility, provider, or pharmacy claims with an SUD diagnosis and an SUD-related treatment during the measurement period but not in the 3 months before the measurement period	All Medicaid beneficiaries enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	Claims Data	- ITS - Descriptive Statistics
	Change in beneficiary self-report of barriers to treatment		AIR defined, with input from DHCF	Number of beneficiaries who report a barrier to treatment	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			Site Visits	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
						Beneficiary Interviews	
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 1.2a: Did the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increase during the Demonstration period?						
	SUD provider availability	Number of providers who were enrolled in Medicaid and qualified to deliver SUD services during the measurement period	CMS-constructed SUD Monitoring Metric #13	Total number of eligible SUD providers	SUD providers who were enrolled in Medicaid and qualified to deliver Medicaid services during the measurement period (Population of interest)	- Provider Enrollment Database - Claims Data	- ITS - Descriptive Statistics
	Capacity of newly enrolled Medicaid providers qualified to deliver SUD services	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Increase in newly enrolled Medicaid providers qualified to deliver SUD services relative to overall increase in providers qualified to deliver SUD services in the District	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services</i>	Research question 1.2b: How does the implementation of reimbursement for services provided in IMD settings influence access to specific SUD treatment services?						
	Availability of reimbursement for services in IMD settings	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Content of reimbursement policy for services in IMD settings (e.g., which services are covered and at what rate)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of reimbursement for services in IMD settings	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to services in IMD settings	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Research question 1.2c: How does the implementation of reimbursement for withdrawal management in IMD settings influence access to these SUD treatment services?						
	Availability of reimbursement for withdrawal management services in IMD settings	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Content of reimbursement policy for withdrawal management services in IMD settings (e.g., which services are covered and at what rate)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services</i>	Awareness of reimbursement for withdrawal management services in IMD settings		N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to withdrawal management services in IMD settings		N/A, Qualitative Measure			Site Visits	- Thematic Analysis - Triangulation
Secondary Driver: <i>Require evidence-based assessment tools and practices, availability of MAT, and participation in the PDMP</i>	Research question 1.2d: How does the implementation of requirements to offer or facilitate access to all FDA-approved medications for use in SUD influence access to these SUD treatment services?						
	Whether and through what mechanisms the District implements requirements to offer or facilitate access to all FDA-approved medications for use in SUD		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Perceptions of the extent to which requiring the availability of all FDA-approved medications facilitated expanded access to SUD services		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Perceived facilitators and barriers to offering or facilitating access to all FDA-approved medications for use in SUD		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
Secondary Driver: <i>Provide Medicaid reimbursement for independent licensed BH clinicians</i>	Research question 1.2e: How does the implementation of reimbursement for independent behavioral health clinicians for SUD services influence access to specific SUD treatment services?						
	Availability of reimbursement for independent licensed BH clinicians for SUD services		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Secondary Driver: <i>Provide Medicaid reimbursement for independent licensed BH clinicians</i>	Content of reimbursement policy for independent licensed BH clinicians for SUD services (e.g., which services are covered and at what rate)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of reimbursement to independent licensed BH clinicians for SUD services	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement of independent licensed BH clinicians for SUD services incentivized or facilitated expanded access to SUD services	N/A, Qualitative Measure				Site Visits	Thematic Analysis
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i> Secondary Driver: <i>Decentralize the intake and assessment functions of the ARC</i>	Research question 1.3a: Was there an increase in community knowledge of available treatment and services?						
	Change in beneficiary awareness of available SUD treatment and services		AIR defined, with input from DHCF	Number of beneficiaries who indicate awareness of SUD treatment and services	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 1.3b: Was there an increase in the utilization of specific SUD treatment services?						
	Any SUD treatment (number and percentage of beneficiaries)	Number and percentage of beneficiaries enrolled in the measurement	CMS-constructed SUD Monitoring Metric #6	Number of unique beneficiaries (de-duplicated) enrolled in the measurement	All Medicaid beneficiaries enrolled for any amount of time	Claims data	- ITS - Descriptive Statistics

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>		period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period		period receiving at least one SUD treatment service or pharmacy claim during the measurement period	during the measurement period (<i>Population of interest</i>)		
	Change in self-reported utilization of SUD treatment and services		AIR defined, with input from DHCF	Number of beneficiaries who report receiving the SUD services that they wanted or needed	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	
Research question 1.3c: How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence utilization of appropriate SUD services?							
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i> Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Beneficiary awareness of MAT copay removal		AIR defined, with input from DHCF	Number of beneficiaries indicating awareness of the copay removal for MAT	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator / population of interest	Data source	Analytic approach
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i> Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Mechanisms through which the District removed the \$1 copay for certain MAT prescriptions		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Perceptions of the extent to which the removal of the \$1 copay incentivized or facilitated increased utilization of SUD services		AIR defined, with input from DHCF	Number of beneficiaries indicating copay removal for MAT increased their utilization of SUD services	Total number of survey participants who were aware of the copay removal for MAT (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Goal 2: Increased adherence to and retention in treatment.							
Primary Driver: <i>Increase adherence to and retention in treatment</i>	Research question 2.1a: Did the demonstration increase adherence to SUD treatment?						
	Initiation of Alcohol and Other Drug Dependence Treatment (IET-AD)	Percentage of beneficiaries with a new episode of alcohol or other drug (AOD) abuse or dependence who received initiation of AOD treatment	National Committee for Quality Assurance (NCQA), National Quality Forum (NQF) #0004 SUD Monitoring Metric #15	Number of beneficiaries who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth, or medication treatment within 14 days of the diagnosis	Medicaid beneficiaries ages 18 and older during the measurement period, who had a new episode of alcohol or other drug (AOD) abuse or dependence (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics
Primary Driver: <i>Increase adherence to and retention in treatment</i>	Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)	Percentage of beneficiaries who initiated treatment and who were engaged in ongoing alcohol or other drug (AOD) treatment within 34 days of the initiation visit	National Committee for Quality Assurance (NCQA), National Quality Forum (NQF) #0004 SUD Monitoring Metric #15	Number of beneficiaries who initiated treatment and who were engaged in ongoing AOD treatment within 34 days of the initiation visit	Medicaid beneficiaries ages 18 and older during the measurement period, who had a new episode of alcohol or other drug (AOD) abuse or dependence (<i>Denominator</i>)	Claims Data	- ITS - Descriptive Statistics

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Beneficiary self-report of how well they have adhered to their providers' treatment advice		AIR defined, with input from DHCF	Number of beneficiaries who indicate they have adhered to their providers' treatment advice	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			Beneficiary Interviews	
	Perceptions of facilitators and barriers to adherence to SUD treatment		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
	Research question 2.1b: Did the demonstration increase retention in SUD treatment?						
		Continuity of pharmacotherapy for opioid use disorder (number and percentage of beneficiaries)	Number and percentage of beneficiaries who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than 7 days	USC, NQF#3175 SUD Monitoring Metric #22	Number of beneficiaries who have at least 180 days of continuous pharmacotherapy with a medication prescribed for SUD without a gap of more than 7 days	Individuals who had a diagnosis of OUD and at least one claim for an OUD medication (<i>Denominator</i>)	Claims Data
Primary Driver: <i>Increase adherence to and retention in treatment</i>	Beneficiary self-report of how well they have adhered to their providers' treatment advice		AIR defined, with input from DHCF	Number of beneficiaries who indicate they have adhered to their providers' treatment advice	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			Beneficiary Interviews	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Perceptions of facilitators and barriers to retention in SUD treatment		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Research question 2.1c: How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence adherence to and retention in SUD treatment?						
	Mechanisms through which the District removed the \$1 copay for certain MAT prescriptions		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
	Beneficiary awareness of the removal of the \$1 copay for certain MAT prescriptions		AIR defined, with input from DHCF	Number of beneficiaries indicating awareness of the copay removal for MAT	Total number of survey participants (<i>Denominator</i>)	• Beneficiary Survey	• Descriptive Statistics • Thematic Analysis • Triangulation
			N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Descriptive Statistics • Thematic Analysis • Triangulation
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Perceptions of the extent to which removal of the \$1 copay for certain MAT prescriptions increased adherence to and retention in SUD treatment		AIR defined, with input from DHCF	Number of beneficiaries indicating copay removal for MAT increased their adherence to/retention in SUD treatment services	Total number of survey participants who were aware of the copay removal for MAT (<i>Denominator</i>)	• Beneficiary Survey	• Descriptive Statistics • Thematic Analysis • Triangulation
			N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Research question 2.1d: How does the availability of supported employment services influence adherence to and retention in SUD treatment?						
	Availability of supported employment services (SES)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Type of SES available	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Awareness of the availability of SES	AIR defined, with input from DHCF	Number of beneficiaries indicating awareness of services	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation	
		N/A, Qualitative Measure				- Site Visits - Beneficiary Survey	- Descriptive Statistics - Thematic Analysis - Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Use of SES		AIR defined, with input from DHCF	Number of beneficiaries indicating that they used services	Total number of survey participants indicating that they are aware of services (<i>Denominator</i>)	• Beneficiary Survey	• Descriptive Statistics
	Perceptions of the SES		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of whether the SES influenced adherence to and retention in SUD treatment		AIR defined, with input from DHCF	Number of beneficiaries indicating services influenced their adherence to and retention in SUD treatment	Total number of survey participants who indicated that they have used services (<i>Denominator</i>)	• Beneficiary Survey	• Descriptive Statistics • Thematic Analysis • Triangulation
			N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Descriptive Statistics • Thematic Analysis • Triangulation
Secondary Driver: Remove \$1 copay for certain MAT prescriptions. Add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and	Research question 2.1e: How does the availability of recovery support services influence initiation of, adherence to, and retention in SUD treatment?						
	Availability of recovery support services		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
	Types of recovery support services available		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
therapeutic SE for SUD	Awareness of the availability of recovery support services	N/A, Qualitative Measure				• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of the recovery support services	N/A, Qualitative Measure				• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of whether the recovery support services influenced initiation of, adherence to, and retention in SUD treatment	N/A, Qualitative Measure				• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
Primary Driver: Increase adherence to and retention in treatment	Research question 2.1f: How does the availability of transition planning services influence adherence to and retention in SUD treatment?						
	Availability of transition planning services	N/A, Qualitative Measure				• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
Primary Driver: Increase adherence to and retention in treatment	Types of transition planning services available	N/A, Qualitative Measure				• Document Reviews • Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Awareness of the availability of transition planning services	N/A, Qualitative Measure				• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of the transition planning services	AIR defined, with input from DHCF	Number of beneficiaries who report they knew what the next step in their care would be	Total number of survey participants (Denominator)	• Beneficiary Survey	• Descriptive Statistics • Thematic Analysis • Triangulation	
		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
	Perceptions of whether the transition planning services influenced adherence to and retention in SUD treatment		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Research question 2.1g: How does the availability of independent licensed behavioral health clinician services influence adherence to and retention in SUD treatment?						
	Availability of independent licensed BH clinician services		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation
Primary Driver: <i>Increase adherence to and retention in treatment</i>	Types of independent licensed BH clinician services available		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation
	Awareness of the availability of independent licensed BH clinician services		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of the independent licensed BH clinician services		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation
	Perceptions of whether the independent licensed BH clinician services influenced adherence to and retention in SUD treatment		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews	• Thematic Analysis • Triangulation

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator		Denominator/ population of interest	Data source	Analytic approach
Goal 3: Reductions in overdose deaths, particularly those due to opioids. (SUD-3 in STCs)								
Primary Driver: All primary drivers	Research question 3.1: Was there a decrease in the rate of overdose deaths?							
	Opioid overdose deaths	Number and percentage of overdose deaths during the measurement period among Medicaid beneficiaries living in a geographic area covered by the Demonstration	SUD Monitoring Metric #26	Number of SUD overdose deaths during the measurement period among Medicaid beneficiaries	Beneficiaries enrolled in Medicaid for at least 1 month (30 consecutive days) during the measurement period or the 30 days prior to the beginning of the measurement period (Denominator)	• Vital Records Data	• ITS • Descriptive Statistics	
Goal 4: Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services. (SUD-4 in STCs)								
Primary Driver: Reduce ED admissions/ readmissions for SUD and SMI/SED	Research question 4.1a: Was there a reduction in ED or inpatient utilization for beneficiaries with SUD?							
	Inpatient stays for SUD per 1,000 Medicaid beneficiaries	Total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period	CMS-constructed SUD Monitoring Metric #24	The number of inpatient discharges related to a SUD stay during the measurement period	All Medicaid beneficiaries enrolled for any amount of time during the measurement period (Population of interest)	• Claims Data	• ITS • Descriptive Statistics	

Driver	Measure name or research domain	Measure description		Measure steward, endorsement	Numerator		Denominator/ population of interest	Data source	Analytic approach
	Emergency department utilization for SUD per 1,000 Medicaid beneficiaries	Total number of ED visits for SUD per 1,000 beneficiaries in the measurement period		CMS-constructed SUD Monitoring Metric #23	The number of ED visits for SUD during the measurement period	All Medicaid beneficiaries enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	• Claims Data		- ITS - Descriptive Statistics
	Prevention Quality Indicator: chronic conditions composite	Inpatient hospital admissions for ambulatory care sensitive chronic conditions	AIR defined, with input from DHCF (leveraging AHRQ PQI 92)	Discharges for Medicaid beneficiaries 18 years and older for chronic conditions	Beneficiaries with diagnosed SUD enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period (Denominator)	• Claims data	• ITS • Descriptive Statistics		
Primary Driver: <i>Reduce ED admissions/readmissions for SUD and SMI/SED (continued)</i>	Research question 4.1b: How does the Demonstration influence preventable utilization of ED or inpatient care through improved access to other continuum of care services?								
	Perceptions of whether the Demonstration has reduced preventable utilization of ED or inpatient care			AIR defined, with input from DHCF	Number of beneficiaries who report that they know they can get help when in crisis outside of the ED	Total number of survey participants (<i>Denominator</i>)	• Beneficiary Survey		- Descriptive Statistics - Thematic Analysis - Triangulation
				N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator		Denominator/ population of interest	Data source	Analytic approach
	Perceptions of how the Demonstration has reduced preventable utilization of ED or inpatient care		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		• Thematic Analysis • Triangulation
	Research question 4.1c: How does the Demonstration influence medically inappropriate utilization of ED or inpatient care through improved access to other continuum of care services?							
	Perceptions of whether the Demonstration has reduced medically inappropriate utilization of ED or inpatient care		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		• Thematic Analysis • Triangulation
	Perceptions of how the Demonstration has reduced medically inappropriate of ED or inpatient care		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		• Thematic Analysis • Triangulation
Goal 5: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)								
Primary Driver: <i>Reduce ED admissions/ readmissions for SUD and SMI/SED</i>	Research question 5.1: Was there a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD?							
	Readmissions among beneficiaries with SUD	Rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD	CMS-constructed SUD Monitoring Metric #25	The count of 30-day readmissions: at least one acute readmission for any diagnosis within 30 days of the Index Discharge Date	The count of Index Hospital Stays for beneficiaries with SUD (Denominator)	• Claims Data		• ITS • Descriptive Statistics
	Perceptions of whether there was a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for (LOC) beneficiaries with SUD		N/A, Qualitative Measure			• Site Visits • Beneficiary Interviews		• Thematic Analysis • Triangulation
Goal 6: Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs)								
	Research question 6.1a: Was there an increase in access to care for physical health conditions among beneficiaries with SUD?							

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator		Denominator/ population of interest	Data source	Analytic approach
Primary Driver: <i>Improve care transitions and behavioral/ physical health coordination</i>	Access to preventive/ ambulatory health services for adult Medicaid beneficiaries with SUD	Percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period	NCQA, Adjusted HEDIS Measure SUD Monitoring Metric #32	Number of Medicaid beneficiaries who had an ambulatory or preventive care visit during the measurement period	Number of Medicaid beneficiaries with a diagnosis of SUD during the measurement period (<i>Denominator</i>)	• Claims Data		• ITS • Descriptive Statistics
	Receipt of behavioral health and physical healthcare from same provider		AIR defined, with input from DHCF	Number of beneficiaries who report they have received behavioral health and physical healthcare from same provider	Total number of survey participants (<i>Denominator</i>)	• Beneficiary Survey		• Descriptive Statistics • Thematic Analysis • Triangulation
			NA, Qualitative Measure			• Site Visits • Beneficiary Interviews		
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Research question 6.1b: Did care coordination improve for beneficiaries with SUD?							
	Care coordination for beneficiaries with SUD	Beneficiary perceptions of how their healthcare providers work together	AIR defined, with input from DHCF	Number of beneficiaries who rate their providers' collaboration highly	Total number of survey participants (<i>Denominator</i>)	• Beneficiary Survey		• Descriptive Statistics •
	Beneficiaries' experiences with coordinated care		N/A, Qualitative Measure			• Beneficiary Interviews		• Thematic Analysis

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator		Denominator/ population of interest	Data source	Analytic approach
	Providers’ experiences coordinating care		N/A, Qualitative Measure			• Site Visits	• Thematic analysis	
	Utilization of transition planning service	Use of new transition billing service by eligible beneficiaries	AIR defined, with input from DHCF	Number and percentage of eligible beneficiaries using the new transition planning service for beneficiaries with SUD	Medicaid mental health providers (<i>Denominator</i>)	• Claims Data	• ITS • Descriptive Statistics	
Secondary Drivers: <i>Offer technical assistance and training on clinical care coordination. Leverage existing grants and stakeholder collaborations to expand provider adoption of Health IT</i>	Research question 6.1c: How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SUD?							
	Strategies implemented by the District to facilitate health IT adoption and interoperability (e.g., via improvements to the HIE, increased use of the PDMP)		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation	
	Challenges and facilitators to adopting and using health IT		N/A, Qualitative Measure			• Key Informant Interviews • Site Visit	• Thematic Analysis • Triangulation	
	Workflows for integrating HIE data into care coordination efforts		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation	
	Perceptions of information available via HIE		N/A, Qualitative Measure			• Key Informant Interviews • Site Visits	• Thematic Analysis • Triangulation	
	Content, format, and reach of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure			• Document Reviews • Key Informant Interviews	• Thematic Analysis • Triangulation	

Driver	Measure name or research domain	Measure description	Measure steward, endorsement	Numerator	Denominator/ population of interest	Data source	Analytic approach
Secondary Drivers: <i>Offer technical assistance and training on clinical care coordination. Leverage existing grants and stakeholder collaborations to expand provider adoption of Health IT (continued)</i>					• Site Visits		
	Perceptions of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure		• Site Visits		• Thematic Analysis
	Strategies implemented by the District to facilitate health IT adoption and interoperability (e.g., via improvements to the HIE, increased use of the PDMP)		N/A, Qualitative Measure		• Document Reviews • Key Informant Interviews		• Thematic Analysis • Triangulation
Primary Driver: <i>Improve care transitions and behavioral/physical health coordination</i>	Research question 6.1d: How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SUD?						
	Whether and through what mechanisms the District implements requirements for IMDs to conduct psychiatric and medical screenings		N/A, Qualitative Measure		• Document Reviews • Key Informant Interviews		• Thematic Analysis • Triangulation
Primary Driver: <i>Improve care transitions and behavioral/physical health coordination</i>	Perceptions of the extent to which requiring IMDs to conduct psychiatric and medical screenings influenced care coordination		N/A, Qualitative Measure		• Key Informant Interviews • Site Visits		• Thematic Analysis • Triangulation
	Perceived facilitators and barriers to conducting psychiatric and medical screenings in IMDs		N/A, Qualitative Measure		• Key Informant Interviews • Site Visits		• Thematic Analysis

Appendix C. SMI/SED Goals—Regression Results Tables

This appendix presents regression estimates from the preferred ITS model for various subgroups of interest. The subgroups are adopted from the Demonstration’s monitoring reports. While we have included all subgroup results in this appendix, we have only discussed findings related to a few key subgroups: FFS vs. MCO; OUD vs. not; SMI/SED with vs. without co-occurring SUD; SMI/SED with vs. without co-occurring physical condition. These subgroups were deemed most relevant to the Demonstration and had sufficient beneficiary counts.

It is important to note that some subgroups have very few beneficiaries in certain months or quarters, such as age group, ward, pregnancy status, and criminal justice involvement. When aggregating the data into monthly or quarterly time series, the average outcome might be influenced by just a few individuals. Therefore, caution is warranted when interpreting results from small subgroups.

When interpreting the results for FFS versus MCO, it is also important to consider the changes in population composition under the Demonstration, as discussed in Section H. In October 2020, during the first year of the Demonstration, there was a transition of Medicaid FFS beneficiaries with complex conditions to managed care. This transition led to a decrease in the number of beneficiaries using certain Demonstration services.

Goal 1: Reduced utilization and lengths of stay in hospital emergency departments (ED) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings

Research Question 1.1a. Was there a decrease in ED service utilization by beneficiaries with SMI/SED?

The results of subgroup analyses on the number of beneficiaries with SMI/SED who utilized ED services for mental health during the measurement period are shown in Appendix Exhibit C.1. Findings for key subgroups:

- *FFS vs. MCO:* For FFS beneficiaries, the Demonstration was associated with both an immediate and a quarterly decrease. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OUD vs. non-OUD:* For beneficiaries with OUD, the immediate and quarterly changes were not statistically significant. For beneficiaries without OUD, the Demonstration was associated with both an immediate and a quarterly decrease.

- *State Defined SMI/SED with vs. without co-occurring SUD:* For beneficiaries with co-occurring SUD, there was a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without co-occurring SUD, the Demonstration was associated with both an immediate and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring physical condition:* For beneficiaries with co-occurring physical condition, the Demonstration was associated with both an immediate and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.1. Mental Health Services Utilization—ED (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	6.88***	(0.67)	-15.94*	(8.11)	-6.36***	(1.52)	60	77.67
Main sample: Model 2 – robustness check; most parsimonious model	6.42***	(0.64)	-10.18	(7.45)	-6.80***	(1.60)	60	77.67
FFS	4.39***	(0.53)	-12.32*	(6.58)	-12.05***	(1.00)	60	55.97
MCO	2.49***	(0.36)	-3.62	(8.32)	5.69***	(1.61)	60	21.69
Dual	1.28***	(0.22)	-5.73**	(2.18)	-3.38***	(0.35)	60	18.22
Non-Dual	5.60***	(0.59)	-10.21	(7.32)	-2.98**	(1.43)	60	59.44
Pregnant	0.33***	(0.08)	-1.82**	(0.89)	-0.16	(0.14)	60	2.47
Not Pregnant	6.55***	(0.66)	-14.12*	(7.93)	-6.20***	(1.49)	60	75.19
Justice Involved	0.65***	(0.08)	-1.69	(1.25)	-1.44***	(0.21)	60	5.08
Not Justice Involved	6.24***	(0.64)	-14.25*	(8.13)	-4.92***	(1.55)	60	72.58
Disability	3.14***	(0.44)	-13.91**	(6.01)	-4.52***	(0.99)	60	44.72
No Disability	3.75***	(0.37)	-2.03	(5.38)	-1.84*	(1.03)	60	32.94
SMI/SED with Co-occurring SUD	3.44***	(0.41)	-3.08	(5.83)	-3.07***	(1.00)	60	42.36
SMI/SED without Co-occurring SUD	3.44***	(0.36)	-12.86**	(5.46)	-3.29***	(0.95)	60	35.31
State Defined SMI/SED with Co-occurring SUD	3.44***	(0.41)	-3.08	(5.83)	-3.07***	(1.00)	60	42.36
State Defined SMI/SED without Co-occurring SUD	3.44***	(0.36)	-12.86**	(5.46)	-3.29***	(0.95)	60	35.31
State Defined SMI/SED with Co- occurring Physical Condition	5.14***	(0.58)	-13.59*	(8.10)	-5.24***	(1.35)	60	62.81
State Defined SMI/SED without Co-occurring Physical Condition	1.75***	(0.20)	-2.35	(3.45)	-1.12*	(0.66)	60	14.86
ODD	0.61***	(0.17)	-0.79	(2.12)	-0.42	(0.32)	60	9.17
No ODD	6.27***	(0.64)	-15.15*	(7.65)	-5.94***	(1.42)	60	68.50

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Age<21	0.30**	(0.13)	-4.22*	(2.45)	1.59***	(0.49)	60	3.50
Age21-44	4.30***	(0.58)	-1.29	(6.00)	-4.64***	(1.09)	60	40.61
Age45-64	1.93***	(0.26)	-10.49**	(3.93)	-2.29***	(0.63)	60	29.92
Age>=65	0.35***	(0.10)	0.06	(1.18)	-1.01***	(0.15)	60	3.64
Ward01	0.37***	(0.11)	0.60	(1.79)	-0.44	(0.30)	60	3.67
Ward02	0.11	(0.15)	-4.17**	(1.76)	0.36	(0.31)	60	7.81
Ward03	-0.03	(0.07)	0.23	(1.18)	0.12	(0.19)	60	1.31
Ward04	0.13	(0.11)	0.30	(1.50)	0.01	(0.27)	60	4.44
Ward05	0.87***	(0.17)	-4.39**	(2.03)	-0.42	(0.35)	60	9.50
Ward06	0.77***	(0.13)	2.06	(2.36)	-1.12***	(0.38)	60	9.75
Ward07	1.32***	(0.19)	-1.32	(3.41)	-1.30**	(0.55)	60	12.69
Ward08	2.36***	(0.23)	-5.62*	(3.15)	-2.45***	(0.53)	60	17.08
Ward99, 00, or missing	0.97***	(0.18)	-3.62	(2.22)	-1.12***	(0.34)	60	11.42

The results of subgroup analyses on the percentage of beneficiaries with SMI/SED who utilized ED services for mental health during the measurement period are shown in Appendix Exhibit C.2. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with both an immediate and a quarterly decrease. For MCO beneficiaries, there was a quarterly decrease, but the immediate change was not statistically significant.
- *OUD vs. non-OUD*: For beneficiaries with OUD, the immediate and quarterly changes were not statistically significant. For beneficiaries without OUD, the Demonstration was associated with both an immediate and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, there was a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without co-occurring SUD, the Demonstration was associated with both an immediate and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without co-occurring physical condition, the Demonstration was associated with both an immediate and a quarterly decrease.

Appendix Exhibit C.2. Mental Health Services Utilization—ED (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.04***	(0.00)	-0.12***	(0.04)	-0.05***	(0.01)	60	0.46
Main sample: Model 2 – robustness check; most parsimonious model	0.03***	(0.00)	-0.09**	(0.04)	-0.05***	(0.01)	60	0.46
FFS	0.04***	(0.00)	-0.17***	(0.06)	-0.09***	(0.01)	60	0.54
MCO	0.03***	(0.00)	-0.01	(0.06)	-0.02**	(0.01)	60	0.34
Dual	0.03***	(0.00)	-0.12**	(0.05)	-0.07***	(0.01)	60	0.40
Non-Dual	0.04***	(0.00)	-0.12**	(0.05)	-0.04***	(0.01)	60	0.49
Pregnant	0.07***	(0.02)	-0.47**	(0.21)	-0.06*	(0.03)	60	0.65
Not Pregnant	0.04***	(0.00)	-0.11***	(0.04)	-0.05***	(0.01)	60	0.46
Justice Involved	0.18***	(0.03)	-0.24	(0.40)	-0.35***	(0.07)	60	1.30
Not Justice Involved	0.03***	(0.00)	-0.11***	(0.04)	-0.04***	(0.01)	60	0.45
Disability	0.05***	(0.01)	-0.23***	(0.08)	-0.07***	(0.01)	60	0.62
No Disability	0.03***	(0.00)	-0.05	(0.04)	-0.04***	(0.01)	60	0.35
SMI/SED with Co-occurring SUD	0.08***	(0.01)	-0.15	(0.12)	-0.09***	(0.02)	60	0.98
SMI/SED without Co-occurring SUD	0.02***	(0.00)	-0.11***	(0.04)	-0.03***	(0.01)	60	0.28
State Defined SMI/SED with Co-occurring SUD	0.08***	(0.01)	-0.15	(0.12)	-0.09***	(0.02)	60	0.98
State Defined SMI/SED without Co-occurring SUD	0.02***	(0.00)	-0.11***	(0.04)	-0.03***	(0.01)	60	0.28
State Defined SMI/SED with Co-occurring Physical Condition	0.05***	(0.01)	-0.10	(0.08)	-0.07***	(0.01)	60	0.72
State Defined SMI/SED without Co-occurring Physical Condition	0.02***	(0.00)	-0.06*	(0.03)	-0.02***	(0.01)	60	0.19
ODD	0.04***	(0.01)	-0.10	(0.12)	-0.02	(0.02)	60	0.56
No ODD	0.04***	(0.00)	-0.12***	(0.04)	-0.05***	(0.01)	60	0.45

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Age<21	0.02*	(0.01)	-0.32*	(0.17)	0.11***	(0.03)	60	0.29
Age21-44	0.06***	(0.01)	-0.12	(0.07)	-0.10***	(0.01)	60	0.70
Age45-64	0.03***	(0.00)	-0.15***	(0.05)	-0.04***	(0.01)	60	0.39
Age>=65	0.01***	(0.00)	0.00	(0.05)	-0.05***	(0.01)	60	0.17
Ward01	0.03***	(0.01)	0.05	(0.15)	-0.05*	(0.02)	60	0.33
Ward02	0.02	(0.01)	-0.42**	(0.19)	0.03	(0.03)	60	0.76
Ward03	-0.01	(0.02)	0.08	(0.32)	0.02	(0.05)	60	0.37
Ward04	0.01	(0.01)	0.02	(0.11)	-0.01	(0.02)	60	0.36
Ward05	0.03***	(0.01)	-0.21***	(0.08)	-0.03**	(0.01)	60	0.43
Ward06	0.04***	(0.01)	0.05	(0.10)	-0.07***	(0.02)	60	0.51
Ward07	0.04***	(0.01)	-0.08	(0.10)	-0.06***	(0.02)	60	0.43
Ward08	0.06***	(0.01)	-0.21***	(0.07)	-0.08***	(0.01)	60	0.48
Ward99, 00, or missing	0.04***	(0.01)	-0.16*	(0.09)	-0.06***	(0.01)	60	0.48

Goal 2: Reduced preventable readmissions to acute care and specialty hospitals and residential settings.

Research Question 2.1. Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?

The results of subgroup analyses on unplanned, 30-day readmission rate for Demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease during an index admission to an IPF are shown in Appendix Exhibit C.3. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with both an immediate and a quarterly increase. For beneficiaries without OOD, there was an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, the Demonstration was associated with both an immediate and a quarterly increase. For beneficiaries without co-occurring SUD, both the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with both an immediate and a quarterly increase. For beneficiaries without co-occurring physical condition, there was an immediate increase, but the quarterly change was not statistically significant.

Appendix Exhibit C.3. Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.42*	(0.23)	8.50**	(2.83)	0.75*	(0.39)	20	11.68
Main sample: Model 2 – robustness check; most parsimonious model	-0.42*	(0.22)	7.91***	(2.02)	0.80**	(0.30)	20	11.68
FFS	-0.45	(0.44)	14.05*	(7.40)	0.25	(1.03)	20	7.44
MCO	-0.43*	(0.22)	4.55	(2.71)	1.42***	(0.42)	20	12.84
Dual	-0.30	(0.43)	4.93	(4.63)	1.04	(0.71)	20	5.57
Non-Dual	-0.45*	(0.24)	8.32***	(2.63)	0.77*	(0.38)	20	13.12
Pregnant	-1.44	(1.37)	-2.73	(16.04)	6.55*	(3.23)	20	14.82
Not Pregnant	-0.40	(0.24)	8.58**	(2.94)	0.70	(0.41)	20	11.61
Justice Involved	-1.83	(1.04)	13.63	(10.10)	2.79	(1.64)	20	15.87
Not Justice Involved	-0.35	(0.23)	7.44**	(2.61)	0.75*	(0.36)	20	11.57
Disability	-0.01	(0.38)	12.40**	(5.61)	0.26	(0.78)	20	7.57
No Disability	-0.55**	(0.23)	6.73**	(2.41)	0.97**	(0.34)	20	12.69
SMI/SED with Co-occurring SUD	-0.41*	(0.21)	8.40***	(2.67)	0.91**	(0.40)	20	11.76
SMI/SED without Co-occurring SUD	-0.43	(0.54)	5.79	(5.58)	0.36	(0.75)	20	12.00
State Defined SMI/SED with Co-occurring SUD	-0.41*	(0.21)	8.40***	(2.67)	0.91**	(0.40)	20	11.76
State Defined SMI/SED without Co-occurring SUD	-0.43	(0.54)	5.79	(5.58)	0.36	(0.75)	20	12.00
State Defined SMI/SED with Co-occurring Physical Condition	-0.44*	(0.22)	9.05***	(2.68)	0.84**	(0.35)	20	12.44
State Defined SMI/SED without Co-occurring Physical Condition	-0.40	(0.38)	4.87*	(2.58)	0.60	(0.55)	20	10.46
ODD	-0.26	(0.25)	7.29*	(3.42)	1.01*	(0.49)	20	10.13

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
No OUD	-0.50	(0.34)	9.23**	(3.87)	0.57	(0.51)	20	13.27
Age<21	-0.76	(0.71)	-6.85	(9.04)	1.78	(1.40)	20	17.58
Age21-44	-0.63**	(0.25)	5.91*	(2.94)	1.66**	(0.56)	20	13.68
Age45-64	-0.23	(0.24)	11.72***	(2.49)	-0.12	(0.36)	20	9.20
Age>=65	-1.52	(1.22)	18.78*	(10.17)	0.44	(1.73)	20	13.21
Ward01	-1.83**	(0.78)	11.19	(7.79)	1.71	(1.24)	20	14.03
Ward02	0.63	(0.93)	6.43	(7.46)	0.52	(1.37)	20	10.39
Ward03	0.35	(1.55)	-14.83	(19.03)	2.99*	(1.64)	20	8.13
Ward04	0.39	(0.73)	8.03	(11.03)	-0.29	(1.59)	20	7.65
Ward05	-0.53	(0.89)	9.88	(6.40)	0.13	(1.05)	20	14.00
Ward06	0.88	(0.50)	12.00*	(6.19)	-2.29**	(0.83)	20	11.34
Ward07	-0.37	(0.38)	3.96	(3.44)	1.06*	(0.53)	20	9.85
Ward08	-0.72*	(0.35)	8.50*	(4.61)	1.96***	(0.57)	20	11.85
Ward99, 00, or missing	-1.47	(1.23)	11.21	(12.05)	2.11	(2.05)	20	14.31

Goal 3: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District.

Research Question 3.1a. Was there an increase in the utilization of crisis-stabilization services?

The results of subgroup analyses on the number of beneficiaries accessing crisis stabilization services are shown in Appendix Exhibit C.4. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OUD vs. non-OUD*: For both beneficiaries with OUD and without OUD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.

- *State Defined SMI/SED with vs. without co-occurring SUD:* For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition:* For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.

Appendix Exhibit C.4. Any Crisis Stabilization Service (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	5.22***	(1.34)	141.88**	(67.89)	6.78	(10.31)	60	257.28
Main sample: Model 2 – robustness check; most parsimonious model	6.36***	(0.85)	122.49*	(71.57)	8.37	(10.75)	60	257.28
FFS	3.32***	(0.94)	101.27**	(39.84)	-21.39***	(5.59)	60	163.25
MCO	1.91*	(1.12)	40.61	(43.37)	28.18***	(6.81)	60	94.03
Dual	0.49	(0.52)	40.60**	(17.17)	-0.14	(2.45)	60	58.22
Non-Dual	4.73***	(1.09)	101.29*	(51.88)	6.92	(8.05)	60	199.06
Pregnant	0.26	(0.17)	1.23	(3.37)	0.44	(0.53)	60	7.58
Not Pregnant	4.96***	(1.30)	140.65**	(65.87)	6.34	(9.99)	60	249.69
Justice Involved	0.86***	(0.20)	0.55	(4.00)	-2.01***	(0.63)	60	17.58
Not Justice Involved	4.36***	(1.33)	141.33**	(65.39)	8.80	(9.94)	60	239.69
Disability	2.22***	(0.80)	71.09**	(31.75)	-0.58	(4.70)	60	126.58
No Disability	3.00***	(0.83)	70.79*	(37.92)	7.36	(5.95)	60	130.69
SMI/SED with Co- occurring SUD	1.34*	(0.79)	75.75**	(32.98)	3.82	(5.23)	60	109.19
SMI/SED without Co- occurring SUD	3.88***	(0.91)	66.13*	(36.20)	2.96	(5.38)	60	148.08

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring SUD	1.34*	(0.79)	75.75**	(32.98)	3.82	(5.23)	60	109.19
State Defined SMI/SED without Co-occurring SUD	3.88***	(0.91)	66.13*	(36.20)	2.96	(5.38)	60	148.08
State Defined SMI/SED with Co-occurring Physical Condition	2.94***	(0.73)	86.86**	(38.23)	2.11	(5.99)	60	149.44
State Defined SMI/SED without Co-occurring Physical Condition	2.28**	(0.87)	55.03*	(30.93)	4.67	(4.57)	60	107.83
ODD	0.20	(0.33)	21.40***	(7.59)	1.14	(1.38)	60	19.50
No ODD	5.03***	(1.31)	120.48*	(62.77)	5.64	(9.38)	60	237.78
Age<21	1.19***	(0.42)	6.87	(7.42)	-0.95	(1.10)	60	31.44
Age21-44	2.59***	(0.82)	84.66**	(40.22)	6.87	(6.34)	60	133.72
Age45-64	1.15*	(0.63)	32.23*	(18.92)	2.45	(2.80)	60	80.53
Age>=65	0.30*	(0.18)	18.12***	(6.44)	-1.60*	(0.93)	60	11.58
Ward01	0.79***	(0.21)	9.27	(6.23)	0.08	(0.97)	60	15.08
Ward02	-0.09	(0.24)	6.22	(4.77)	1.41*	(0.78)	60	18.47
Ward03	0.17	(0.12)	2.09	(2.61)	0.94**	(0.43)	60	3.44
Ward04	0.24	(0.20)	6.29	(5.28)	2.03**	(0.89)	60	18.92
Ward05	0.87*	(0.46)	11.46	(9.26)	2.08	(1.40)	60	38.78
Ward06	0.05	(0.27)	29.91***	(10.83)	0.65	(1.63)	60	31.94
Ward07	0.87	(0.55)	39.09**	(18.04)	-0.67	(2.77)	60	52.39
Ward08	1.80***	(0.47)	28.77*	(16.37)	0.15	(2.47)	60	59.03
Ward99, 00, or missing	0.52**	(0.20)	8.79	(5.41)	0.12	(0.80)	60	19.22

The results of subgroup analyses on the percentage of beneficiaries accessing crisis stabilization services are shown in Appendix Exhibit C.5. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.
- *OUD vs. non-OUD*: For both beneficiaries with OUD and without OUD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without co-occurring physical condition, both the immediate and quarterly changes were not statistically significant.

