Medicaid Behavioral Health Transformation Demonstration

Final Evaluation Design

District of Columbia

Department of Health Care Finance

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IMPAQ INTERNATIONAL LLC

SUBMITTED TO

District of Columbia
Department of Health Care Finance
441 4th Street, NW
Suite 300 South
Washington, DC 20001

ATTENTION

April Grady
Associate Director
Division of Analytics and Policy Research
Health Care Policy and Research Administration

Alex Tierney
Management Assistant

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SUBMITTED BY

Rekha Varghese, Project Director
IMPAQ International, LLC
10420 Little Patuxent Parkway
Suite 300
Columbia, MD 21044
(443)256-5500
www.impaqint.com

AUTHORS

Rekha Varghese, PhD, MPP, IMPAQ
Melissa Hafner, MPP, IMPAQ
Brandy Farrar, PhD, IMPAQ
Siying Liu, PhD, IMPAQ
Elizabeth Schoyer, MPH, IMPAQ
Lauren-Ashley Daley, BA, IMPAQ

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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
DATA/WITS	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
OUD	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 BACKGOUND 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 FFP 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 moving to less intensive levels of care. People with co-occurring disorders require a specialized

[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

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).

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

[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/yspij8v81cxqyebl7gj3uifjumb7ufsw

[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

[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

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 community-based services due to COVID-19 stay at home orders and concerns about the safety of congregate settings of care.

[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

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.

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

[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.

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]

[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

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).
- 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

