OKLAHOMA
Health Care Authority

Evaluation Design for the Institutions for Mental Diseases Waiver for Serious Mental Illness/Substance Abuse Disorder §1115(a) Demonstration 11-W-00363/6

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Table of Contents

A. GENERAL BACKGROUND INFORMATION

The Oklahoma Institutions for Mental Diseases (IMD) Waiver for Serious Mental Illness and Substance Use Disorder Section 1115(a) Demonstration was approved on December 22, 2020, effective December 22, 2020, through December 31, 2025. The Centers for Medicare and Medicaid Services (CMS) CMS concurrently approved Oklahoma's Substance Use Disorder (SUD) and Serious Mental Illness/Serious Emotional Disturbance (SMI/SED) Implementation Plans, as well as the Health IT Plan for each initiative.

The Oklahoma Health Care Authority (OHCA) is Oklahoma's Single-State Agency for Medicaid. Medicaid is the largest health care provider in the State of Oklahoma. The OHCA and the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) work collaboratively to provide a wide array of behavioral health services for Oklahomans. Medicaid inpatient services are largely administered by the OHCA, while Medicaid outpatient behavioral health services and other state-funded supports are largely administered by the ODMHSAS. A combined payer system consolidates eligibility determinations, claims, authorizations, and outcomes data for all publicly funded services.

Based on the Substance Abuse and Mental Health Services Administration (SAMHSA) 2018-2019 National Survey on Drug Use and Health, Oklahoma had among the highest rates nationally for mental illness and SUD. An estimated 22.54 percent of Oklahomans age 18 and older experience mental illness and 5.43 percent are estimated to have a serious mental illness. An estimated 8.01 percent of Oklahomans in that age group had a SUD and 7.40 percent needed but did not receive SUD treatment at a specialized facility.[1]

At the time of its request for an IMD Demonstration, Oklahoma had a waiting list for SUD residential treatment of 158 women, with an average wait time of 29 days, and 415 men, with an average wait time of 208 days. In State Fiscal Year (SFY) 2019, over 5,300 children under 21 and 2,078 adults 21-64 received inpatient psychiatric treatment.

Medicaid expansion is also underway in Oklahoma, with new enrollments starting July 1, 2021. A recent literature review by Kaiser Family Foundation shows that states with Medicaid expansion populations have seen increased access to medications and services for the treatment of mental health and SUD conditions.[2]

In 2019, the State Legislature appropriated additional funds to support residential treatment. This IMD Demonstration was sought to expand residential treatment services and complement the State's efforts to increase access.

[1] SAMHSA 2018-2019 National Survey on Drug Use and Health retrieved from https://www.samhsa.gov/data/sites/default/files/reports/rpt32805/2019NSDUHsaeExcelPercents/2019NSDUHsaeExcelPercents/2019NSDUHsaePercents.pdf

[2] Kaiser Family Foundation. The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review; M. Guth, R. Garfield, and R. Rudowitz. Published: Mar 17, 2020, retrieved from https://www.kff.org/report-section/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review-report/

The Demonstration provides the State with authority to provide high-quality, clinically appropriate treatment for beneficiaries with a SUD or SMI/SED while they are short-term residents in residential and inpatient treatment settings that qualify as IMDs. This Evaluation Design will assess the Demonstration's association with improvements in access to care, treatment engagement, integration of primary and behavioral health care, and health outcomes.

1. Description of the Demonstration

The IMD Demonstration was implemented to ensure that beneficiaries have access to a full array of SUD and SMI/SED treatment services, including inpatient and residential treatment services provided by facilities that classify as IMDs.

The Demonstration provides the State with authority to provide medically necessary residential treatment, facility-based crisis stabilization, and inpatient treatment services within qualified IMDs, for Medicaid beneficiaries with SMI, SED, and/or SUD diagnoses. The Medicaid authority also includes coverage for Qualified Residential Treatment Programs (QRTPs) that meet the definition of an IMD for beneficiaries under age 21. The State must achieve a statewide average length of stay of no more than 30 days in IMD treatment settings for beneficiaries receiving psychiatric coverage.

The SUD treatment continuum of care is based on the American Society of Addiction Medicine (ASAM) criteria and/or other nationally recognized assessment and placement tools that reflect evidence-based clinical treatment guidelines. For SUD treatment services, the State will aim for a statewide average length of stay of 30 days or less in residential treatment settings.

The Demonstration will test whether this authority will increase access to evidence-based treatment services and improve overall health and long-term outcomes for those with SMI, SED, and SUD when a full continuum of care is provided. The State will work to improve care coordination and care for co-occurring physical and behavioral health conditions.

Populations Impacted by the Demonstration

All enrollees eligible under the State Plan for full Medicaid coverage, and between the ages of 21-64, are eligible for services under the Demonstration. Additionally, Medicaid enrollees under the age of 21 may qualify for services under the Demonstration when receiving residential SUD treatment or QRTP services.

Substance Abuse Disorder Treatment Benefits

Members have access to the full range of otherwise covered Medicaid services, including SUD treatment services. This includes high-quality, evidence-based Opioid Use Disorder (OUD)/SUD treatment and recovery services across a comprehensive continuum of care, ranging from residential and inpatient treatment to ongoing treatment in community-based settings. Benefits include short-term stays in residential and inpatient SUD treatment settings that qualify as an IMD.