Appendix Exhibit C.5. Any Crisis Stabilization Service (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.02***	(0.01)	0.67**	(0.32)	-0.02	(0.05)	60	1.55
Main sample: Model 2 – robustness check; most parsimonious model	0.03***	(0.01)	0.55	(0.34)	-0.01	(0.05)	60	1.55
FFS	0.03***	(0.01)	0.75**	(0.34)	-0.04	(0.05)	60	1.59
MCO	0.01	(0.01)	0.55*	(0.31)	0.02	(0.05)	60	1.49
Dual	0.01	(0.01)	0.88**	(0.35)	-0.03	(0.05)	60	1.27
Non-Dual	0.02***	(0.01)	0.59*	(0.32)	-0.02	(0.05)	60	1.65
Pregnant	0.03	(0.04)	0.15	(0.69)	0.03	(0.10)	60	2.04
Not Pregnant	0.02***	(0.01)	0.68**	(0.32)	-0.02	(0.05)	60	1.54
Justice Involved	0.26***	(0.06)	0.14	(1.10)	-0.03	(0.21)	60	4.44

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Not Justice Involved	0.02**	(0.01)	0.69**	(0.31)	-0.01	(0.05)	60	1.48
Disability	0.04***	(0.01)	0.83**	(0.40)	-0.03	(0.06)	60	1.74
No Disability	0.01	(0.01)	0.57*	(0.29)	-0.01	(0.04)	60	1.40
SMI/SED with Co-occurring SUD	0.04**	(0.02)	1.49**	(0.67)	0.03	(0.10)	60	2.53
SMI/SED without Co-occurring SUD	0.02***	(0.01)	0.40*	(0.22)	-0.03	(0.03)	60	1.20
State Defined SMI/SED with Co-occurring SUD	0.04**	(0.02)	1.49**	(0.67)	0.03	(0.10)	60	2.53
State Defined SMI/SED without Co-occurring SUD	0.02***	(0.01)	0.40*	(0.22)	-0.03	(0.03)	60	1.20
State Defined SMI/SED with Co-occurring Physical Condition	0.02**	(0.01)	1.16**	(0.44)	-0.00	(0.07)	60	1.71
State Defined SMI/SED without Co-occurring Physical Condition	0.02*	(0.01)	0.30	(0.26)	-0.02	(0.04)	60	1.38
ODD	0.01	(0.02)	1.10***	(0.40)	0.07	(0.07)	60	1.19
No ODD	0.02**	(0.01)	0.62*	(0.33)	-0.03	(0.05)	60	1.59
Age<21	0.04	(0.03)	0.23	(0.52)	-0.05	(0.07)	60	2.62
Age21-44	0.01	(0.01)	0.99**	(0.47)	-0.04	(0.07)	60	2.34
Age45-64	0.02**	(0.01)	0.35	(0.21)	0.00	(0.03)	60	1.06
Age>=65	0.00	(0.01)	0.84***	(0.28)	-0.08**	(0.04)	60	0.56
Ward01	0.06***	(0.02)	0.69	(0.46)	-0.04	(0.07)	60	1.26
Ward02	0.02	(0.02)	0.64	(0.44)	0.12	(0.07)	60	1.67
Ward03	0.04	(0.03)	0.58	(0.64)	0.14	(0.10)	60	0.95
Ward04	0.01	(0.01)	0.45	(0.34)	0.08	(0.05)	60	1.40
Ward05	0.02	(0.02)	0.35	(0.31)	0.02	(0.05)	60	1.60
Ward06	-0.00	(0.01)	1.28***	(0.46)	-0.02	(0.07)	60	1.65
Ward07	0.01	(0.02)	0.86**	(0.42)	-0.07	(0.06)	60	1.60
Ward08	0.03***	(0.01)	0.46	(0.30)	-0.06	(0.04)	60	1.52
Ward99, 00, or missing	0.03*	(0.02)	0.57	(0.40)	-0.06	(0.06)	60	1.75

The results of subgroup analyses on the number of beneficiaries accessing CPEP are shown in Appendix Exhibit C.6. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OUD vs. non-OUD*: For beneficiaries with OUD, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without OUD, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring SUD, there was a quarterly decrease, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.6. Any Crisis Stabilization Service, by Setting (Number of Beneficiaries)—Comprehensive Psychiatric Emergency Program

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	1.81**	(0.82)	27.25***	(8.21)	-9.44***	(1.22)	60	165.44
Main sample: Model 2 – robustness check; most parsimonious model	1.92**	(0.75)	22.89***	(7.47)	-9.04***	(1.15)	60	165.44
FFS	1.56**	(0.61)	18.05*	(10.21)	-15.23***	(1.56)	60	113.42
MCO	0.25	(0.48)	9.20	(9.17)	5.79***	(1.30)	60	52.03
Dual	0.01	(0.27)	5.66	(3.43)	-2.03***	(0.47)	60	40.47
Non-Dual	1.80**	(0.70)	21.59**	(8.35)	-7.41***	(1.31)	60	124.97
Pregnant	0.09	(0.12)	-0.33	(1.90)	-0.34	(0.29)	60	4.61
Not Pregnant	1.72**	(0.77)	27.58***	(7.30)	-9.10***	(1.09)	60	160.83

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Justice Involved	0.57***	(0.17)	-3.55*	(1.81)	-1.75***	(0.27)	60	14.33
Not Justice Involved	1.24	(0.79)	30.81***	(7.85)	-7.69***	(1.13)	60	151.11
Disability	1.10**	(0.50)	15.78**	(5.94)	-7.34***	(0.95)	60	86.61
No Disability	0.71	(0.49)	11.47*	(6.61)	-2.10**	(1.03)	60	78.83
SMI/SED with Co-occurring SUD	0.37	(0.54)	17.87***	(4.86)	-3.82***	(0.75)	60	77.72
SMI/SED without Co-occurring SUD	1.44**	(0.55)	9.38	(7.01)	-5.62***	(1.04)	60	87.72
State Defined SMI/SED with Co-occurring SUD	0.37	(0.54)	17.87***	(4.86)	-3.82***	(0.75)	60	77.72
State Defined SMI/SED without Co-occurring SUD	1.44**	(0.55)	9.38	(7.01)	-5.62***	(1.04)	60	87.72
State Defined SMI/SED with Co-occurring Physical Condition	0.94*	(0.54)	19.13***	(5.90)	-5.78***	(1.02)	60	98.56
State Defined SMI/SED without Co-occurring Physical Condition	0.87*	(0.50)	8.12	(6.26)	-3.66***	(0.97)	60	66.89
ODD	0.07	(0.24)	6.17**	(3.01)	-0.74	(0.50)	60	14.00
No ODD	1.74**	(0.69)	21.08**	(8.93)	-8.70***	(1.29)	60	151.44
Age<21	0.38**	(0.14)	1.93	(1.86)	-0.92***	(0.26)	60	7.39
Age21-44	1.17**	(0.54)	20.92***	(7.26)	-4.65***	(1.06)	60	96.53
Age45-64	0.09	(0.36)	1.21	(3.91)	-2.92***	(0.66)	60	54.89
Age>=65	0.17	(0.13)	3.19*	(1.62)	-0.96***	(0.24)	60	6.64
Ward01	0.51***	(0.13)	1.48	(1.72)	-1.28***	(0.27)	60	9.44
Ward02	-0.30*	(0.16)	2.39	(1.72)	-0.27	(0.24)	60	11.75
Ward03	0.07	(0.08)	-0.55	(1.19)	0.10	(0.18)	60	2.03
Ward04	-0.07	(0.12)	0.97	(1.57)	-0.03	(0.34)	60	11.53
Ward05	0.44	(0.28)	0.90	(2.89)	-1.50***	(0.41)	60	25.25
Ward06	-0.27	(0.21)	10.91**	(4.72)	-1.34*	(0.67)	60	22.03
Ward07	0.38	(0.32)	7.36**	(3.57)	-2.20***	(0.58)	60	33.86
Ward08	0.75*	(0.40)	4.54	(4.17)	-2.31***	(0.64)	60	36.92
Ward99, 00, or missing	0.30**	(0.15)	-0.75	(2.27)	-0.61	(0.37)	60	12.64

The results of subgroup analyses on the percentage of beneficiaries accessing CPEP are shown in Appendix Exhibit C.7. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, there was a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *OOD vs. non-OOD*: For beneficiaries with OOD, both the immediate and quarterly changes were not statistically significant. For beneficiaries without OOD, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring SUD, there was a quarterly decrease, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.7. Any Crisis Stabilization Service, by Setting (Percentage of Beneficiaries)—Comprehensive Psychiatric Emergency Program

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.00	(0.00)	0.10*	(0.05)	-0.07***	(0.01)	60	1.00
Main sample: Model 2 – robustness check; most parsimonious model	0.00	(0.00)	0.07	(0.04)	-0.06***	(0.01)	60	1.00
FFS	0.01**	(0.01)	0.07	(0.08)	-0.09***	(0.01)	60	1.10
MCO	-0.01	(0.01)	0.11*	(0.07)	-0.02**	(0.01)	60	0.83
Dual	-0.00	(0.01)	0.13*	(0.07)	-0.05***	(0.01)	60	0.88
Non-Dual	0.01	(0.01)	0.08	(0.07)	-0.07***	(0.01)	60	1.04
Pregnant	0.00	(0.03)	-0.14	(0.44)	-0.09	(0.07)	60	1.24
Not Pregnant	0.00	(0.00)	0.10**	(0.05)	-0.07***	(0.01)	60	0.99

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Justice Involved	0.18***	(0.05)	-0.71	(0.49)	-0.30***	(0.10)	60	3.62
Not Justice Involved	0.00	(0.00)	0.12**	(0.05)	-0.06***	(0.01)	60	0.93
Disability	0.02***	(0.01)	0.15*	(0.08)	-0.11***	(0.01)	60	1.19
No Disability	-0.01	(0.00)	0.07	(0.06)	-0.04***	(0.01)	60	0.85
SMI/SED with Co-occurring SUD	0.01	(0.01)	0.30**	(0.12)	-0.11***	(0.02)	60	1.80
SMI/SED without Co-occurring SUD	0.00	(0.00)	0.03	(0.05)	-0.05***	(0.01)	60	0.71
State Defined SMI/SED with Co-occurring SUD	0.01	(0.01)	0.30**	(0.12)	-0.11***	(0.02)	60	1.80
State Defined SMI/SED without Co-occurring SUD	0.00	(0.00)	0.03	(0.05)	-0.05***	(0.01)	60	0.71
State Defined SMI/SED with Co-occurring Physical Condition	0.00	(0.01)	0.29***	(0.07)	-0.07***	(0.01)	60	1.13
State Defined SMI/SED without Co-occurring Physical Condition	0.00	(0.01)	-0.05	(0.08)	-0.05***	(0.01)	60	0.85
ODD	0.01	(0.02)	0.30	(0.18)	-0.04	(0.03)	60	0.85
No ODD	0.00	(0.00)	0.07	(0.06)	-0.07***	(0.01)	60	1.01
Age<21	0.02	(0.01)	0.07	(0.14)	-0.06***	(0.02)	60	0.62
Age21-44	-0.01	(0.01)	0.18	(0.11)	-0.11***	(0.02)	60	1.69
Age45-64	0.00	(0.00)	-0.02	(0.05)	-0.05***	(0.01)	60	0.72
Age>=65	0.00	(0.01)	0.16**	(0.07)	-0.04***	(0.01)	60	0.32
Ward01	0.04***	(0.01)	0.08	(0.14)	-0.11***	(0.02)	60	0.79
Ward02	-0.01	(0.01)	0.25	(0.18)	-0.05*	(0.02)	60	1.06
Ward03	0.01	(0.02)	-0.12	(0.30)	0.01	(0.04)	60	0.56
Ward04	-0.01	(0.01)	0.08	(0.11)	-0.02	(0.02)	60	0.85
Ward05	0.01	(0.01)	-0.02	(0.12)	-0.07***	(0.02)	60	1.04
Ward06	-0.02*	(0.01)	0.44**	(0.22)	-0.08**	(0.03)	60	1.14
Ward07	0.00	(0.01)	0.11	(0.09)	-0.07***	(0.01)	60	1.04
Ward08	0.01	(0.01)	0.01	(0.08)	-0.07***	(0.01)	60	0.95
Ward99, 00, or missing	0.02	(0.01)	-0.10	(0.19)	-0.07**	(0.03)	60	1.15

The results of subgroup analyses on the number of beneficiaries accessing mobile crisis and outreach services are shown in Appendix Exhibit C.8. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OUD vs. non-OUD*: For beneficiaries with OUD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without OUD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the immediate and quarterly changes were not statistically significant. For beneficiaries without co-occurring physical condition, there was a quarterly increase, but the immediate change was not statistically significant.

Appendix Exhibit C.8. Any Crisis Stabilization Service, by Setting (Number of Beneficiaries)—Mobile Crisis and Outreach

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	4.00***	(0.85)	51.80	(37.56)	9.28	(5.78)	60	91.83
Main sample: Model 2 – robustness check; most parsimonious model	4.44***	(0.70)	44.17	(39.56)	9.91	(6.02)	60	91.83
FFS	2.09***	(0.61)	43.81*	(23.92)	-5.81*	(3.34)	60	49.83
MCO	1.91***	(0.56)	7.99	(19.42)	15.08***	(3.25)	60	42.00
Dual	0.70*	(0.36)	17.30*	(9.78)	1.15	(1.42)	60	17.75
Non-Dual	3.30***	(0.60)	34.50	(28.39)	8.12*	(4.44)	60	74.08
Pregnant	0.17*	(0.09)	-0.51	(1.59)	0.64**	(0.26)	60	2.97
Not Pregnant	3.83***	(0.84)	52.31	(36.55)	8.64	(5.63)	60	88.86
Justice Involved	0.33***	(0.09)	1.30	(2.02)	-0.31	(0.31)	60	3.25
Not Justice Involved	3.67***	(0.85)	50.50	(36.09)	9.58*	(5.57)	60	88.58

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Disability	1.54***	(0.48)	22.31	(18.56)	4.36	(2.81)	60	39.97
No Disability	2.46***	(0.51)	29.49	(19.91)	4.91	(3.11)	60	51.86
SMI/SED with Co-occurring SUD	1.19**	(0.45)	28.27	(18.93)	4.58	(3.03)	60	31.47
SMI/SED without Co-occurring SUD	2.81***	(0.53)	23.53	(19.26)	4.70	(2.90)	60	60.36
State Defined SMI/SED with Co-occurring SUD	1.19**	(0.45)	28.27	(18.93)	4.58	(3.03)	60	31.47
State Defined SMI/SED without Co-occurring SUD	2.81***	(0.53)	23.53	(19.26)	4.70	(2.90)	60	60.36
State Defined SMI/SED with Co-occurring Physical Condition	2.25***	(0.45)	31.18	(20.96)	3.59	(3.28)	60	50.89
State Defined SMI/SED without Co-occurring Physical Condition	1.75***	(0.51)	20.62	(17.27)	5.69**	(2.61)	60	40.94
ODD	0.11	(0.14)	10.04**	(4.11)	1.21	(0.78)	60	5.50
No ODD	3.89***	(0.83)	41.76	(34.26)	8.07	(5.18)	60	86.33
Age<21	0.87**	(0.34)	-0.69	(3.96)	-1.03*	(0.57)	60	24.06
Age21-44	1.73***	(0.51)	28.30	(22.28)	7.62**	(3.54)	60	37.19
Age45-64	1.24***	(0.42)	14.58	(11.80)	3.28*	(1.74)	60	25.64
Age>=65	0.16	(0.10)	9.61**	(3.77)	-0.60	(0.56)	60	4.94
Ward01	0.31**	(0.12)	3.61	(3.70)	0.85	(0.56)	60	5.64
Ward02	0.21	(0.14)	0.83	(2.69)	1.18***	(0.44)	60	6.72
Ward03	0.13**	(0.06)	1.08	(1.33)	0.54**	(0.25)	60	1.42
Ward04	0.32**	(0.14)	1.72	(3.25)	1.25**	(0.48)	60	7.39
Ward05	0.49*	(0.26)	4.43	(5.12)	1.88**	(0.80)	60	13.53
Ward06	0.43***	(0.15)	8.85	(5.59)	1.42	(0.85)	60	9.92
Ward07	0.66**	(0.31)	16.85*	(9.34)	0.60	(1.43)	60	18.53
Ward08	1.19***	(0.24)	9.53	(8.15)	1.26	(1.33)	60	22.11
Ward99, 00, or missing	0.27*	(0.14)	4.90	(3.55)	0.30	(0.53)	60	6.58

The results of subgroup analyses on the percentage of beneficiaries accessing mobile crisis and outreach services are shown in Appendix Exhibit C.9. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the immediate and quarterly changes were not statistically significant.
- *OUD vs. non-OUD*: For beneficiaries with OUD, the Demonstration was associated with both an immediate and quarterly increase. For beneficiaries without OUD, both the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without co-occurring physical condition, both the immediate and quarterly changes were not statistically significant.

Appendix Exhibit C.9. Any Crisis Stabilization Service, by Setting (Percentage of Beneficiaries)—Mobile Crisis and Outreach

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.02***	(0.01)	0.24	(0.18)	0.02	(0.03)	60	0.55
Main sample: Model 2 – robustness check; most parsimonious model	0.02***	(0.00)	0.19	(0.20)	0.02	(0.03)	60	0.55
FFS	0.02***	(0.01)	0.32	(0.22)	0.02	(0.03)	60	0.48
MCO	0.02**	(0.01)	0.15	(0.16)	0.01	(0.02)	60	0.67
Dual	0.01*	(0.01)	0.38*	(0.20)	0.01	(0.03)	60	0.39
Non-Dual	0.02***	(0.00)	0.19	(0.18)	0.02	(0.03)	60	0.62
Pregnant	0.03	(0.02)	-0.14	(0.34)	0.10*	(0.05)	60	0.80
Not Pregnant	0.02***	(0.01)	0.25	(0.18)	0.02	(0.03)	60	0.55
Justice Involved	0.10***	(0.03)	0.14	(0.57)	0.16	(0.10)	60	0.82
Not Justice Involved	0.02***	(0.01)	0.24	(0.18)	0.02	(0.03)	60	0.55
Disability	0.02***	(0.01)	0.25	(0.24)	0.05	(0.04)	60	0.55
No Disability	0.02***	(0.01)	0.23	(0.16)	0.00	(0.02)	60	0.55

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
SMI/SED with Co-occurring SUD	0.03***	(0.01)	0.55	(0.40)	0.08	(0.06)	60	0.73
SMI/SED without Co-occurring SUD	0.02***	(0.00)	0.14	(0.12)	0.00	(0.02)	60	0.49
State Defined SMI/SED with Co-occurring SUD	0.03***	(0.01)	0.55	(0.40)	0.08	(0.06)	60	0.73
State Defined SMI/SED without Co-occurring SUD	0.02***	(0.00)	0.14	(0.12)	0.00	(0.02)	60	0.49
State Defined SMI/SED with Co-occurring Physical Condition	0.02***	(0.01)	0.42*	(0.24)	0.03	(0.04)	60	0.58
State Defined SMI/SED without Co-occurring Physical Condition	0.02***	(0.01)	0.11	(0.15)	0.01	(0.02)	60	0.52
ODD	0.01	(0.01)	0.53**	(0.22)	0.07*	(0.04)	60	0.33
No ODD	0.02***	(0.01)	0.21	(0.19)	0.01	(0.03)	60	0.58
Age<21	0.03	(0.03)	-0.25	(0.28)	-0.05	(0.04)	60	2.00
Age21-44	0.02**	(0.01)	0.33	(0.28)	0.04	(0.04)	60	0.65
Age45-64	0.02***	(0.01)	0.16	(0.14)	0.03	(0.02)	60	0.34
Age>=65	0.00	(0.00)	0.44**	(0.17)	-0.04	(0.02)	60	0.24
Ward01	0.02**	(0.01)	0.27	(0.28)	0.04	(0.04)	60	0.47
Ward02	0.03*	(0.01)	0.10	(0.25)	0.11***	(0.04)	60	0.61
Ward03	0.03*	(0.02)	0.32	(0.32)	0.08	(0.06)	60	0.39
Ward04	0.02*	(0.01)	0.12	(0.21)	0.06*	(0.03)	60	0.54
Ward05	0.02	(0.01)	0.14	(0.18)	0.04	(0.03)	60	0.56
Ward06	0.02***	(0.01)	0.38	(0.24)	0.03	(0.04)	60	0.51
Ward07	0.02*	(0.01)	0.37	(0.23)	-0.01	(0.03)	60	0.56
Ward08	0.02***	(0.01)	0.14	(0.16)	-0.01	(0.03)	60	0.57
Ward99, 00, or missing	0.02	(0.01)	0.31	(0.26)	-0.01	(0.04)	60	0.60

Goal 4: Improved access to community-based services to address the chronic mental healthcare needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral healthcare.

Research Question 4.2a. Was there an increase in utilization of community-based SMI/SED treatment services?

The results of subgroup analyses on the number of beneficiaries with SMI/SED who used any services related to mental health during the measurement period are shown in Appendix Exhibit C.10. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OOD vs. non-OOD*: For both beneficiaries with OOD and without OOD, the Demonstration was associated with an immediate and a quarterly increase.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate and a quarterly increase.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with a quarterly increase, but the immediate change was not statistically significant. For beneficiaries without co-occurring physical condition, there were both immediate and quarter increase.

Appendix Exhibit C.10. Any Mental Health Services Utilization (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	157.04***	(21.99)	970.32***	(330.60)	538.75***	(56.90)	60	12,635.69
Main sample: Model 2 – robustness check; most parsimonious model	150.00***	(22.81)	1,018.90***	(312.28)	535.89***	(53.16)	60	12,635.69
FFS	33.72*	(18.59)	1,372.33**	(539.78)	-672.03***	(77.49)	60	7,277.17
MCO	123.32***	(22.28)	-402.07	(596.59)	1,210.79***	(104.05)	60	5,358.56
Dual	25.31***	(3.31)	108.39**	(49.11)	81.80***	(8.29)	60	2,720.44
Non-Dual	131.73***	(19.35)	861.92***	(285.81)	456.95***	(49.24)	60	9,915.25

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Pregnant	5.64***	(1.23)	20.49	(16.82)	15.97***	(2.73)	60	280.47
Not Pregnant	151.40***	(21.17)	949.83***	(316.75)	522.78***	(54.65)	60	12,355.22
Justice Involved	-0.08	(1.20)	14.12	(15.94)	-27.75***	(2.44)	60	315.58
Not Justice Involved	157.11***	(22.70)	956.19***	(331.11)	566.50***	(57.61)	60	12,320.11
Disability	-7.44	(7.08)	436.44***	(102.21)	92.34***	(17.33)	60	5,867.25
No Disability	164.47***	(15.56)	533.87**	(237.84)	446.42***	(40.51)	60	6,768.44
SMI/SED with Co-occurring SUD	-2.56	(4.35)	354.65***	(80.41)	77.29***	(13.36)	60	3,387.72
SMI/SED without Co-occurring SUD	159.60***	(19.21)	615.66**	(263.40)	461.46***	(45.14)	60	9,247.97
State Defined SMI/SED with Co-occurring SUD	-2.56	(4.35)	354.65***	(80.41)	77.29***	(13.36)	60	3,387.72
State Defined SMI/SED without Co-occurring SUD	159.60***	(19.21)	615.66**	(263.40)	461.46***	(45.14)	60	9,247.97
State Defined SMI/SED with Co-occurring Physical Condition	61.50***	(12.81)	-98.74	(210.10)	97.53**	(36.77)	60	5,575.19
State Defined SMI/SED without Co-occurring Physical Condition	95.54***	(17.67)	1,069.06***	(326.07)	441.22***	(50.74)	60	7,060.50
OOD	-6.93***	(2.37)	202.33***	(44.21)	19.77**	(7.67)	60	1,197.97
No OOD	163.96***	(21.46)	767.98**	(293.70)	518.98***	(50.73)	60	11,437.72
Age<21	24.52***	(3.94)	120.12***	(34.43)	-11.03*	(5.89)	60	1,074.44
Age21-44	94.02***	(10.89)	438.95**	(168.75)	332.88***	(29.20)	60	4,854.08
Age45-64	11.95	(7.34)	394.45***	(144.18)	176.57***	(23.63)	60	5,825.42
Age>=65	26.55***	(1.64)	16.80	(17.81)	40.33***	(3.00)	60	881.75
Ward01	14.72***	(1.47)	11.43	(17.90)	21.73***	(2.93)	60	888.89
Ward02	-6.38***	(0.91)	7.42	(17.54)	15.28***	(3.20)	60	708.42
Ward03	4.45***	(0.77)	-8.65	(10.83)	13.66***	(2.11)	60	261.17
Ward04	15.13***	(1.79)	7.12	(26.59)	32.95***	(4.84)	60	1,032.69
Ward05	27.49***	(3.17)	135.31***	(46.28)	60.94***	(7.71)	60	1,834.14
Ward06	9.86***	(2.78)	171.34***	(42.59)	52.27***	(7.18)	60	1,434.56

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Ward07	32.58***	(5.19)	239.28***	(64.78)	130.50***	(11.28)	60	2,572.50
Ward08	48.41***	(7.25)	331.47***	(99.18)	179.08***	(16.60)	60	3,088.39
Ward99, 00, or missing	10.78***	(1.73)	75.59**	(29.80)	32.34***	(5.20)	60	814.94

The results of subgroup analyses on the percentage of beneficiaries with SMI/SED who used any services related to mental health during the measurement period are shown in Appendix Exhibit C.11. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was an immediate increase, but the quarterly change was not statistically significant.
- *OOD vs. non-OOD*: For both beneficiaries with OOD and without OOD, the Demonstration was associated with an immediate and a quarterly increase.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate and a quarterly increase.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with both immediate and quarterly increase. For beneficiaries without co-occurring physical condition, both immediate and quarterly changes were not statistically significant.

Appendix Exhibit C.11. Any Mental Health Services Utilization (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.34***	(0.05)	2.93***	(0.50)	0.46***	(0.09)	60	76.09
Main sample: Model 2 – robustness check; most parsimonious model	0.34***	(0.06)	2.72***	(0.50)	0.48***	(0.08)	60	76.09
FFS	0.26***	(0.06)	4.10***	(1.36)	-1.16***	(0.22)	60	70.80
MCO	0.32***	(0.06)	3.51***	(0.60)	0.09	(0.11)	60	84.72
Dual	0.28***	(0.05)	4.08***	(0.80)	0.57***	(0.12)	60	59.39

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Non-Dual	0.33***	(0.05)	2.03***	(0.38)	0.37***	(0.08)	60	82.46
Pregnant	0.05	(0.13)	5.24***	(1.48)	0.79***	(0.26)	60	75.49
Not Pregnant	0.35***	(0.05)	2.88***	(0.50)	0.45***	(0.09)	60	76.11
Justice Involved	0.58***	(0.10)	6.43***	(1.53)	-3.03***	(0.27)	60	79.18
Not Justice Involved	0.33***	(0.05)	2.95***	(0.50)	0.49***	(0.09)	60	76.02
Disability	0.37***	(0.05)	1.49***	(0.51)	0.43***	(0.08)	60	80.61
No Disability	0.40***	(0.06)	3.91***	(0.60)	0.48***	(0.10)	60	72.55
SMI/SED with Co-occurring SUD	0.16***	(0.06)	3.64***	(0.68)	0.53***	(0.11)	60	78.55
SMI/SED without Co-occurring SUD	0.41***	(0.05)	2.70***	(0.51)	0.43***	(0.09)	60	75.22
State Defined SMI/SED with Co-occurring SUD	0.16***	(0.06)	3.64***	(0.68)	0.53***	(0.11)	60	78.55
State Defined SMI/SED without Co-occurring SUD	0.41***	(0.05)	2.70***	(0.51)	0.43***	(0.09)	60	75.22
State Defined SMI/SED with Co-occurring Physical Condition	0.25***	(0.05)	2.94***	(0.60)	0.59***	(0.09)	60	63.78
State Defined SMI/SED without Co-occurring Physical Condition	0.41***	(0.03)	0.29	(0.30)	0.05	(0.05)	60	89.79
OUD	-0.30***	(0.08)	5.70***	(1.09)	1.35***	(0.17)	60	73.02
No OUD	0.40***	(0.05)	2.65***	(0.46)	0.36***	(0.08)	60	76.42
Age<21	0.11***	(0.04)	0.95*	(0.56)	0.01	(0.09)	60	90.02
Age21-44	0.32***	(0.04)	2.30***	(0.42)	0.23***	(0.08)	60	84.76
Age45-64	0.35***	(0.05)	2.53***	(0.50)	0.51***	(0.09)	60	76.35
Age>=65	0.53***	(0.06)	3.54***	(0.79)	0.78***	(0.12)	60	42.89
Ward01	0.72***	(0.05)	-0.03	(0.53)	0.13	(0.08)	60	74.55
Ward02	0.33***	(0.06)	2.01**	(0.90)	0.54***	(0.13)	60	64.14
Ward03	0.37***	(0.10)	1.60	(1.02)	0.48***	(0.16)	60	72.49
Ward04	0.45***	(0.06)	1.16*	(0.66)	0.31***	(0.10)	60	76.20
Ward05	0.49***	(0.07)	2.07***	(0.59)	0.41***	(0.11)	60	75.68
Ward06	0.20***	(0.07)	4.20***	(0.78)	0.58***	(0.13)	60	73.89

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Ward07	0.21***	(0.06)	3.65***	(0.60)	0.54***	(0.11)	60	78.62
Ward08	0.20***	(0.07)	3.44***	(0.68)	0.56***	(0.12)	60	79.99
Ward99, 00, or missing	0.21***	(0.07)	3.93***	(0.77)	0.16	(0.13)	60	74.52

Research Question 4.3a. Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?

The results of subgroup analyses on the number of episodes of care where IMD providers billed for assessments or treatment of physical conditions are shown in Appendix Exhibit C.12. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease. For MCO beneficiaries, there was an immediate decrease and a quarterly increase.
- *OUD vs. non-OUD*: For beneficiaries with OUD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without OUD, there was an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring SUD, there was an immediate increase, but the quarterly change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was an immediate increase, but the quarterly change was not statistically significant.

Appendix Exhibit C.12. Assessment of Physical Health During IMD Stay (Number of Episodes of Care)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	14.25***	(3.64)	195.33***	(31.24)	-11.49**	(4.49)	20	274.92
Main sample: Model 2 – robustness check; most parsimonious model	13.44***	(3.12)	202.09***	(27.09)	-11.94***	(3.87)	20	274.92
FFS	3.95**	(1.68)	301.13***	(59.20)	-42.42***	(9.60)	20	61.00
MCO	10.81**	(3.69)	-92.64*	(42.64)	29.46***	(7.72)	20	217.75
Dual	3.77***	(0.30)	-5.03	(4.44)	-7.93***	(1.28)	20	50.83
Non-Dual	10.54**	(3.74)	199.56***	(29.62)	-3.38	(4.24)	20	224.42
Pregnant	0.24	(0.15)	3.38*	(1.87)	-0.09	(0.22)	20	3.58
Not Pregnant	14.04***	(3.62)	195.17***	(31.34)	-11.77**	(4.50)	20	273.00
Justice Involved	0.04	(0.36)	50.28***	(8.82)	-4.48**	(1.57)	20	9.50
Not Justice Involved	14.21***	(3.54)	147.56***	(27.81)	-6.99	(3.99)	20	267.75
Disability	4.28***	(0.70)	182.77***	(19.63)	-11.89**	(4.30)	20	58.08
No Disability	10.36**	(3.82)	13.94	(25.24)	-0.24	(4.31)	20	219.58
SMI/SED with Co-occurring SUD	13.10***	(3.29)	187.98***	(25.84)	-13.23***	(3.60)	20	238.17
SMI/SED without Co-occurring SUD	2.33***	(0.52)	17.56*	(8.75)	1.93	(1.16)	20	53.17
State Defined SMI/SED with Co-occurring SUD	13.10***	(3.29)	187.98***	(25.84)	-13.23***	(3.60)	20	238.17
State Defined SMI/SED without Co-occurring SUD	2.33***	(0.52)	17.56*	(8.75)	1.93	(1.16)	20	53.17
State Defined SMI/SED with Co-occurring Physical Condition	14.46***	(3.72)	195.24***	(31.28)	-11.73**	(4.64)	20	274.00

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate decrease, but the quarterly change was not statistically significant. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.13. Assessment of Physical Health During IMD Stay (Percentage of Episodes of Care)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	1.26***	(0.16)	-6.32	(4.52)	-1.12	(0.71)	20	73.03
Main sample: Model 2 – robustness check; most parsimonious model	1.23***	(0.22)	-6.91*	(3.81)	-1.05	(0.61)	20	73.03
FFS	2.95***	(0.71)	-6.43	(8.72)	-6.60***	(1.55)	20	71.67
MCO	0.81**	(0.29)	-12.52***	(3.46)	1.78***	(0.43)	20	73.21
Dual	2.96***	(0.59)	-6.87	(6.71)	-10.46***	(1.23)	20	77.76
Non-Dual	0.95***	(0.22)	-5.86	(4.70)	0.43	(0.66)	20	72.02
Pregnant	3.47*	(1.76)	-41.92***	(12.85)	2.18	(2.61)	20	69.44
Not Pregnant	1.25***	(0.16)	-5.94	(4.61)	-1.16	(0.73)	20	73.17
Justice Involved	1.10	(0.98)	0.77	(13.23)	-1.95	(1.84)	20	78.45
Not Justice Involved	1.21***	(0.17)	-6.83	(4.33)	-0.99	(0.71)	20	72.97
Disability	2.51**	(1.01)	-6.37	(8.30)	-3.86**	(1.29)	20	74.09
No Disability	1.02***	(0.30)	-10.71**	(4.51)	0.29	(0.68)	20	72.74
SMI/SED with Co-occurring SUD	1.06***	(0.19)	-7.60	(4.87)	-0.48	(0.75)	20	76.84
SMI/SED without Co-occurring SUD	1.50***	(0.31)	-3.55	(3.92)	-2.04**	(0.71)	20	59.20
State Defined SMI/SED with Co-occurring SUD	1.06***	(0.19)	-7.60	(4.87)	-0.48	(0.75)	20	76.84
State Defined SMI/SED without Co-occurring SUD	1.50***	(0.31)	-3.55	(3.92)	-2.04**	(0.71)	20	59.20
State Defined SMI/SED with Co-occurring Physical Condition	0.50**	(0.20)	-6.77*	(3.60)	0.09	(0.66)	20	83.02

- *OOD vs. non-OOD*: For beneficiaries with OOD, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without OOD, both the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit C.14. Follow-Up After Hospitalization for Mental Illness: Ages 18 and Older (FUH-AD)—Within 7 Days

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.90**	(0.32)	3.66	(3.35)	-1.01	(0.60)	20	47.79
Main sample: Model 2 – robustness check; most parsimonious model	0.92***	(0.28)	3.02	(2.76)	-0.95	(0.57)	20	47.79
FFS	0.44	(0.32)	6.50	(4.40)	-1.82**	(0.68)	20	48.85
MCO	1.72***	(0.41)	-0.48	(3.46)	-1.18*	(0.56)	20	46.24
Dual	0.29	(0.62)	7.95	(5.14)	0.20	(0.76)	20	49.87
Non-Dual	1.05**	(0.36)	2.62	(4.04)	-1.35	(0.81)	20	47.41
Pregnant	1.47	(1.10)	14.65*	(7.98)	-2.84**	(1.12)	20	47.20
Not Pregnant	0.91**	(0.31)	3.40	(3.37)	-0.99	(0.60)	20	47.79
Justice Involved	0.50	(0.63)	1.30	(13.04)	-1.35	(2.23)	20	48.58
Not Justice Involved	0.92**	(0.33)	3.67	(3.32)	-1.00	(0.63)	20	47.89
Disability	0.72	(0.41)	3.83	(4.71)	0.21	(0.70)	20	54.71
No Disability	1.13***	(0.31)	2.12	(4.23)	-1.59**	(0.70)	20	41.73
SMI/SED with Co-occurring SUD	0.93**	(0.33)	3.35	(3.25)	-0.66	(0.51)	20	47.50
SMI/SED without Co-occurring SUD	0.95**	(0.36)	2.11	(4.56)	-1.30	(0.87)	20	49.66
State Defined SMI/SED with Co-occurring SUD	0.93**	(0.33)	3.35	(3.25)	-0.66	(0.51)	20	47.50

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED without Co-occurring SUD	0.95**	(0.36)	2.11	(4.56)	-1.30	(0.87)	20	49.66
State Defined SMI/SED with Co-occurring Physical Condition	0.69*	(0.32)	4.26	(3.24)	-0.65	(0.56)	20	49.25
State Defined SMI/SED without Co-occurring Physical Condition	1.18***	(0.33)	-1.57	(3.27)	-0.89	(0.60)	20	56.27
ODD	0.21	(0.58)	12.32**	(4.87)	-0.52	(0.87)	20	46.71
No ODD	1.00***	(0.30)	2.56	(3.68)	-1.07	(0.63)	20	48.07
Age<21	1.89*	(1.03)	-10.05	(16.41)	0.80	(2.10)	20	39.79
Age21-44	1.01**	(0.40)	4.44	(4.15)	-1.64**	(0.69)	20	46.50
Age45-64	0.87*	(0.45)	2.22	(4.71)	-0.20	(0.88)	20	50.04
Age>=65	-0.43	(0.64)	17.55**	(6.99)	-0.74	(1.05)	20	47.93
Ward01	1.36	(0.86)	-12.07	(9.50)	1.10	(1.48)	20	45.95
Ward02	0.41	(0.83)	4.09	(11.00)	0.38	(1.63)	20	43.11
Ward03	1.04	(1.59)	-6.34	(12.92)	-2.64	(2.86)	20	46.47
Ward04	0.87	(0.59)	-2.72	(9.52)	1.13	(1.31)	20	50.00
Ward05	1.41***	(0.40)	5.74	(3.50)	-1.95*	(0.90)	20	47.42
Ward06	0.94	(0.61)	2.20	(6.69)	-0.72	(1.25)	20	48.89
Ward07	1.05*	(0.55)	3.53	(4.49)	-2.18**	(0.75)	20	52.40
Ward08	0.47	(0.36)	5.87	(4.23)	0.78	(0.66)	20	46.06
Ward99, 00, or missing	-0.01	(0.64)	12.50**	(5.05)	-2.21***	(0.71)	20	44.59

The results of subgroup analyses on the percentage of discharged beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner within 30 days are shown in Appendix Exhibit C.15. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant.

- *OOD vs. non-OOD*: For beneficiaries with OOD, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without OOD, there was a quarterly decrease, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For beneficiaries with co-occurring SUD, there was a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without co-occurring SUD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.15. Follow-up after hospitalization for mental illness: ages 18 and older (FUH-AD) —Within 30 days

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.54*	(0.29)	5.46	(3.40)	-1.17*	(0.56)	20	65.29
Main sample: Model 2 – robustness check; most parsimonious model	0.56**	(0.26)	5.39*	(2.80)	-1.17**	(0.51)	20	65.29
FFS	0.10	(0.38)	8.39	(5.47)	-2.45**	(0.84)	20	66.38
MCO	1.29***	(0.23)	2.83	(1.79)	-1.13***	(0.32)	20	64.05
Dual	-0.31	(0.47)	10.80*	(4.96)	-0.06	(0.71)	20	68.13
Non-Dual	0.75**	(0.33)	4.20	(3.52)	-1.45*	(0.68)	20	64.66
Pregnant	1.33	(0.94)	14.45*	(7.69)	-3.09**	(1.39)	20	63.93
Not Pregnant	0.55*	(0.28)	5.05	(3.33)	-1.12*	(0.56)	20	65.34
Justice Involved	0.28	(0.59)	8.47	(12.58)	-2.76	(2.89)	20	65.85
Not Justice Involved	0.57*	(0.29)	5.42	(3.49)	-1.14*	(0.63)	20	65.41
Disability	0.14	(0.41)	5.59	(4.27)	0.52	(0.64)	20	72.37
No Disability	0.93***	(0.25)	3.87	(4.23)	-2.06***	(0.65)	20	59.12
SMI/SED with Co-occurring SUD	0.72**	(0.30)	4.59	(2.90)	-0.96**	(0.42)	20	65.31

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
SMI/SED without Co-occurring SUD	0.18	(0.30)	5.69	(4.58)	-1.10	(0.79)	20	67.09
State Defined SMI/SED with Co-occurring SUD	0.72**	(0.30)	4.59	(2.90)	-0.96**	(0.42)	20	65.31
State Defined SMI/SED without Co-occurring SUD	0.18	(0.30)	5.69	(4.58)	-1.10	(0.79)	20	67.09
State Defined SMI/SED with Co-occurring Physical Condition	0.36	(0.31)	6.10*	(3.15)	-0.91	(0.53)	20	66.68
State Defined SMI/SED without Co-occurring Physical Condition	0.74**	(0.30)	1.65	(3.75)	-1.23*	(0.59)	20	76.10
ODD	0.76	(0.63)	10.11*	(5.10)	-1.21	(0.83)	20	63.58
No ODD	0.53	(0.30)	4.64	(3.69)	-1.13*	(0.63)	20	65.69
Age<21	1.69*	(0.85)	-7.34	(14.81)	-0.08	(2.03)	20	56.92
Age21-44	0.72*	(0.37)	6.40	(4.17)	-1.73**	(0.69)	20	63.24
Age45-64	0.48	(0.39)	3.96	(4.94)	-0.55	(0.85)	20	69.09
Age>=65	-0.82**	(0.29)	12.78*	(6.86)	0.12	(0.85)	20	61.62
Ward01	1.62	(1.06)	-17.69	(11.19)	1.19	(1.66)	20	62.05
Ward02	-0.15	(0.57)	0.92	(10.81)	1.65	(1.44)	20	61.73
Ward03	0.37	(1.37)	3.26	(14.55)	-4.73*	(2.45)	20	61.32
Ward04	0.34	(0.45)	1.04	(9.61)	0.24	(1.42)	20	67.03
Ward05	0.66	(0.53)	12.04***	(3.81)	-1.82*	(0.91)	20	63.87
Ward06	0.51	(0.84)	0.25	(6.99)	-0.14	(1.18)	20	68.66
Ward07	0.49	(0.41)	6.84*	(3.54)	-1.73***	(0.47)	20	69.27
Ward08	0.37	(0.35)	8.81**	(3.56)	-0.10	(0.54)	20	64.30
Ward99, 00, or missing	0.46	(0.60)	9.65	(7.29)	-3.07***	(0.97)	20	60.79

The results of subgroup analyses on the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 7 days of the ED visit are shown in Appendix Exhibit C.16. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *OUD vs. non-OUD*: For beneficiaries with OUD, both the immediate and quarterly changes were not statistically significant. For beneficiaries without OUD, there was an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, there was an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without co-occurring physical condition, there was an immediate increase and a quarterly decrease.