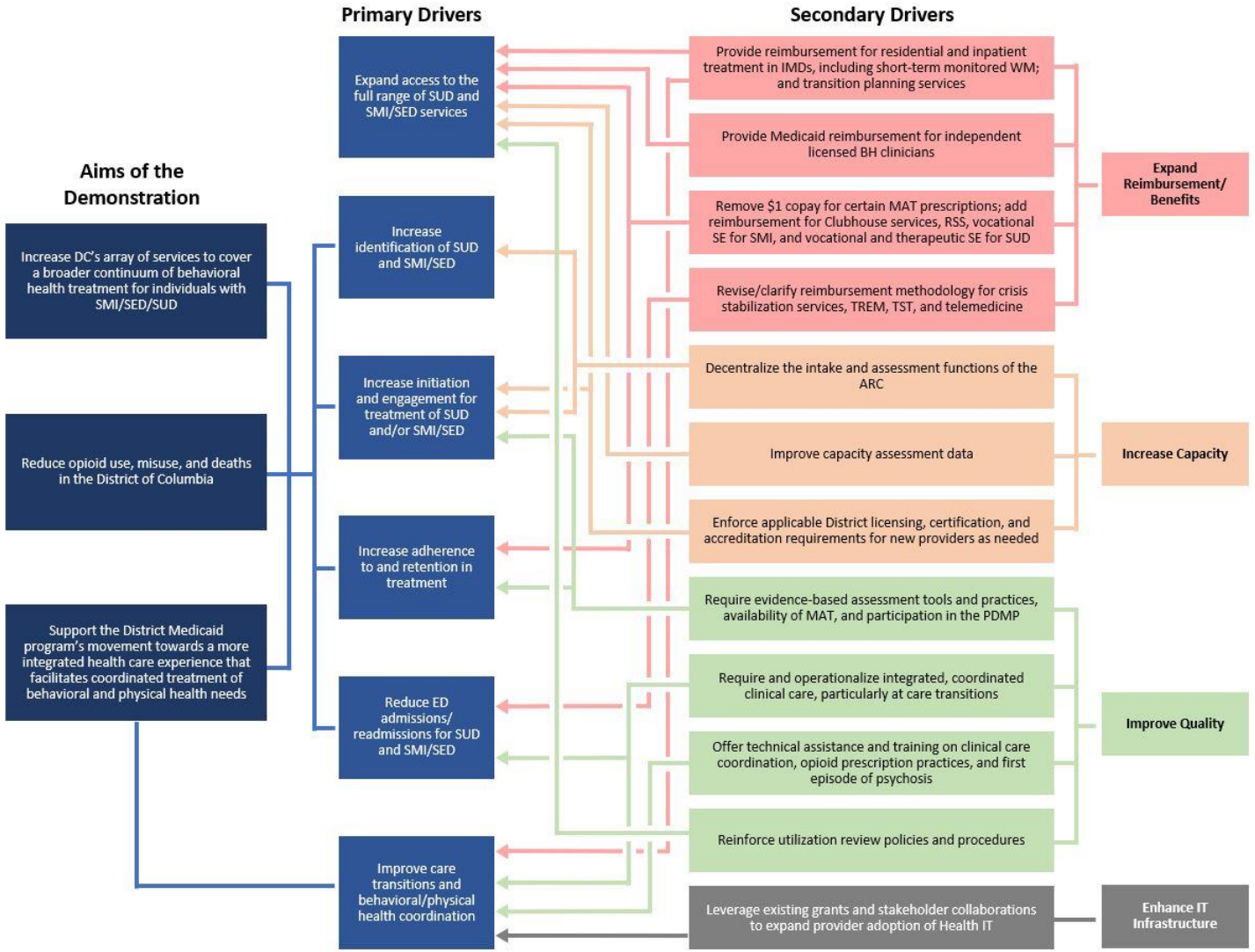
B.1 DRIVER DIAGRAM

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.

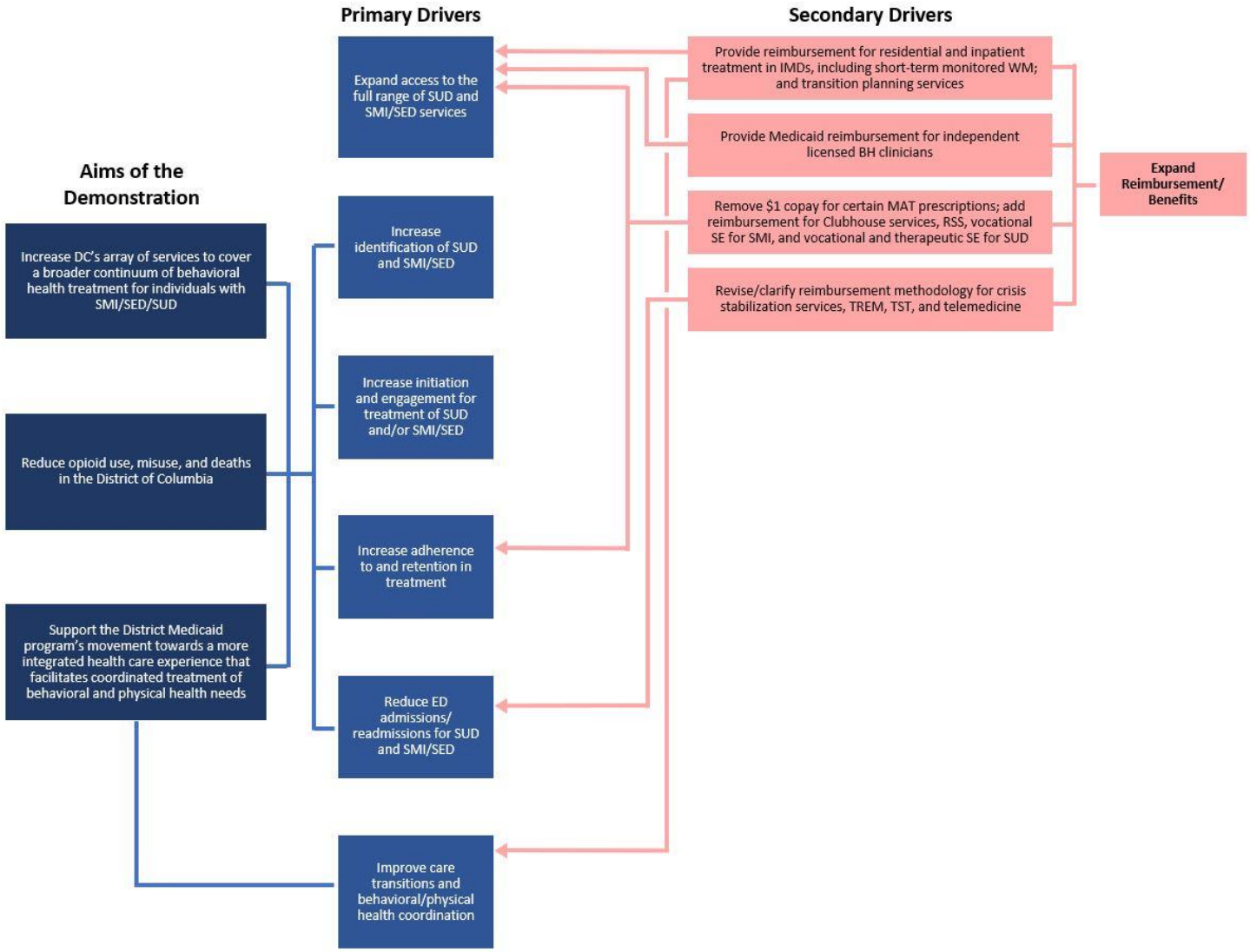
The primary and secondary drivers in Exhibits B–F are reflected in the hypotheses and research questions (Section B.2) and the proposed evaluation measures (Exhibit G).

Exhibit B: Behavioral Health Transformation Demonstration Driver Diagram



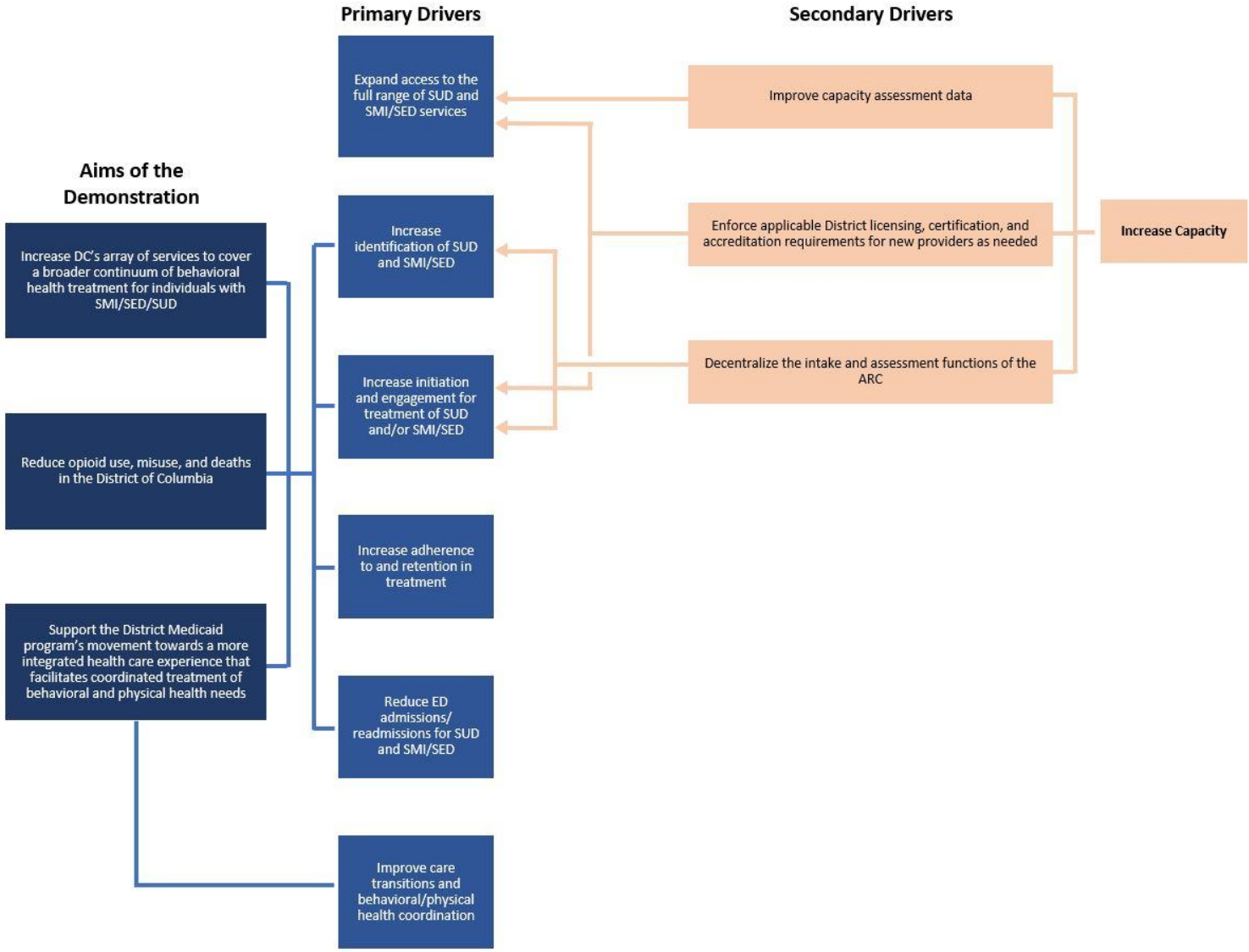
ARC=Assessment and Referral Center; BH=behavioral health; ED=emergency department; IMD=Institutions of Mental Disease; IT=information technology; MAT=medication assisted treatment; PDMP=prescription drug monitoring program; RSS=Recovery Support Services; SE=Supported Employment; SED=serious emotional 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*