Appendix Exhibit C.16. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 7 Days

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.07	(0.18)	8.17***	(1.40)	-1.73***	(0.32)	20	57.55
Main sample: Model 2 – robustness check; most parsimonious model	0.14	(0.11)	7.33***	(1.36)	-1.66***	(0.33)	20	57.55
FFS	-0.06	(0.14)	7.95***	(2.38)	-1.67***	(0.45)	20	60.21
MCO	0.34	(0.30)	6.37**	(2.30)	-1.20***	(0.35)	20	53.13
Dual	-0.02	(0.18)	14.76***	(2.58)	-1.92***	(0.50)	20	57.26
Non-Dual	0.10	(0.20)	6.02**	(1.97)	-1.63***	(0.38)	20	57.65
Pregnant	0.57	(0.92)	14.56	(14.42)	-3.78	(2.95)	20	58.49
Not Pregnant	0.06	(0.18)	8.12***	(1.49)	-1.69***	(0.32)	20	57.61
Justice Involved	-0.40	(1.06)	0.64	(12.22)	-0.37	(2.54)	20	59.60
Not Justice Involved	0.08	(0.18)	8.65***	(1.61)	-1.78***	(0.35)	20	57.46
Disability	-0.07	(0.24)	6.21**	(2.71)	-0.82	(0.49)	20	64.67
No Disability	0.32	(0.22)	8.32**	(3.23)	-2.23***	(0.52)	20	50.98
SMI/SED with Co-occurring SUD	-0.23	(0.22)	12.82***	(2.67)	-1.38***	(0.41)	20	56.24

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
SMI/SED without Co-occurring SUD	0.25	(0.17)	5.33**	(2.36)	-1.93***	(0.45)	20	58.77
State Defined SMI/SED with Co-occurring SUD	-0.23	(0.22)	12.82***	(2.67)	-1.38***	(0.41)	20	56.24
State Defined SMI/SED without Co-occurring SUD	0.25	(0.17)	5.33**	(2.36)	-1.93***	(0.45)	20	58.77
State Defined SMI/SED with Co-occurring Physical Condition	-0.00	(0.22)	4.71**	(1.98)	-0.71	(0.46)	20	58.39
State Defined SMI/SED without Co-occurring Physical Condition	0.24	(0.18)	6.42***	(2.01)	-2.46***	(0.30)	20	63.65
OOD	-0.68	(0.46)	0.25	(7.58)	0.53	(1.45)	20	57.61
No OOD	0.16	(0.22)	8.44***	(1.83)	-1.87***	(0.42)	20	57.52
Age<21	-0.87	(1.08)	37.28**	(15.94)	-2.62	(2.45)	20	48.12
Age21-44	0.32	(0.24)	6.75***	(2.10)	-2.22***	(0.49)	20	54.90
Age45-64	0.00	(0.22)	6.48*	(2.99)	-0.78	(0.57)	20	61.60
Age>=65	0.01	(0.37)	10.95*	(5.43)	-1.53	(1.22)	20	56.93
Ward01	-0.07	(0.75)	2.39	(7.26)	-2.79**	(0.93)	20	53.60
Ward02	0.70	(0.84)	-3.80	(12.20)	-1.12	(1.90)	20	50.55
Ward03	0.05	(1.07)	-19.49	(15.83)	-1.48	(3.71)	20	56.24
Ward04	-0.16	(0.31)	1.69	(5.16)	-0.32	(0.87)	20	58.79
Ward05	-0.20	(0.42)	7.43	(5.28)	0.38	(1.01)	20	56.87
Ward06	0.63	(0.43)	13.63*	(7.62)	-4.11***	(1.09)	20	59.65
Ward07	-0.00	(0.48)	12.08**	(4.88)	-2.13**	(0.80)	20	59.25
Ward08	-0.09	(0.31)	11.80**	(5.19)	-2.25***	(0.68)	20	60.04
Ward99, 00, or missing	-0.10	(0.70)	1.32	(9.30)	-0.48	(1.24)	20	55.58

The results of subgroup analyses on the percentage of ED visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness within 30 days of the ED visit are shown in Appendix Exhibit C.17. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *OOD vs. non-OOD*: For beneficiaries with OOD, both the immediate and quarterly changes were not statistically significant. For beneficiaries without OOD, there was an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring SUD*: For both beneficiaries with co-occurring SUD and without co-occurring SUD, the Demonstration was associated with an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, there was an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit C.17. Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)—Within 30 Days

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.20	(0.22)	6.49***	(1.49)	-1.69***	(0.27)	20	70.18
Main sample: Model 2 – robustness check; most parsimonious model	0.21	(0.18)	6.03***	(1.17)	-1.65***	(0.27)	20	70.18
FFS	0.14	(0.23)	4.64**	(1.97)	-1.35***	(0.32)	20	73.46
MCO	0.39	(0.24)	7.69***	(2.40)	-1.45***	(0.29)	20	64.92
Dual	0.25	(0.26)	8.50**	(3.10)	-1.72***	(0.49)	20	71.79
Non-Dual	0.17	(0.23)	5.80***	(1.83)	-1.63***	(0.34)	20	69.65
Pregnant	0.65	(0.83)	14.82	(13.91)	-3.76	(2.71)	20	69.45
Not Pregnant	0.20	(0.23)	6.45***	(1.52)	-1.70***	(0.30)	20	70.33
Justice Involved	0.28	(0.92)	-6.44	(13.72)	-0.68	(2.54)	20	69.62
Not Justice Involved	0.18	(0.22)	7.12***	(1.61)	-1.72***	(0.28)	20	70.24
Disability	0.12	(0.27)	2.13	(2.49)	-0.62	(0.36)	20	77.32
No Disability	0.38	(0.27)	9.01**	(3.05)	-2.36***	(0.48)	20	63.55
SMI/SED with Co-occurring SUD	-0.09	(0.25)	9.08***	(2.68)	-0.98**	(0.34)	20	68.88

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
SMI/SED without Co-occurring SUD	0.42*	(0.23)	4.44**	(1.68)	-2.19***	(0.28)	20	71.61
State Defined SMI/SED with Co-occurring SUD	-0.09	(0.25)	9.08***	(2.68)	-0.98**	(0.34)	20	68.88
State Defined SMI/SED without Co-occurring SUD	0.42*	(0.23)	4.44**	(1.68)	-2.19***	(0.28)	20	71.61
State Defined SMI/SED with Co-occurring Physical Condition	0.13	(0.27)	5.06**	(2.01)	-1.04**	(0.35)	20	71.74
State Defined SMI/SED without Co-occurring Physical Condition	0.43*	(0.21)	3.06	(1.90)	-2.12***	(0.22)	20	76.11
ODD	-0.32	(0.33)	-3.02	(7.02)	-0.03	(1.22)	20	72.46
No ODD	0.27	(0.28)	6.83***	(1.83)	-1.78***	(0.37)	20	69.93
Age<21	0.78	(1.08)	17.43	(10.30)	-2.37	(1.69)	20	60.08
Age21-44	0.45	(0.33)	4.93**	(2.18)	-2.16***	(0.42)	20	67.72
Age45-64	-0.16	(0.25)	7.97***	(2.15)	-0.90**	(0.41)	20	73.75
Age>=65	1.17	(0.71)	4.37	(7.36)	-1.64	(1.01)	20	71.04
Ward01	0.79	(0.66)	-4.66	(8.67)	-3.21	(1.95)	20	68.59
Ward02	0.51	(0.80)	0.56	(11.06)	-2.25	(1.98)	20	63.04
Ward03	0.12	(0.98)	-18.82	(22.17)	-2.18	(4.83)	20	67.17
Ward04	0.37	(0.26)	5.63*	(2.92)	-1.06*	(0.56)	20	71.58
Ward05	-0.53	(0.48)	8.86*	(4.15)	0.52	(0.92)	20	70.71
Ward06	0.35	(0.46)	10.14	(9.16)	-2.78**	(1.24)	20	72.39
Ward07	0.20	(0.50)	6.69	(5.59)	-1.69**	(0.71)	20	70.98
Ward08	0.17	(0.28)	7.20*	(3.45)	-1.96**	(0.65)	20	72.65
Ward99, 00, or missing	0.42	(0.66)	8.84	(6.54)	-2.56**	(1.09)	20	65.25

Appendix D. SUD Goals—Regression Results Tables

This appendix presents regression estimates from the preferred ITS model for various subgroups of interest. The subgroups are adopted from the Demonstration’s monitoring reports. While we have included all subgroup results in this appendix, we have only discussed findings related to a few key subgroups: FFS vs. MCO; OUD vs. not; SMI/SED with vs. without co-occurring physical condition. These subgroups were deemed most relevant to the Demonstration and had sufficient beneficiary counts.

It is important to note that some subgroups have very few beneficiaries in certain months or quarters, such as age group, ward, pregnancy status, and criminal justice involvement. When aggregating the data into monthly or quarterly time series, the average outcome might be influenced by just a few individuals. Therefore, caution is warranted when interpreting results from small subgroups.

When interpreting the results for FFS versus MCO, it is also important to consider the changes in population composition under the Demonstration, as discussed in Section H. In October 2020, during the first year of the Demonstration, there was a transition of Medicaid FFS beneficiaries with complex conditions to managed care. This transition led to a decrease in the number of beneficiaries using certain Demonstration services.

Goal 1: Increased rates of identification, initiation, and engagement in treatment for SUD.

Research Question 1.1. Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?

The results of subgroup analyses on the number of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period are shown in Appendix Exhibit D.1. Findings for key subgroups:

- *FFS vs. MCO:* For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.

- *OOD vs. non-OOD*: For beneficiaries with OOD, both the immediate and quarterly changes were not statistically significant. For beneficiaries without OOD, the Demonstration was associated with a quarterly increase, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.1. Newly Initiated SUD Treatment/Diagnosis (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-25.55***	(5.47)	-45.11	(54.92)	23.72**	(9.67)	60	1,145.28
Main sample: Model 2 – robustness check; most parsimonious model	-29.10***	(5.09)	-0.46	(45.88)	20.31**	(9.42)	60	1,145.28
FFS	-7.24***	(2.02)	13.31	(24.92)	-32.47***	(4.09)	60	513.50
MCO	-18.30***	(4.29)	-58.43	(52.96)	56.19***	(10.06)	60	631.81
Dual	-0.60	(0.84)	-15.47	(10.67)	1.08	(1.66)	60	148.83
Non-Dual	-24.94***	(4.94)	-29.63	(47.46)	22.64**	(8.51)	60	996.44
Pregnant	-1.59***	(0.28)	2.49	(3.59)	1.00*	(0.50)	60	29.89
Not Pregnant	-23.95***	(5.35)	-47.60	(54.25)	22.72**	(9.54)	60	1,115.39
Justice Involved	-0.96**	(0.45)	-10.55**	(4.71)	-1.72**	(0.73)	60	51.75
Not Justice Involved	-24.59***	(5.35)	-34.56	(54.59)	25.45**	(9.81)	60	1,093.53
Disability	-7.27***	(1.63)	-22.38	(20.73)	4.03	(3.12)	60	348.33
No Disability	-18.27***	(4.24)	-22.72	(40.51)	19.69**	(7.62)	60	796.94
SMI/SED with Co-occurring SUD	-25.53***	(5.47)	-45.32	(54.93)	23.73**	(9.67)	60	1,145.25
SMI/SED without Co-occurring SUD	-0.02	(0.01)	0.21	(0.13)	-0.00	(0.01)	60	0.03
State Defined SMI/SED with Co-occurring SUD	-1.68	(1.92)	11.40	(23.73)	3.29	(4.80)	60	441.17

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED without Co-occurring SUD	-0.01	(0.00)	0.17	(0.12)	-0.01	(0.01)	60	0.00
State Defined SMI/SED with Co-occurring Physical Condition	-1.52	(1.66)	2.35	(19.03)	2.46	(3.74)	60	346.50
State Defined SMI/SED without Co-occurring Physical Condition	-0.17	(0.51)	9.22	(6.63)	0.82	(1.33)	60	94.67
ODD	-3.70***	(0.94)	-2.03	(16.67)	3.67	(2.76)	60	197.25
No ODD	-21.85***	(5.11)	-43.08	(45.78)	20.05**	(8.01)	60	948.03
Age<21	-4.34***	(0.52)	4.27	(5.67)	4.39***	(0.90)	60	52.67
Age21-44	-11.93***	(3.60)	-18.28	(32.37)	12.67**	(5.99)	60	531.03
Age45-64	-9.97***	(2.27)	-34.32	(21.83)	6.96*	(3.65)	60	504.11
Age>=65	0.68	(0.42)	3.23	(8.39)	-0.29	(1.30)	60	57.47
Ward01	-1.46**	(0.55)	-3.97	(6.03)	2.19**	(1.01)	60	71.69
Ward02	-3.26***	(0.40)	-2.91	(3.87)	2.74***	(0.83)	60	61.72
Ward03	-0.01	(0.27)	-4.66	(2.91)	1.26**	(0.62)	60	18.47
Ward04	-2.42***	(0.54)	-4.00	(7.53)	2.78**	(1.32)	60	85.72
Ward05	-3.75***	(0.81)	-2.44	(10.12)	4.24***	(1.51)	60	164.36
Ward06	-2.77***	(0.72)	5.00	(9.43)	0.28	(1.61)	60	125.83
Ward07	-5.31***	(1.48)	-4.30	(16.65)	3.15	(3.02)	60	245.19
Ward08	-5.20*	(2.60)	-29.48	(22.36)	6.89*	(3.51)	60	301.83
Ward99, 00, or missing	-1.38***	(0.39)	1.66	(5.27)	0.19	(0.74)	60	70.44

The results of subgroup analyses on the percentage of beneficiaries with an SUD diagnosis and an SUD-related service during the measurement period but not in the 3 months before the measurement period are shown in Appendix Exhibit D.2. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.

- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with a quarterly increase, but the immediate change was not statistically significant. For beneficiaries without OOD, both the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the immediate and quarterly changes were not statistically significant. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit D.2. Newly Initiated SUD Treatment/Diagnosis (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.01***	(0.00)	-0.00	(0.02)	0.00	(0.00)	60	0.45
Main sample: Model 2 – robustness check; most parsimonious model	-0.01***	(0.00)	0.02	(0.02)	0.00	(0.00)	60	0.45
FFS	-0.01**	(0.00)	0.01	(0.03)	-0.03***	(0.01)	60	0.80
MCO	-0.01***	(0.00)	-0.01	(0.02)	0.02***	(0.00)	60	0.33
Dual	-0.00	(0.00)	-0.04	(0.04)	-0.00	(0.01)	60	0.61
Non-Dual	-0.01***	(0.00)	0.00	(0.02)	0.00	(0.00)	60	0.43
Pregnant	-0.03***	(0.01)	0.07	(0.09)	0.02	(0.01)	60	0.67
Not Pregnant	-0.01***	(0.00)	-0.00	(0.02)	0.00	(0.00)	60	0.45
Justice Involved	-0.02	(0.02)	0.09	(0.22)	-0.08**	(0.03)	60	1.95
Not Justice Involved	-0.01***	(0.00)	0.00	(0.02)	0.00	(0.00)	60	0.43
Disability	-0.01***	(0.00)	-0.05	(0.06)	0.01	(0.01)	60	0.90
No Disability	-0.01***	(0.00)	0.00	(0.02)	0.00	(0.00)	60	0.37
SMI/SED with Co-occurring SUD	-0.06*	(0.03)	0.18	(0.43)	0.06	(0.07)	60	7.25
SMI/SED without Co-occurring SUD	-0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	60	0.00
State Defined SMI/SED with Co-occurring SUD	-0.01	(0.04)	-0.30	(0.44)	-0.05	(0.09)	60	10.22

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED without Co-occurring SUD	-0.00	(0.00)	0.00	(0.00)	-0.00	(0.00)	60	0.00
State Defined SMI/SED with Co-occurring Physical Condition	-0.04***	(0.01)	0.27	(0.17)	0.00	(0.03)	60	3.96
State Defined SMI/SED without Co-occurring Physical Condition	-0.01*	(0.01)	-0.06	(0.06)	-0.02*	(0.01)	60	1.21
ODD	-0.07***	(0.02)	-0.02	(0.35)	0.11*	(0.06)	60	4.02
No ODD	-0.01***	(0.00)	-0.00	(0.02)	0.00	(0.00)	60	0.38
Age<21	-0.00***	(0.00)	0.01	(0.01)	0.00***	(0.00)	60	0.06
Age21-44	-0.01***	(0.00)	0.00	(0.03)	0.00	(0.01)	60	0.59
Age45-64	-0.01***	(0.00)	-0.03	(0.04)	-0.00	(0.01)	60	0.89
Age>=65	0.00	(0.00)	0.03	(0.05)	-0.01	(0.01)	60	0.37
Ward01	-0.01**	(0.00)	-0.01	(0.03)	0.00	(0.00)	60	0.33
Ward02	-0.01***	(0.00)	-0.01	(0.03)	0.00	(0.01)	60	0.49
Ward03	0.00	(0.01)	-0.07	(0.05)	0.01	(0.01)	60	0.35
Ward04	-0.01***	(0.00)	-0.00	(0.02)	0.01	(0.00)	60	0.27
Ward05	-0.01***	(0.00)	0.01	(0.03)	0.01	(0.00)	60	0.47
Ward06	-0.01***	(0.00)	0.04	(0.04)	-0.01	(0.01)	60	0.54
Ward07	-0.01***	(0.00)	0.00	(0.03)	0.00	(0.01)	60	0.49
Ward08	-0.01**	(0.00)	-0.03	(0.04)	0.01	(0.01)	60	0.49
Ward99, 00, or missing	-0.01***	(0.00)	0.07*	(0.04)	-0.00	(0.01)	60	0.53

Research Question 1.3b. Was there an increase in the utilization of specific SUD treatment services?

The results of subgroup analyses on the number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period are shown in Appendix Exhibit D.3. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was an immediate decrease and a quarterly increase.

- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without OOD, there was an immediate decrease and a quarterly increase.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the immediate and quarterly changes were not statistically significant. For beneficiaries without co-occurring physical condition, there was an immediate and a quarterly increase.

Appendix Exhibit D.3. Any SUD Treatment (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-14.33	(9.09)	-165.18*	(94.66)	6.20	(14.99)	60	4,363.44
Main sample: Model 2 – robustness check; most parsimonious model	-19.40**	(9.04)	-113.50	(86.87)	2.50	(16.14)	60	4,363.44
FFS	-2.55	(4.96)	167.86	(155.51)	-258.38***	(25.79)	60	2,406.33
MCO	-11.78	(8.98)	-333.05*	(196.00)	264.58***	(33.56)	60	1,957.14
Dual	8.38***	(1.41)	-43.63*	(22.59)	-24.21***	(3.32)	60	694.28
Non-Dual	-22.71***	(8.11)	-121.54	(79.36)	30.41**	(13.22)	60	3,669.17
Pregnant	-2.34***	(0.30)	2.61	(3.85)	1.27**	(0.51)	60	59.06
Not Pregnant	-11.99	(9.00)	-167.79*	(93.60)	4.93	(14.83)	60	4,304.39
Justice Involved	-0.62	(0.75)	-8.64	(8.19)	-13.68***	(1.48)	60	157.53
Not Justice Involved	-13.71	(8.73)	-156.54*	(92.56)	19.88	(15.18)	60	4,205.92
Disability	-13.06***	(3.20)	-24.95	(48.47)	-24.48***	(6.52)	60	1,910.94
No Disability	-1.27	(6.57)	-140.23**	(60.86)	30.68**	(11.52)	60	2,452.50
SMI/SED with Co-occurring SUD	-14.16	(9.11)	-165.74*	(94.03)	4.94	(14.89)	60	4,355.78
SMI/SED without Co-occurring SUD	-0.17	(0.17)	0.56	(1.93)	1.25***	(0.33)	60	7.67
State Defined SMI/SED with Co-occurring SUD	9.83**	(4.33)	29.88	(44.34)	8.80	(9.18)	60	1,839.81
State Defined SMI/SED without Co-occurring SUD	-0.11	(0.11)	0.43	(1.38)	0.43*	(0.22)	60	3.00

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring Physical Condition	8.73*	(4.36)	-5.43	(43.60)	-13.90	(8.62)	60	1,378.19
State Defined SMI/SED without Co-occurring Physical Condition	0.99	(1.11)	35.73*	(20.97)	23.13***	(3.29)	60	464.61
OOD	0.47	(2.68)	127.68***	(39.04)	-54.87***	(6.25)	60	2,392.33
No OOD	-14.79*	(7.64)	-292.86***	(64.81)	61.07***	(10.88)	60	1,971.11
Age<21	-6.38***	(0.62)	3.76	(5.10)	8.04***	(0.87)	60	74.50
Age21-44	-3.15	(5.15)	-89.90**	(42.13)	23.22***	(7.40)	60	1,238.00
Age45-64	-17.95***	(4.32)	-82.68	(51.37)	-7.73	(7.98)	60	2,718.11
Age>=65	13.14***	(0.61)	3.64	(10.36)	-17.33***	(1.53)	60	332.83
Ward01	-1.49*	(0.87)	-5.99	(9.96)	2.13	(1.35)	60	296.42
Ward02	-9.14***	(0.81)	-12.37	(7.98)	5.70***	(1.35)	60	282.61
Ward03	0.80**	(0.31)	-6.83**	(3.32)	1.64**	(0.74)	60	85.31
Ward04	0.47	(0.77)	-19.21*	(9.96)	-1.01	(1.71)	60	306.39
Ward05	-2.32*	(1.23)	-33.09**	(14.11)	-0.09	(2.24)	60	644.94
Ward06	-2.09*	(1.06)	16.46	(11.16)	-3.31*	(1.97)	60	515.83
Ward07	-1.35	(2.21)	-40.60*	(23.87)	-0.72	(4.11)	60	870.17
Ward08	-2.30	(3.75)	-57.28*	(32.44)	5.33	(4.98)	60	1,058.11
Ward99, 00, or missing	3.10***	(0.74)	-6.27	(9.01)	-3.47**	(1.33)	60	303.67

The results of subgroup analyses on the percentage of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period are shown in Appendix Exhibit D.4. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without OOD, there was an immediate decrease and a quarterly increase.

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was an immediate decrease, but the quarterly change was not statistically significant.

Appendix Exhibit D.4. Any SUD Treatment (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.01*	(0.00)	0.01	(0.03)	-0.02***	(0.01)	60	1.71
Main sample: Model 2 – robustness check; most parsimonious model	-0.01**	(0.00)	0.03	(0.03)	-0.02***	(0.01)	60	1.71
FFS	0.01*	(0.01)	0.27	(0.18)	-0.33***	(0.03)	60	3.76
MCO	-0.01**	(0.00)	-0.08	(0.08)	0.08***	(0.01)	60	1.03
Dual	0.03***	(0.01)	-0.09	(0.09)	-0.14***	(0.01)	60	2.84
Non-Dual	-0.01***	(0.00)	0.01	(0.03)	-0.01**	(0.00)	60	1.59
Pregnant	-0.04***	(0.01)	0.08	(0.09)	0.02	(0.01)	60	1.33
Not Pregnant	-0.01*	(0.00)	0.00	(0.04)	-0.02***	(0.01)	60	1.72
Justice Involved	0.01	(0.02)	1.70***	(0.39)	-0.66***	(0.06)	60	5.96
Not Justice Involved	-0.01*	(0.00)	0.00	(0.03)	-0.02***	(0.01)	60	1.67
Disability	-0.00	(0.01)	0.02	(0.13)	-0.08***	(0.02)	60	4.97
No Disability	-0.00	(0.00)	-0.01	(0.02)	-0.01	(0.00)	60	1.13
SMI/SED with Co-occurring SUD	0.32***	(0.07)	0.96	(0.83)	-0.33**	(0.13)	60	27.68
SMI/SED without Co-occurring SUD	-0.00	(0.00)	0.00	(0.00)	0.00***	(0.00)	60	0.00
State Defined SMI/SED with Co-occurring SUD	0.35***	(0.07)	-1.70**	(0.78)	-0.40***	(0.13)	60	42.66
State Defined SMI/SED without Co-occurring SUD	-0.00	(0.00)	0.00	(0.01)	0.00*	(0.00)	60	0.02
State Defined SMI/SED with Co-occurring Physical Condition	-0.01	(0.03)	0.92***	(0.28)	-0.27***	(0.05)	60	15.76

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.5. Initiation of alcohol and other drug dependence treatment (IET-AD)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.34	(0.30)	2.96	(1.95)	-0.21	(0.41)	20	30.34
Main sample: Model 2 – robustness check; most parsimonious model	0.36	(0.26)	2.93**	(1.24)	-0.21	(0.33)	20	30.34
FFS	0.39	(0.23)	1.60	(1.31)	0.65**	(0.28)	(0.00)	34.93
MCO	0.26	(0.35)	2.53	(2.50)	0.16	(0.46)	(0.00)	26.36
Dual	0.41*	(0.22)	0.12	(2.39)	0.21	(0.35)	(0.01)	36.10
Non-Dual	0.30	(0.32)	3.76	(2.20)	-0.32	(0.46)	(0.00)	29.20
Pregnant	0.68	(0.75)	-4.08	(7.17)	0.20	(0.93)	(0.01)	28.37
Not Pregnant	0.33	(0.30)	3.24	(2.08)	-0.24	(0.43)	(0.00)	30.30
Justice Involved	0.48	(0.42)	13.61*	(6.80)	-0.88	(1.08)	(0.01)	32.38
Not Justice Involved	0.33	(0.31)	2.85	(2.09)	-0.19	(0.43)	(0.00)	30.19
Disability	0.34	(0.27)	4.02*	(2.03)	-0.43	(0.40)	(0.00)	34.95
No Disability	0.33	(0.32)	2.59	(2.15)	-0.07	(0.45)	(0.00)	27.82
SMI/SED with Co-occurring SUD	0.36	(0.32)	3.60	(2.18)	-0.27	(0.45)	(0.00)	31.05
SMI/SED without Co-occurring SUD	0.28**	(0.12)	-0.84	(1.80)	-0.01	(0.26)	(0.00)	15.90
State Defined SMI/SED with Co-occurring SUD	0.16	(0.30)	3.07	(1.99)	-0.42	(0.49)	(0.01)	43.35
State Defined SMI/SED without Co-occurring SUD	0.17	(0.23)	-5.48	(3.68)	0.22	(0.62)	(0.01)	19.35

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring Physical Condition	0.48	(0.28)	2.85	(2.28)	-0.50	(0.57)	(0.01)	45.68
State Defined SMI/SED without Co-occurring Physical Condition	-1.01***	(0.31)	3.04	(2.40)	0.37	(0.40)	(0.00)	28.23
ODD	0.67**	(0.26)	3.19*	(1.72)	-1.75***	(0.38)	(0.00)	51.97
No ODD	0.26	(0.29)	2.96	(1.99)	0.11	(0.41)	(0.00)	25.43
Age<21	1.29	(0.77)	-5.18	(10.64)	-0.69	(1.34)	(0.01)	23.66
Age21-44	0.22	(0.35)	4.14	(2.35)	-0.05	(0.45)	(0.00)	24.32
Age45-64	0.33	(0.25)	2.51	(1.94)	-0.29	(0.43)	(0.01)	35.30
Age>=65	0.56*	(0.28)	1.69	(3.08)	-0.13	(0.39)	(0.01)	37.65
Ward01	0.13	(0.26)	4.69*	(2.55)	-0.46	(0.51)	(0.01)	33.45
Ward02	0.37**	(0.14)	-0.30	(3.05)	0.55	(0.41)	(0.00)	35.38
Ward03	0.03	(0.57)	2.22	(11.87)	0.63	(1.53)	(0.02)	32.61
Ward04	0.66*	(0.31)	-1.00	(3.36)	-0.87	(0.58)	(0.00)	31.83
Ward05	0.43	(0.34)	0.37	(2.78)	0.13	(0.59)	(0.01)	31.09
Ward06	0.40	(0.23)	3.03	(2.29)	-0.34	(0.35)	(0.00)	32.25
Ward07	-0.04	(0.29)	8.07***	(1.75)	-0.25	(0.40)	(0.00)	27.60
Ward08	0.63	(0.52)	1.52	(3.39)	-0.33	(0.64)	(0.01)	28.92
Ward99, 00, or missing	0.22	(0.35)	1.69	(4.61)	0.00	(0.66)	(0.01)	31.26

The results of subgroup analyses on the percentage of beneficiaries who initiated treatment and were engaged in ongoing AOD treatment within 34 days of the initiation visit are shown in Appendix Exhibit D.6. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the immediate and quarterly changes were not statistically significant. For MCO beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant.
- *ODD vs. non-ODD*: For beneficiaries with ODD, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without ODD, the immediate and quarterly changes were not statistically significant.

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.6. Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.09	(0.05)	1.48*	(0.79)	-0.34**	(0.14)	20	5.11
Main sample: Model 2 – robustness check; most parsimonious model	0.11*	(0.05)	1.32**	(0.51)	-0.32***	(0.11)	20	5.11
FFS	0.00	(0.09)	1.80	(1.22)	-0.21	(0.21)	20	6.07
MCO	0.17***	(0.05)	0.79	(0.49)	-0.30***	(0.09)	20	4.52
Dual	0.08	(0.07)	-0.43	(0.85)	0.03	(0.13)	20	4.88
Non-Dual	0.10	(0.06)	1.79*	(0.83)	-0.41**	(0.15)	20	5.28
Pregnant	0.17	(0.19)	-0.45	(1.98)	0.06	(0.35)	20	1.83
Not Pregnant	0.09	(0.06)	1.50*	(0.76)	-0.35**	(0.14)	20	5.31
Justice Involved	0.15	(0.16)	6.79***	(1.69)	-0.96**	(0.36)	20	7.04
Not Justice Involved	0.09	(0.06)	1.31	(0.78)	-0.31**	(0.14)	20	5.17
Disability	-0.06	(0.10)	3.28***	(0.81)	-0.39**	(0.14)	20	6.09
No Disability	0.18***	(0.06)	0.51	(0.91)	-0.31*	(0.14)	20	4.76
SMI/SED with Co-occurring SUD	0.11*	(0.06)	1.70**	(0.76)	-0.39**	(0.14)	20	5.40
SMI/SED without Co-occurring SUD	-0.03	(0.13)	-1.39	(1.21)	0.27	(0.15)	20	2.16
State Defined SMI/SED with Co-occurring SUD	0.10	(0.08)	2.91**	(1.27)	-0.61**	(0.24)	20	8.17
State Defined SMI/SED without Co-occurring SUD	-0.19	(0.16)	-1.08	(1.82)	0.65*	(0.34)	20	2.88

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring Physical Condition	0.14	(0.08)	3.29**	(1.46)	-0.63*	(0.30)	20	8.50
State Defined SMI/SED without Co-occurring Physical Condition	-0.13	(0.13)	0.89	(1.75)	-0.12	(0.20)	20	5.48
ODD	0.42***	(0.11)	4.64	(2.86)	-1.99***	(0.38)	20	18.46
No ODD	0.02	(0.04)	0.68	(0.48)	0.02	(0.10)	20	2.28
Age<21	0.10	(0.13)	-0.61	(1.21)	0.14	(0.27)	20	1.11
Age21-44	0.11***	(0.03)	1.27***	(0.37)	-0.25***	(0.07)	20	3.58
Age45-64	0.08	(0.10)	2.00	(1.41)	-0.48*	(0.23)	20	6.98
Age>=65	0.05	(0.08)	-0.46	(0.62)	0.08	(0.10)	20	5.08
Ward01	0.29*	(0.15)	2.87	(2.07)	-1.13***	(0.23)	20	5.74
Ward02	0.12	(0.13)	1.26	(1.92)	-0.37	(0.35)	20	5.71
Ward03	-0.22	(0.19)	0.65	(3.43)	0.44	(0.58)	20	5.09
Ward04	0.20*	(0.10)	2.04	(1.46)	-0.76**	(0.27)	20	5.58
Ward05	0.08	(0.09)	0.92	(1.20)	-0.08	(0.20)	20	5.01
Ward06	0.12**	(0.05)	1.55	(1.52)	-0.29	(0.29)	20	5.59
Ward07	0.08	(0.10)	1.05	(1.85)	-0.22	(0.27)	20	5.13
Ward08	0.05	(0.08)	1.31*	(0.69)	-0.31**	(0.14)	20	4.54
Ward99, 00, or missing	-0.03	(0.09)	2.82**	(0.95)	-0.28	(0.19)	20	5.20

Research Question 2.1b. Did the demonstration increase retention in SUD treatment?

The results of subgroup analyses on the number of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for ODD without a gap of more than 7 days are shown in Appendix Exhibit D.7. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.

- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without OOD, there was a quarterly increase, but the immediate change was not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For beneficiaries without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.7. Continuity of Pharmacotherapy for Opioid Use Disorder (Number of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	19.20***	(1.96)	42.25	(30.43)	-27.34***	(5.64)	20	420.25
Main sample: Model 2 – robustness check; most parsimonious model	18.61***	(1.99)	54.89*	(27.33)	-28.41***	(5.60)	20	420.25
FFS	6.82**	(2.81)	83.65	(79.50)	-63.34***	(12.63)	20	277.25
MCO	13.12***	(2.62)	-34.42	(83.06)	33.39*	(15.72)	20	150.67
Dual	0.15	(0.32)	-2.90	(3.70)	0.07	(0.54)	20	8.17
Non-Dual	19.13***	(1.89)	46.00	(29.30)	-27.65***	(5.56)	20	412.50
Pregnant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Not Pregnant	19.16***	(1.98)	43.78	(30.70)	-27.28***	(5.64)	20	419.00
Justice Involved	1.57***	(0.34)	9.11*	(4.57)	-6.42***	(0.80)	20	16.58
Not Justice Involved	17.95***	(1.97)	34.43	(31.92)	-22.12***	(6.06)	20	407.50
Disability	4.14***	(0.91)	18.61*	(10.41)	-10.85***	(1.99)	20	245.33
No Disability	15.72***	(1.53)	18.13	(22.32)	-17.22***	(3.97)	20	180.50
SMI/SED with Co-occurring SUD	19.20***	(1.96)	42.25	(30.43)	-27.34***	(5.64)	20	420.25
SMI/SED without Co-occurring SUD	0.86***	(0.20)	1.97	(3.53)	-2.43***	(0.54)	20	9.00

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring SUD	9.39***	(1.25)	22.19	(26.97)	-13.84**	(5.13)	20	266.75
State Defined SMI/SED without Co-occurring SUD	0.10	(0.07)	0.69	(1.29)	-0.34*	(0.16)	20	2.50
State Defined SMI/SED with Co-occurring Physical Condition	7.36***	(0.80)	7.68	(17.89)	-10.98**	(3.63)	20	230.33
State Defined SMI/SED without Co-occurring Physical Condition	2.82***	(0.72)	23.89	(26.50)	-2.10	(4.05)	20	89.25
ODD	18.84***	(1.86)	31.75	(22.75)	-33.24***	(4.76)	20	413.83
No ODD	1.47**	(0.57)	-0.29	(6.45)	7.17***	(1.36)	20	19.58
Age<21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Age21-44	4.26***	(0.45)	-5.30	(4.52)	-3.86***	(1.02)	20	53.75
Age45-64	14.69***	(1.74)	46.39	(26.29)	-23.94***	(4.79)	20	362.58
Age>=65	0.35***	(0.11)	1.42	(2.18)	0.32	(0.33)	20	4.83
Ward01	0.88**	(0.29)	0.00	(2.85)	-1.35**	(0.45)	20	29.75
Ward02	0.79**	(0.35)	2.75	(3.10)	-1.78**	(0.65)	20	25.75
Ward03	0.49**	(0.21)	-4.66	(3.45)	-0.14	(0.47)	20	9.00
Ward04	1.08***	(0.35)	3.02	(5.06)	-1.74**	(0.65)	20	23.25
Ward05	2.36***	(0.32)	-1.99	(3.97)	-2.86**	(0.94)	20	67.50
Ward06	3.83***	(0.51)	16.07**	(5.68)	-8.68***	(0.91)	20	60.67
Ward07	2.13***	(0.31)	13.93**	(6.25)	-3.10**	(1.26)	20	83.67
Ward08	6.42***	(0.87)	9.18	(10.46)	-5.77***	(1.85)	20	96.42
Ward99, 00, or missing	1.22***	(0.18)	3.96**	(1.52)	-1.92***	(0.27)	20	24.25

Note. N/A means regression analysis is not applicable due to the small number of observations for this subgroup.

The results of subgroup analyses on the percentage of beneficiaries who had at least 180 days of continuous pharmacotherapy with a medication prescribed for ODD without a gap of more than 7 days are shown in Appendix Exhibit D.8. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the immediate and quarterly changes were not statistically significant.