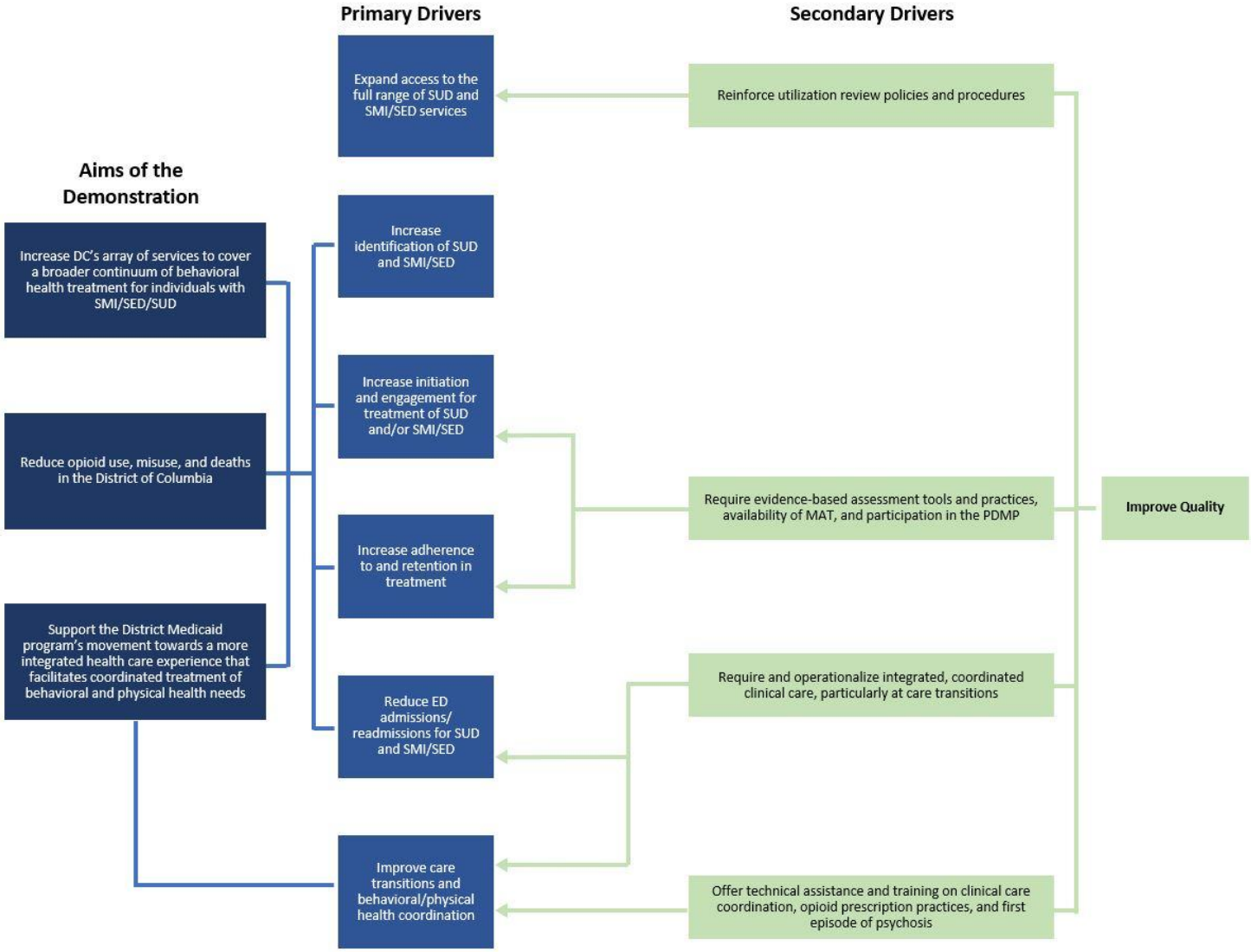
BH=behavioral health; ED=emergency department; IMD=Institutions of Mental Disease; MAT=medication assisted treatment; RSS=Recovery Support Services; SE=supported employment; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder; TREM=Trauma Recovery and Empowerment Model; TST=Trauma Systems Therapy; WM=withdrawal management.

Exhibit D: Behavioral Health Transformation Demonstration Driver Diagram – *Increase Capacity Domain*



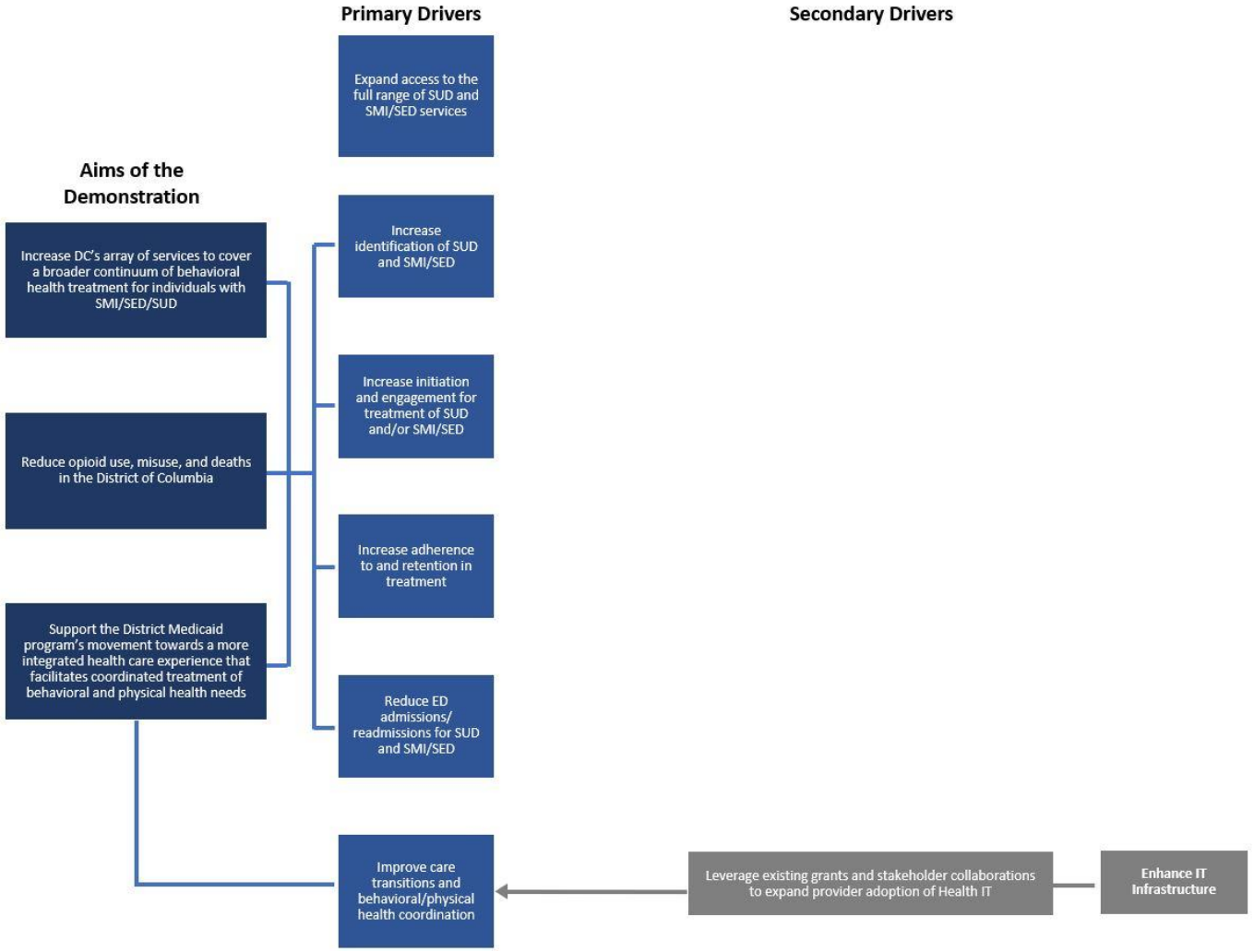
ARC=Assessment and Referral Center; ED=emergency department; SED=serious emotional disturbance; SMI=serious mental illness; SUD=substance use disorder.