- *OOD vs. non-OOD*: For both beneficiaries with OOD and without OOD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.8. Continuity of Pharmacotherapy for Opioid Use Disorder (Percentage of Beneficiaries)

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.17	(0.27)	1.70	(3.09)	-0.33	(0.55)	20	53.21
Main sample: Model 2 – robustness check; most parsimonious model	0.11	(0.31)	3.20	(2.28)	-0.46	(0.49)	20	53.21
FFS	-0.31	(0.36)	2.42	(8.24)	-2.06	(1.34)	20	59.51
MCO	1.07**	(0.48)	0.69	(4.34)	-0.24	(0.85)	20	43.26
Dual	0.63	(0.82)	-12.43	(7.88)	1.00	(1.45)	20	28.09
Non-Dual	0.10	(0.30)	2.16	(3.44)	-0.30	(0.62)	20	53.80
Pregnant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Not Pregnant	0.18	(0.27)	1.83	(3.14)	-0.36	(0.56)	20	53.23
Justice Involved	0.40	(0.56)	18.68**	(7.14)	-6.68***	(1.24)	20	37.30
Not Justice Involved	0.19	(0.29)	1.31	(3.28)	-0.34	(0.57)	20	53.81
Disability	0.28*	(0.15)	-2.34	(2.66)	-0.04	(0.45)	20	63.29
No Disability	0.75	(0.44)	2.98	(4.08)	-0.97	(0.72)	20	43.00
SMI/SED with Co-occurring SUD	0.17	(0.27)	1.78	(3.06)	-0.34	(0.55)	20	53.21
SMI/SED without Co-occurring SUD	0.76	(0.80)	10.56	(11.13)	-4.48***	(1.35)	20	25.86
State Defined SMI/SED with Co-occurring SUD	0.01	(0.30)	-1.86	(3.19)	0.04	(0.62)	20	53.98
State Defined SMI/SED without Co-occurring SUD	-0.85	(0.55)	0.12	(15.09)	0.11	(1.96)	20	30.76
State Defined SMI/SED with Co-occurring Physical Condition	0.04	(0.23)	-3.92	(2.52)	0.31	(0.47)	20	54.75

- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without OOD, there was an immediate increase and a quarterly decrease.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.9. Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.02**	(0.01)	0.62***	(0.08)	-0.03*	(0.02)	60	2.24
Main sample: Model 2 – robustness check; most parsimonious model	-0.03**	(0.01)	0.61***	(0.10)	-0.03*	(0.02)	60	2.24
FFS	-0.02	(0.03)	2.07***	(0.33)	-0.40***	(0.05)	60	5.34
MCO	-0.02***	(0.01)	0.07	(0.15)	0.14***	(0.02)	60	1.20
Dual	0.02	(0.02)	0.21	(0.18)	-0.02	(0.03)	60	3.48
Non-Dual	-0.03***	(0.01)	0.66***	(0.08)	-0.03**	(0.02)	60	2.11
Pregnant	-0.05	(0.04)	1.08*	(0.63)	-0.05	(0.11)	60	2.91
Not Pregnant	-0.02**	(0.01)	0.61***	(0.09)	-0.03*	(0.02)	60	2.23
Justice Involved	-0.34**	(0.13)	11.45***	(2.12)	-1.02***	(0.33)	60	12.21
Not Justice Involved	-0.02**	(0.01)	0.55***	(0.08)	-0.02	(0.02)	60	2.14
Disability	-0.06*	(0.03)	2.10***	(0.32)	-0.16***	(0.06)	60	6.56
No Disability	-0.01*	(0.01)	0.34***	(0.09)	0.00	(0.02)	60	1.47
SMI/SED with Co-occurring SUD	0.17	(0.19)	12.11***	(1.95)	-0.38	(0.35)	60	36.26
SMI/SED without Co-occurring SUD	-0.00***	(0.00)	0.01***	(0.00)	0.00	(0.00)	60	0.00

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring SUD	-0.05	(0.37)	22.34***	(3.33)	-2.28***	(0.62)	60	89.50
State Defined SMI/SED without Co-occurring SUD	-0.01***	(0.00)	0.11***	(0.03)	0.01	(0.01)	60	0.04
State Defined SMI/SED with Co-occurring Physical Condition	-0.26	(0.16)	15.97***	(2.14)	-1.07***	(0.38)	60	41.05
State Defined SMI/SED without Co-occurring Physical Condition	-0.24***	(0.06)	0.64	(0.48)	0.12	(0.08)	60	3.57
OOD	-0.97***	(0.28)	18.15***	(3.25)	0.58	(0.57)	60	44.77
No OOD	-0.00	(0.01)	0.24***	(0.05)	-0.02*	(0.01)	60	1.41
Age<21	-0.00	(0.00)	0.00	(0.02)	-0.00	(0.00)	60	0.12
Age21-44	-0.01	(0.01)	0.67***	(0.12)	-0.02	(0.02)	60	2.15
Age45-64	-0.06**	(0.03)	1.58***	(0.26)	-0.15***	(0.05)	60	5.87
Age>=65	0.05***	(0.01)	0.88***	(0.21)	-0.11***	(0.03)	60	2.26
Ward01	-0.01	(0.02)	0.38	(0.24)	-0.04	(0.04)	60	1.92
Ward02	-0.04	(0.03)	0.88**	(0.41)	-0.14**	(0.07)	60	3.49
Ward03	-0.01	(0.03)	0.14	(0.28)	0.12**	(0.05)	60	1.88
Ward04	0.01	(0.01)	0.31***	(0.10)	-0.08***	(0.01)	60	1.45
Ward05	-0.05***	(0.01)	0.82***	(0.14)	-0.02	(0.03)	60	2.29
Ward06	-0.03	(0.02)	1.03***	(0.34)	-0.11*	(0.06)	60	3.07
Ward07	-0.03***	(0.01)	0.67***	(0.16)	-0.04	(0.02)	60	2.12
Ward08	-0.01	(0.02)	0.40**	(0.17)	0.02	(0.03)	60	2.16
Ward99, 00, or missing	-0.04	(0.03)	1.23***	(0.28)	-0.04	(0.05)	60	2.74

The results of subgroup analyses on the total number of ED visits for SUD per 1,000 beneficiaries in the measurement period are shown in Appendix Exhibit D.10. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.

- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with an immediate and a quarterly increase. For beneficiaries without OOD, the immediate and quarterly changes were not statistically significant.
- *State Defined SMI/SED with vs. without co-occurring physical condition*: For beneficiaries with co-occurring physical condition, the Demonstration was associated with an immediate increase and a quarterly decrease. For beneficiaries without co-occurring physical condition, there was a quarterly decrease, but the immediate change was not statistically significant.

Appendix Exhibit D.10. Emergency Department (ED) Utilization for SUD per 1,000 Medicaid Beneficiaries

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.18***	(0.03)	0.50*	(0.25)	-0.03	(0.04)	60	6.47
Main sample: Model 2 – robustness check; most parsimonious model	-0.19***	(0.03)	0.54**	(0.23)	-0.04	(0.04)	60	6.47
FFS	-0.16***	(0.05)	1.01	(0.78)	-0.98***	(0.12)	60	14.25
MCO	-0.17***	(0.02)	0.28	(0.35)	0.32***	(0.06)	60	3.85
Dual	-0.21***	(0.04)	0.44	(0.30)	-0.02	(0.05)	60	8.01
Non-Dual	-0.18***	(0.03)	0.51*	(0.27)	-0.04	(0.04)	60	6.30
Pregnant	-0.23**	(0.09)	1.06	(1.38)	0.08	(0.20)	60	6.56
Not Pregnant	-0.18***	(0.02)	0.49**	(0.24)	-0.04	(0.04)	60	6.47
Justice Involved	-1.32***	(0.39)	6.37	(4.31)	-2.52***	(0.61)	60	46.28
Not Justice Involved	-0.16***	(0.02)	0.54**	(0.24)	-0.01	(0.04)	60	6.05
Disability	-0.35***	(0.06)	0.64	(0.75)	-0.21*	(0.11)	60	17.15
No Disability	-0.13***	(0.02)	0.44*	(0.24)	0.01	(0.04)	60	4.56
SMI/SED with Co-occurring SUD	-1.39***	(0.44)	12.30**	(4.86)	-0.95	(0.83)	60	104.10
SMI/SED without Co-occurring SUD	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	60	0.00
State Defined SMI/SED with Co-occurring SUD	-2.14***	(0.60)	16.08**	(7.53)	-5.31***	(1.13)	60	190.02
State Defined SMI/SED without Co-occurring SUD	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	60	0.00

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED with Co-occurring Physical Condition	-2.01***	(0.26)	17.28***	(4.77)	-1.67**	(0.72)	60	86.23
State Defined SMI/SED without Co-occurring Physical Condition	0.05	(0.07)	-0.16	(0.71)	-0.66***	(0.10)	60	8.58
ODD	-2.32***	(0.40)	7.52*	(3.80)	2.45***	(0.56)	60	87.05
No ODD	-0.13***	(0.02)	0.31	(0.22)	-0.05	(0.03)	60	4.88
Age<21	-0.02***	(0.01)	0.03	(0.05)	0.02**	(0.01)	60	0.35
Age21-44	-0.20***	(0.05)	0.83	(0.50)	-0.09	(0.07)	60	7.75
Age45-64	-0.30***	(0.05)	0.67	(0.51)	-0.19**	(0.08)	60	14.76
Age>=65	-0.13***	(0.03)	1.13***	(0.36)	-0.09	(0.06)	60	5.30
Ward01	-0.07**	(0.04)	0.79**	(0.36)	-0.23***	(0.06)	60	4.94
Ward02	-0.37***	(0.07)	1.45**	(0.69)	0.03	(0.10)	60	9.35
Ward03	-0.17**	(0.07)	-0.06	(0.62)	0.14	(0.11)	60	5.14
Ward04	-0.06**	(0.03)	0.35	(0.23)	-0.14***	(0.04)	60	3.93
Ward05	-0.20***	(0.03)	1.09***	(0.30)	-0.07	(0.06)	60	6.46
Ward06	-0.14***	(0.04)	0.65	(0.43)	-0.24***	(0.06)	60	8.14
Ward07	-0.21***	(0.03)	0.53	(0.35)	0.03	(0.06)	60	6.31
Ward08	-0.19***	(0.06)	-0.16	(0.50)	0.08	(0.08)	60	6.53
Ward99, 00, or missing	-0.21***	(0.06)	1.01	(0.78)	-0.02	(0.12)	60	9.53

The results of subgroup analyses on the number of inpatient hospital admissions for ambulatory care sensitive chronic conditions are shown in Appendix Exhibit D.11. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the immediate and quarterly changes were not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *ODD vs. non-ODD*: For beneficiaries with ODD, the Demonstration was associated with an immediate increase, but the quarterly change was not statistically significant. For beneficiaries without ODD, the immediate and quarterly changes were not statistically significant.

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the immediate and quarterly changes were not statistically significant.

Appendix Exhibit D.11. Inpatient Hospital Admissions for Ambulatory Care Sensitive Chronic Conditions

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-8.82	(11.07)	163.78	(124.00)	-12.23	(15.21)	20	1636.83
Main sample: Model 2 – robustness check; most parsimonious model	-13.27	(10.01)	221.01*	(106.09)	-16.88	(15.28)	20	1636.83
FFS	-9.99	(22.45)	-39.44	(246.41)	-13.30	(31.66)	20	2563.79
MCO	-18.22	(16.60)	145.34	(144.49)	107.76***	(27.73)	20	677.40
Dual	15.03	(22.45)	-472.48	(332.58)	-21.23	(40.70)	20	2425.63
Non-Dual	-16.43	(12.32)	299.69*	(145.60)	-7.87	(19.58)	20	1465.22
Pregnant	-13.14	(39.73)	12.25	(458.60)	40.50	(87.13)	20	556.49
Not Pregnant	-8.90	(10.71)	165.24	(127.84)	-13.35	(15.88)	20	1648.62
Justice Involved	68.76*	(37.61)	62.19	(415.90)	-204.20***	(46.53)	20	866.87
Not Justice Involved	-12.90	(10.05)	168.50	(118.75)	-6.49	(15.16)	20	1661.38
Disability	-22.72	(29.37)	-48.28	(271.49)	-14.67	(43.17)	20	2748.11
No Disability	-0.77	(17.12)	240.44	(172.50)	8.53	(26.79)	20	933.78
SMI/SED with Co-occurring SUD	0.02	(12.84)	109.14	(134.03)	-11.86	(19.18)	20	1615.01
SMI/SED without Co-occurring SUD	-24.40***	(7.68)	298.47*	(158.85)	-34.06	(27.71)	20	1112.11
State Defined SMI/SED with Co-occurring SUD	5.41	(18.47)	96.74	(187.33)	-71.45**	(27.84)	20	1923.99
State Defined SMI/SED without Co-occurring SUD	-43.74	(26.62)	220.24	(219.21)	45.73*	(24.61)	20	1162.12
State Defined SMI/SED with Co-occurring Physical Condition	-10.37	(25.21)	263.37	(300.77)	-46.07	(43.04)	20	2505.54
State Defined SMI/SED without Co-occurring Physical Condition	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	20	0.00

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
OUD	-44.74*	(23.50)	476.93**	(204.56)	-15.74	(37.24)	20	1984.39
No OUD	4.29	(11.35)	18.84	(116.98)	-8.54	(14.48)	20	1453.49
Age<21	1.26	(21.92)	534.20	(316.51)	-103.97**	(34.95)	20	157.59
Age21-44	-14.39	(10.50)	185.98	(175.97)	17.82	(24.24)	20	644.23
Age45-64	-11.11	(12.48)	34.45	(156.55)	5.58	(19.69)	20	2362.41
Age>=65	-6.95	(22.63)	226.71	(354.41)	-95.45*	(46.29)	20	2428.85
Ward01	-25.88	(26.61)	291.58	(293.64)	-7.95	(43.50)	20	1631.78
Ward02	-9.61	(33.76)	431.38	(617.39)	-203.99*	(114.43)	20	3068.53
Ward03	-138.92**	(47.17)	110.72	(623.45)	140.97	(125.56)	20	1900.13
Ward04	32.35	(45.46)	-97.56	(502.93)	-12.93	(89.92)	20	1536.16
Ward05	4.74	(20.84)	-25.20	(212.26)	-10.35	(34.91)	20	1486.59
Ward06	21.16	(45.62)	-271.57	(333.85)	-41.17	(58.22)	20	2270.09
Ward07	-39.38*	(22.05)	406.94	(232.36)	-10.48	(35.59)	20	1484.44
Ward08	-12.92	(23.26)	-144.41	(173.74)	97.25***	(25.36)	20	1503.50
Ward99, 00, or missing	20.06	(27.58)	727.22**	(254.50)	-124.43***	(34.95)	20	1236.65

Goal 5: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.

Research Question 5.1. Was there a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD?

The results of subgroup analyses on the rate of 30-day all-cause readmissions during the measurement period among beneficiaries with SUD are shown in Appendix Exhibit D.12. Findings for key subgroups:

- *FFS vs. MCO*: For FFS beneficiaries, the immediate and quarterly changes were not statistically significant. For MCO beneficiaries, there was a quarterly increase, but the immediate change was not statistically significant.
- *OUD vs. non-OUD*: For both beneficiaries with OUD and without OUD, the immediate and quarterly changes were not statistically significant.

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For beneficiaries with co-occurring physical condition, the immediate and quarterly changes were not statistically significant. For beneficiaries without co-occurring physical condition, there was an immediate decrease, but the quarterly change was not statistically significant.

Appendix Exhibit D.12. Readmissions Among Beneficiaries With SUD

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	-0.16	(0.12)	0.48	(1.71)	0.18	(0.22)	20	20.92
Main sample: Model 2 – robustness check; most parsimonious model	-0.18	(0.11)	0.74	(1.39)	0.16	(0.20)	20	20.92
FFS	-0.09	(0.16)	-1.11	(3.73)	-0.41	(0.46)	20	23.76
MCO	-0.29	(0.16)	1.33	(2.08)	1.24***	(0.39)	20	15.90
Dual	-0.17	(0.16)	-1.27	(2.55)	0.55*	(0.31)	20	10.28
Non-Dual	-0.12	(0.12)	0.33	(1.58)	0.10	(0.21)	20	23.22
Pregnant	-0.12	(0.97)	-3.34	(10.32)	2.06	(2.57)	20	25.75
Not Pregnant	-0.16	(0.12)	0.54	(1.76)	0.14	(0.22)	20	20.94
Justice Involved	-0.26	(0.50)	0.07	(6.03)	0.29	(1.21)	20	24.32
Not Justice Involved	-0.16	(0.11)	0.50	(1.58)	0.19	(0.21)	20	20.82
Disability	-0.29	(0.17)	2.43	(2.60)	-0.25	(0.34)	20	24.56
No Disability	-0.03	(0.14)	-1.25	(1.49)	0.57**	(0.23)	20	17.71
SMI/SED with Co-occurring SUD	-0.16	(0.11)	0.89	(1.87)	0.16	(0.23)	20	21.16
SMI/SED without Co-occurring SUD	-0.12	(0.28)	-1.97	(2.05)	0.00	(0.52)	20	19.77
State Defined SMI/SED with Co-occurring SUD	-0.19	(0.12)	0.69	(1.94)	0.01	(0.22)	20	23.63
State Defined SMI/SED without Co-occurring SUD	0.12	(0.39)	-1.69	(3.25)	-0.29	(0.47)	20	19.73
State Defined SMI/SED with Co-occurring Physical Condition	-0.25	(0.15)	0.93	(2.05)	0.04	(0.22)	20	24.26
State Defined SMI/SED without Co-occurring Physical Condition	0.35*	(0.19)	-5.09**	(1.83)	0.03	(0.28)	20	10.45

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
OOD	-0.24	(0.19)	-0.29	(2.16)	0.49	(0.30)	20	23.25
No OOD	-0.10	(0.13)	0.73	(1.74)	-0.01	(0.21)	20	19.83
Age<21	1.23**	(0.46)	-9.57*	(5.11)	-1.72**	(0.69)	20	22.86
Age21-44	-0.37***	(0.09)	1.35	(2.13)	0.68**	(0.26)	20	22.85
Age45-64	-0.07	(0.16)	0.75	(1.62)	-0.24	(0.24)	20	21.37
Age>=65	-0.11	(0.24)	0.18	(1.95)	0.78*	(0.38)	20	8.11
Ward01	0.30	(0.35)	-0.84	(3.32)	-0.70	(0.58)	20	22.82
Ward02	0.39	(0.23)	1.06	(6.90)	-0.94	(0.84)	20	26.35
Ward03	0.55	(0.42)	-12.79*	(5.95)	0.73	(0.97)	20	20.97
Ward04	0.37	(0.30)	1.34	(3.95)	-0.59	(0.53)	20	18.00
Ward05	-0.50	(0.37)	-0.34	(2.75)	0.62	(0.53)	20	18.06
Ward06	-0.53**	(0.18)	5.11**	(2.22)	0.02	(0.34)	20	22.03
Ward07	-0.12	(0.26)	-3.77	(2.40)	0.69*	(0.33)	20	20.14
Ward08	-0.26	(0.29)	3.51	(2.94)	0.28	(0.45)	20	20.64
Ward99, 00, or missing	-0.23	(0.27)	-2.01	(6.50)	0.51	(0.85)	20	22.08

Goal 6: Improved access to care for physical health conditions among beneficiaries with SUD.

Research Question 6.1a. Was there an increase in access to care for physical health conditions among beneficiaries with SUD?

The results of subgroup analyses on the percentage of Medicaid beneficiaries with an SUD who had an ambulatory or preventive care visit during the measurement period are shown in Appendix Exhibit D.13. Findings for key subgroups:

- *FFS vs. MCO*: For both FFS and MCO beneficiaries, the Demonstration was associated with a quarterly decrease, but the immediate change was not statistically significant.
- *OOD vs. non-OOD*: For beneficiaries with OOD, the Demonstration was associated with an immediate and a quarterly decrease. For beneficiaries without OOD, there was a quarterly decrease, but the immediate change was not statistically significant.

- *State Defined SMI/SED with vs. without co-occurring physical condition:* For both beneficiaries with co-occurring physical condition and without co-occurring physical condition, the Demonstration was associated with an immediate and a quarterly decrease.

Appendix Exhibit D.13. Access to Preventive/Ambulatory Health Services for Adult Medicaid Beneficiaries With SUD

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
Main sample: Model 1 – with COVID deaths and seasonality as control variables	0.58***	(0.10)	-0.71	(0.96)	-1.09***	(0.15)	20	62.49
Main sample: Model 2 – robustness check; most parsimonious model	0.53***	(0.12)	-0.31	(1.04)	-1.12***	(0.19)	20	62.49
FFS	0.27***	(0.07)	-0.68	(1.30)	-0.81***	(0.19)	20	69.11
MCO	0.78***	(0.14)	-1.72	(1.83)	-0.58**	(0.25)	20	55.84
Dual	0.27	(0.17)	-6.04	(4.97)	-0.55	(0.66)	20	76.68
Non-Dual	0.58***	(0.11)	0.61	(1.01)	-1.18***	(0.17)	20	59.71
Pregnant	0.34	(0.22)	0.03	(2.65)	-0.66	(0.41)	20	76.09
Not Pregnant	0.59***	(0.10)	-0.76	(1.00)	-1.11***	(0.15)	20	62.20
Justice Involved	1.19***	(0.22)	4.07	(2.73)	-3.45***	(0.47)	20	40.64
Not Justice Involved	0.54***	(0.09)	-0.87	(0.99)	-1.08***	(0.15)	20	63.42
Disability	0.19**	(0.07)	-0.53	(1.75)	-0.82***	(0.22)	20	72.59
No Disability	0.78***	(0.12)	-0.89	(1.05)	-1.13***	(0.17)	20	56.76
SMI/SED with Co-occurring SUD	0.64***	(0.11)	-1.09	(1.03)	-1.11***	(0.14)	20	64.06
SMI/SED without Co-occurring SUD	0.47***	(0.11)	-1.35	(1.11)	-0.82***	(0.23)	20	62.40
State Defined SMI/SED with Co-occurring SUD	0.56***	(0.07)	-2.96**	(1.12)	-1.29***	(0.16)	20	77.66
State Defined SMI/SED without Co-occurring SUD	0.09	(0.11)	-1.69	(1.31)	-0.94***	(0.15)	20	77.84
State Defined SMI/SED with Co-occurring Physical Condition	0.48***	(0.08)	-1.48*	(0.72)	-0.95***	(0.11)	20	85.98

	Time (continuous)		Demonstration period		Demonstration period * Time (continuous)		Number of observations	Baseline mean
State Defined SMI/SED without Co-occurring Physical Condition	0.34***	(0.09)	-2.69**	(1.20)	-1.09***	(0.19)	20	67.85
OOD	0.93***	(0.10)	-2.23*	(1.19)	-1.74***	(0.17)	20	74.21
No OOD	0.40***	(0.11)	-1.25	(0.97)	-0.66***	(0.16)	20	58.77
Age<21	0.90***	(0.20)	-4.09	(3.35)	-1.08	(0.69)	20	48.63
Age21-44	0.60***	(0.16)	0.43	(1.29)	-1.08***	(0.21)	20	51.14
Age45-64	0.49***	(0.04)	-0.78	(0.53)	-0.98***	(0.10)	20	69.85
Age>=65	0.16	(0.22)	-5.69	(5.08)	-0.57	(0.65)	20	77.97
Ward01	0.42**	(0.15)	-0.30	(1.31)	-0.99***	(0.26)	20	65.97
Ward02	0.69***	(0.16)	-0.03	(1.80)	-1.41***	(0.34)	20	64.13
Ward03	0.29	(0.21)	0.18	(1.86)	-0.99*	(0.48)	20	68.82
Ward04	0.48***	(0.09)	0.18	(0.81)	-0.74***	(0.12)	20	62.69
Ward05	0.51***	(0.07)	-0.55	(0.56)	-1.02***	(0.09)	20	63.32
Ward06	0.45***	(0.08)	-0.22	(1.25)	-0.79***	(0.18)	20	63.20
Ward07	0.61***	(0.13)	-1.68	(1.32)	-1.07***	(0.18)	20	62.58
Ward08	0.65***	(0.17)	-0.57	(1.71)	-1.35***	(0.23)	20	60.74
Ward99, 00, or missing	0.78***	(0.21)	-1.56	(2.16)	-1.13***	(0.31)	20	60.14

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Medicaid Behavioral Health Transformation Demonstration

Final Evaluation Design



District of Columbia

Department of Health Care Finance

November 25, 2020



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INTERNATIONAL LLC

SUBMITTED TO

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Task 3
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Table of Contents

A. GENERAL BACKGROUND INFORMATION	1
A.1 Demonstration Context.....	2
A.2 Behavioral Health Transformation Demonstration	5
B. EVALUATION QUESTIONS AND HYPOTHESES	9
B.1 Driver Diagram	9
B.2 Hypotheses And Research Questions	15
B.2.1 Demonstration Goal-Based Hypotheses And Research Questions	15
B.2.2 Research Questions For Cost Analysis	19
C. METHODOLOGY	20
C.1 Evaluation Design	20
C.2 Target And Comparison Populations.....	21
C.3 Evaluation Period.....	22
C.4 Evaluation Measures.....	22
C.5 Data Sources	50
C.5.1 Primary Data	50
C.5.2 Secondary Data.....	56
C.6 Analytic Methods.....	57
C.6.1 Qualitative Data Analysis	57
C.6.2 Quantitative Data Analysis.....	58
D. METHODOLOGICAL LIMITATIONS	68
E. ATTACHMENTS.....	72
Attachment 1: Independent Evaluator.....	72
Attachment 2: Evaluation Budget.....	77
Attachment 3: Evaluation Timeline and Major Milestones	77

Table of Exhibits

Exhibit A: Goals of the Behavioral Health Transformation Demonstration	6
Exhibit B: Behavioral Health Transformation Demonstration Driver Diagram	10
Exhibit C: Behavioral Health Transformation Demonstration Driver Diagram – <i>Expand Reimbursement/ Benefits Domain</i>	11
Exhibit D: Behavioral Health Transformation Demonstration Driver Diagram – <i>Increase Capacity Domain</i>	11
Exhibit E: Behavioral Health Transformation Demonstration Driver Diagram – <i>Improve Quality Domain</i>	12
Exhibit F: Behavioral Health Transformation Demonstration Driver Diagram – <i>Enhance IT Infrastructure Domain</i>	14
Exhibit G: Proposed Evaluation Measures	24
Exhibit H: Types of Costs and Proposed Data Sources.....	49
Exhibit I: Proposed Discussion Topics for Key Informant Interviews.....	51
Exhibit J: Sample Topics for Site Visit Interview and Focus Group Protocols	53
Exhibit K: Illustration of Potential ITS Relationships	62
Exhibit L: Anticipated Methodological Limitations	68
Exhibit M: Signed Statement of Independent Evaluator.....	73
Exhibit N: Evaluation Contract Budget	77
Exhibit O: Evaluation Work Plan	78

Table of Abbreviations

AHL	Access Help Line
AOD	Alcohol or Other Drug
APRN	Advanced Practice Registered Nurse
ARC	Assessment and Referral Center
ARIMA	Autoregressive Integrated Moving Average
ASAM	American Society of Addiction Medicine
ASARS	Adult Substance Abuse Rehabilitative Services
ASSIST	Alcohol, Smoking and Substance Involvement Screening Test
AUDIT	Alcohol Use Disorders Identification Test
BH	Behavioral Health
CAHPS	Consumer Assessment of Healthcare Providers and Systems
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHIP	Children's Health Insurance Plan
COO	Chief Operating Officer
CMO	Chief Medical Officer
CMCS	Center for Medicaid and CHIP Services
CMS	Centers for Medicare & Medicaid Services
CNO	Chief Nursing Officer
COI	Conflicts of Interest
CPEP	Comprehensive Psychiatric Emergency Program
CRISP	Chesapeake Regional Information System for our Patients
CRT	DBH Community Response Team
DATAWITS	District's Automated Treatment Accounting (System)
DAST	Drug Abuse Screening Test
DBH	Department of Behavioral Health
Demonstration	Behavioral Health Transformation Demonstration
DHCF	Department of Health Care Finance
DID	Difference-in-Differences
District	District of Columbia
DSM	Diagnostic and Statistical Manual of Mental Disorders
DUA	Data Use Agreement
DY	Demonstration Year
ED	Emergency Department
EHR	Electronic Health Records
EUA	Enterprise User Administration
FDA	Federal Drug Administration
FFP	Federal Financial Participation
FFS	Fee-For-Service
FISMA	Federal Information Security Management Act of 2002

FMAP	Federal Medical Assistance Percentage
FQHCs	Federally Qualified Health Centers
FTP	File Transfer Protocol
FUM-AD	Follow-Up After Emergency Department Visit for Mental Illness
FY	Fiscal Year
HCBS	Home- and Community-Based Settings
HEDIS	Health Effectiveness Data and Information Set
HIE	Health Information Exchange
HIPAA	Health Insurance Portability and Accountability Act
HWR	Hospital-Wide Readmission
iCAMS	DC Department of Behavioral Health's electronic health records
IDR	Integrated Data Repository (CMS)
IFE	IMPAQ FISMA Enclave
IMD	Institution for Mental Disease
IPF	Inpatient Psychiatric Facility
IP	Inpatient
IPFQR	Inpatient Psychiatric Facility Quality Reporting
IT	Information Technology
ITS	Interrupted Time Series
LT	Long-term care
LOS	Length of Stay
MAT	Medication-Assisted Treatment
MCAC	Medical Care Advisory Committee (DC)
MCO	Managed Care Organization
MDW	Medicaid Data Warehouse
MHRS	Mental Health Rehabilitation Services
MMIS	Medicaid Management Information System
NCQA	National Committee for Quality Assurance
NHIS	National Health Interview Survey
NQF	National Quality Forum
NSDUH	National Survey on Drug Use and Health
NSSATS	National Survey of Substance Abuse Treatment Services
OCME	Office of the Chief Medical Examiner
OCP	Office of Contracting and Procurement
ODD	Opioid Use Disorder
OT	Outpatient
PDMP	Prescription Drug Monitoring Program
PIW	Psychiatric Institute of Washington
QAP	Quality Assurance Plan
RSS	Recovery Support Services
RX	Pharmacy
SAMHSA	Substance Abuse and Mental Health Services Administration
SE	Supported Employment

SED	Serious Emotional Disturbance
SFTP	SSH [Secure Shell] File Transfer Protocol
SMI	Serious Mental Illness
SOR	State Opioid Response
SOW	Statement of Work
SSH	Secure Shell
STCs	Special Terms and Conditions
SUD	Substance Use Disorder
SUPPORT	Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act
T-MSIS	Transformed Medicaid Statistical Information System
TREM	Trauma Recovery and Empowerment Model
TST	Trauma Systems Therapy
USCIS	United States Customs and Immigration Services
WM	Withdrawal Management

A. GENERAL BACKGROUND INFORMATION

The District of Columbia (District) received approval from the Centers for Medicare & Medicaid Services (CMS) for a Section 1115(a) demonstration entitled Behavioral Health Transformation Demonstration (Demonstration) on November 6, 2019. The Demonstration has three overarching aims that include expanding the continuum of Medicaid behavioral health services and supports in the District, advancing the District's goals to improve outcomes for individuals with opioid use disorder (OUD) and other substance use disorders (SUDs), and supporting a more person-centered, integrated, and coordinated system of physical and behavioral health care for Medicaid beneficiaries.

The Demonstration will enable the District to receive federal financial participation (FFP) for inpatient, residential, and other services provided to eligible Medicaid beneficiaries while residing in Institutions for Mental Diseases (IMDs) for treatment of SUD, serious mental illness (SMI), and/or serious emotional disturbance (SED). In addition, the Demonstration will:

- Provide community-based services designed to improve behavioral health care for beneficiaries with SUD and/or SMI/SED.
- Provide temporary authority for crisis intervention, recovery support services, transition planning, supported employment services, and other related benefit changes.
- Eliminate the current \$1 copayment requirement for certain prescriptions associated with medication assisted treatment (MAT).

Under the special terms and conditions (STCs) outlined in CMS's approval letter, the District's Department of Health Care Finance (DHCF), which operates the District's Medicaid program, must contract with an independent third party to evaluate the Demonstration.¹ DHCF contracted with IMPAQ International, LLC (IMPAQ) to conduct the independent evaluation of the Demonstration. The IMPAQ Team includes IMPAQ, its subcontractor, L&M Policy Research, LLC and SUD and SMI/SED consultant, Dr. Victor Capoccia. This Evaluation Design Report provides an overview of the IMPAQ Team's evaluation design for assessing the effects of the Demonstration. This document follows CMS's recommended structure for evaluation designs, as outlined below.

- A. **General Background Information.** This section describes the District's behavioral health challenges that served as the impetus for the Demonstration, the Demonstration's goals and time period, and the evaluation time period.
- B. **Evaluation Questions and Hypotheses.** This section includes a driver diagram that links the goals of the Demonstration to primary and secondary interventions and policy changes that will drive expected outcomes. The section also articulates the hypotheses behind each Demonstration goal and provides research questions that we will use to test the hypotheses.
- C. **Methodology.** This section outlines the evaluation design and describes the key elements of the approach, including target and comparison populations, the evaluation

¹ CMS Administrator Verma, Seema. Received by Senior Deputy Director and State Medicaid Director at the District of Columbia Department of Health Care Finance Melisa Byrd. (2019 Nov 5). Retrieved from: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

period, data sources (such as claims data, beneficiary surveys, and interviews), measures, and quantitative and qualitative analytic methods.

D. **Methodological Limitations.** This section discusses the limitations and confounding factors that could affect the results of the evaluation, along with proposed mitigation strategies that we will employ.

E. **Attachments.** The Evaluation Design Report includes attachments provided by DHCF that address the selection of the independent evaluator, the evaluation budget, and the timeline and major milestones related to the evaluation.

A.1 DEMONSTRATION CONTEXT

The District's Medicaid behavioral health delivery system is complex, with services financed by Medicaid (administered either through managed care organizations [MCOs] or fee-for-service [FFS] arrangements) and provided by a network of private- and public-sector providers. Many of the behavioral health community-based providers are contractually supported by the District's Department of Behavioral Health (DBH) for services not covered by Medicaid or other insurance. Due to the multiple overlapping delivery systems as well as differing administrative and financing roles of DHCF and DBH, Medicaid providers and beneficiaries are often ill-informed about available benefits and coverage requirements.

Over the past five years, the District has experienced an increased need for SUD treatment, and OUD treatment in particular, as the number of drug-overdose deaths spiked by 236 percent between 2014 and 2017 (from 83 to 279) mirroring trends in other states.² The District is facing a need for increased capacity for appropriate levels of care, particularly critical levels of care, and is seeking to address the under-utilization of MAT. Historically, Medicaid did not allow FFS for care provided to individuals age 21-64 during stays in IMDs—hospitals, nursing facilities, or other institutions with more than 16 beds. This IMD exclusion limited the Medicaid supports available for individuals needing services in facilities that specialize in the treatment of psychiatric disorders and SUD.

Prior to waiver implementation, residential treatment for SUDs and short-term, medically monitored withdrawal-management (WM) services delivered in an IMD were provided with local-only funding through DBH. In addition, although Medicaid expansion has helped to reduce the unmet treatment needs of childless adult beneficiaries, the District still faces shortages in appropriate levels of care and evidence-based and specialized practices for youth with SED. This is particularly problematic for the District, where in Fiscal Year (FY) 2019 nearly 44 percent of its 72,959 Medicaid FFS beneficiaries had a behavioral health diagnosis, and an estimated 32 percent had an SMI/SED or SUD diagnosis.

A major barrier to addressing SUD is a lack of availability of critical levels of care for people with SMI/SED and SUD. Beneficiaries with co-occurring SMI and SUD face structural barriers, namely lack of treatment options but also difficulty navigating complex systems and entry points into treatment.³ Individuals with SMI may require stabilization in an intensive setting before

² District of Columbia, Department of Behavioral Health. (2019 Mar). *LIVE.LONG.DC.: Washington, DC's Strategic plan to reduce opioid use, misuse and related deaths*. Retrieved from: <https://dbh.dc.gov/sites/default/files/dc/sites/dmh/publication/attachments/LIVE.%20LONG.%20DC-%20Washington%20DC%27s%20Opioid%20Strategic%20Plan-%20March%20Revision.pdf>

³ Priester, M. A., Browne, T., Iachini, A., Clone, S., DeHart, D., & Seay, K. D. (2016 Feb). Treatment access barriers and disparities among individuals with co-occurring mental health and substance use disorders: An integrative literature review. *J Subst Abuse Treat.*, 61, 47–59. doi:10.1016/j.jsat.2015.09.006

moving to less intensive levels of care. People with co-occurring disorders require a specialized environment, with trained professionals and a combination of medication and counseling.⁴ Culturally competent care is also an important facilitator to effective behavioral health treatment.⁵ Co-occurring SMI and SUD are associated with difficulties engaging in and adhering to treatment.⁶ Prior heroin use and homelessness are also associated with a lower likelihood of treatment completion.⁷ Further, older heroin users, such as those more prevalent in the District, tend to have co-occurring mental health co-morbidities and face issues of marginalization that impact treatment seeking and treatment retention.⁸

Additionally, the demographic profile of OUD-related deaths in the District differs from that in some other states. Eighty percent of the non-elderly population in the District's Medicaid program is non-Hispanic African American, in part reflecting significant income disparities that contribute to a higher than national-average number of residents living in poverty.^{9,10} These demographics, in addition to the service landscape, are driving factors in the rate of opioid-related deaths in the District, which were initially concentrated among older, African-American men who are long-term heroin users, rather than among younger white adults who first became addicted to opioids through prescription drug use.¹¹ As DHCF notes in its waiver proposal, there was also a disparity in the services available between Medicaid FFS and managed care because care in an IMD was allowable as an "in lieu of" service for MCO beneficiaries under certain circumstances.¹² Additionally, the fragmentation of the managed care-FFS landscape results in coordination challenges, confusion about entry points to care, and gaps in services (particularly for FFS beneficiaries).

⁴ Substance Abuse and Mental Health Services Administration (SAMHSA). (2019 Jan). *Behavioral health treatments and services*. Retrieved from: <https://www.samhsa.gov/find-help/treatment>

⁵ SAMHSA. (first printed in 2014). Tip 59. Improving cultural competence. Retrieved from: <https://store.samhsa.gov/system/files/sma14-4849.pdf>

⁶ Priester, M. A., Browne, T., Iachini, A., Clone, S., DeHart, D., & Seay, K. D. (2016). Treatment access barriers and disparities among individuals with co-occurring mental health and substance use disorders: An integrative literature review. *J Subst Abuse Treat*, 61, 47–59. doi:10.1016/j.jsat.2015.09.006

⁷ Sanchez, J., Sahker, E., & Arndt, S. (2020 Mar). The Assessment of Recovery Capital (ARC) predicts substance abuse treatment completion. *Addict Behav*, 102. doi:10.1016/j.addbeh.2019.106189

⁸ Rosen, D., Hunsaker, A., Albert, S. M., Cornelius, J. R., Reynolds, C. F., 3rd. (2011). Characteristics and consequences of heroin use among older adults in the United States: A review of the literature, treatment implications, and recommendations for further research. *Addict Behav*, 36(4), 279–285. doi:10.1016/j.addbeh.2010.12.012

⁹ Kaiser Family Foundation. (2018). *Distribution of the nonelderly with Medicaid by race/ethnicity*. Retrieved from: <https://www.kff.org/medicaid/state-indicator/distribution-by-raceethnicity-4/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>

¹⁰ Government of the District of Columbia, Department of Health. (2018) *Health equity report: District of Columbia 2018*. Retrieved from: <https://app.box.com/s/yspij8v81cxqyeb17gj3uifjumb7ufsw>

¹¹ District of Columbia, Department of Behavioral Health. (2019 Mar). *LIVE. LONG. DC.: Washington, DC's Strategic plan to reduce opioid use, misuse and related deaths*. Retrieved from: https://livelong.dc.gov/sites/default/files/dc/sites/opioid/page_content/attachments/LIVE-LONG-DC-WashingtonDCsOpioidStrategicPlan-MarchRevision.pdf

¹² District of Columbia. (2019). *District of Columbia Section 1115 Medicaid Behavioral Health Transformation Demonstration Program*. Retrieved from: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/1115%20Final%20Demonstration%20Application%206.3.19%20.pdf

Nationally, health outcome disparities have been linked to racial disparities in access to care.¹³ Increased use of managed care may help decrease under-utilization of care by groups with health disparities.¹⁴ To address these issues at the local level and improve care coordination, the District recently announced plans to move toward a fully managed Medicaid program over the next five years, starting in 2020. In October 2020, DHCF transitioned approximately 17,000 beneficiaries from FFS to the Medicaid managed care program.¹⁵ As the District goes through a transition to managed care, it is important that evaluators understand this transition and its impacts on the composition of the remaining FFS population and other interactive effects.

The District has been implementing SUD, including OUD-specific, treatment reforms for several years and many of these initiatives will continue into the evaluation period. These reforms include locally funded initiatives and Medicaid policy reforms that focus on preventing substance use disorder by changing prescribing behavior, increasing the availability of overdose-reversal drugs, increasing the use of data to monitor and address changes in OUD trends, and direct outreach for overdose survivors. The development and implementation of *Live. Long. DC.*, the District's strategic plan to address OUD and opioid-related mortality, has been supported by more than 40 stakeholder groups, District government, and federal agencies since 2017. The District received a Substance Abuse and Mental Health Services Administration (SAMHSA) State Targeted Response to the Opioid Crisis Grant, which has funded a variety of activities including education on the benefits of naloxone, placed clinical-care coordinators and peer-recovery specialists in DBH-contracted methadone clinics and a primary care–physician practice group providing buprenorphine, and trained recovery coaches to use MAT and OUD competency.¹⁶ The District has focused on discharge-planning and care-coordination requirements and currently operates two Health Home programs. It has also implemented intake and assessment sites using evidence-based criteria to determine appropriate level of care and services. To improve SUD treatment, infrastructure, and care coordination, the District kicked off a demonstration project in 2019 that is funded by the Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act, Section 1003. The grant funds education and technical assistance to build Medicaid provider capacity to treat individuals with SUD in community settings.¹⁷

The COVID-19 public health emergency has coincided with the launch of the Demonstration. It is uncertain what effects the resulting economic downturn might have on the number of uninsured individuals in the District and the Medicaid population. An increase in Medicaid enrollment would lead to an increase in the Demonstration population and potentially affect the metrics in the early years of the Demonstration. In addition, it is plausible that the pandemic will directly impact metrics used to evaluate the Demonstration. For example, the District could see an increase in overdose deaths and demand for mental health care to cope with pandemic stressors. The District may also experience a reduction in utilization of Demonstration

¹³ Cook, B. L. (2007). Effect of Medicaid Managed Care on racial disparities in health care access. *Health Serv Res*, 42(1 Pt 1), 124–145. doi:10.1111/j.1475-6773.2006.00611.x

¹⁴ Marton, J., Yelowitz, A., Shores, M., & Talbert, J. C. (2016). Does Medicaid Managed Care help equalize racial and ethnic disparities in utilization? *Health Serv Res*, 51(3), 872–891. doi:10.1111/1475-6773.12396

¹⁵ District of Columbia, Department of Health Care Finance. (2019 Sep). DHCF Announces Medicaid Program Reforms and Intent to Re-Procure Managed Care Contracts. Retrieved from: <https://dhcf.dc.gov/release/dhcf-announces-medicaid-program-reforms-and-intent-re-procure-managed-care-contracts>

¹⁶ District of Columbia, Department of Behavioral Health (2019 Mar). *Our work*. Retrieved from: <https://livelong.dc.gov/page/our-work>

¹⁷ District of Columbia, Department of Health Care Finance. (n.d.). *Demonstration Project to Increase Substance Use Provider Capacity*. Retrieved from: <https://dhcf.dc.gov/page/demonstration-project-increase-substance-use-provider-capacity>

community-based services due to COVID-19 stay at home orders and concerns about the safety of congregate settings of care.

To assist SUD providers who are experiencing a reduction in service volume and therefore revenue, DHCF is seeking approval of an emergency state plan amendment that would provide a 20 percent increase in reimbursement rates for certain SUD providers. At this time, DHCF is not implementing a reimbursement increase specific to SMI/SED providers, some of which have been able to use telehealth as a method of service delivery. However, certain pandemic-related payment enhancements (e.g., for federally qualified health centers) may benefit providers that serve individuals with SMI/SED. IMPAQ and DHCF will work together to account for changes in policy, provider and beneficiary behavior, and outcomes related to the pandemic that could affect the Demonstration, following evaluation best practices and CMS guidance.

A.2 BEHAVIORAL HEALTH TRANSFORMATION DEMONSTRATION

Demonstration and Evaluation Periods

The approval period for the District's Behavioral Health Transformation Demonstration is January 1, 2020 – December 31, 2024.¹⁸ The evaluation period for the Demonstration is from January 1, 2020 – December 31, 2024. The Interim Evaluation Report will cover Demonstration activities between January 1, 2020, and June 30, 2022 (Demonstration Year [DY] 1-2.5). The Summative Evaluation Report, which will be the final evaluation deliverable to CMS, will cover Demonstration activities from January 1, 2020 – December 31, 2024 and will include quantitative data through the first quarter of DY 5 and qualitative observations for the remainder of the DY.¹⁹ As outlined in Demonstration STCs, the summative evaluation report is due to CMS within 18 months of June 30, 2024 (i.e., by December 31, 2025). Should CMS require changes to the evaluation, the IMPAQ Team will work with the District to make the necessary revisions. This evaluation design is for the Demonstration as approved on November 6, 2019. It does not apply to an amendment, extension, renewal, or expansion of the Demonstration. The evaluation design follows CMS guidance and is organized around the District's and CMS's goals for the Demonstration and the evaluation.

Goals of the Demonstration

The Demonstration has three overarching aims:

- Ensuring that the District's Medicaid program provides a broader continuum of behavioral health services and supports for individuals with SMI/SED, SUD, or other behavioral health needs.
- Advancing the District's goals in the Opioid Strategic Plan, *Live. Long. DC.*, to improve outcomes for individuals with OUD and other SUDs.
- Supporting movement towards a more person-centered system of physical and behavioral health care for Medicaid beneficiaries that facilitates coordinated treatment.

¹⁸ The District received 24-month approval for certain additional waiver authorities. CMS Administrator Verma, Seema. Received by Senior Deputy Director and State Medicaid Director at DHCF Melisa Byrd. (2019 Nov 5). Retrieved from: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

¹⁹ Ibid.

The Demonstration has SUD and SMI/SED components as well as components that impact both populations and those with co-occurring mental health and substance use disorders. The primary objectives of the SUD components are for the District to maintain and enhance access to OUD and other SUD services and to continue delivery system improvements to provide more coordinated and comprehensive treatment for Medicaid beneficiaries with SUD. The primary objectives of the SMI/SED components are for the District to maintain and enhance access to mental health services and continue delivery system improvements to provide more coordinated and comprehensive treatment for Medicaid beneficiaries with SMI and SED. The Demonstration authorizes the District to receive FFP for delivering high-quality, clinically appropriate treatment to beneficiaries who are diagnosed with SUD/SMI/SED, self-identify with SUD, or experience a behavioral health crisis and those who are receiving treatment while short-term residents in settings that qualify as IMDs. This Demonstration also complements the District's efforts to implement models of care that are focused on increasing supports for individuals outside of institutions, in home- and community-based settings (HCBS), to improve their access to SUD/SMI/SED services at varied levels of intensity and to combat OUD and other SUDs among District residents.

There are 11 specific goals (Exhibit A) that inform the evaluation's research questions and the measures we will use to evaluate the effects of the Demonstration.

Exhibit A: Goals of the Behavioral Health Transformation Demonstration

Goal 1: Increased rates of identification, initiation, and engagement in treatment for SUD. (SUD-1 in STCs)

Goal 2: Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral health care. (SMI/SED-4 in STCs)

Goal 3: Increased adherence to and retention in treatment. (SUD-2 in STCs)

Goal 4: Reduced utilization and lengths of stay in hospital emergency departments (ED) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)

Goal 5: Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services. (SUD-4 in STCs)

Goal 6: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)

Goal 7: Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)

Goal 8: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)

Goal 9: Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs)

Goal 10: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)

Goal 11: Reductions in overdose death, particularly those due to opioids. (SUD-3 in STCs)

Note: Parentheses in the table indicate whether the goal applies to SUD or SMI/SED and the number of the goal as written in the CMS Special Terms and Conditions for the Demonstration.²⁰

Demonstration Activities

Overall, the Demonstration will complement ongoing District efforts under the Medicaid State Plan and administration operations to enhance Adult Substance Abuse Rehabilitative Services (ASARS) and Mental Health Rehabilitation Services (MHRS) and identify opportunities for system improvements. The SUD initiatives aim to improve access to MAT and support services at all levels in the continuum of care recommended by the American Society of Addiction Medicine (ASAM). The SMI/SED initiatives improve critical care access, as well as screening, standards of care, and care coordination. Demonstration initiatives are outlined in the District's SUD and SMI/SED implementation plans. Medicaid waiver authority was effective immediately, while several of the other initiatives will take one to two years to implement. Altogether, the Demonstration includes the initiatives listed below.

- Medicaid reimbursement of residential treatment (ASAM Levels 3.1, 3.3, and 3.5), as well as short-term, medically monitored WM services (Level 3.7-WM) delivered in an IMD.
- Ensuring all residential treatment facilities provide or facilitate access to beneficiaries for whom MAT is an appropriate treatment option.
- Medicaid waiver and expenditure authority to exempt medications for MAT (beyond methadone, which was already exempt) from the \$1 co-payment otherwise associated with outpatient prescription medications.
- Increased entry points and access to SUD and dual SUD/mental health treatment.
- Medicaid reimbursement for transition planning services for individuals with SMI/SED and/or SUD being discharged from residential, inpatient, and other institutional facilities.
- FFP for treatment provided to Medicaid recipients in IMDs. The Demonstration will cover short-term (up to 60 days) stays for SMI acute care.
- New reimbursement methodology for Comprehensive Psychiatric Emergency Program (CPEP), youth mobile crisis intervention, and adult mobile crisis and behavioral health outreach services to appropriately account for and value them.
- Establishment of a new service, Psychiatric Crisis Stabilization, as a treatment alternative to psychiatric inpatient hospitalization.
- Medicaid reimbursement for SUD-related Recovery Support Services (RSS), vocational and therapeutic Supported Employment (SE) services for individuals with SUD, vocational SE services for individuals with SMI, and Psychosocial Rehabilitative Clubhouse Services (Clubhouse).
- New reimbursement methodologies and service definitions for the trauma-targeted services Trauma Systems Therapy (TST) and Trauma Recovery and Empowerment Model (TREM).

²⁰ CMS Administrator Verma, Seema. Received by Senior Deputy Director and State Medicaid Director at the District of Columbia Department of Health Care Finance Melisa Byrd. (2019 Nov 5). Retrieved from: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/page_content/attachments/DC%20SMI-SUD_STCs%20for%201115%20Waiver%20110619.pdf

- An assessment of potential changes to reimbursement and financing policies that address gaps in access to community-based providers identified in the District's assessment of current availability of mental health services, specifically to increase the number of psychiatrists/prescribers enrolled in Medicaid.
- Updates to the District's needs-assessment methods.
- Collaboration with stakeholders to improve health information technology adoption, use, and interoperability.

Population Groups Impacted by the Demonstration

The populations targeted and likely to be most impacted by the Demonstration are beneficiaries with SUD and/or SMI/SED who are in need of critical levels of care and short-term residential or inpatient stabilization. Beneficiaries with OUD and other SUDs who could be stabilized and/or undergo detox with the follow-up use of MAT could also benefit from expanded access to and utilization of MAT. These populations are often particularly vulnerable and, if the Demonstration is successfully implemented, many of the District's SUD and/or SMI/SED beneficiaries could be helped with increased support for care transitions and linkages to social support services. As opioid-overdose mortality has disproportionately impacted older African-American heroin users in the District, this population may benefit from increased access to treatment. Increased access to SUD services will increase SUD and mental health treatment utilization, while the use of evidence-based standards for such treatment will improve the quality of care and health outcomes for beneficiaries receiving treatment.

B. EVALUATION QUESTIONS AND HYPOTHESES

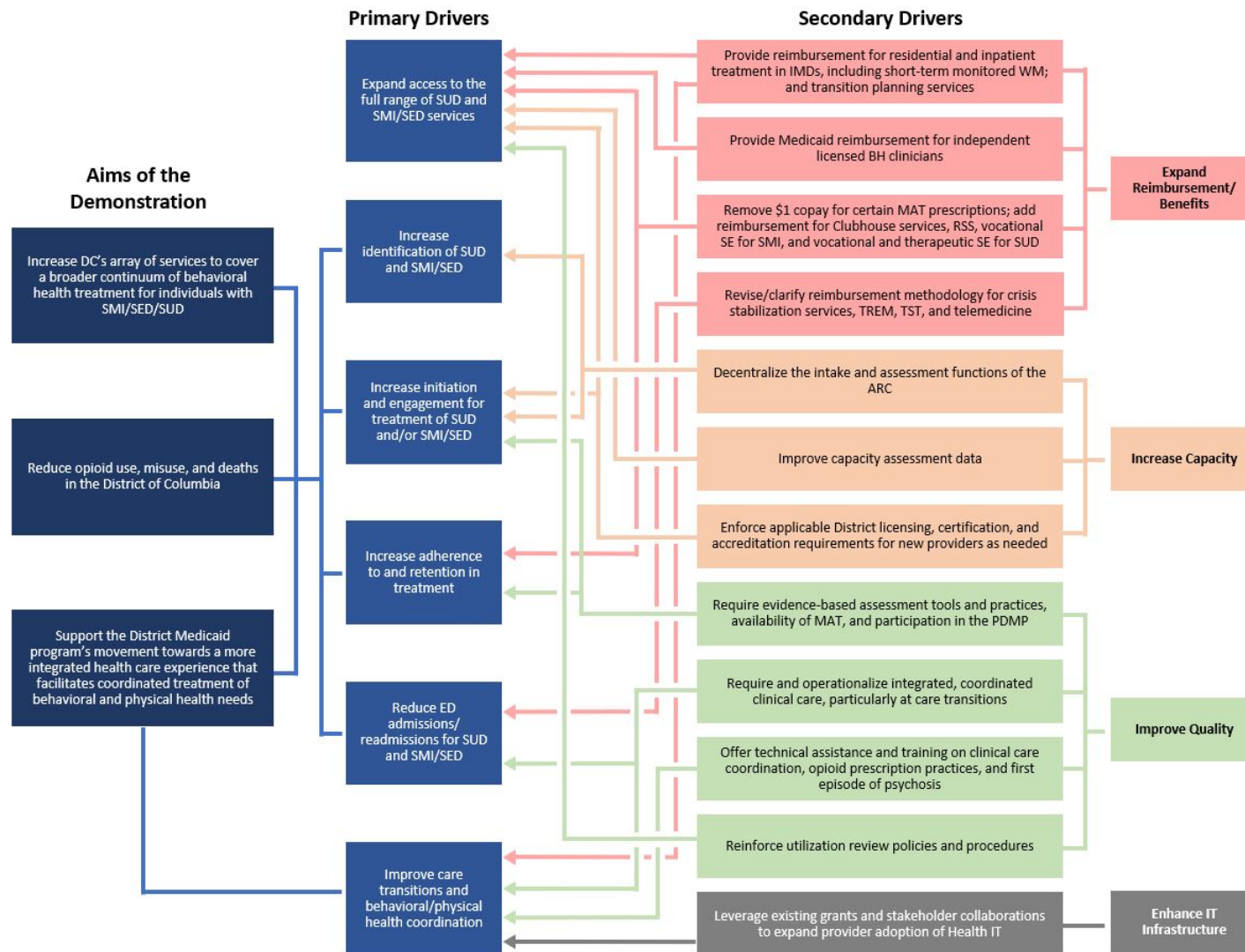
B.1 DRIVER DIAGRAM

The waiver goals and initiatives in Section A articulate DHCF's vision for the Demonstration. The driver diagrams (Exhibits B–F) illustrate how the goals, implementation milestones, and initiatives from the District's SUD and SMI/SED Implementation Plans work together to drive change and advance the three overarching aims of the Demonstration. The District's interventions under the waiver are presented as secondary drivers. These secondary drivers are grouped into four domains: Expand Reimbursement/Benefits, Increase Capacity, Improve Quality, and Enhance IT Infrastructure, and map to the goals of the Demonstration (summarized here as primary drivers). Exhibits C, D, E and F break down the overall driver diagram (Exhibit B) to show how the interventions in each domain map to the goals of the Demonstration. For example, one of the Demonstration's key interventions—reimbursement of intensive services delivered in an IMD setting—supports the District's goal of expanding access to the full range of SUD and SMI/SED services. Similarly, within the Improve Quality domain, the District's provision of technical assistance on care coordination supports the goal of improving care transitions and behavioral and physical health coordination.

As these driver diagrams show, the District will achieve the Demonstration aims through expanded reimbursement, increased capacity, quality improvements, and enhanced information technology (IT) infrastructure in SUD and SMI/SED services. The expansion of coverage for intensive inpatient and outpatient treatment, crisis care, MAT, and recovery supports will increase access to the full continuum of care, improve retention and completion of treatment, and reduce reliance on emergency departments (EDs) and avoidable hospitalizations. The Demonstration also increases provider capacity, which supports access to services, improves identification and engagement in treatment, and seeks to decrease preventable or medically inappropriate ED/hospital service use. Quality improvements such as care-transition services, evidence-based assessment, care coordination, technical assistance, and utilization review will further improve identification of SUD and SMI/SED, increase access to treatment and adherence, and align beneficiaries' physical and behavioral health care. Finally, the District will use existing grants and stakeholder collaborations to expand the use of health IT among SUD and mental health providers to improve care coordination and transitions between levels of care.

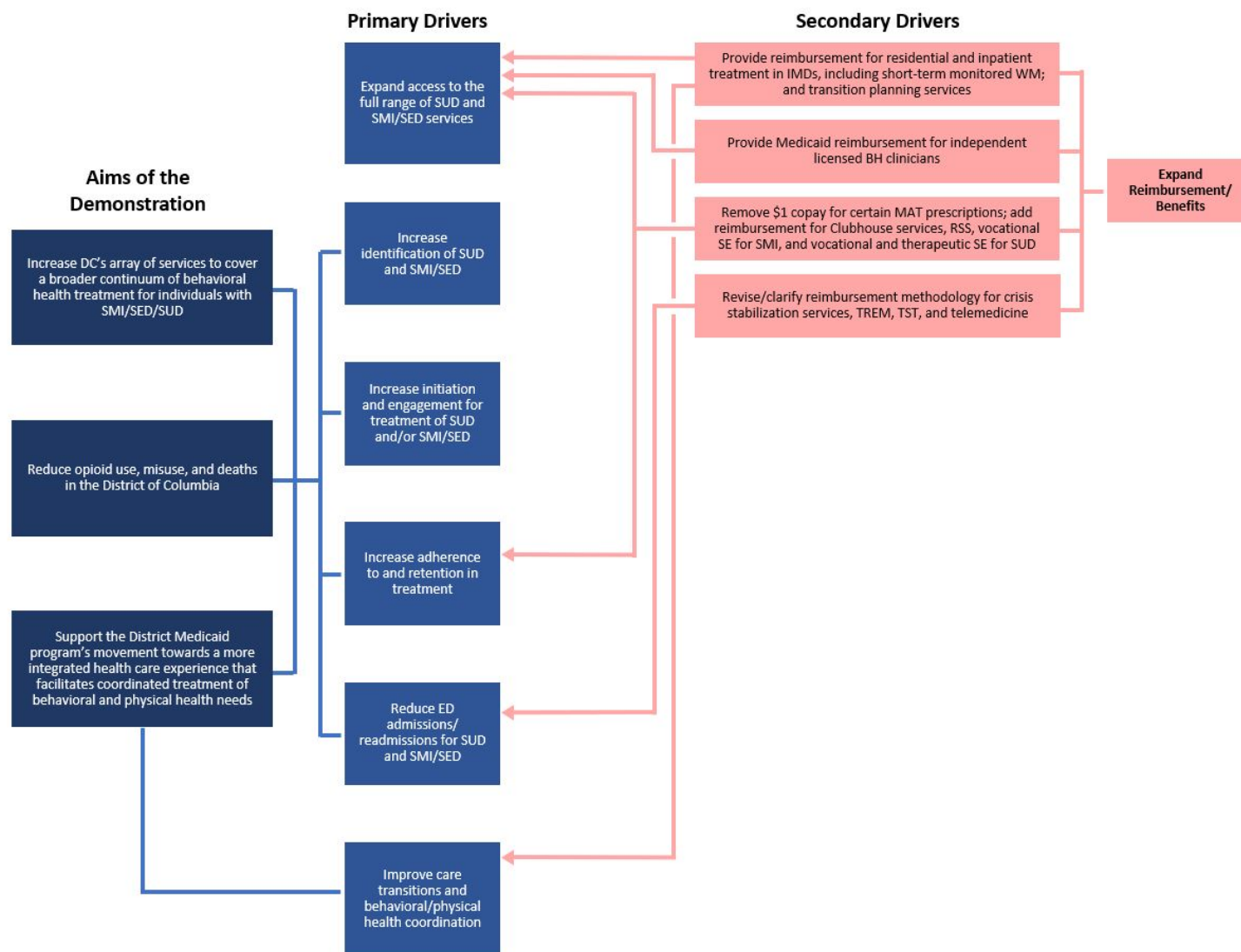
The primary and secondary drivers in Exhibits B–F are reflected in the hypotheses and research questions (Section B.2) and the proposed evaluation measures (Exhibit G).

Exhibit B: Behavioral Health Transformation Demonstration Driver Diagram



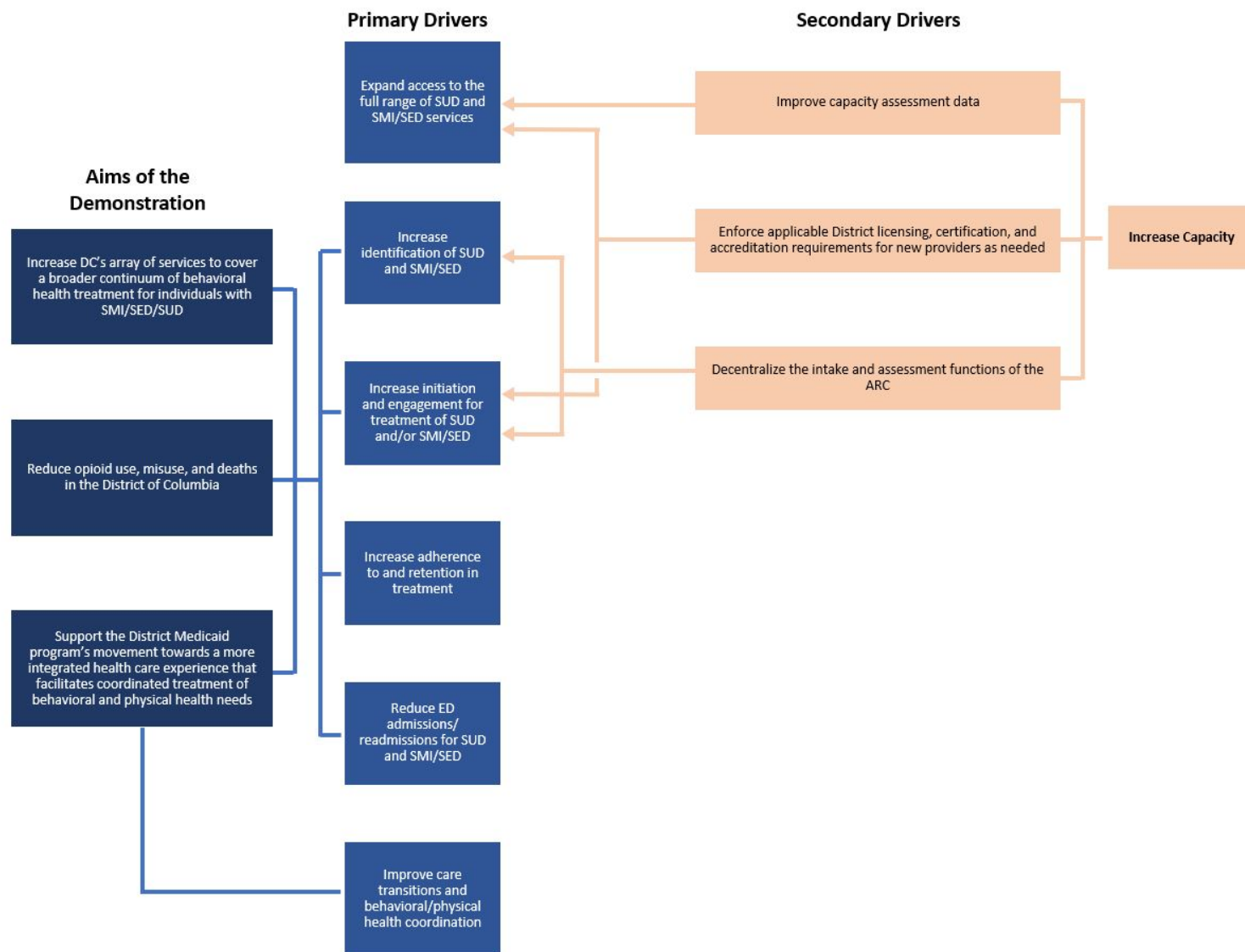
ARC=Assessment and Referral Center; BH=behavioral health; ED=emergency department; IMD=Institutions of Mental Disease; IT=information technology; MAT=medication assisted treatment; PDMP=prescription drug monitoring program; RSS=Recovery Support Services; SE=Supported Employment; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder; TREM=Trauma Recovery and Empowerment Model; TST=Trauma Systems Therapy; WM=withdrawal management

Exhibit C: Behavioral Health Transformation Demonstration Driver Diagram – *Expand Reimbursement/Benefits Domain*



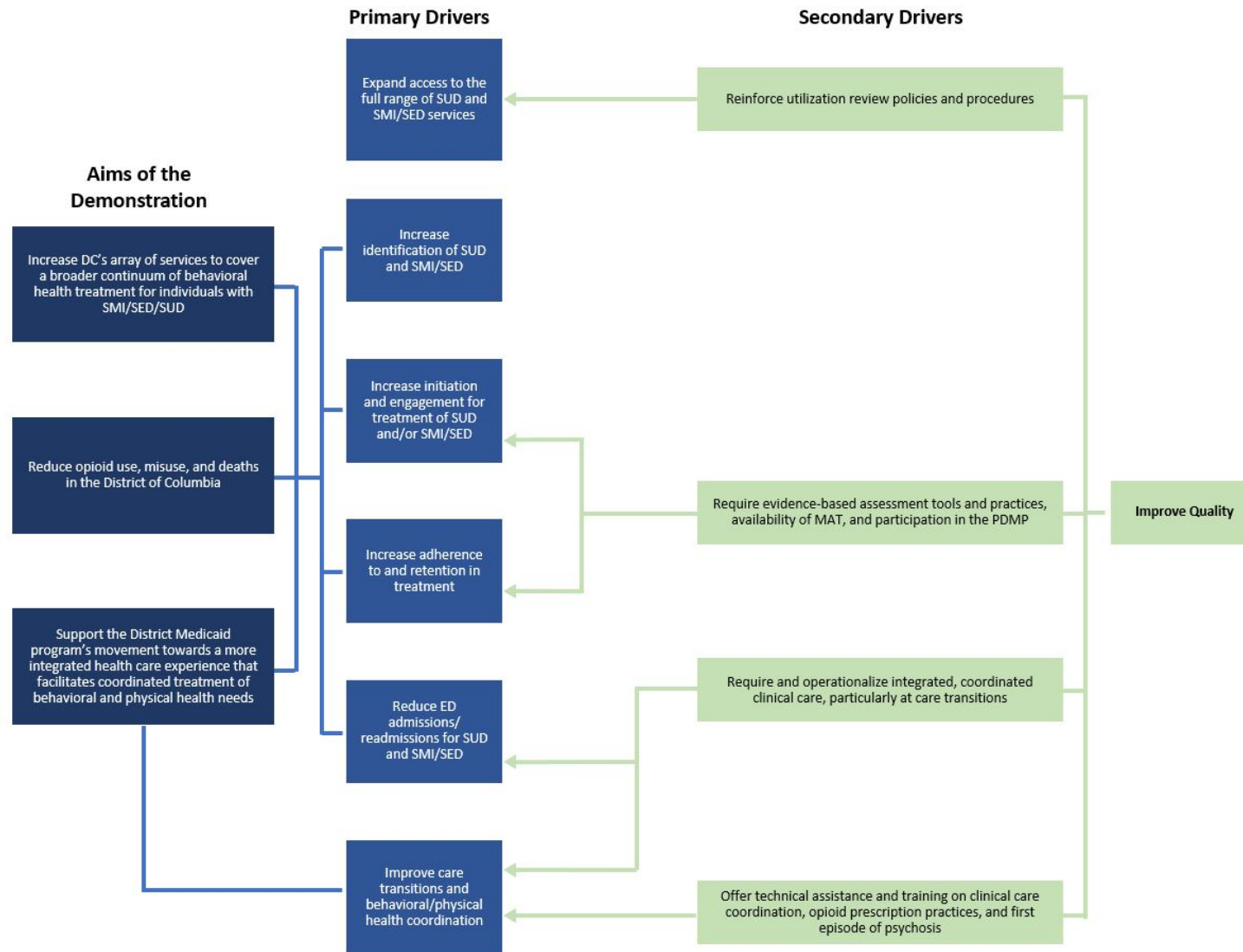
BH=behavioral health; ED=emergency department; IMD=Institutions of Mental Disease; MAT=medication assisted treatment; RSS=Recovery Support Services; SE=supported employment; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder; TREM=Trauma Recovery and Empowerment Model; TST=Trauma Systems Therapy; WM=withdrawal management.

Exhibit D: Behavioral Health Transformation Demonstration Driver Diagram – Increase Capacity Domain



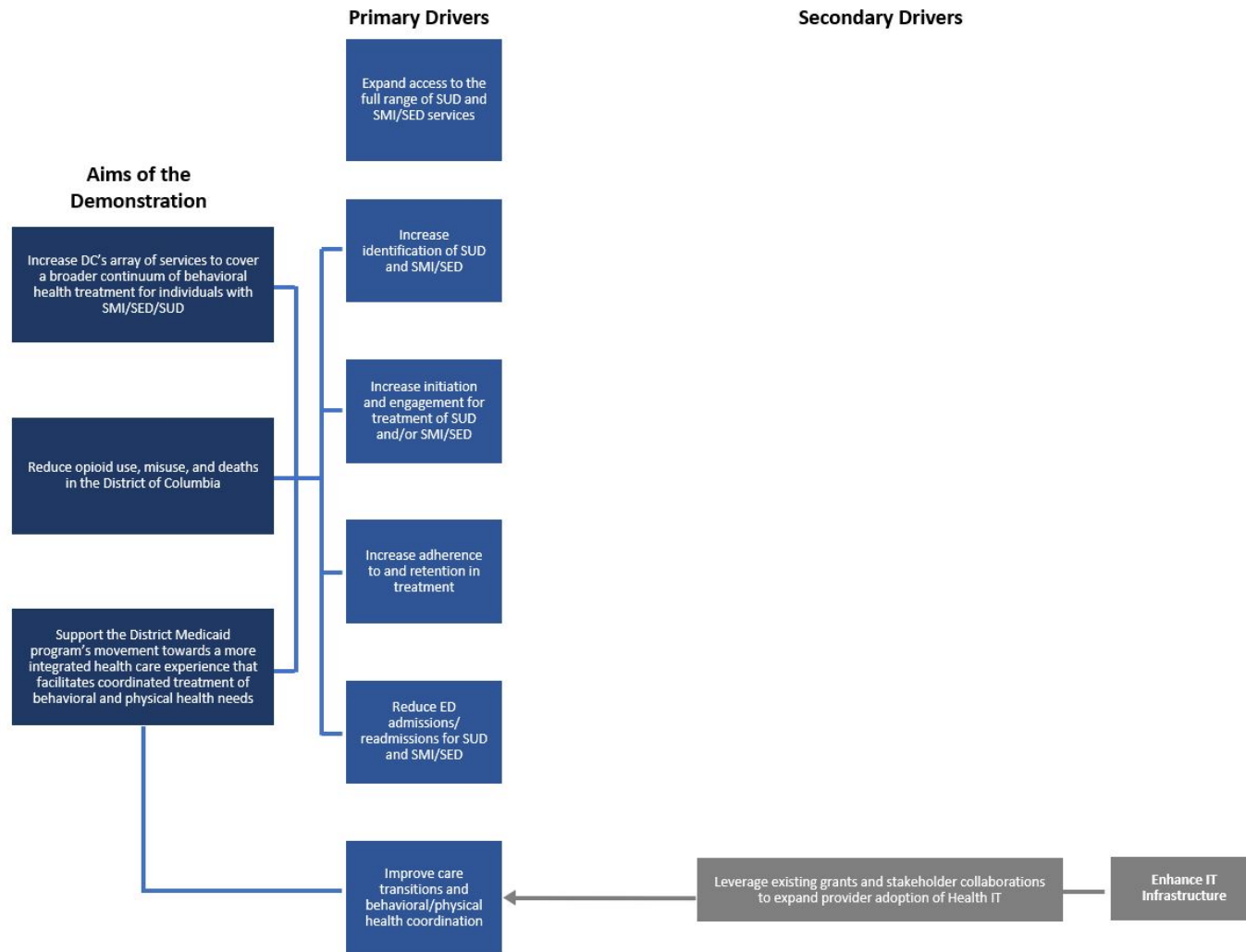
ARC=Assessment and Referral Center; ED=emergency department; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder.

Exhibit E: Behavioral Health Transformation Demonstration Driver Diagram – *Improve Quality Domain*



ED=emergency department; MAT=medication assisted treatment; PDMP=prescription drug monitoring program; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder.

Exhibit F: Behavioral Health Transformation Demonstration Driver Diagram – Enhance IT Infrastructure Domain



ED=emergency department; IT=information technology; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder.

B.2 HYPOTHESES AND RESEARCH QUESTIONS

B.2.1 Demonstration Goal-Based Hypotheses and Research Questions

Based on the aims and goals of the Demonstration, we propose the hypotheses below that we will test as part of the evaluation. Each hypothesis will be tested by one or more research questions that can be answered through quantitative and/or qualitative measures (Exhibit G).

Goal 1: Increased rates of identification, initiation, and engagement in treatment for SUD. (SUD-1 in STCs)

Hypothesis 1.1 The Demonstration will increase rates of identification and initiation of treatment for SUD.

Research Question 1.1 Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?

Hypothesis 1.2 The Demonstration will increase access to specific SUD treatment services.

Research Question 1.2a Did the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increase during the Demonstration period?

Research Question 1.2b How does the implementation of reimbursement for services provided in IMD settings influence access to specific SUD treatment services?

Research Question 1.2c How does the implementation of reimbursement for withdrawal management in IMD settings influence access to these SUD treatment services?

Research Question 1.2d How does the implementation of requirements to offer or facilitate access to all Food and Drug Administration (FDA)-approved medications for use in SUD influence access to these SUD treatment services?

Research Question 1.2e How does the implementation of reimbursement for independent licensed behavioral health (BH) clinicians providing SUD services influence access to specific SUD treatment services?

Hypothesis 1.3 The Demonstration will increase utilization of specific SUD treatment services.

Research Question 1.3a. Was there an increase in community knowledge of available SUD treatment and services?

Research Question 1.3b Was there an increase in the utilization of specific SUD treatment services?

Research Question 1.3c How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence utilization of SUD services?

Goal 2: Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral health care. (SMI/SED-4 in STCs)

Hypothesis 2.1 The Demonstration will increase access to specific community-based SMI/SED treatment services.

Research Question 2.1a Was there an increase in access to community-based SMI/SED treatment services?

Research Question 2.1b Was there an increase in community knowledge of available community-based SMI/SED treatment and services?

Research Question 2.1c How does the implementation of changes to the reimbursement methodology for Trauma Systems Therapy (TST) and Trauma Recovery and Empowerment Model (TREM) influence access to TST and TREM?

Research Question 2.1d How does the implementation of reimbursement for independent licensed BH clinicians for SMI/SED services influence access to independent licensed BH clinicians?

Research Question 2.1e How does creating separate services definitions for TREM and TST influence access to TREM and TST?

Research Question 2.1f How does the implementation of FFP for short-term stays for acute care in IMD settings influence access to short-term stays for acute care in IMD settings?

Hypothesis 2.2 The Demonstration will increase utilization of specific community-based SMI/SED treatment services.

Research Question 2.2a Was there an increase in utilization of community-based SMI/SED treatment services?

Research Question 2.2b How does the Demonstration influence utilization of TST and TREM services?

Research Question 2.2c How does the availability of the Clubhouse influence utilization of SMI/SED treatment services?

Research Question 2.2d How does the Demonstration influence utilization of independent licensed BH clinicians by beneficiaries with SMI or SED?

Hypothesis 2.3 The Demonstration will increase integration of primary and behavioral health care.

Research Question 2.3a Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?

Research Question 2.3b Did the Demonstration increase integration of primary and behavioral health care for beneficiaries with SMI or SED?

Goal 3: Increased adherence to and retention in treatment. (SUD-2 in STCs)

Hypothesis 3.1 The Demonstration will increase adherence to and retention in SUD treatment.

Research Question 3.1a Did the Demonstration increase adherence to SUD treatment?

Research Question 3.1b Did the Demonstration increase retention in SUD treatment?

Research Question 3.1c How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence adherence to and retention in SUD treatment?

Research Question 3.1d How does the availability of supported employment influence adherence to and retention in SUD treatment?

Research Question 3.1e How does the availability of recovery support services influence initiation of, adherence to, and retention in SUD treatment?

Research Question 3.1f How does the availability of transition planning services influence adherence to and retention in SUD treatment?

Research Question 3.1g How does the availability of independent licensed BH clinician services influence adherence to and retention in SUD treatment?

Goal 4: Reduced utilization and lengths of stay in hospital emergency departments (ED) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)

Hypothesis 4.1 The Demonstration will decrease the utilization of ED services by beneficiaries with SMI/SED.

Research Question 4.1a Was there a decrease in ED service utilization by beneficiaries with SMI/SED?

Research Question 4.1b How does the Demonstration influence the ED service utilization by beneficiaries with SMI/SED (e.g., through improved access to other continuum of care services)?

Hypothesis 4.2 The Demonstration will decrease the lengths of stay (LOS) in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings.

Research Question 4.2a Was there a decrease in the LOS in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings?

Research Question 4.2b How does the Demonstration influence the length of stay (LOS) in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings (e.g., through improved access to other continuum of care services)?

Goal 5: Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services. (SUD-4 in STCs)

Hypothesis 5.1 The Demonstration will reduce utilization of hospital emergency departments and inpatient hospital settings.

Research Question 5.1a Was there a reduction in ED or inpatient utilization for beneficiaries with SUD?

Research question 5.1b How does the Demonstration influence preventable utilization of ED or inpatient care through improved access to other continuum of care services?

Research question 5.1c How does the Demonstration influence medically inappropriate utilization of ED or inpatient care through improved access to other continuum of care services?

Goal 6: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)

Hypothesis 6.1 The Demonstration will improve follow-up for beneficiaries with SMI/SED after episodes of acute care in hospitals.

Research Question 6.1a Was there an increase in utilization of follow-up services for beneficiaries with SMI/SED after episodes of acute care in hospitals?

Research Question 6.1b How does the implementation of the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge influence care coordination?

Research Question 6.1c How does the implementation of reimbursement for transition planning services influence care coordination?

Research Question 6.1d How did changes in care coordination infrastructure influence experiences of care coordination for beneficiaries with SMI/SED?

Research Question 6.1e How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SMI/SED?

Research Question 6.1f Did care coordination improve for beneficiaries with SMI/SED?

Goal 7: Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)

Hypothesis 7.1 The Demonstration will reduce preventable readmissions to acute care and specialty hospitals and residential settings for beneficiaries with SMI/SED.

Research Question 7.1 Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?

Goal 8: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)

Hypothesis 8.1 The Demonstration will decrease preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD.

Research Question 8.1 Was there a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD?

Goal 9: Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs).

Hypothesis 9.1 The Demonstration will increase access to care for physical health conditions among beneficiaries with SUD.

Research Question 9.1a Was there an increase in access to care for physical health conditions among beneficiaries with SUD?

Research Question 9.1b Did care coordination improve for beneficiaries with SUD?