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: *Increase identification of SUD and SMI/SED*	**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 *(Population of interest)*	▪ 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 *(Denominator)*	▪ 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: *Expand access to the full range of SUD and SMI/SED 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?						
	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
Secondary Driver: *Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM; and transition planning services*	**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: *Require evidence-based assessment tools and practices, availability of MAT, and participation in the PDMP*	**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: Provide Medicaid reimbursement for independent licensed BH clinicians*	**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: *Expand access to the full range of SUD and SMI/SED services* Secondary Driver: *Decentralize the intake and assessment functions of the ARC*	**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 *(Denominator)*	▪ Beneficiary survey	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
Primary Driver: *Increase initiation and engagement for treatment of SUD and/or SMI/SED*	**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 *(Population of interest)*	▪ 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 *(Denominator)*	▪ Beneficiary survey	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
Primary Driver: *Expand access to the full range of SUD and SMI/SED services* 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 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 *(Denominator)*	▪ Beneficiary survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
	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 *(Denominator)*	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
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: *Expand access to the full range of SUD and SMI/SED services*	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 *(Population of interest)*	▪ 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 *(Denominator)*	▪ 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 *(Denominator)*	▪ 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: *Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM, and transition planning services*	**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: *Increase initiation and engagement for treatment of SUD and/or SMI/SED*	**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 *(Population of interest)*	▪ 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 *(Denominator)*	▪ Beneficiary survey	▪ Descriptive statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
Primary Driver: *Increase initiation and*	**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 *(Denominator)*	▪ 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 *(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
	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 *(Denominator)*	▪ 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 (*Denominator*)	▪ 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: *Increase adherence to and retention in treatment*	**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 (*Denominator*)	▪ 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 (*Denominator*)	▪ 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: *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 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 *(Denominator)*	▪ 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 *(Denominator)*	▪ Beneficiary Survey	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Interviews	
Secondary Driver: *Remove $1 copay for certain MAT prescriptions; add reimbursement for Clubhouse services, RSS, vocational SE for SMI, and vocational and*	**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	▪ Descriptive Statistics ▪ Regression ▪ Thematic Analysis ▪ Triangulation
			N/A, Qualitative Measure			▪ Site Visits ▪ Beneficiary Survey	
	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 *(Denominator)*	▪ 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 *(Denominator)*	▪ 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
transitions and behavioral/ physical health coordination	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: *Require and operationalize integrated, coordinated clinical care, particularly at care transitions*	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: *Require and operationalize integrated, coordinated clinical care,*	**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
particularly at care transitions	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: *Provide reimbursement for residential and inpatient treatment in IMDs, including short-term, monitored WM; and transition planning services*	**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 (*Denominator*)	▪ Claims data	▪ ITS ▪ Descriptive statistics
Secondary Drivers: *Offer technical assistance and training on clinical care coordination; Leverage existing grants and stakeholder*	**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: *Require and operationalize integrated, coordinated clinical care, particularly at care transitions*	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 *(Denominator)*	▪ 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 (*Denominator*)	▪ Claims data	▪ ITS ▪ Descriptive statistics
Secondary Drivers: *Offer technical assistance and training on clinical care coordination; Leverage existing grants and stakeholder collaborations to expand provider adoption of Health IT*	**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: *Improve care transitions and behavioral/physical health coordination*	**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: *Expand access to the full range of SUD and SMI/SED services*	**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 *(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
	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 *(Denominator)*	▪ 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 *(Denominator)*	▪ 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 ½ – 1½ 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 DATA/WITS, 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.