Research Question 9.1c How did changes in care-coordination infrastructure influence experiences of care coordination for beneficiaries with SUD?

Research Question 9.1d How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SUD?

Goal 10: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)

Hypothesis 10.1 The Demonstration will increase the availability of crisis-stabilization services.

Research Question 10.1a Was there an increase in the availability of crisis-stabilization services?

Research Question 10.1b How does the Demonstration influence the availability of crisis stabilization services (i.e., CPEP, Psychiatric Crisis Stabilization Program, Youth Mobile Crisis Intervention, and Adult Mobile Crisis and Behavioral Health Outreach)?

Goal 11: Reductions in overdose deaths, particularly those due to opioids. (SUD-3 in STCs)

Hypothesis 11.1 The Demonstration will reduce the rate of overdose deaths.

Research Question 11.1 Was there a decrease in the rate of overdose deaths?

B.2.2 Research Questions for Cost Analysis

In addition to addressing the above Demonstration goals-based research questions, the evaluation will also include a cost analysis, which will address the following questions.²¹

Research Question 12.1 Has the total healthcare spending for targeted beneficiaries increased, decreased, or stayed the same in the Demonstration period?

Research Question 12.2 Have the total federal costs for the health care of targeted beneficiaries increased, decreased, or stayed the same in the Demonstration period?

Research Question 12.3 Have the costs related to the diagnosis and treatment of targeted beneficiaries increased, decreased, or stayed the same during the Demonstration period?

Research Question 12.4 What are the treatment cost drivers for the target population in the Demonstration period?

²¹ Research questions are formulated based on CMS guidance on evaluating 1115 waiver demonstrations, as shown in Table C: <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-sed-sud-cost-appendix-c.pdf>

C. METHODOLOGY

This section describes our planned methodology, which we will refine in consultation with DHCF and based on CMS feedback, subject to the availability of data and feasibility of analysis. The subsections below follow CMS's recommended structure for the methodology section of the evaluation design.

- Evaluation design
- Target and comparison populations
- Evaluation period
- Evaluation measures
- Data sources
- Analytic methods

C.1 EVALUATION DESIGN

Quantitative and Qualitative Analytic Methods Under a Mixed-Methods Approach.

The IMPAQ Team will employ a mixed-methods approach to this evaluation and will use multiple quantitative and qualitative analyses to answer the evaluation questions. A mixed-methods approach will account for the complexity and variety of the Demonstration activities shown in the Driver Diagrams (Exhibit B–F). This section gives an overview of the three main types of analyses we will conduct.

Qualitative analysis. We will conduct key informant interviews, site visits with providers, a beneficiary survey, and a document review to gather primary data that characterizes the interventions the District will implement to achieve the Demonstration's goals. This data will also yield insights into providers' and beneficiaries' awareness and perspectives of systems changes enacted through the Demonstration. We will employ thematic coding and triangulation to analyze the data qualitatively. Sections C.5.1 and C.6.1 describe the qualitative data sources and methods.

Quantitative analysis. We will evaluate the Demonstration's impact on quantifiable measures, such as access to services for SUD and SMI/SED. The data sources for the quantitative analyses include Medicaid claims and other administrative data as well as data from two rounds of a beneficiary survey fielded under the evaluation. The quantitative analysis will include descriptive statistics and an impact analysis using an interrupted time series (ITS) design. We will conduct descriptive subgroup analysis by stratifying the data by beneficiary characteristics, treatment setting, and service type. Descriptive statistics will include frequencies, means, and distributions of relevant metrics. ITS is the CMS-preferred methodology for impact analysis when there is no appropriate comparison group as is the case with this Demonstration. We will conduct the ITS analyses for the target population overall, as defined by each research question. In addition, we may conduct ITS analyses by treatment setting, service type, FFS and Managed Care, and dual status for selected measures, depending on sample sizes and relevance for the evaluation (see Section C.2 for relevant sample sizes). Where appropriate and feasible, we will incorporate quantitative measures from the beneficiary survey that capture beneficiaries' awareness of SUD or SMI/SED services in the District and their experiences with care. Sections C.5.2 and C.6.2 describe the quantitative data sources and methods.

Integrated mixed-methods analysis. We will integrate findings from the various quantitative and qualitative analyses using methods such as sequential exploratory design and concurrent triangulation.^{22, 23} The mixed-methods evaluation approach will provide summative insights into how successful the Demonstration is in achieving its objectives. In addition, it will provide more formative insights into how and why the various components of the Demonstration work or could be improved. To integrate findings across both qualitative and quantitative methods, we will leverage qualitative data to contextualize or further inform quantitative results. For example, qualitative findings may help to explain patterns occurring in the descriptive statistics and ITS models, and those patterns may suggest areas to explore in the key informant interviews and site visits. In addition, we may use findings from the qualitative data analysis to update the quantitative data analysis methods, for example, by identifying which of the selected measures are most likely to show change based on Demonstration activities or new questions to add to the second wave of the beneficiary survey.

Implications of the COVID-19 pandemic for the evaluation. The COVID-19 pandemic has coincided with the launch of the Demonstration. This makes it particularly challenging for the evaluation to distinguish the effects of the Demonstration on Medicaid enrollment, service utilization, provider behavior and beneficiary outcomes from the effects of the pandemic. The pandemic may even affect how the Demonstration is implemented. Section C.6.2 discusses the quantitative impact estimation strategies the IMPAQ Team will use to address these challenges. These strategies include following an ITS design, inclusion of covariates that capture COVID-19 severity in regression models, and beneficiary-level sub-group analyses. Section C.5.1 describes how the primary data collection strategies will be adapted to overcome the challenges posed by the pandemic in reaching targeted site visit, interview, and survey participants. It also describes the additional research domains we will include in the questionnaires to gather qualitative insights into the effects of the pandemic on stakeholders.

C.2 TARGET AND COMPARISON POPULATIONS

Target Population

The target population of this evaluation will be any full-benefit Medicaid beneficiary in the District.²⁴ We will use District-provided Medicaid claims data to identify Medicaid beneficiaries with SMI/SED or SUD along with details on service use and outcomes. We will identify SMIs/SEDs and SUDs in the claims data using measure specifications for the selected measures. Based on DHCF Medicaid Management Information System (MMIS) data for September 2019 Medicaid beneficiaries with SMI/SED or SUD, there were 28,724 beneficiaries with SMI/SED only, 9,967 beneficiaries with SUD only and 12,542 beneficiaries with SMI/SED and SUD.²⁵

Comparison Population

As CMS's SUD Demonstration Evaluation Guidance explains, the ideal comparison groups are comparable states without the Demonstration waiver flexibilities or similar programs affecting the same population occurring concurrently with the Demonstration, comparison populations

²² Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field Methods*, 18(1), 3–20. doi:10.1177/1525822X05282260.

²³ Castro, F. G., Kellison, J. G., Boyd, S. J., & Kopak, A. A. (2010). Methodology for conducting integrative mixed methods research and data analyses. *J Mix Methods Res.*, 4(4), 342–360. doi:10.1177/1558689810382916.

²⁴ In the District, a full benefit beneficiary is any Medicaid enrollee who is not partially eligible for both Medicare and Medicaid with benefits limited to payment of Medicare premiums and cost sharing. All other Medicaid enrollees in the District receive full benefits.

²⁵ MMIS data extracted March 2020. Excludes individuals whose only SUD diagnosis is tobacco use disorder. SMI/SED diagnoses reflect state-based definition in the District's monitoring protocol.

that are not able to receive services due to geographic or demographic limitations, or late Demonstration-participants that can act as a comparison group for early Demonstration-participants. However, such comparison groups are not available for this evaluation because all eligible beneficiaries in the District are participating in the Demonstration, their participation begins at the same time, and obtaining access to administrative claims data or performing data collection for other states is out of scope of this project (as discussed further in section C.6.2). Therefore, we will use the ITS design as the main method for estimating the effects of the Demonstration. The ITS design compares the trend of the outcome after Demonstration implementation with the outcome trend that would have occurred if the pre-existing trend had continued after implementation.

C.3 EVALUATION PERIOD

The pre-Demonstration period will serve as the baseline for the ITS analysis and the period after the Demonstration begins will be considered the post-period. The baseline will be a fixed three-year period prior to January 1, 2020, for the ITS analysis. CMS guidance in the technical specifications for Monitoring Metrics indicates that the first measurement period (e.g., quarter) of the post-period will be the baseline period for monitoring metric purposes.^{26, 27} However, for evaluation purposes we will ensure the baseline period includes only periods prior to the Demonstration, so that any early effects of the Demonstration on the outcomes of interest are reflected in the descriptive analysis. The full post-period will extend until the end of the Demonstration, December 31, 2024. The end point of the post-periods to be included in the analysis for the evaluation reports will be a few months prior to the due date of the first draft of each report to allow for the three-month claim-runout period and the time needed for data analysis and reporting. The Interim Evaluation Report will cover Demonstration activities between January 1, 2020, and June 30, 2022 (DY 1-2.5). The Summative Evaluation Report, the final evaluation deliverable to CMS, will cover the Demonstration activities from January 1, 2020, through December 31, 2024.

C.4 EVALUATION MEASURES

As noted above, we will use a mix of quantitative and qualitative measures to evaluate the effects of the Demonstration. Exhibit G describes the quantitative measures and the qualitative research domains, along with the data sources and analytic methods, that we will use to evaluate changes in access to SUD and SMI/SED services and patient outcomes associated with the Demonstration. The exhibit aligns the goals, hypotheses, research questions, and proposed measures/research domains. For efficiency, we will leverage 15 SUD and SMI/SED monitoring metrics that DHCF will regularly report to CMS. Six quantitative measures are drawn from the Healthcare Effectiveness Data and Information Set (HEDIS), Medicaid Core Set, or other standardized measure sets. We also propose 27 de novo quantitative measures that address specific dimensions of the Demonstration that are not captured in the monitoring metrics or established measures, including those based on the beneficiary survey that we will field under the evaluation.²⁸ The measure names, descriptions, numerators, and

²⁶ CMS. *Monitoring Metrics for Section 1115 Demonstrations with SMI/SED Policies*. Retrieved from: <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-monitoring-metrics.pdf>

²⁷ CMS. *Monitoring Metrics for Section 1115 Demonstrations with SUD Policies*. Retrieved from: <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/sud-monitoring-metrics.pdf>

²⁸ The survey domains are provided in Section C.5.1. Once the survey questionnaire is finalized, we will update the measure list with additional survey-based measures.

denominators/populations of interest are drawn directly from CMS's specifications for monitoring metrics where available.

Where applicable and feasible, we will create measures also for beneficiary subpopulations, depending on whether the subpopulation sizes are sufficiently large to allow for the measures to be defined. Some of the beneficiary subpopulations of interest include:

- FFS/MCO
- Dually eligible for Medicare
- Age
- Pregnant
- Justice-involved
- Disability
- SUD
- OUD
- SMI/SED
- SMI/SED and co-occurring SUD
- SMI/SED and co-occurring physical condition
- Ward of residence

For IMD stay-related measures, if population sizes are sufficiently large, we will further stratify the data and construct the measures for beneficiaries at St. Elizabeths (the District's public psychiatric hospital), at Psychiatric Institute of Washington (PIW), or attended by other private providers, separately. We will select a subset of the above subgroups for inclusion in the ITS analysis and the remaining subgroups will be explored descriptively. We will select the subsets for various types of analyses in consultation with DHCF after preliminary data exploration.

We will also report additional program statistics that DHCF deems relevant to describe the Demonstration landscape (e.g., the number of active DC Health Information Exchange [HIE] users) but which are not included in the exhibit and for which ITS analysis is not feasible.²⁹

The qualitative domains that will be assessed as part of the evaluation mainly align with the secondary drivers in the driver diagram. For efficiency, we will assess the document reviews and reserve primary data collection for clarification and for collecting information that cannot be gleaned through documents.

In addition to the measures in Exhibit G that we will use to assess the Demonstration goals-based research questions, we show the cost measures that we will assess under the cost analysis in Exhibit H.

²⁹ These measures will be selected from the monitoring reports submitted by DHCF to CMS. Therefore, we do not separately report them in Exhibit G.

Exhibit G: Proposed Evaluation Measures

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Goal 1: Increased rates of identification, initiation, and engagement in treatment for SUD. (SUD-1 in STCs)							
Primary Driver: <i>Increase identification of SUD and SMI/SED</i>	Research question 1.1: Was there an increase in the identification and initiation of treatment for beneficiaries with SUD?						
	Medicaid Beneficiaries with Newly Initiated SUD Treatment/Diagnosis	Number of beneficiaries with a SUD diagnosis and a SUD-related service during the measurement period but not in the three months before the measurement period	CMS-constructed SUD Monitoring Metric #2	Number of unique beneficiaries (de-duplicated total) enrolled in the measurement period who receive MAT or have qualifying facility, provider, or pharmacy claims with a SUD diagnosis and a SUD related treatment during the measurement period but not in the three months before the measurement period	All Medicaid beneficiaries enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	Claims data	- ITS - Descriptive statistics
	Change in beneficiary self-report of barriers to treatment		IMPAQ defined, with input from DHCF	Number of beneficiaries who report a barrier to treatment	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Regression - Thematic Analysis - Triangulation
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 1.2a: Did the number of providers who were enrolled in Medicaid and qualified to deliver SUD services increase during the Demonstration period?						
	SUD Provider Availability	Number of providers who were enrolled in Medicaid and qualified to deliver SUD services during the measurement period	CMS-constructed SUD Monitoring Metric #13	Total number of eligible SUD providers	SUD providers who were enrolled in Medicaid and qualified to deliver Medicaid services during the measurement period (<i>Population of interest</i>)	▪ Provider enrollment database ▪ Claims data	▪ ITS ▪ Descriptive statistics
	Capacity of newly enrolled Medicaid providers qualified to deliver SUD services		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Increase in newly enrolled Medicaid providers qualified to deliver SUD services relative to overall increase in providers qualified to deliver SUD services in the District		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM; and transition planning services</i>	Research Question 1.2b: How does the implementation of reimbursement for services provided in IMD settings influence access to specific SUD treatment services?						
	Availability of reimbursement for services in IMD settings		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Content of reimbursement policy for services in IMD settings (e.g., which services are covered and at what rate)		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Awareness of reimbursement for services in IMD settings		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to services in IMD settings		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Research Question 1.2c: How does the implementation of reimbursement for withdrawal management in IMD settings influence access to these SUD treatment services?						
	Availability of reimbursement for withdrawal-management services in IMD settings	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Content of reimbursement policy for withdrawal-management services in IMD settings (e.g., which services are covered and at what rate)	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of reimbursement for withdrawal-management services in IMD settings	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to withdrawal-management services in IMD settings	N/A, Qualitative Measure				Site Visits	- Thematic Analysis - Triangulation
Secondary Driver: <i>Require evidence-based assessment tools and practices, availability of MAT, and participation in the PDMP</i>	Research Question 1.2d: How does the implementation of requirements to offer or facilitate access to all FDA-approved medications for use in SUD influence access to these SUD treatment services?						
	Whether and through what mechanisms the District implements requirements to offer or facilitate access to all FDA-approved medications for use in SUD	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Perceptions of the extent to which requiring the availability of all FDA-approved medications facilitated expanded access to SUD services	N/A, Qualitative Measure				- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Perceived facilitators and barriers to offering or facilitating access to all FDA-approved medications for use in SUD	N/A, Qualitative Measure				- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
Secondary Driver: <i>Provide Medicaid reimbursement for independent licensed BH clinicians</i>	Research Question 1.2e: How does the implementation of reimbursement for independent BH clinicians for SUD services influence access to specific SUD treatment services?						
	Availability of reimbursement for independent licensed BH clinicians for SUD services	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Content of reimbursement policy for independent licensed BH clinicians for SUD services (e.g., which services are covered and at what rate)	N/A, Qualitative Measure				▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Awareness of reimbursement to independent licensed BH clinicians for SUD services	N/A, Qualitative Measure				▪ Site Visits	▪ Thematic Analysis
	Perceptions of the extent to which reimbursement of independent licensed BH clinicians for SUD services incentivized or facilitated expanded access to SUD services	N/A, Qualitative Measure				▪ Site Visits	▪ Thematic Analysis
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i> Secondary Driver: <i>Decentralize the intake and assessment functions of the ARC</i>	Research question 1.3a: Was there an increase in community knowledge of available treatment and services?						
	Change in beneficiary awareness of available SUD treatment and services	IMPAQ defined, with input from DHCF	Number of beneficiaries who indicate awareness of SUD treatment and services	Total number of survey participants (<i>Denominator</i>)	▪ Beneficiary survey	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
		N/A, Qualitative Measure					▪ Site Visits ▪ Beneficiary Interviews
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 1.3b: Was there an increase in the utilization of specific SUD treatment services?						
	Any SUD Treatment	Number of beneficiaries enrolled in the measurement period receiving any SUD treatment service, facility claim, or pharmacy claim during the measurement period	CMS-constructed SUD Monitoring Metric #6	Number of unique beneficiaries (de-duplicated) enrolled in the measurement period receiving at least one SUD treatment service or pharmacy claim during the measurement period	All Medicaid beneficiaries enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	▪ Claims	▪ ITS ▪ Descriptive statistics

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Change in self-reported utilization of SUD treatment and services	IMPAQ defined, with input from DHCF	Number of beneficiaries who report receiving the SUD services that they wanted or needed	Total number of survey participants <i>(Denominator)</i>	▪ Beneficiary survey ▪ Site Visits ▪ Beneficiary Interviews	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
		N/A, Qualitative Measure					
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i> Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions; add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Research question 1.3c: How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence utilization of appropriate SUD services?						
	Beneficiary awareness of MAT copay removal	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating awareness of the copay removal for MAT	Total number of survey participants <i>(Denominator)</i>	▪ Beneficiary survey ▪ Site Visits ▪ Beneficiary Interviews	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
		N/A, Qualitative Measure					
	Mechanisms through which the District removed the \$1 copay for certain MAT prescriptions	N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation	
	Perceptions of the extent to which the removal of the \$1 copay incentivized or facilitated increased utilization of SUD services	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating copay removal for MAT increased their utilization of SUD services	Total number of survey participants who were aware of the copay removal for MAT <i>(Denominator)</i>	▪ Beneficiary Survey ▪ Site Visits ▪ Beneficiary Interviews	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
		N/A, Qualitative Measure					
Goal 2: Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI or SED including through increased integration of primary and behavioral health care. (SMI/SED-4 in STCs)							
	Research question 2.1a: Was there an increase in access to community-based SMI/SED treatment services?						

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach	
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Mental health providers	Number of mental health providers who delivered services to beneficiaries with SMI/SED under the demonstration, in total and stratified by type (e.g., MHRS providers, physicians, other licensed practitioners)	IMPAQ defined, with input from DHCF	Total number of eligible mental health practitioners delivering services to SMI/SED beneficiaries (includes stratifications for provider type)	SMI/SED providers who were enrolled in Medicaid and qualified to deliver Medicaid services during the measurement period (<i>Population of interest</i>)	- Provider enrollment database - Claims data	- ITS - Descriptive statistics	
	Capacity of newly enrolled Medicaid providers qualified to deliver SMI/SED services		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation	
	Increase in newly enrolled Medicaid providers qualified to deliver SMI/SED services relative to overall increase in providers qualified to deliver SMI/SED services in the District		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation	
	Change in beneficiary self-report of barriers to treatment	IMPAQ defined, with input from DHCF	Number of beneficiaries who report a barrier to treatment	Total number of survey respondents (<i>Denominator</i>)	Beneficiary Survey	- Descriptive statistics - Regression - Thematic Analysis - Triangulation		
		N/A, Qualitative Measure					- Site Visits - Beneficiary Interviews	
	Research question 2.1b: Was there an increase in community knowledge of available community-based SMI/SED treatment and services?							
	Change in beneficiary awareness of SMI treatment and services	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating they know where to go to receive treatment for SMI	Total number of survey participants (<i>Denominator</i>)	Beneficiary survey	- Descriptive statistics - Regression - Thematic Analysis - Triangulation		
		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews			
Secondary Driver:	Research question 2.1c: How does the implementation of changes to the reimbursement methodology for Trauma Systems Therapy (TST) and Trauma Recovery and Empowerment Model (TREM) influence access to TST and TREM?							

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Revise/clarify reimbursement methodology for crisis stabilization services, TREM, TST, and telemedicine	Content of the changes to the reimbursement methodology for TST and TREM	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of changes to the reimbursement methodology for TST and TREM	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Expanded TST and TREM services as reported by providers	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which changes to the reimbursement methodology for TST and TREM incentivized or facilitated expanded access to TST and TREM	N/A, Qualitative Measure				Site Visits	Thematic Analysis
Secondary Driver: Provide Medicaid reimbursement for independent licensed BH clinicians	Research Question 2.1d: How does the implementation of reimbursement for independent licensed providers for SMI/SED services influence access to independent licensed BH clinicians?						
	Availability of reimbursement for independent licensed BH clinicians for SMI/SED services	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of reimbursement to independent licensed BH clinicians for SMI/SED services	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement of independent licensed BH clinicians for SMI/SED services incentivized or facilitated expanded access to SMI/SED treatment services	N/A, Qualitative Measure				Site Visits	Thematic analysis
Secondary Driver: Revise/clarify reimbursement methodology for crisis stabilization services, TREM, TST, and telemedicine	Research Question 2.1e: How does creating separate service definitions for TREM and TST influence access to TREM and TST treatment services?						
	Content of changes to the definitions or to the regulations for TREM and TST	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of changes to the definitions or regulations for TREM and TST	N/A, Qualitative Measure				Site Visits	Thematic Analysis
	Perceptions of the extent to which changes to the definitions or regulations for TREM and TST incentivized or facilitated expanded access to TREM and TST treatment services	N/A, Qualitative Measure				Site Visits	Thematic analysis

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services</i>	Research Question 2.1f: How does the implementation of FFP for short-term stays for acute care in IMD settings influence access to short-term stays for acute care in IMD settings?						
	Availability of FFP for short-term stays for acute care in IMD settings		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Content of reimbursement policy for short-term stays for acute care in IMD settings (e.g., eligible services, payment rate)		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Awareness of reimbursement for short-term stays for acute care in IMD settings		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
	Perceptions of the extent to which reimbursement incentivized or facilitated expanded access to short-term stays for acute care in IMD settings		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
Primary Driver: <i>Increase initiation and engagement for treatment of SUD and/or SMI/SED</i>	Research question 2.2a: Was there an increase in utilization of community-based SMI/SED treatment services?						
	Mental Health Services Utilization– Any Services	Number of beneficiaries in the demonstration with SMI/SED who used any services related to mental health during the measurement period.	CMS-constructed SMI Monitoring Metric #18	Number of unique beneficiaries (de-duplicated total) with a service claim for any services related to mental health during the measurement period	Medicaid beneficiaries in the demonstration or with SMI/SED enrolled for any amount of time during the measurement period (<i>Population of interest</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics
	Change in self-reported utilization of SMI treatment and services		IMPAQ defined, with input from DHCF	Number of beneficiaries who report receiving the SMI services that they wanted or needed	Total number of survey participants (<i>Denominator</i>)	▪ Beneficiary survey	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
Primary Driver: <i>Increase initiation and</i>	Research Question 2.2b: How does the Demonstration influence utilization of TST and TREM?						
	Perceptions of whether the Demonstration increased utilization of TST and TREM		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
engagement for treatment of SUD and/or SMI/SED	Perceptions of how the Demonstration increased utilization of TST and TREM		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
Secondary Driver: Remove \$1 copay for certain MAT prescriptions; add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD	Research Question 2.2c: How does the availability of the Clubhouse influence utilization of SMI/SED treatment services?						
	Availability of the Clubhouse		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Resources and services available at the Clubhouse		N/A, Qualitative Measure			▪ Document Reviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the resources and services provided through the Clubhouse		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the extent to which the availability of the Clubhouse increased utilization of SMI/SED treatment services		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis
Primary Driver: Increase initiation and engagement for treatment of SUD and/or SMI/SED	Research Question 2.2d: How does the Demonstration influence utilization of independent licensed BH clinicians by beneficiaries with SMI or SED?						
	Perceptions of whether the Demonstration increased utilization of independent licensed BH clinicians by beneficiaries with SMI or SED		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
	Perceptions of how the Demonstration increased utilization of independent licensed BH clinicians by beneficiaries with SMI or SED		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
Primary Driver: Improve care transitions and behavioral/ physical health coordination	Research question 2.3a: Did beneficiaries being treated in an IMD setting receive treatment for physical health conditions experienced by beneficiaries with SMI/SED?						
	Assessment of physical health during IMD stay	Number and percentage of episodes of care where IMD providers billed for assessments or treatment of physical conditions	IMPAQ defined, with input from DHCF	Number of beneficiaries receiving a physical health service during an IMD stay	Number of beneficiaries with an IMD stay during the measurement period (Denominator)	▪ Claims data	▪ ITS ▪ Descriptive Statistics
	Research Question 2.3b: Did the Demonstration increase integration of primary and behavioral health care for beneficiaries with SMI or SED?						

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Perceptions of whether the Demonstration increased integration of primary and behavioral health care for beneficiaries with SMI or SED	N/A, Qualitative Measure				▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Descriptions of ways primary and behavioral health care are integrated for beneficiaries with SMI or SED	N/A, Qualitative Measure				▪ Key Informant Interviews ▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
	Beneficiary self-reported receipt of behavioral health and physical health care from same provider	IMPAQ defined, with input from DHCF	Number of beneficiaries who report they have received behavioral health and physical health care from same provider	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
	NA, Qualitative Measure			▪ Beneficiary Interviews			
Goal 3: Increased adherence to and retention in SUD treatment. (SUD-2 in STCs)							
Primary Driver: Increase adherence to and retention in treatment	Research question 3.1a: Did the demonstration increase adherence to SUD treatment?						
	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment (IET-AD)	Percentage of beneficiaries with a new episode of alcohol or other drug (AOD) abuse or dependence who received Initiation or Engagement of AOD Treatment	National Committee for Quality Assurance (NCQA), National Quality Forum (NQF) #0004 SUD Monitoring Metric #15	Initiation or engagement of AOD treatment within 14 days of the index episode	Medicaid beneficiaries aged 18 and older during the measurement period (<i>Denominator</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Continuity of Pharmacotherapy for Opioid Use Disorder	Number and percentage of beneficiaries who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than seven days	USC, NQF#3175 SUD Monitoring Metric #22	Number of beneficiaries who have at least 180 days of continuous pharmacotherapy with a medication prescribed for SUD without a gap of more than seven days	Individuals who had a diagnosis of OUD and at least one claim for an OUD medication (<i>Denominator</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics
	Beneficiary self-report of how well they have adhered to their providers' treatment advice		IMPAQ defined, with input from DHCF	Number of beneficiaries who indicate they have adhered to their providers' treatment advice	Total number of survey respondents (<i>Denominator</i>)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			NA, Qualitative Measure			▪ Beneficiary Interviews	
	Perceptions of facilitators and barriers to adherence to SUD treatment		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
Primary Driver: <i>Increase adherence to and retention in treatment</i>	Research question 3.1b: Did the demonstration increase retention in SUD treatment?						
	Beneficiaries retention in SUD treatment	Beneficiaries receiving ongoing SUD treatment during the measurement period	IMPAQ defined, with input from DHCF	Number of Medicaid beneficiaries receiving ongoing SUD treatment during the measurement period	Number of Medicaid beneficiaries with at least one DBH service during the measurement period (<i>Denominator</i>)	▪ DBH key performance indicator data	▪ Descriptive statistics ▪ ITS
	Beneficiary self-report of how well they have adhered to their providers' treatment advice		IMPAQ defined, with input from DHCF	Number of beneficiaries who indicate they have adhered to their providers' treatment advice	Total number of survey respondents (<i>Denominator</i>)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Beneficiary Interviews	
	Perceptions of facilitators and barriers to retention in SUD treatment		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic analysis ▪ Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions; add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and therapeutic SE for SUD</i>	Research Question 3.1c: How does the implementation of the removal of the \$1 copay for certain MAT prescriptions influence adherence to and retention in SUD treatment?						
	Mechanisms through which the District removed the \$1 copay for certain MAT prescriptions	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Beneficiary awareness of the removal of the \$1 copay for certain MAT prescriptions	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating awareness of the copay removal for MAT	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Regression - Thematic Analysis - Triangulation	
		N/A, Qualitative Measure					- Site Visits - Beneficiary Interviews
	Perceptions of the extent to which removal of the \$1 copay for certain MAT prescriptions increased adherence to and retention in SUD treatment	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating copay removal for MAT increased their adherence to/retention in SUD treatment services	Total number of survey participants who were aware of the copay removal for MAT (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Regression - Thematic Analysis - Triangulation	
		N/A, Qualitative Measure					- Site Visits - Beneficiary Interviews
Secondary Driver: <i>Remove \$1 copay for certain MAT prescriptions; add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and</i>	Research Question 3.1d: How does the availability of supported employment services influence adherence to and retention in SUD treatment?						
	Availability of supported employment services	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Type of supported employment service(s) available	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
therapeutic SE for SUD	Awareness of the availability of supported employment services	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating awareness of services	Total number of survey participants (Denominator)	▪ Beneficiary Survey	▪ Site Visits ▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
		N/A, Qualitative Measure					
	Use of supported employment services	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating that they used services	Total number of survey participants indicating that they are aware of services (Denominator)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression	
	Perceptions of the supported employment services	N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation	
	Perceptions of whether the supported employment services influenced adherence to and retention in SUD treatment	IMPAQ defined, with input from DHCF	Number of beneficiaries indicating services influenced their adherence to and retention in SUD treatment	Total number of survey participants who indicated that they have used services (Denominator)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation	
		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews		
	Research Question 3.1e: How does the availability of recovery support services influence initiation of, adherence to, and retention in SUD treatment?						
	Availability of recovery support services	N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation	
	Types of recovery support services available	N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation	
	Awareness of the availability of recovery support services	N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation	

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Perceptions of the recovery support services	N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation	
	Perceptions of whether the recovery support services influenced initiation of, adherence to, and retention in SUD treatment	N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation	
Primary Driver: Increase adherence to and retention in treatment	Research Question 3.1f: How does the availability of transition planning services influence adherence to and retention in SUD treatment?						
	Availability of transition planning services	N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation	
	Types of transition planning services available	N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation	
	Awareness of the availability of transition planning services	N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation	
	Perceptions of the transition planning services	IMPAQ defined, with input from DHCF	Number of beneficiaries who report they knew what the next step in their care would be	Total number of survey participants (Denominator)	Beneficiary Survey	- Descriptive Statistics - Regression Analysis - Thematic Analysis - Triangulation	
		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews		
	Perceptions of whether the transition planning services influenced adherence to, and retention in SUD treatment	N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation	
	Research Question 3.1g: How does the availability of independent licensed BH clinician services influence adherence to and retention in SUD treatment?						
	Availability of independent licensed BH clinician services	N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation	

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Types of independent licensed BH clinician services available	N/A, Qualitative Measure				▪ Document Reviews ▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Awareness of the availability of independent licensed BH clinician services	N/A, Qualitative Measure				▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the independent licensed BH clinician services	N/A, Qualitative Measure				▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
	Perceptions of whether the independent licensed BH clinician services influenced adherence to, and retention in SUD treatment	N/A, Qualitative Measure				▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
Goal 4: Reduced utilization and lengths of stay in hospital emergency departments (ED) among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings. (SMI/SED-1 in STCs)							
Primary Driver: Reduce ED admissions /readmissions for SUD and SMI/SED	Research question 4.1a: Was there a decrease in ED services by beneficiaries with SMI/SED?						
	Mental Health Services Utilization - ED	Number and percentage of beneficiaries in the demonstration or with SMI/SED who use emergency department services for mental health during the measurement period; average length of stay in ED will also be reported	CMS-constructed SMI Monitoring Metric #16	The total number of unique beneficiaries (de-duplicated total) who have a claim for emergency services for mental health during the measurement period	Medicaid beneficiaries in the demonstration or with SMI/SED enrolled for any amount of time during the measurement period (Denominator)	▪ Claims data	▪ ITS ▪ Descriptive statistics
	Research question 4.1b How does the Demonstration influence ED service utilization among Medicaid beneficiaries with SMI/SED (e.g., through improved access to other continuum of care services)?						
	Perceptions of how the Demonstration has reduced utilization of ED services		IMPAQ defined, with input from DHCF	Number of beneficiaries who report that they know they can get help when in crisis outside of the ED	Total number of survey participants (Denominator)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression Analysis ▪ Thematic Analysis ▪ Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
			N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	
	Research question 4.2a: Was there a decrease in the length of stay in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings?						
	ED length of stay for beneficiaries awaiting mental health treatment	Length of stay in EDs for Medicaid beneficiaries awaiting mental health treatment in specialized settings	IMPAQ defined, with input from DHCF	Length of stay for Medicaid beneficiaries receiving treatment for SMI/SED in emergency departments	Medicaid beneficiaries receiving treatment for SMI/SED in emergency departments followed by an inpatient stay for SMI/SED (Denominator)	Claims data	- ITS - Descriptive statistics
	Perceptions of whether there was a decrease in the LOS in hospital EDs among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
	Research question 4.2b How does the Demonstration influence the length of stay in hospital EDs among Medicaid beneficiaries with SMI/SED while awaiting mental health treatment in specialized settings (e.g., through improved access to other continuum of care services)?						
	Perceptions of how the Demonstration has reduced length of stay in hospital EDs		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
Goal 5: Reduced utilization of hospital emergency departments and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate, through improved access to other continuum of care services. (SUD-4 in STCs)							
Primary Driver: Reduce ED admissions /readmissions for SUD and SMI/SED	Research question 5.1a: Was there a reduction in ED or inpatient utilization for beneficiaries with SUD?						
	Inpatient Stays for SUD per 1,000 Medicaid Beneficiaries	Total number of SUD-related inpatient stays per 1,000 beneficiaries in the measurement period	CMS-constructed SUD Monitoring Metric #24	The number of inpatient discharges related to a SUD stay during the measurement period	Beneficiaries with diagnosed SUD enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period (Denominator)	Claims data	- ITS - Descriptive statistics
	Emergency Department Utilization for SUD per 1,000 Medicaid Beneficiaries	Total number of ED visits for SUD per 1,000 beneficiaries in the measurement period	CMS-constructed SUD Monitoring Metric #23	The number of ED visits for SUD during the measurement period	Beneficiaries with diagnosed SUD enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period. (Denominator)	Claims data	- ITS - Descriptive statistics

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach	
	Prevention Quality Indicator: chronic conditions composite	Inpatient hospital admissions for ambulatory care sensitive chronic conditions	IMPAQ defined, with input from DHCF (e.g., leveraging AHRQ PQI #92)	Discharges for Medicaid beneficiaries 18 years and older for chronic conditions	To be determined (<i>Denominator</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics	
	Research question 5.1b How does the Demonstration influence preventable utilization of ED or inpatient care through improved access to other continuum of care services?							
	Perceptions of whether the Demonstration has reduced preventable utilization of ED or inpatient care	IMPAQ defined, with input from DHCF	Number of beneficiaries who report that they know they can get help when in crisis outside of the ED	Total number of survey participants (<i>Denominator</i>)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression Analysis ▪ Thematic Analysis ▪ Triangulation		
		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews			
	Perceptions of how the Demonstration has reduced preventable utilization of ED or inpatient care	N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation		
	Research question 5.1c: How does the Demonstration influence medically inappropriate utilization of ED or inpatient care through improved access to other continuum of care services?							
	Perceptions of whether the Demonstration has reduced medically inappropriate utilization of ED or inpatient care	N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation		
	Perceptions of how the Demonstration has reduced medically inappropriate of ED or inpatient care	N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation		
	Goal 6: Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities. (SMI/SED-5 in STCs)							
	Primary Driver: Improve care	Research question 6.1a: Was there an increase in utilization of follow-up services for beneficiaries with SMI/SED after episodes of acute care in hospitals?						

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
<i>transitions and behavioral/ physical health coordination</i>	Follow-up After Hospitalization for Mental Illness: Age 18 and Older (FUH-AD)	Percentage of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm and who had a follow-up visit with a mental health practitioner. -within 30 days -within 7 days	NCQA, NQF #0576 SMI Monitoring Metric #8	A follow-up visit with a mental health practitioner within 7 or 30 days after discharge.	Number of discharges for beneficiaries age 18 years and older who were hospitalized for treatment of selected mental illness diagnoses or intentional self-harm (Denominator)	Claims data	- ITS - Descriptive statistics
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Follow-Up After Emergency Department Visit for Mental Illness (FUM-AD)	Percentage of emergency department (ED) visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm and who had a follow-up visit for mental illness. -within 30 days of the ED visit -within 7 days of the ED visit	NCQA, NQF #2605 SMI Monitoring Metric #10	A follow-up visit with any practitioner, with a principal diagnosis of a mental health disorder or with a principal diagnosis of intentional self-harm and any diagnosis of mental health disorder within 7 or 30 days after the ED visit	Number of emergency department (ED) visits for beneficiaries age 18 and older with a principal diagnosis of mental illness or intentional self-harm (Denominator)	Claims data	- ITS - Descriptive statistics
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care,</i>	Research Question 6.1b: How does the implementation of the requirement that psychiatric hospitals initiate contact with the beneficiary and community-based providers within 72 hours of discharge influence care coordination?						
	Whether and through what mechanisms the District implements requirements for psychiatric hospitals and residential treatment settings to initiate contact within 72 hours of discharge with the beneficiary and community-based providers	N/A, Qualitative Measure				- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
<i>particularly at care transitions</i>	Perceived facilitators and barriers to initiating contact within 72 hours of discharge with the beneficiary and community-based providers		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
Secondary Driver: <i>Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM; and transition planning services</i>	Research Question 6.1c: How does the implementation of reimbursement for transition planning services influence care coordination?						
	Availability of reimbursement for transition planning activities		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Content of reimbursement policy for transition planning activities (e.g., eligible beneficiaries, reimbursement rates)		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Awareness of the availability of reimbursement for transition planning activities		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
	Perceptions of whether the available reimbursement for discharge-planning activities incentivized or facilitated improved care coordination		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
	Utilization of transition planning service	Use of new transition planning service by eligible beneficiaries with SMI/SED	IMPAQ defined, with input from DHCF	Number and percentage of eligible beneficiaries using the new transition planning service for beneficiaries with SMI/SED	Medicaid beneficiaries eligible for the service (<i>Denominator</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics
Secondary Drivers: <i>Offer technical assistance and training on clinical care coordination; Leverage existing grants and stakeholder</i>	Research Question 6.1d: How did changes in care-coordination infrastructure influence experiences of care coordination for beneficiaries with SMI/SED?						
	Strategies implemented by the District to facilitate Health IT adoption and interoperability (e.g., via improvements to the HIE)		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Challenges and facilitators to adopting and using Health IT		N/A, Qualitative Measure			▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
collaborations to expand provider adoption of Health IT	Workflows for integrating HIE data into care-coordination efforts		N/A, Qualitative Measure			▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceptions of information available via HIE		N/A, Qualitative Measure			▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Content, format, and reach of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the technical assistance and training given to providers related to care coordination		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
Secondary Driver: Require and operationalize integrated, coordinated clinical care, particularly at care transitions	Research Question 6.1e: How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SMI/SED?						
	Whether and through what mechanisms the District implements requirements for IMDs to conduct psychiatric and medical screenings		N/A, Qualitative Measure			▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the extent to which requiring IMDs to conduct psychiatric and medical screenings influenced care coordination for beneficiaries with SMI/SED		N/A, Qualitative Measure			▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceived facilitators and barriers to conducting psychiatric and medical screenings in IMDs for beneficiaries with SMI/SED		N/A, Qualitative Measure			▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis
	Research Question 6.1f: Did care coordination improve for beneficiaries with SMI/SED?						
	Care coordination for beneficiaries with SMI/SED	Beneficiary perceptions of how their health care providers work together	IMPAQ defined, with input from DHCF	Number of beneficiaries who rate their providers' collaboration highly	Total number of survey participants (Denominator)	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression
	Beneficiaries' experiences with coordinated care		N/A, Qualitative Measure			▪ Beneficiary Interviews	▪ Thematic Analysis

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Providers' experiences coordinating care		N/A, Qualitative Measure			▪ Site Visits	▪ Thematic Analysis
Goal 7: Reduced preventable readmissions to acute care and specialty hospitals and residential settings. (SMI/SED-2 in STCs)							
Primary Driver: Reduce ED admissions/readmissions for SUD and SMI/SED	Research question 7.1: Was there a decrease in preventable readmissions to acute care, specialty hospitals, and residential settings for beneficiaries with SMI/SED?						
	30-Day All-Cause Unplanned Readmission Following Psychiatric Hospitalization in an Inpatient Psychiatric Facility (IPF)	The rate of unplanned, 30-day, readmission rate for demonstration beneficiaries with a primary discharge diagnosis of a psychiatric disorder or dementia/Alzheimer's disease	Inpatient Psychiatric Facility Quality Reporting (IPFQR), NQF #2860 SMI Monitoring Metric #4	The count of 30-day readmissions. A readmission is defined as any admission, for any reason, to an IPF or a short-stay acute care hospital (including critical access hospitals) that occurs within 30 days after the discharge date from an eligible index admission to an IPF, except those considered planned. The measure uses the CMS 30-day Hospital-Wide Readmission (HWR) Measure Planned Readmission Algorithm, Version 4.0.	The count of index hospital admissions to IPFs (Denominator)	▪ Claims data	▪ ITS ▪ Descriptive statistics
	Perceptions of whether there was a decrease in preventable readmissions to acute care and specialty hospitals and residential settings		N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	▪ Thematic Analysis ▪ Triangulation
Goal 8: Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate. (SUD-5 in STCs)							
Primary Driver: Reduce ED	Research question 8.1: Was there a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD?						

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
admissions /readmissions for SUD and SMI/SED	Readmissions Among Beneficiaries with SUD	The rate of all-cause readmissions during the measurement period among beneficiaries with SUD	CMS-constructed SUD Monitoring Metric #25	The count of 30-day readmissions: at least one acute readmission for any diagnosis within 30 days of the Index Discharge Date.	The count of Index Hospital Stays for beneficiaries with SUD (Denominator)	Claims data	- ITS - Descriptive statistics
	Perceptions of whether there was a decrease in preventable or medically inappropriate readmissions to the same or higher level of care for beneficiaries with SUD		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
Goal 9: Improved access to care for physical health conditions among beneficiaries with SUD. (SUD-6 in STCs)							
Primary Driver: Improve care transitions and behavioral/ physical health coordination	Research question 9.1a: Was there an increase in access to care for physical health conditions among beneficiaries with SUD?						
	Access to Preventive/ Ambulatory Health Services for Adult Medicaid Beneficiaries with SUD	Percentage of Medicaid beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period	NCQA, Adjusted HEDIS Measure SUD Monitoring Metric #32	Number of Medicaid beneficiaries who had an ambulatory or preventive care visit during the measurement period	Number of Medicaid beneficiaries with a diagnosis of SUD during the measurement period (Denominator)	Claims data	- ITS - Descriptive statistics
	Receipt of behavioral health and physical health care from same provider		IMPAQ defined, with input from DHCF	Number of beneficiaries who report they have received behavioral health and physical health care from same provider	Total number of survey participants (Denominator)	Beneficiary Survey	- Descriptive Statistics - Regression - Thematic Analysis - Triangulation
			NA, Qualitative Measure			- Site Visits - Beneficiary Interviews	
	Research Question 9.1b: Did care coordination improve for beneficiaries with SUD?						

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
Secondary Driver: <i>Require and operationalize integrated, coordinated clinical care, particularly at care transitions</i>	Care coordination for beneficiaries with SUD	Beneficiary perceptions of how their health care providers work together	IMPAQ defined, with input from DHCF	Number of beneficiaries who rate their providers' collaboration highly	Total number of survey participants (<i>Denominator</i>)	Beneficiary Survey	- Descriptive Statistics - Regression
	Beneficiaries' experiences with coordinated care		N/A, Qualitative Measure			Beneficiary Interviews	Thematic Analysis
	Providers' experiences coordinating care		N/A, Qualitative Measure			Site Visits	Thematic analysis
	Utilization of transition planning service	Use of new transition billing service by eligible beneficiaries	IMPAQ defined, with input from DHCF	Number and percentage of eligible beneficiaries using the new transition planning service for beneficiaries with SUD	Medicaid mental health providers (<i>Denominator</i>)	Claims data	- ITS - Descriptive statistics
Secondary Drivers: <i>Offer technical assistance and training on clinical care coordination; Leverage existing grants and stakeholder collaborations to expand provider adoption of Health IT</i>	Research Question 9.1c: How did changes in care-coordination infrastructure influence experiences of care coordination for beneficiaries with SUD?						
	Strategies implemented by the District to facilitate Health IT adoption and interoperability (e.g., via improvements to the HIE, increased use of the PDMP)		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Challenges and facilitators to adopting and using Health IT		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Workflows for integrating HIE data into care-coordination efforts		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
	Perceptions of information available via HIE		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Content, format, and reach of the technical assistance and training given to providers related to care coordination	N/A, Qualitative Measure				▪ Document Reviews ▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the technical assistance and training given to providers related to care coordination	N/A, Qualitative Measure				▪ Site Visits	▪ Thematic Analysis
	Strategies implemented by the District to facilitate Health IT adoption and interoperability (e.g., via improvements to the HIE, increased use of the PDMP)	N/A, Qualitative Measure				▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
Primary Driver: <i>Improve care transitions and behavioral/physical health coordination</i>	Research question 9.1d: How does the implementation of requirements for IMDs to conduct psychiatric and medical screenings influence assessment and treatment of physical health conditions for beneficiaries with SUD?						
	Whether and through what mechanisms the District implements requirements for IMDs to conduct psychiatric and medical screenings	N/A, Qualitative Measure				▪ Document Reviews ▪ Key Informant Interviews	▪ Thematic Analysis ▪ Triangulation
	Perceptions of the extent to which requiring IMDs to conduct psychiatric and medical screenings influenced care coordination	N/A, Qualitative Measure				▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis ▪ Triangulation
	Perceived facilitators and barriers to conducting psychiatric and medical screenings in IMDs	N/A, Qualitative Measure				▪ Key Informant Interviews ▪ Site Visits	▪ Thematic Analysis
Goal 10: Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs and psychiatric hospitals and residential treatment settings throughout the District. (SMI/SED-3 in STCs)							
Primary Driver: <i>Expand access to the full range of SUD and SMI/SED services</i>	Research question 10.1a: Was there an increase in the availability of crisis stabilization services?						
	Any crisis stabilization service	Number and percentage of beneficiaries accessing crisis stabilization services	IMPAQ defined, with input from DHCF	Number and percentage of beneficiaries accessing crisis stabilization services	Medicaid beneficiaries in the demonstration or with SUD and/or SMI/SED enrolled for any amount of time during the measurement period (<i>Denominator</i>)	▪ Claims data	▪ ITS ▪ Descriptive statistics

Driver	Measure Name or Research Domain	Measure Description	Measure Steward, Endorsement	Numerator	Denominator/ Population of Interest	Data Source	Analytic Approach
	Crisis stabilization services, by setting	Number and percentage of beneficiaries accessing crisis stabilization services, by setting	IMPAQ defined, with input from DHCF	Number of beneficiaries receiving crisis stabilization service in the specified setting	Number of beneficiaries accessing crisis stabilization services (<i>Denominator</i>)	Claims data	- ITS - Descriptive statistics
	Awareness of available crisis stabilization services		N/A, Qualitative Measure			- Site Visits - Beneficiary Interviews	- Thematic Analysis - Triangulation
Secondary Driver: Revise/clarify reimbursement for crisis stabilization services, TREM, TST, and telemedicine	Research Question 10.1b: How does the Demonstration influence the availability of crisis stabilization services (i.e., CPEP, Psychiatric Crisis Stabilization Program, Youth Mobile Crisis Intervention, and Adult Mobile Crisis and Behavioral Health Outreach)?						
	Content of changes to the reimbursement methodology for crisis stabilization services		N/A, Qualitative Measure			- Document Reviews - Key Informant Interviews	- Thematic Analysis - Triangulation
	Awareness of changes to the reimbursement methodology for crisis stabilization services		N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of the extent to which reimbursement changes incentivize or facilitate increased availability of crisis stabilization services		N/A, Qualitative Measure			Site Visits	Thematic Analysis
	Perceptions of how the Demonstration influenced availability of crisis stabilization services		N/A, Qualitative Measure			- Key Informant Interviews - Site Visits	- Thematic Analysis - Triangulation
Goal 11: Reductions in overdose deaths, particularly those due to opioids. (SUD-3 in STCs)							
Primary Driver: All primary drivers	Research question 11.1: Was there a decrease in the rate of overdose deaths?						
	Opioid overdose deaths	Number and percentage of overdose deaths during the measurement period among Medicaid beneficiaries living in a geographic area covered by the demonstration.	SUD Monitoring Metric #26	Number of SUD overdose deaths during the measurement period among Medicaid beneficiaries	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period or the 30 days prior to the beginning of the measurement Period (<i>Denominator</i>)	Vital records data	- ITS - Descriptive statistics

Exhibit H describes the various cost measures that will be used to address the research questions related to the changes in the health care costs of the targeted beneficiaries in the Demonstration period along with the level of analysis and data sources. We will reference the waiver's monitoring protocol when defining the SMI/SED and SUD populations and their related costs. We will estimate the measures below separately for beneficiaries with SMI/SED and SUD. The MMIS data source includes FFS claims and MCO encounters.

Exhibit H: Types of Costs and Proposed Data Sources

Level of Analysis	Type of Beneficiaries	Type of Costs	Description/Data Source
Level 1: Total costs	SMI/SED	Total costs	Sum of benefit and administrative costs. ^a Data sources are MMIS and other DHCF administrative data (e.g., on waiver evaluation contract costs).
		Total federal costs	Total Medicaid costs * Federal medical assistance percentage (FMAP)
	SUD	Total costs	Sum of benefit and administrative costs. Data sources are MMIS and other DHCF administrative data (e.g., on waiver evaluation costs).
		Total federal costs	Total Medicaid costs * Federal medical assistance percentage (FMAP)
Level 2: Cost related to diagnosis and treatment	SMI/SED	SMI/SED-IMD costs	IMD costs for beneficiaries with SMI/SED. Data source is MMIS.
		Other SMI/SED costs	Benefit costs for SMI/SED care other than IMD stays. Data source is MMIS.
		Non-SMI/SED costs	Benefit costs for non-SMI/SED care. Data source is MMIS.
	SUD	SUD-IMD costs	IMD costs for beneficiaries with SUD. Data source is MMIS.
		Other SUD costs	Benefit costs for SUD care other than IMD stays. Data source is MMIS.
		Non-SUD costs	Benefit costs for non-SUD care. Data source is MMIS.
Level 3: Source of treatment cost drivers for beneficiaries in the target population	SMI/SED	Outpatient costs, non-ED	Types of costs will be defined using HEDIS, CMS or DHCF standards and may utilize claim type, procedure code, revenue code, place of service, provider type, and other data elements. Data source is MMIS.
		Outpatient costs, ED	
		Inpatient costs	
		Pharmacy costs	
		Long-term care costs	
	SUD	Outpatient costs, non-ED	Types of costs will be defined using HEDIS, CMS or DHCF standards and may utilize

Level of Analysis	Type of Beneficiaries	Type of Costs	Description/Data Source
		Outpatient costs, ED	claim type, procedure code, revenue code, place of service, provider type, and other data elements. Data source is MMIS.
		Inpatient costs	
		Pharmacy costs	
		Long-term care costs	

^a Benefit costs are defined as payments made by DHCF, or on behalf of DHCF by MCOs, to health care providers for services delivered to Medicaid beneficiaries. While the CMS guidance refers to inpatient [IP], outpatient [OT], pharmacy [RX], long-term care [LT] file types in Transformed Medicaid Statistical Information System (T-MSIS) as an example, equivalent data from DHCF's MMIS will be used in the cost analysis.

C.5 DATA SOURCES

To evaluate the Demonstration, the IMPAQ Team will use a combination of primary and secondary data sources. We will collect primary qualitative data through key informant interviews and site visits to Medicaid providers. We will also administer a beneficiary survey that will have questions designed to elicit further primary data, both quantitative and qualitative. We will abstract additional primary data through a document review. We will collect secondary data—Medicaid claims and other administrative data—in coordination with DHCF and DBH for the quantitative analysis. In addition, we will incorporate quantitative measures from the beneficiary survey to inform the quantitative analysis. To the extent feasible, we will leverage surveys already conducted by the District such as the DBH consumer satisfaction survey and the 2014–2015 CMS Center for Medicaid and CHIP (Children's Health Insurance Program) Services (CMCS) Nationwide Adult Medicaid Consumer Assessment of Healthcare Providers and Systems (CAHPS) and supplement the findings from the IMPAQ-administered beneficiary survey. In the sections that follow we describe how we plan to collect and use District-specific primary and secondary data for the evaluation.

C.5.1 Primary Data

The objectives of the primary data collection are to:

- Describe the systems changes that the District is able to make as part of the Demonstration, including the challenges and successes along the way.
- Assess the extent to which these systems changes facilitate achievement of Demonstration goals.
- Characterize provider and beneficiary awareness of and experiences with these systems changes.

There will be four sources of primary data for the evaluation: documents, key informant interviews, site visits, and beneficiary surveys. This section describes our methodology for collecting data from the first three data sources. The methodology for conducting the beneficiary surveys will be submitted in the Beneficiary Survey Methodology Memorandum.

Program Documents

The IMPAQ Team will conduct ongoing document reviews to stay abreast of the systems changes that are occurring under the Demonstration and the overlapping initiatives that may complicate or provide synergy to the Demonstration activities. Examples of key documents to review include:

- Demonstration Implementation Plans
- Demonstration Health Information Technology Plans
- Internal briefing materials about the Demonstration
- District policy (e.g., rules, legislation, contract language, care agreements)
- Provider guidance documents (e.g., Bulletins)
- Assessment and placement tools used to route beneficiaries to appropriate care
- Demonstration Monitoring Reports
- Stakeholder engagement and workgroup meeting materials
- Materials that describe relevant co-occurring initiatives (e.g., grant narratives, reports)

To identify relevant documents to review, the IMPAQ Team will monitor the SharePoint site DHCF has created for the evaluation, subscribe to public email listservs, such as the one the District maintains for the 1115 waiver, and ask key informants to share internal documents that are relevant to the evaluation. We also anticipate that the IMPAQ Team's weekly evaluation contract meetings with DHCF and DBH will provide information about relevant documents to review.

Key Informant Interviews

Each year during the Base Year–Option Year 3 period, we will conduct individual and/or small-group interviews with representatives from DHCF, DBH, DC Health, and District Medicaid health plans, as well as community stakeholders (e.g., DC Primary Care Association, DC Behavioral Health Association, Chesapeake Regional Information System for our Patients (CRISP) DC, DC Medical Care Advisory Committee (MCAC). The primary goals of the key informant interviews are to clarify information available via the document reviews as needed, to identify the challenges and facilitators to implementing Demonstration drivers, and to identify whether there are changes or delays to planned Demonstration activities associated with the COVID-19 public health emergency. Our goal is to interview individuals who are knowledgeable about the design, strategic planning, oversight, or systems-level implementation of waiver activities and relevant co-occurring activities in the District. Exhibit I provides a high-level overview of core topics to discuss during key informant interviews. We will work closely with DHCF to identify potential key informants who occupy relevant roles and to develop protocols for interview discussions tailored to each role.

Exhibit I: Proposed Discussion Topics for Key Informant Interviews

Discussion Topics
Historical context for current configuration of behavioral health payment and service delivery

Discussion Topics
Reimbursement/coverage strategies under the Demonstration
Policy strategies under the Demonstration
Changes or delays to Demonstration plans associated with COVID-19
Interagency and stakeholder relationships
Provider communications, technical assistance, and training
Co-occurring initiatives
Sustainability of Demonstration activities

When scheduling and logistics allow, our preference is to conduct key informant interviews in person. However, given the uncertainty of COVID-19, we are currently planning to conduct at least the first round of key informant interviews virtually. We anticipate that interviews that occur during the first round will last 60–90 minutes. Subsequent interviews will likely be shorter in duration. With the permission of interviewees, all interviews will be audio-recorded and transcribed. Real-time notetaking will also occur if interviewees prefer not to be audio-recorded or there is a technological failure.

Site Visits to Relevant Clinical Sites

We will conduct site visits during the Base Year, Option Year 2, and Option Year 3 of the evaluation contract period. The goals of the site visits are to characterize changes to the care-delivery continuum under the Demonstration, understand whether the drivers the District is using under the Demonstration are having the effect intended, and describe provider and beneficiary awareness and experiences of care and care coordination. In the Base Year, we will also use the site visits to characterize service and operational changes associated with COVID-19.

We recommend that the following organizations be prioritized for receiving a site visit:

- Assessment and Referral Centers (ARCs)
- Access Help Line (AHL)
- The Clubhouse
- The Psychiatric Institute of Washington
- St. Elizabeths Hospital
- The Comprehensive Psychiatric Emergency Program (CPEP)
- The Community Response Team (CRT)

We also suggest that when selecting additional clinical sites, we attempt to have some diversity within the following characteristics:

- ASAM Level of Care provided for SUD sites (e.g., outpatient, intensive outpatient, day treatment) and setting type for SMI/SED sites (e.g., core services agencies, Federally Qualified Health Centers (FQHCs), free-standing mental health clinics)

- Types of providers on staff (e.g., psychologists, psychiatrists, therapists, social workers, Advanced Practice Registered Nurses [APRNs], certified addiction counselors, peer providers)
- Geographic location
- Number of beneficiaries served
- Whether or not the site has expanded access to SUD and/or SMI/SED services, particularly those targeted by the Demonstration (Trauma Recovery and Empowerment Model (TREM), Trauma Systems Therapy (TST), transition planning)

Once sites have been selected, the IMPAQ Team will schedule an initial evaluation-briefing conference call with the participating site. Prior to the briefing, we will provide the site with materials that outline the core primary data-collection goals and the data-collection process. During the briefing call, the team will review the materials related to the evaluation and provide participants with an opportunity to ask questions. The team will also request any documents that can be used to characterize the services provided, identify the appropriate individuals to participate in key informant interviews and assess the feasibility of conducting interviews or focus groups with beneficiaries. At the conclusion of the briefing call, the team will identify the preferred approach to coordinating the logistics of the site visits. For example, the site may prefer to take the lead on coordinating the scheduling of interviews or provide contact information for site-visit key informants so that the evaluation team can schedule interviews.

The categories of site-visit key informants that we anticipate interviewing include:

- Executive leadership (e.g., CEO [Chief Executive Officer], CFO [Chief Financial Officer], COO [Chief Operating Officer])
- Staff responsible for regulatory compliance and governmental affairs
- Coding and billing staff
- Senior-level quality-improvement and innovation staff
- Clinical leaders (e.g., CMO [Chief Medical Officer], CNO [Chief Nursing Officer])
- Core implementing staff (e.g., clinicians, case managers, care coordinators/navigators, certified addiction counselors, peer counselors, intake, and other frontline staff)

Exhibit J provides a high-level overview of likely discussion topics for site-visit key informant interviews. Separate interview protocols for each type of site-visit key informant will be developed collaboratively with DHCF. We will also collaborate closely with DHCF to select sites to visit and key informants to interview based on the Demonstration priority areas and the need to minimize burden. For example, the evaluation team will crosswalk the list of organizations that we recommend for Demonstration site visits with the list of organizations that have participated in relevant interviews conducted by other District or stakeholder contractors and crosswalk the evaluation discussion topics with the reports associated with those efforts to avoid duplication.

Exhibit J: Sample Topics for Site Visit Interview and Focus Group Protocols

Sample Topics
Key Informants
Organizational description and background

Sample Topics
Impact of COVID-19 on services and operations
Perceptions of the reimbursement changes made through the Demonstration
Perceptions of policy changes made through the Demonstration
Perceptions of Demonstration-related communication, technical assistance, and training
Systems changes to implement changes made through the Demonstration
Experiences coordinating care throughout the continuum, particularly at care transitions
Perceptions and use of assessment and placement tools
Unmet beneficiary needs
Unmet provider needs
Sustainability of Demonstration activities
Beneficiaries
Awareness of available services
Removal of \$1 copay for certain MAT prescriptions
Experiences of care, with an emphasis on cultural competence
Experiences of care coordination, particularly at care transitions
Experiences of supported employment services
Experiences of the Clubhouse
Unmet needs

The duration of each site visit will depend on the number and types of key informant interviews agreed upon. However, we anticipate that the visits will occur over the course of ½ – 1½ days. To facilitate efficient data collection, we will conduct small-group interviews when possible (e.g., for individuals in similar roles). Site-visit interviews will occur in person if scheduling, logistics, and COVID-19 progress allow. Each interview will last approximately 60 minutes and be audio-recorded and transcribed if interviewees permit. Real-time note taking will also occur if interviewees do not feel comfortable with audio-recording or if there is a technological failure.

If feasible, we will also conduct 30-minute individual interviews or 60-minute focus groups with beneficiaries during site visits. These interviews/focus groups will occur at the site or other convenient location (e.g., a community-organization facility). The IMPAQ Team will work closely with DHCF and site staff to assess the feasibility of collecting data with beneficiaries during site visits and identify the best option for recruiting beneficiaries if feasible. There are four likely options that have tradeoffs regarding selection bias associated with recruitment and likely response rates.

Option 1. Sites will provide the names and contact information of their Medicaid beneficiaries. We will then select a random sample of these patients to contact, screen, and solicit their participation in the evaluation. This option would reduce selection bias associated with recruitment, but may result in low response rates as the evaluation team does not have a relationship with beneficiaries and contact information may not be up to date (as is often the case in this type of hard-to-reach population).

Option 2. We will develop a contact information/release form for Medicaid beneficiaries. Site staff will ask patients as they interact with them whether they agree to have their contact information released to our staff for the purposes of requesting their participation in the evaluation. These staff will submit to us the names and contact information for patients who consent. We will then select a random sample of these patients to contact, screen, and solicit their participation in the evaluation. This option may introduce selection bias associated with recruitment as site staff may not ask all beneficiaries they interact with.

Option 3. We will develop a recruitment flyer and request that site staff hand the flyer to patients as they interact with them. Patients who are interested can contact us based on the information in the flyer, at which point we will screen and recruit participants. This option is likely to create the greatest problems with selection bias associated with recruitment and response rates because (1) staff may not give the flyers to all beneficiaries and (2) the approach relies on the beneficiary to initiate contact with the evaluation team.

Option 4. We will allow the sites to recruit patients to participate in the evaluation. We will provide relevant staff with recruitment scripts, as well as written and verbal instructions on how to recruit using methods that are consistent with human-subject protections and that minimize selection bias. This option is likely to generate the best response rate. However, it also is likely to introduce selection bias associated with recruitment because staff may focus on beneficiaries with whom they have a strong relationship or those they believe would be most willing to participate in the evaluation.

Options 1 or 4, in that order, are our preferred recruitment strategies as they offer the best tradeoffs in terms of selection bias associated with recruitment and likely response rates. However, experience suggests that sites may be reluctant to provide us with the names and contact information for their patients, even if appropriate protections are promised through data-use agreements (DUAs), and relying on sites to recruit beneficiaries may be too burdensome. Thus, we will work with sites to develop a strategy that is mutually satisfactory.

It is important to acknowledge that the Demonstration is targeting a vulnerable and marginalized population, whose members may be reluctant to participate in interviews or focus groups due to general distrust of research, particularly by outsiders, or the stigma associated with their conditions. Thus, we will also collaborate closely with site staff to devise strategies to mitigate these recruitment challenges and ensure that all site visitors are well versed in cultural competence, non-stigmatizing language, and harm reduction.

If the COVID-19 public-health emergency persists, we will conduct the site visits virtually. During the virtual site visits, interviews and focus groups for each site would still be scheduled to occur over the course of $\frac{1}{2}$ – $1\frac{1}{2}$ days; however, we would facilitate the discussions using Zoom or Microsoft Teams. We would request that site-visit participants use the audio and video capabilities of the platform we select and provide instructions on how to test their system's capabilities relative to the platform in advance to prevent technological disruptions. Virtual focus groups with laypersons are often difficult to facilitate and yield less rich data than in-person focus groups and virtual interviews; thus, we would recommend that only one-on-one interviews with beneficiaries be considered if we have to conduct virtual site visits.

Beneficiary Survey

The evaluation includes a beneficiary survey. The plans for the beneficiary survey are still being finalized as part of the IMPAQ submission and DHCF and CMS review of the Beneficiary Survey Methodology Memorandum. The Memorandum will include detailed information about the sampling and recruitment methodology, questionnaire, and plans for fielding the survey, including materials to support respondent-recruitment communications. Here, we provide a high-level summary of the current plans for the survey.

We expect to have two rounds of the survey with data collected through telephone interviews and the web. The first round of the survey will occur February – April 2021 (Demonstration Year 2). The second round of the survey will occur November 2023 – January 2024 (Demonstration Year 3 and 4). The target population of the beneficiary survey will be any Medicaid beneficiary of the District diagnosed with an SUD or SMI. We will select a sample that contains proportions

of beneficiaries with SUD, SMI, and SUD&SMI that reflect the proportions of sample frame Medicaid beneficiaries with SUD, SMI, and SUD&SMI. Based on administrative data provided by DHCF (see Section C.2), this is expected to correspond to a sample of 334 beneficiaries with SUD only, 935 beneficiaries with SMI only, and 401 beneficiaries with both SUD and SMI for a total sample size of 1,670 beneficiaries per survey round. Our goal response rate is 30 percent, or 500 completed surveys.

Our goal is to use the survey to collect data on:

- Awareness of care and services available;
- Care coordination;
- Perceptions of services;
- Barriers to access/utilization;
- Perceived health status;
- Suggestions for improvement;
- Adherence to treatment;
- Behavioral and physical health care integration;
- Utilization of services available; and
- Beneficiary characteristics and social determinants of health.

Where appropriate, we will include survey items from other validated surveys (such as the CAHPS Experience of Care and Health Outcomes Survey, which captures beneficiary experiences with behavioral health services) in order to minimize measurement error and maximize reliability and validity. We will use CMS-recommended practices to guide and inform the process of designing the survey.³⁰ If it is not feasible to collect data on all the desired topics via the survey (e.g., due to length constraints or because there is not language that beneficiaries would recognize for certain services), we will assess these topics via the beneficiary interviews.

To the extent feasible, we will also leverage surveys already conducted by the District, such as the DBH consumer satisfaction survey and the 2014–2015 CMS CMCS Nationwide Adult Medicaid CAHPS and supplement the findings from the IMPAQ-administered beneficiary survey.

C.5.2 Secondary Data

Data Sources

The evaluation will independently calculate evaluation-related measures using Medicaid FFS and Managed Care Program (Medicaid MCO) claims data, as well as administrative data such as lists of Medicaid providers certified to provide Demonstration-relevant services. The Medicaid claims data, along with Medicaid beneficiary enrollment data and other DHCF data, will come from the District's Medicaid Management Information System (MMIS) accessed through the

³⁰ Mathematica. (2019 Jun). *Beneficiary survey design and administration for eligibility and coverage demonstration evaluations*. Retrieved from: <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/1115-beneficiary-survey-guide.pdf>

Medicaid Data Warehouse (MDW). Additional administrative data needed for the evaluation will be extracted from data sources such as CRISP (the District's HIE) and the databases of DBH, including specific clinical systems, such as DBH's electronic medical record system iCAMS and DATAWITS, the District's Automated Treatment Accounting System. Vital records data on overdose deaths during the baseline and Demonstration periods will be sourced from the Office of the Chief Medical Examiner (OCME) for the District of Columbia, and will include name, date of birth, gender, date of death, and cause of death. The vital records data is expected to be available by March 2021, after a memorandum of agreement is executed between DHCF and OCME.

The DC MCO encounter data on claims paid by managed care plans have a similar level of quality and completeness as the FFS claims data. The MCO encounter claims include information on the actual payments to providers. No further imputation of costs is necessary and we can use the MCO encounters in the same fashion as the FFS claims when we conduct the cost analysis.

A limitation of the secondary data sources is that DHCF may not have complete crossover claims data on dual-eligibles (particularly for those in Medicare Advantage plans), and thus analyses on the dual subpopulation might not capture the full effect of the Demonstration. (See Section D for a discussion of methodological limitations.)

Quantitative Data Management

The IMPAQ Team will access the MDW directly and create analytic datasets. DHCF and DBH will provide additional administrative data as aggregate data extracts to the IMPAQ Team. These data will be exported out of MDW and transferred to IMPAQ's Federal Information Security Management Act (FISMA)-compliant secure server. The data will be transferred to IMPAQ's secure servers using SSH [Secure Shell] File Transfer Protocol (SFTP). All confidential data are stored and protected in the Data Zone of the FISMA server. The server has capacity for data analysis using SAS, STATA, and NVivo, among others.

The IMPAQ Team will verify the integrity of the data received from DHCF and DBH by implementing data-validation checks immediately on receipt. Only authorized research staff will access the project-related folders on the FISMA server to execute queries, extract data, and run various scientific, analytical, and programming applications. All data use is recorded in detailed logs to track access and activities.

IMPAQ has procedures and processes in place to ensure that all quantitative data-processing activities produce high-quality outputs. For analytic tasks, quality-assurance procedures encompass three types of activities: (1) all data-analysis programmers will use strong coding standards to ensure that the resulting code is well documented, consistently formatted, and easy to read; (2) all programmers will also use programmer self-checks, with a variety of techniques that test program code to assess whether it accomplishes its intent; and (3) programmers will use peer reviews in which a programmer not involved in the original work formally reviews the written code.

C.6 ANALYTIC METHODS

C.6.1 Qualitative Data Analysis

All documents and primary data collected will be housed in an NVivo database on IMPAQ's secure server. We will begin the analysis process by developing a start list of codes based on the driver diagram, research questions, and data-collection protocols. We will refine this start list of codes based on insights gleaned through data-collection debriefs. Once we have a stable

code book, the evaluation team will systematically code the data using the code book. In the early phases of the coding, we will conduct checks for inter-rater reliability to ensure standardized, thorough, and precise coding. After data have been coded, we will draw conclusions from the data by identifying and interpreting coding patterns, such as high-frequency codes and coding clusters. The overarching analytic framework that we will use for the qualitative analysis is data triangulation. Triangulation methods begin with the assumption that each data point (i.e., document, interview, focus group) is one piece of evidence as it relates to the analyses above and that this information may be complementary, contradictory, or confirmatory when compared to other data sources. Thus, the analytic task is to synthesize the data provided across data sources to develop the most comprehensive and accurate description and analyses of the Demonstration possible. The evaluation team will ensure that assessments of the influence of COVID-19 on the Demonstration are conducted throughout the analytic process.

C.6.2 Quantitative Data Analysis

We will first report simple summary statistics by pre- vs. post-Demonstration periods to assess how the measures change over time. The summary statistics on quantitative measures will include mean, minimum, maximum, and standard deviation, among others. We will identify seasonal patterns, outliers, and anomalies as we explore the data using a data visualization approach, which will also inform the specifications of the regression models. Furthermore, for measures successfully defined for sub-populations, in addition to creating simple summary statistics by pre- vs. post-Demonstration periods, we will also conduct t-tests to see if there exist statistically significant differences between the measures across sub-groups, during the pre- and post-Demonstration periods.

For survey-based measures, we will tabulate the answers for key questions and illustrate using bar charts or pie charts as applicable. Where meaningful, we will conduct t-tests to see if there exist statistically significant differences in the measures across the two waves of the survey.

Impact Analysis – District-Quarter Level Analysis using an ITS Design

The main impact analysis will use an ITS design, which is a robust research design when a quasi-experimental approach requiring a comparison group is not feasible.^{31, 32, 33, 34} A comparison group is not feasible because all eligible Medicaid beneficiaries in the District are considered to be participating in the Demonstration, their participation begins at the same time, and obtaining access to claims and administrative data for other states is out of scope for this project.³⁵ This design is particularly suited for interventions introduced at the population level that have a clearly defined time period and targeted health outcomes.

³¹ Soumerai, S. B., Starr, D., & Majumdar, S. R. (2015). How do you know which health care effectiveness research you can trust? A guide to study design for the perplexed. *Preventing Chronic Disease*, 12, E101.

³² Wagner, A. K., Soumerai, S. B., Zhang, F., & Ross-Degnan, D. (2002). Segmented regression analysis of interrupted time series studies in medication use research. *Journal of Clinical Pharmacy and Therapeutics*, 27(4), 299–309.

³³ Bernal, J. L., Cummins, S., & Gasparrini, A. (2017). Interrupted time series regression for the evaluation of public health interventions: A tutorial. *International Journal of Epidemiology*, 46(1), 348–355.

³⁴ Ewusie, J. E., Soobiah, C., Blondal, E., Beyene, J., Thabane, L., & Hamid, J. S. (2020). Methods, Applications and Challenges in the Analysis of Interrupted Time Series Data: A Scoping Review. *Journal of multidisciplinary healthcare*, 13, 411–423. <https://doi.org/10.2147/JMDH.S241085>

³⁵ We have explored the feasibility of using out of state data, such as the Transformed Medicaid Statistical Information System Analytic Files Research Identifiable Files (TAF RIF), and using another state (or a

The ITS design compares the trend of each outcome of interest after Demonstration implementation with the outcome trend that would have occurred if the pre-Demonstration trend had continued after implementation. The difference between an ITS and a pre-post design is that the ITS design compares the actual outcome trend in the post-period to the baseline outcome trend projected into the post-period. Alternatively, the pre-post design compares the mean of the outcome in the post-period to the mean of the outcome in the baseline period. As a result, the ITS design will provide a more accurate estimate than the pre-post design if there was a trend in the outcome of interest in the baseline period and if that trend would have continued after implementation of the Demonstration.

The disadvantage of both the pre-post and ITS designs is that programs or events occurring at the same time as the Demonstration could confound the impact estimates they produce. We do not anticipate that it will be feasible to fully separate out the impact of certain services from the Demonstration because the services overlap, and they are implemented concurrently or nearly concurrently. In addition, there are several concurrent programs targeting a similar population and similar outcomes. To the extent feasible, we will control for concurrent programs. If there are District-level factors that are changing quickly or unpredictably throughout the sample period, they should be included in the model as covariates. The prime example would be characteristics from other programs happening concurrently with the Demonstration or variation in provider implementation of key Demonstration activities. We will use qualitative data to inform covariate data for the regression models. However, we anticipate that the ITS design will likely estimate the combined impact of the services of the Demonstration as well as that of concurrent programs.

In light of the potential effects of the COVID-19 pandemic on the evaluation, the ITS design may be a relatively robust approach, because this design uses many observations over a long period and does not require (1) a known trajectory for the pandemic or its effects or (2) a similar comparison group.

For the reasons described above, the unit of analysis for the primary specification of the claims-based impact analysis implemented using the ITS design will be the District-quarter. Estimating the model at the District level will allow us to obtain the impact of the Demonstration and concurrent programs on outcomes for the entire District. The estimates from the model are also more directly interpretable from a policy perspective.

We propose splitting calendar years into quarters because quarters are a suitably granular length of time for controlling for outcome trends and used in many CMS evaluations. However, we will also test the model using months to identify which specification of the model performs best. One consideration is that there is strong seasonality in the receipt of behavioral health

metropolitan area) as the comparison group and potentially conducting analysis using frameworks such as difference-in-differences (DID). However, we think TAF RIF is not an adequate data source for two reasons. First, the data lag of the TAF RIF means that analyses using another state will not be feasible for the interim evaluation report, and only be feasible for the summative evaluation report, in which we may evaluate the impact of the Demonstration during the first two years of the Demonstration. However, such a short period of analysis from the early years of the Demonstration is unlikely to produce reliable findings about the full impact of the Demonstration, especially given the likelihood that the COVID-19 public health emergency will likely be a huge confounding factor (that is, different states will have different responses during the pandemic, making it difficult to isolate Demonstration effects from the pandemic effects). Second, according to CMS guidance in the "Implications of Covid-19 for Section 1115 Demonstration Evaluations: Considerations For States and Evaluators," using interrupted time series analysis may be a relatively robust approach, because this design uses many observations over a long period and does not require (1) a known trajectory for the pandemic or its effects or (2) a similar comparison group. Because the pandemic is still evolving, it is difficult to determine which state (or a metropolitan area) could potentially be a good comparison group at this stage. Therefore, we recommend not using a comparison group and using the ITS design for this evaluation.

services, so whether monthly or quarterly seasonality in behavioral health services is stronger will be a factor in the final model specification.

We will implement the ITS design using a regression model specified as follows:

Equation 1: $Y_t = \beta_0 + \beta_1 time_t + \beta_2 demo_t + \beta_3 time\_after\_demo_t + X_t + \varepsilon_t$

Where:

- Y_t is the outcome in time period t (assume quarters). An example of the outcome could be the number of providers who were enrolled in Medicaid and qualified to deliver SUD services during time period t .
- $time_t$ indicates the number of quarters from the first quarter of the baseline period (January 1, 2017, to December 31, 2019)
- $demo_t$ is an indicator variable taking the value of 0 in the baseline period and 1 in the post-period (the period starting January 1, 2020).
- $time\_after\_demo_t$ equals 0 in the baseline period and in the post-period takes on the value of the number of quarters from the first post-period quarter. That is, the first post-period quarter takes on a value of 1, the second post-period quarter takes on a value of 2, etc.
- X_t represents District-level characteristics that change over time. The ITS design assumes that District-level characteristics are either fixed or changed slowly over time so that they are captured by the linear trend. If there are District-level factors that are changing quickly or unpredictably throughout the sample period, they should be included in the model as covariates. The prime example would be characteristics from other programs happening concurrently with the Demonstration or variation in provider implementation of key Demonstration activities. We will use qualitative data to inform covariate data for the regression models. Another example would be proxies for the exposure to the COVID-19 pandemic, such as the number of COVID-19 cases per 100,000 DC population in each quarter.³⁶
- β_0 estimates the base level of the outcome in the first quarter of the baseline period or the intercept at the baseline.
- β_1 estimates the baseline trend. It is the change in the outcome in the baseline period or the slope of the trend in the baseline period.
- β_2 estimates the change in level of the outcome from the baseline period to the post-period or the change in the intercept after the post-period started. This is one of the policy parameters of interest.
- β_3 estimates the post-period trend. It is the change in the outcome in the post-period or the slope of the trend in the post-period. This is one of the policy parameters of interest.
- Depending on the features of the observed data, we will explore replacing $time\_after\_demo_t$ with two (or more variables) to indicate the first- and the second-half

³⁶ The best practices for isolating demonstration effects in the context of the pandemic are not settled yet. The best measures to proxy the severity of the pandemic and exposure to the pandemic are also controversial and not settled yet. We will finalize our approach as more information and guidance become available throughout the evaluation process.

(or more) of the post-period. This will generate a more versatile specification that can reflect the non-linear effects of the Demonstration during the post-period. This strategy of splitting the post-period and estimating effects separately by period may also be useful as a sensitivity test to assess the potential effects of the COVID-19 pandemic on the Demonstration and the impact estimation. For example, we will explore splitting the post-period as (1) 2020 Quarter (Q)1-Q2, and (2) 2020 Q3 and later to assess if the effects of the pandemic are stronger in the first quarters of 2020.

- ε_t is the error term.

The standard regression model for an ITS design is a linear regression model. However, there are several assumptions of the regression model which, if not met, may cause bias or imprecision in the estimates. As a first step to address possible violations of the assumptions, we will use heteroscedasticity and auto-correlation consistent standard errors.³⁷ We will then investigate whether other violations of the model assumptions exist. We discuss below two examples of potential violations, and the associated tests and solutions.