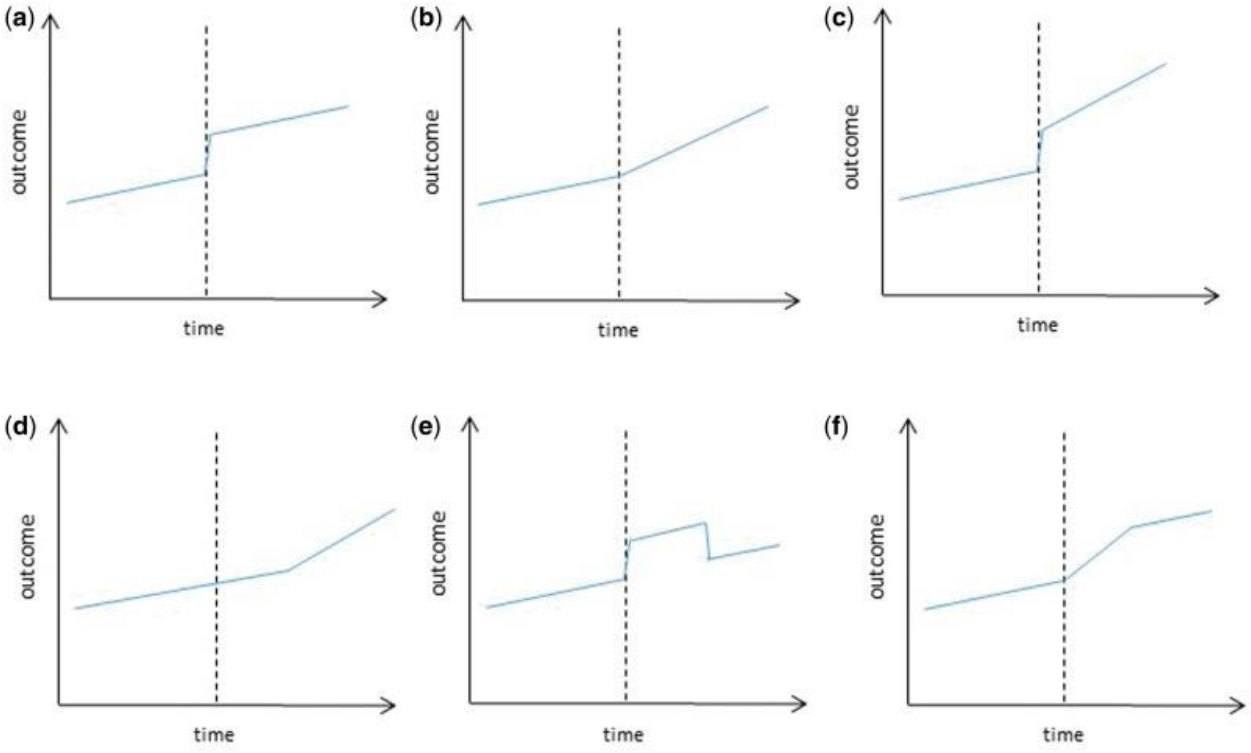
[39] Betancourt, R., & Kelejian, H. (1981). Lagged endogenous variables and the Cochrane-Orcutt procedure. *Econometrica, 49*(4), 1073–1078.

[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:

Equation 2: $Y_{it} = \beta_0 + \beta_1\, demo_t + X_{it} + \theta_i + \theta_t + \varepsilon_{it}$

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:

Equation 3: $Y_i = \beta_0 + \beta_1 \, Endline_i \; + \; X_i + \varepsilon_i$

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:

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

IMPAQ

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 2020 - 2021												Option Year 1 2021 - 2022												Option Year 2 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 ▬