First, errors should not be correlated over time. We will test this assumption by constructing auto-correlation plots of the residuals. In addition, we will conduct a Durbin-Watson test to detect auto-correlation.³⁸ If the Durbin-Watson test is below 1 or above 3, there is an indication of serial correlation. In this case, we would test whether an auto-regressive model, such as the Cochrane-Orcutt model or the auto-regressive integrated moving average (ARIMA) model, performs better than linear regression.^{39, 40} Mortality and behavioral health outcomes are typically highly auto-correlated at a quarterly frequency and provider level, so we are prepared to apply the appropriate auto-regressive model based on the results of the testing.

Second, the variance of errors should be constant over time (homoscedasticity). In addition to using heteroscedasticity-robust standard errors, we will test for the presence of heteroscedasticity using a plot of residuals versus predicted values. The points should be symmetrically distributed around a horizontal line with roughly constant variance. If they are not, the data may be nonlinear, and we will test the option of transforming the outcome measure using logging or deflating. The effects of the Demonstration are likely to be non-linear, and there is likely to be high heterogeneity in terms of providers and beneficiaries, so we anticipate that transformation may be necessary at least for some outcomes.

Exhibit K illustrates different types of impact models estimated from an ITS design: (a) Level change; (b) Slope change; (c) Level and slope change; (d) Slope change following a lag; (e) Temporary level change; (f) Temporary slope change leading to a level change.⁴¹ Our specification (Equation 1) is flexible to account for all these types of relationships. For each measure, we will experiment with different model specifications and select the model with the

³⁷ Kiefer, N. M., & Vogelsang, T. J. (2002). Heteroskedasticity-autocorrelation robust standard errors using the Bartlett kernel without truncation. *Econometrica*, 70(5), 2093–2095.

³⁸ Savin, N. E., & White, K. J. (1977). The Durbin-Watson test for serial correlation with extreme sample sizes or many regressors. *Econometrica*, 45(8), 1989–1996.

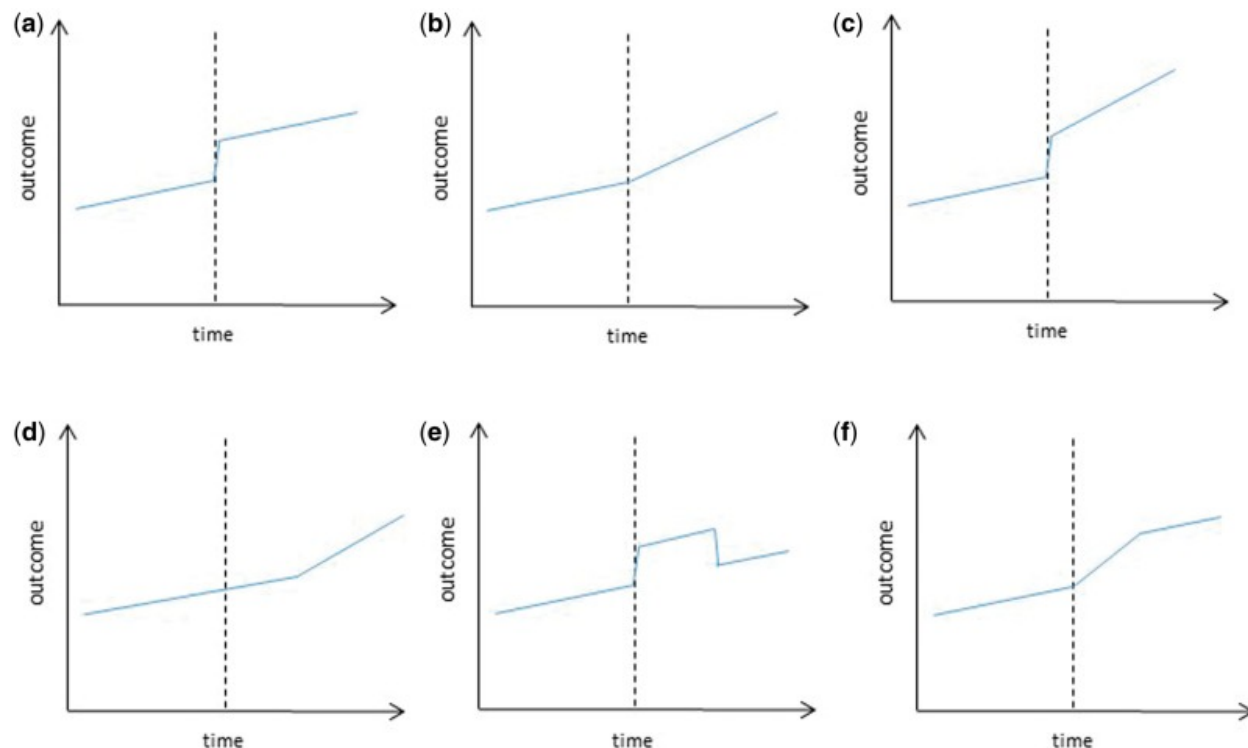
³⁹ Betancourt, R., & Kelejian, H. (1981). Lagged endogenous variables and the Cochrane-Orcutt procedure. *Econometrica*, 49(4), 1073–1078.

⁴⁰ Nelson B. K. (1998). Statistical methodology: V. Time series analysis using autoregressive integrated moving average (ARIMA) models. *Academic emergency medicine: official journal of the Society for Academic Emergency Medicine*, 5(7), 739–744. <https://doi.org/10.1111/j.1553-2712.1998.tb02493.x>

⁴¹ Bernal, J. L., Cummins, S., & Gasparrini, A. (2017). Interrupted time series regression for the evaluation of public health interventions: a tutorial. *International journal of epidemiology*, 46(1), 348–355.

best fit. We will provide scatter plots of each measure over time along with the fitted model in the evaluation reports.

Exhibit K: Illustration of Potential ITS Relationships



Note: Examples of impact models used in ITS (a) Level change; (b) Slope change; (c) Level and slope change; (d) Slope change following a lag; (e) Temporary level change; (f) Temporary slope change leading to a level change.⁴²

We will also explore measures defined for sub-populations and use beneficiary-group by quarter as the unit of analysis to separately estimate the impact of the Demonstration for each beneficiary-group, if population sizes are sufficiently large to allow for the measures to be defined. Some of the sub-groups of interest include dual/non-dual status and Medicaid FFS/managed care status. We will estimate Equation 1 separately for each sub-group and report the estimated coefficients. The covariates for the sub-group analyses will be the same as those for the main analyses. We will also conduct statistical tests such as z-tests to see whether the estimated coefficients are statistically significantly different across sub-groups.^{43, 44}

Impact Analysis – Individual-Year Level Analysis using a Fixed effects Model

The district-quarter level analysis using an ITS design is our primary model. However, there could be a concern that the number of observations (the number of quarters under the

⁴² Ibid.

⁴³ Clogg, C. C., Petkova, E., & Haritou, A. (1995). Statistical methods for comparing regression coefficients between models. *American Journal of Sociology*, 100(5), 1261-1293.

⁴⁴ Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology*, 36(4), 859-866.

Demonstration) might not be sufficiently large enough for the detection of statistically significant effects associated with the Demonstration. This is more of a concern at the stage when we conduct analysis for the interim evaluation report. Furthermore, the type of covariates allowed for in the district-level ITS model is limited and may mask the heterogeneity of effects at the individual level within the District's Medicaid population.

Therefore, to supplement the District-quarter level analysis, we will also conduct an individual-year level analysis for a select subset of outcomes, preferably using an individual-level fixed effects model.⁴⁵ The individual-level fixed effects model analysis requires panel data in which the same individual is observed for multiple periods, and thus individual-fixed effects can be included to capture any unobserved factors that affect the outcomes but do not vary over time. This is an effective way to remove individual-level time-invariant confounding factors such as individuals' unobservable underlying health conditions, preference and motivation for seeking treatment, etc., which cannot be controlled for in a District-quarter level ITS model.

The individual level analysis may also help isolate Demonstration effects from the COVID-19 pandemic effects through subgroup analysis. For example, one concern of the effects of the COVID-19 pandemic on the evaluation is that the number of Medicaid beneficiaries might increase as people experience adverse economic shocks, which in turn affects the denominator of measures such as "Medicaid Beneficiaries with Newly Initiated SUD Treatment/Diagnosis." We will explore the feasibility of comparing the measures defined among "incumbent Medicaid beneficiaries" and among "new Medicaid beneficiaries" and see if there are significant differences. In addition, we will also define both the "conditional" (percentage) and "unconditional" (counts of numerator) measures to see if there are differential changes in the denominator and the numerator.

The individual level analysis will be implemented with a fixed-effects model specified as follows:

$$\text{Equation 2: } Y_{it} = \beta_0 + \beta_1 \text{demo}_t + X_{it} + \theta_i + \theta_t + \varepsilon_{it}$$

Where:

- Y_{it} is the outcome for individual i in year t . An example of the outcome is an indicator variable that equals 1 if beneficiary i (with SMI/SED) had an ED visit during year t .
- demo_t is an indicator variable taking the value of 0 in the baseline period and 1 in the post-period (the period starting January 1, 2020).
- β_1 is the parameter of interest, and it captures changes associated with the Demonstration at the individual level.
- X_{it} denotes individual-level characteristics that vary over time. An example is the number of chronic conditions individual i has in year t .
- θ_i denotes the individual fixed effects.
- θ_t denotes the year fixed effects.
- ε_{it} is the error term.

⁴⁵ This analysis is not applicable for all outcomes listed in Exhibit G. For example, this analysis will not be applicable for provider outcomes such as the "SUD provider availability" and "Mental health providers," measures that can only be observed once for each individual such as "opioid overdose deaths," and measures that are only observed during the Demonstration period such as the survey measures.

This specification might not be feasible for all outcomes of interest. The reason is that it might be challenging to have a balanced panel—all the beneficiaries in the sample have observations in all the time periods—with a large enough sample size (relative to the sample used to compute the District level outcomes for ITS). Because not all individuals can be observed for multiple periods in the claims data, the sample for this analysis is a sub-set of the universe of individuals in the main ITS analysis at the District level. We will construct summary statistics and explore the difference between this sub-sample and the ITS sample to assess the degree of selection, if any. If we find that the bias of non-random missing values could outweigh the benefits of an individual fixed-effects model, we will analyze the same sample using a model without the individual fixed effects. The latter model estimated from repeated cross-sectional data at the individual level will include individual-level covariates and will still provide additional statistical power and evidence that would complement the ITS analysis at the District level.

Regression Analysis of Beneficiary Survey Data

Although the beneficiary survey covers the Demonstration period only, two rounds of data are available with the first round from the first year of the Demonstration itself (baseline survey). The survey data will contain information not available through claims and a relatively large set of variables on respondents' characteristics. Therefore, in addition to descriptive analysis, we will conduct regression analysis of the survey data. The regression-based analysis will assess if there are changes in self-reported outcomes associated with the later round of the survey (endline survey) relative to the baseline.

We will estimate a regression model specified as follows:

$$\text{Equation 3: } Y_i = \beta_0 + \beta_1 \text{Endline}_i + X_i + \varepsilon_i$$

Where:

- Y_i is the outcome for respondent i . An example of the outcome is an indicator variable that equals 1 if respondent i is aware of the available SUD treatment and services, and 0 otherwise.
- Endline_i is an indicator variable taking the value of 1 if the respondent is a participant of the endline survey, and 0 otherwise.
- β_1 is the parameter of interest, and it captures changes associated with the endline survey relative to the baseline survey, which reflects part of the changes associated with the Demonstration.
- X_i denotes respondent characteristics for respondent i . Examples include race/ethnicity and age groups.
- ε_i is the error term.

If feasible, we will conduct sub-sample analysis and see if these changes differ across respondents in different sub-groups.

Cost Analysis

The goal of the cost analysis is to better understand the Medicaid program costs for beneficiaries with SMI/SED and SUD, the factors driving these costs and how this may evolve over the course of the demonstration. We will conduct three levels of cost analysis following

CMS guidance on conducting cost analyses for 1115 waiver demonstrations.⁴⁶ All the analyses will be conducted separately for beneficiaries with SMI/SED and beneficiaries with SUD.

All cost outcome measures will be expressed in terms of dollars per beneficiary per month (PBPM). Analyses at all levels will utilize actual MCO payments to providers. The cost outcomes by level of analysis and populations are defined as follows (the detailed cost outcome measures are defined in Exhibit H).

- Level 1:
 - The first level of analysis will reflect total costs. This calculation will be the sum of benefit and administrative costs. There will be separate analyses for SMI/SED beneficiaries and SUD beneficiaries.
- Level 2:
 - The second level of analysis will reflect costs related to SMI/SED and SUD. This level of analysis identifies cost drivers by splitting out costs associated with an SMI/SED diagnosis and/or services, or with an SUD diagnosis and/or services. There will be separate analyses for SMI/SED beneficiaries and SUD beneficiaries.
- Level 3:
 - The third level of analysis will identify source of treatment cost drivers. This level of analysis identifies cost drivers for the target population—beneficiaries with SMI/SED or beneficiaries with SUD—by splitting out benefit costs that include outpatient, inpatient, prescription drugs and long-term care costs. We will separate ED-related outpatient costs from other outpatient costs. There will be separate analyses for SMI/SED beneficiaries and SUD beneficiaries.

We will follow CMS guidance to construct the dataset used in the cost analysis. There will be separate datasets for beneficiaries with SMI/SED and SUD. We will take the following approach, as directed in CMS guidance:

- We will identify eligible beneficiaries with a relevant diagnosis and/or treatment during the specified time periods and create a beneficiary-month dataset. The dataset will identify each month that a beneficiary has a relevant diagnosis and/or treatment and enrollment in the months following the relevant diagnosis and/or treatment.
- The analysis will identify the first month in which a relevant diagnosis or treatment occurred for SMI/SED or SUD and identify the 11 months following (as long as the beneficiary remained enrolled in Medicaid).
- If a beneficiary has additional claims with the relevant diagnosis and/or treatment code values, the observation period included in the analysis will be extended to include up to 11 additional months following the subsequent claims if the beneficiary remained enrolled in Medicaid. For each month in which a beneficiary is enrolled, the data file will contain an observation with the beneficiary's Medicaid costs in that month (for each of the cost outcome variables) and demographic characteristics.

⁴⁶ <https://www.medicaid.gov/medicaid/section-1115-demo/downloads/evaluation-reports/smi-sed-sud-cost-appendix-c.pdf>. While the CMS guidance refers to inpatient [IP], outpatient [OT], pharmacy [RX], long-term care [LT] file types in Transformed Medicaid Statistical Information System (T-MSIS) as an example, equivalent data from DHCF's MMIS will be used in the cost analysis.

From the beneficiary-month dataset, we will calculate and report average costs. We will plot the means of costs to show trends visually and to verify that month-to-month variation is within expectations and does not indicate an underlying data error.

Like the main evaluation strategy, we will use an ITS model to assess trends in costs over time. This model can estimate different linear effects in the pre-demonstration and post-demonstration periods. We will include three pre-Demonstration years. We will report marginal effects and standard errors in the evaluation reports. We will run separate ITS models for each cost outcome and each beneficiary type (SMI/SED or SUD), and the model is specified as follows:

$$\text{Equation 4: } Cost_{it} = \beta_0 + \beta_1 time_t + \beta_2 demo_t + \beta_3 time_t \times demo_t + X_{it} + \theta_t + \varepsilon_{it}$$

Where:

- $Cost_{it}$ is the cost outcome, for example, the total cost, of beneficiary i during month t .
- $time_t$ indicates the number of quarters from the beginning of the baseline period (January 1, 2017, to December 31, 2019).
- $demo_t$ is an indicator variable taking the value of 0 in the baseline period and 1 in the post-period (the period starting January 1, 2020).
- X_{it} denotes covariates, such as age, gender, race, and dual Medicare-Medicaid enrollment.
- β_0 estimates the base level of the outcome in the first month of the baseline period or the intercept at the baseline.
- β_1 estimates the baseline trend. It is the change in the outcome in the baseline period or the slope of the trend in the baseline period.
- β_2 estimates the change in level of the outcome from the baseline period to the post-period or the change in the intercept after the post-period started.
- β_3 estimates the post-period trend. It is the change in the outcome in the post-period or the slope of the trend in the post-period.
- θ_t denotes the month-fixed effects.
- ε_{it} is the error term.

The estimates from the ITS model demonstrate the trends in PBPM costs in the treatment group. If the average marginal effect of the interaction term ($\beta_3 time_t \times demo_t$) is a positive dollar amount, then the costs in the post-Demonstration period are higher than the costs in the pre-Demonstration period. If the interaction term is a negative dollar amount, then the costs in the post-Demonstration period are lower than in the pre-Demonstration period. We will also assess whether the effect is statistically significantly different from zero. ITS models without a comparison group cannot determine whether any observed changes are caused by the Demonstration.

While we will conduct cost analyses separately for SMI/SED beneficiaries and SUD beneficiaries, beneficiaries with both SMI/SED and SUD are included in both sets of analyses. The post-Demonstration changes in costs for beneficiaries with both SMI/SED and SUD could

be different from those with either SMI/SED or SUD only. We will conduct sub-group analyses to assess whether such differences are observed by type of beneficiary.

D. METHODOLOGICAL LIMITATIONS

In this section, we summarize the main limitations to our methodological approach. Exhibit L describes the potential challenges we will face with the quantitative and qualitative analysis and provides potential solutions for mitigating these limitations.

Exhibit L: Anticipated Methodological Limitations

Challenge/Limitation	Solution
Quantitative Methods	
Because all eligible Medicaid beneficiaries are considered to be participating in the Demonstration, their participation begins at the same time, and obtaining access to administrative claims data or performing data collection for other states is out of scope of this project, there is no appropriate comparison group that is not affected by the Demonstration to compare to the Demonstration group.	Following CMS evaluation guidance, we will use an ITS design to evaluate the effects of the Demonstration, which is the preferred methodology when there is no appropriate comparison group.
Data features such as serial correlation and heteroscedasticity may pose inferential challenges to the ITS design.	We will test for both serial correlation and heteroscedasticity and, if needed, we will update the econometric model to obtain precise estimates.
Because several concurrent programs targeting similar populations and outcomes exist, it can be difficult to rule out alternative explanations and disentangle the precise estimates of the impact of the Demonstration using the ITS design. This is a limitation of the ITS design. The concurrent programs include: State Opioid Response (SOR) grant, Integrated Community Response Team and District-wide Health Information Exchange.	We will try to control for concurrent programs based on the available data from these programs. Yet, it is still likely that our proposed ITS evaluation-design approach will estimate the impact of both the Demonstration and elements of other concurrent programs. Nevertheless, our qualitative data on the nature of these concurrent programs may provide insights into the relative contributions of Demonstration-specific versus pre-existing or new concurrent services to outcomes.
The Demonstration includes several types of programs. The programs vary in features such as goal, length of coverage, target population, and type of services covered, etc.	We will evaluate the heterogeneous effects of the Demonstration by conducting ITS in different subsamples, if the sample sizes are sufficiently large. The subsamples will be defined using categorical variables of characteristics of program, provider, and beneficiaries.
Most non-dual disabled adult beneficiaries have transitioned to managed care as of FY 2021 (October 2020) and many behavioral health services currently carved out of managed care may be carved in as of FY 2022 (October 2021).	We will conduct descriptive subgroup analysis by FFS and managed care status. If feasible, we will conduct ITS analysis for the two groups on selected outcome measures.

Challenge/Limitation	Solution
The COVID-19 pandemic may pose challenges to the ITS design, because the timing of the pandemic coincides with the beginning of the Demonstration and the pandemic may exert long-term effects on the outcomes of interest and confound the ITS estimates.	We may not be able to disentangle the effects of COVID-19 from an ITS model at the district level, so we will discuss the concern for potential confounding factors when we interpret the ITS findings. We will explore whether adding covariates such as the number of COVID-19 cases per 100,000 DC population in each quarter may mitigate the effects of the pandemic. We will consider splitting the post-period in the ITS analysis into two (or more) to account for non-linear effects of the Demonstration. To assess how the COVID-19 pandemic may affect the impact of the Demonstration, we will explore splitting the post-period as (1) 2020 Q1-Q2, and (2) 2020 Q3 and later, and assessing if the effects of the pandemic are stronger in the first quarters of 2020. The individual level analysis may help isolate Demonstration effects from the COVID-19 pandemic effects through subgroup analysis. For example, we may compare outcome changes for incumbent vs. new Medicaid beneficiaries as the number of Medicaid beneficiaries might increase because of the adverse economic shocks of COVID-19.
With an ITS design, estimating the level and slope parameters requires a minimum number of observations (usually at least eight; see table note below for citation) before and after the intervention in order to have sufficient statistical power to estimate the regression coefficients.	We will require at least eight quarters (two years) of data prior to the beginning of the Demonstration to obtain reasonable impact estimates. While level changes due to the intervention can be estimated sooner, we will need about eight quarters of data after the Demonstration starts to obtain an accurate estimate of the changes in post-Demonstration trends. For the Interim Evaluation Report, we may use bootstrapped confidence intervals to estimate the impact of the Demonstration with fewer observations and with some assumptions, along with providing insightful descriptive statistics.
Payment amounts for prescription drugs on FFS claims and MCO encounters in DHCF's MMIS data do not reflect rebates.	This is a limitation that would apply to any claims-based analysis and will be noted in the discussion that accompanies results of the cost analysis.
Qualitative Methods	
Key informant interviews and focus groups will obtain information from a relatively small number of individuals, and we might inadvertently miss important individuals and/or perspectives.	Our approach to qualitative data collection uses the evidence-based standard that saturation is commonly reached after 5–7 interviews as a baseline for the number of stakeholder

Challenge/Limitation	Solution
	interviews, site-visit key informants, and beneficiary interviews/focus groups.
Beneficiary recruitment methods may lead to selection bias (e.g., disproportionately include beneficiaries with positive experiences and outcomes).	We have developed several options for beneficiary recruitment that would minimize selection bias, including the preferred option of random selection.
Key informants may be reluctant to share negative information about the Demonstration out of worry that it will affect their ability to maintain the waiver and institutionalized Demonstration activities.	To mitigate potential response bias, we will inform evaluation participants that DHCF can use the interim qualitative research findings to address emerging challenges with the Demonstration or to modify their Implementation Plan. This may help evaluation participants view discussions of Demonstration challenges as constructive feedback rather than punitive.
Beneficiary Data Collection	
Medicaid beneficiaries are a hard-to-reach population group and this is more so for the subset who have SMI/SED or SUD issues.	IMPAQ will employ multiple survey modes (telephone and in-person) and recruitment through the support of service sites to achieve reasonably high response rates. As SMI/SUD beneficiaries may be harder to engage, and/or not have access to personal cell phones or mailing addresses, the survey team will use service-delivery sites as a way to locate and connect with beneficiaries.
The interviews/focus groups/survey will address certain sensitive topics related to the treatment experiences as well as mental health and substance use of respondents.	IMPAQ interviewers are well trained and experienced working with populations with SMI, SED, and SUD. Interviewers understand the importance of cultural competency, cultural humility, and trauma-informed care. The interviewers understand the importance of building rapport and trust at the start of the interview, emphasizing confidentiality, and explaining the purpose of the survey. Respondents will be given the opportunity to pause as well as skip questions they are not comfortable answering.
Due to co-occurring SMI, cognitive issues, and trauma, some respondents may need additional support and time to answer questions, as well as explanation of questions in easy-to-understand language and flexibility in timing and breaks.	IMPAQ interviewers are experienced in working with people with SMI, SED, and SUD. Interviewers will be prepared to take their time, build rapport, provide breaks, offer flexibility, and reframe questions as needed.
The COVID-19 public-health restrictions pose challenges in conducting in-person data collection at beneficiary residences or provider sites. The restrictions may limit the provision of in-person SUD/SMI services in the District. Those programs still offering in-person residential and outpatient services may not	IMPAQ will assess the current guidelines at the start of the fielding of the data collection and follow all local restrictions related to COVID-19. In cases in which in-person interviews are not an option, the team will work with programs to access beneficiaries via telephone.

Challenge/Limitation	Solution
approve of outside visitors entering their facilities.	
The beneficiary survey will only be offered in English.	Administrative data suggests that less than two percent of Medicaid beneficiaries with SUD, SMI or SUD&SMI are non-English speakers. Given this low percentage, we do not anticipate that an English-only survey will pose a significant problem relative to our ability to achieve the desired response rate or to the representativeness of the survey respondents. However, we will acknowledge this limitation when analyzing and reporting survey results.

Note: Penfold, R. B., & Zhang, F. (2013). Use of interrupted time series analysis in evaluating health care quality improvements. Academic Pediatrics, 13(6), S38–S44.

E. ATTACHMENTS

ATTACHMENT 1: INDEPENDENT EVALUATOR

On November 22, 2019, the District of Columbia Office of Contracting and Procurement (OCP), on behalf of the Department of Health Care Finance, issued a solicitation for proposals from vendors qualified to complete an independent evaluation of the District's Section 1115 Medicaid Behavioral Health Transformation Demonstration in accordance with criteria set forth by the Centers for Medicare & Medicaid Services. Proposals were due to the District on December 20, 2019. After review by a Technical Evaluation Panel and OCP, IMPAQ International was selected as the independent evaluator and a contract was executed on May 14, 2020.

Vendor qualifications were laid out in the District's solicitation. The criteria for evaluation of proposals included an understanding of CMS guidance and District requirements for an independent evaluation, an appropriate approach to execution of the independent evaluation and related deliverables, and a demonstration of organizational capacity, experience, and expertise. Solicitation criteria specified that a prospective contractor must demonstrate to the satisfaction of the District its capability in all respects to perform fully the contract requirements, supported by the submission of relevant documentation. In accordance with STCs for the District's Demonstration, IMPAQ has signed a "No Conflict of Interest" and indicated that it will conduct the demonstration evaluation in an independent manner in accordance with the CMS-approved draft evaluation design (see Exhibit M).

Exhibit M: Signed Statement of Independent Evaluator



Conflict of Interest Certification Form

Sponsor: District of Columbia, Department of Health Care Finance
Reference: Contract #CW82733
IMPAQ Project Title: DC 1115 Waiver Evaluation
IMPAQ Project Director: Rekha Varghese
IMPAQ Internal Reference: Project # 2867

This letter is to certify that IMPAQ International, LLC maintains a written policy and an administrative process for identification, evaluation, and reporting of financial conflicts of interest meeting the requirements of Title 42 CFR Part 50, Title 42 CFR Part 94, Subpart F, NSF AAG Chapter IV.A, FAR 9.5 and other applicable federal regulations. Additionally, IMPAQ's Conflict of Interest Compliance Program, as detailed in the attachment hereto, includes a process for individual or organizational conflict of interest review that is responsive to any Sponsor's application or guidelines requesting this type of review.

Therefore, to the best of IMPAQ's knowledge and belief, it certifies:

ORGANIZATIONAL CONFLICTS OF INTEREST:

There are no facts relevant to any possible sources of organizational conflict of interest (such as ownership or proprietary rights) in conducting the evaluation as defined in the proposal guidelines or contract Statement of Work. IMPAQ will conduct the demonstration evaluation in an independent manner in accordance with the CMS-approved draft evaluation design.

INDIVIDUAL CONFLICTS OF INTEREST:

This section certifies that any individual team members of IMPAQ, who will perform work as investigators under this project have completed the disclosure process and there are no personal conflicts of interest to report.

FUTURE CONFLICTS OF INTEREST:

This is to certify that IMPAQ will promptly report to DHCF any organizational or individual conflicts of interest that may arise during the performance of this contract. This also certifies that IMPAQ has a Conflict of Interest Compliance Program that includes periodic review of financial interest of employees, subcontractors and consultants, and their immediate families, in order to assess actual or apparent conflicts of interest.

By: Jack Robinson

Title: Compliance Officer

Signature: 

Date: September 3, 2020

IMPAQ International | Maher & Maher | ASCEND
10420 Little Patuxent Parkway, Suite 300, Columbia, MD 21044
info@impaqint.com | (443) 259-5500



Conflict of Interest Compliance Program

IMPAQ is strongly committed to ethical and legal conduct in the operation of our business, in the production of high quality research, and in participation in government-sponsored research activities. As part of IMPAQ's commitment to ethical and legal conduct, we have developed and implemented a set of policies, practices, and standards, which are the basis for our operations. These are detailed in a comprehensive Compliance Program, which includes our conflict of interest identification, avoidance, and mitigation plan.

Identification of Conflicts of Interest

IMPAQ's Internal Audit System (IAS), a part of our Compliance Program, is designed to ensure that the company and its personnel are in compliance with the organizational and personal conflict of interest provisions in the Federal Acquisition Regulation (FAR) as well as any additional provisions required by a Request for Proposals (RFP) or issued contract such as conflict of interest requirements. Whenever IMPAQ begins the proposal writing process in response to a Solicitation or RFP, IMPAQ's Compliance Officer and Business Development Teams immediately review the RFP to see if it contains specific Organizational Conflict of Interest (OCI) or Personal Conflict of Interest (PCI) provisions. If PCI requirements exist, the Compliance Officer will ensure that the appropriate personnel review, respond, prepare, and sign any requested PCI forms. If production of the completed and signed PCI forms is required under the terms of the Solicitation or RFP, the Compliance Officer sends copies to IMPAQ's Business Development team for incorporation into the proposal. If production of the PCI forms is not required, the Compliance Officer and Contracts Team retains and archives the signed PCI forms for the duration of the contract, if awarded. For OCI requirements, the Compliance Officer's review will similarly look for specific forms in the RFP that may be required in addition to a more thorough review of the company's past contracts and relationships. The OCI review focuses on four primary forms of OCI: unequal access to information, biased ground rules, impaired objectivity, and procurement integrity. In all cases, the thorough review is designed to ensure compliance with FAR and RFP rules and to identify issues requiring disclosure and/or mitigation. IMPAQ's Compliance Officer, Contracts Team, Business Development Team, and technical staff review IMPAQ's contracts and other available data to determine if the nature of the work, personnel involved, clients, partners, subcontractors, or consultants present a conflict of interest. IMPAQ further requires, via contractual documents at the time of proposal and at the time of award, all partners, consultants, and potential subcontractors to certify that they too have conducted a similar review with respect to an opportunity and can accurately represent that they do not have any PCIs or OCIs.

If a conflict is discovered or disclosed to IMPAQ by a potential partner or consultant, the Compliance Officer meets with the technical staff, Business Development team, and the Vice President of the Division or Practice Area under which the proposal is being submitted to determine (1) whether the conflict of interest can be mitigated, and (2) whether the proposal should be submitted. This review may be escalated to the IMPAQ Compliance Committee. IMPAQ conducts internal audits each time an RFP is identified for pursuit, and in accordance with any applicable procedures set forth in those RFPs that specifically require a conflict of interest review or certification.

Recognizing that IMPAQ has an ongoing duty to discover and disclose any OCIs or PCIs that may arise, IMPAQ also conducts an annual audit, conducted by an outside, independent auditor, which is unrelated to specific RFPs to ensure company compliance and conflict of interest avoidance and mitigation.





Conflict of Interest Compliance Program

Subcontractors are also under an ongoing contractual duty to monitor for conflicts and disclose all potential, apparent, or actual conflicts of interest to IMPAQ immediately for appropriate action, which includes disclosure to the Client as set forth in IMPAQ's Prime Contract. IMPAQ further ensures that all subcontractors are subject to the requirements of the Prime Contract with respect to identification, monitoring, disclosure, and mitigation of conflicts of interest.

Key elements of audits conducted under our Compliance Program, and practices in identifying OCIs or personal conflicts include, without limitation:

- Staff: Review backgrounds of staff including compliance and ethics complaints, education, training, and former employment;
- Procedures, Systems, and Processes: Review procedures for training, education and conflict of interest identification and mitigation; Review systems and processes to ensure they are sufficient for IMPAQ to organize, plan, control, and evaluate financial and marketing activities, the furnishing of services, and the administration and management aspects of the organization including systems/capabilities to provide data and/or reports to clients in the manner and formats requested;
- Policy: Review diligence, effectiveness, and application of IMPAQ's Conflict of Interest Policy;
- Documentation: Review IMPAQ's ability to document and maintain critical conflict of interest documentation for employees and incidents; and
- Compliance with Laws and Regulations: Review IMPAQ's ability to deliver service within compliance laws and regulations.

Avoidance, Neutralization, Mitigation, and Resolution Policies and Procedures

In accordance with the FAR, each individual contracting situation is examined based on its particular facts and the nature of the proposed contract. IMPAQ's policy is to avoid conflicts of interest. Generally, IMPAQ's policy calls for IMPAQ to decline work that presents an actual or potential conflict of interest that cannot be appropriately mitigated. Since no conflicts of interest have been identified for this opportunity, at any time during the project, should a conflict of interest be identified, IMPAQ will adopt a mitigation strategy to minimize risk until a final decision as to the action(s) required are rendered in writing by the Contracting Officer.

In the event a potential, apparent, or actual conflict of interest exists and depending upon the related facts and circumstances, IMPAQ may:

- Divest itself of, or reduce the financial relationship that IMPAQ may have in another organization to a level that is acceptable to the Contracting Officer;
- Separate lines of business management or critical staff or consultants from working on the resultant contract;
- Ensure that the individuals who have potential conflicts of interest due to direct financial relationships to the organizations divest themselves of those relationships, or remove the individual(s) from the contract;
- Have the individuals who have potential conflicts of interest due to indirect financial relationships to the organizations divest themselves of those relationships or obtain approval from the





Conflict of Interest Compliance Program

Contracting Officer of an acceptable level which would allow the individuals to continue working on the contract, or remove the individual(s) from the contract;

- Remove or recuse a subcontractor or consultant, or other partner, and pursue alternative contracting strategies.

IMPAQ may transfer the conflicted party from the work assignment pending resolution of the situation. If an investigation shows that no conflict exists, the employee may return to work on the task with the concurrence of the Contracting Officer.

If the investigation reveals an actual personal conflict of interest, IMPAQ will permanently reassign the employee to non-conflicting work and replace him or her with an equally qualified employee who has no such conflict. Alternate courses of action will be considered only if the Contracting Officer provides written authorization to proceed.

Should the Government, knowing of a potential conflict of interest, desire that IMPAQ perform the work despite a perceived or potential conflict of interest, IMPAQ may agree to perform such work as long as the Contracting Officer directs such an action in writing, and as long as there is informed consent of all parties involved.

Subcontractor & Partner Compliance

In addition to the requirements of subcontractors noted above, IMPAQ takes additional steps to identify, avoid, neutralize, or mitigate apparent, potential, or actual conflicts of interest that our subcontractors or consultants may have. For example, if the subcontractor or consultant has no established procedures, IMPAQ will require them to follow the procedures it uses to identify, evaluate, and disclose conflicts of interest, consistent with any terms of IMPAQ's Prime Contract or RFP. To further facilitate monitoring of subcontractor conflicts of interests, IMPAQ maintains a list of subcontractors and their financial relationships, which include company affiliations as well as parent or subsidiary company relationships, and client relationships, to the extent discoverable. Periodic review of this information helps IMPAQ screen for possible conflicts of interest and ensure subcontractor compliance with the terms of their agreements.

In the event a conflict of interest is discovered, IMPAQ will work with the subcontractor or consultant to develop an appropriate approach to disclosing and mitigating conflicts, taking the subcontractor's own policies into account, within the confines of the Prime Contract requirements. Remedies such as recusal, divestiture, or alternative contracting strategies will be considered. IMPAQ will maintain all documentation necessary to support its determination that any subcontractor or consultant conflicts have been resolved.



ATTACHMENT 2: EVALUATION BUDGET

The budget for the District's evaluation contract totals \$1.551 million over five years. Exhibit N provides a breakout of the costs (inclusive of staff, administrative, and other) by major task and contract year.

Exhibit N: Evaluation Contract Budget

Item Description	Base Year	Option Year 1	Option Year 2	Option Year 3	Option Year 4	Total
Project Planning	\$36,590	\$0	\$0	\$0	\$0	\$36,590
Project Management	\$43,829	\$39,294	\$40,272	\$41,571	\$46,123	\$211,089
Evaluation Design	\$111,446	\$0	\$0	\$0	\$0	\$111,446
Data Collection and Analysis	\$123,477	\$95,446	\$121,791	\$200,960	\$137,400	\$679,075
Beneficiary Survey	\$77,724	\$9,777	\$0	\$60,281	\$8,456	\$156,237
Mid-Point Assessment	\$29,597	\$48,159	\$17,981	\$0	\$0	\$95,737
Interim Evaluation Report	\$0	\$38,430	\$57,359	\$28,704	\$0	\$124,492
Summative Evaluation Report	\$0	\$0	\$0	\$48,804	\$87,229	\$136,033
Total	\$422,662	\$231,106	\$237,403	\$380,319	\$279,208	\$1,550,698

ATTACHMENT 3: EVALUATION TIMELINE AND MAJOR MILESTONES

Exhibit O presents the work plan for the evaluation, with deliverables and anticipated time frames noted. As indicated in the District's STCs, the Final Summative Evaluation report for the Demonstration is due to CMS within 18 months of June 30, 2024 (i.e., by December 31, 2025).

Exhibit O: Evaluation Work Plan

TASK / ACTIVITY	Base Year													Option Year 1													Option Year 2													
	2020 - 2021													2021 - 2022													2022 - 2023													
	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
Task 1: Project Planning																																								
Kickoff Meeting	▲																																							
Project Planning Memorandum		△	▲																																					
Task 2: Project Management																																								
Weekly DHCF meetings		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	
Monthly Evaluation Update		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Task 3: Evaluation Design																																								
Evaluation Design Memorandum		▲																																						
Initial Evaluation Design			△	▲																																				
Final Evaluation Design							△	▲																																
Task 4: Data Collection and Analysis																																								
Design and implement interviews and primary data collection																																								
Data Inventory Memorandum		▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲		
Provide analytic files and documentation																																								
Task 5: Interim Evaluation Report																																								
Initial Interim Evaluation Report																																								
Final Interim Evaluation Report																																								
Task 6: Summative Evaluation Report																																								
Initial Summative Evaluation Report																																								
Final Summative Evaluation Report																																								
Task 7: Mid-Point Assessment																																								
Mid-Point Assessment Memorandum						△		▲																																
Mid-Point Assessment Report																																								
Task 8: Beneficiary Survey Development and Fielding																																								
Beneficiary Survey Methodology Memorandum							△	▲																																
Survey Development																																								
Field beneficiary survey																																								
Provide results of beneficiary survey																																								

Key: Draft △ Final ▲

Ongoing —

TASK / ACTIVITY	Option Year 3												Option Year 4											
	2023 - 2024												2024 - 2025											
	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Task 1: Project Planning																								
Kickoff Meeting																								
Project Planning Memorandum																								
Task 2: Project Management																								
Weekly DHCF meetings	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Monthly Evaluation Update	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Task 3: Evaluation Design																								
Evaluation Design Memorandum																								
Initial Evaluation Design																								
Final Evaluation Design																								
Task 4: Data Collection and Analysis																								
Design and implement interviews and primary data collection																								
Data Inventory Memorandum	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲				
Provide analytic files and documentation																								
Task 5: Interim Evaluation Report																								
Initial Interim Evaluation Report	▲																							
Final Interim Evaluation Report					△	▲																		
Task 6: Summative Evaluation Report																								
Initial Summative Evaluation Report														△						▲				
Final Summative Evaluation Report																								△
Task 7: Mid-Point Assessment																								
Mid-Point Assessment Memorandum																								
Mid-Point Assessment Report																								
Task 8: Beneficiary Survey Development and Fielding																								
Beneficiary Survey Methodology Memorandum																								
Survey Development																								
Field beneficiary survey																								
Provide results of beneficiary survey	▲				△	▲								△						▲				△

Key: Draft △ Final ▲

Ongoing —