Serious Mental Illness and Emotional Disturbance Treatment Benefits

Members have access to the full range of otherwise covered Medicaid services, including SMI/SED treatment services. These SMI/SED services range in intensity from early intervention, short-term crisis stabilization, and acute care in an inpatient or residential setting to ongoing treatment in community-based settings. Benefits include short-term stays in residential and inpatient SMI/SED treatment settings that qualify as an IMD.

2. Demonstration Goals

The State seeks to support the overall health and long-term success of individuals with SMI/SED and SUD. Through its partnership with ODMHSAS, the OHCA ensures access to a full continuum of services such that individuals receive the least restrictive, most effective array of services, to meet their clinical needs. The Demonstration goals for each SUD and SMI/SED IMD authorities are outlined below.

Substance Use Disorder Demonstration Goals

1. Increased rates of identification, initiation, and engagement in treatment for SUD;
2. Increased adherence to and retention in treatment;
3. Reductions in overdose deaths, particularly those due to opioids;
4. Reduced utilization of 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;
5. Fewer readmissions to the same or higher level of care, where the readmission is preventable or medically inappropriate; and
6. Improved access to care for physical health conditions among beneficiaries.

Serious Mental Illness/Serious Emotional Disturbance Demonstration Goals

1. Reduced utilization and lengths of stay in emergency departments among Medicaid beneficiaries with SMI or SED while awaiting mental health treatment in specialized settings;
2. Reduced preventable readmissions to acute care hospitals and residential settings;
3. Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units, intensive outpatient services, as well as services provided during acute short-term stays in residential crisis

stabilization programs, psychiatric hospitals, and residential treatment settings throughout the State;
4. Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI, including through increased integration of primary and behavioral health care; and
5. Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities.

3. Delivery System

Behavioral health services and supports are available statewide through a network of private and government-operated programs. This includes 13 Community Mental Health Centers (CMHCs) and approximately 70 contracted SUD treatment providers, including 11 Certified Community Addiction Recovery Centers (CCARCs). ODMHSAS supports 14 Community Based Structured Crisis Centers (CBSCCs) located throughout the State, including three operated by the State (two serving adults and one serving children and adolescents). CBSCC facilities in Ardmore, Oklahoma City, Sapulpa, and Tulsa also operate behavioral health urgent care centers that provide 23-hour respite and observation to help prevent psychiatric emergency and admission to inpatient or crisis beds. These facilities also address substance abuse emergencies.

Mental Health Services

The statewide network of CMHCs provides a wide variety of services, including case management for adults and children, crisis intervention, psychiatric rehabilitation, medication services, and other outpatient mental health services. Additionally, community-based programs include assistance with such services as housing, employment, peer advocacy, and drop-in centers.

There are 21 Behavioral Health Homes for adults with serious mental illness (SMI) and 20 Health Homes for children with serious emotional disturbance (SED) within the provider network. All CMHCs are certified as Behavioral Health Homes. Health Homes are required to provide care coordination and care management to ensure integrated behavioral health and health care. The Behavioral Health Homes will sunset September 30, 2021, as CMHC programs transition to meet Certified Behavioral Health Clinic (CCBHC) requirements (see below).

In addition, there are two RA1SE NAVIGATE programs to assist individuals who are experiencing their first episode of psychosis (FEP), along with one early serious mental illness (eSMI) crisis care program, and 13 statewide eSMI outreach programs provided through CMHCs. These programs develop and maintain collaborative partnerships with local higher education institutions and local hospitals to increase exposure to young adults within the age range that is most at risk for eSMI.

Substance Use Disorder Services

Oklahoma supports the delivery of residential and outpatient substance abuse services such as medically supervised withdrawal management, residential treatment, sober living, DUI school, Drug Court, criminal justice diversion treatment services, and other outpatient services.

Oklahoma's SUD treatment and recovery services network currently provides services across the State and includes CMHCs and other ODMHSAS funded and/or Medicaid enrolled providers. The ODMHSAS funded services are primarily purchased through contracts with private, for-profit, and non-profit, certified agencies to provide multiple levels of withdrawal management, residential treatment, halfway house, outpatient, intensive outpatient, and early intervention services with substance abuse block grant funds and State appropriations.

All SUD treatment organizations must be certified by ODMHSAS, except for tribal entities located on land not subject to State jurisdiction. Facilities can be certified as a basic alcohol and drug treatment program providing a specific service set, an opioid treatment program, or as a Certified Comprehensive Addiction Recovery Center (CCARC) providing a full continuum of care, including intensive outpatient services. Currently, 11 CCARCs operate across 11 counties, with 26 site locations. Eighteen opioid treatment program locations cover 10 counties in the State.

Certified Community Behavioral Health Clinics

In October 2016, Oklahoma was one of eight states selected by SAMHSA and CMS to pilot Certified Community Behavioral Health Clinics (CCBHCs). The CCBHC model presented an opportunity for improving community-based mental health and SUD services by:

- Advancing integration of behavioral health with physical health care;
- Assimilating and utilizing evidence-based practices on a more consistent basis; and
- Promoting improved access to high-quality care.

Care coordination underpins all aspects of behavioral health care in the CCBHC model. CCBHCs are expected to provide a broad array of services and care coordination across settings and providers on a full spectrum of health, including acute, chronic, and behavioral health needs. The CCBHC model also requires integrating mental health, substance use disorder, and physical health services at one location. Three CMHCs participated in the pilot.

Since the pilot project, Oklahoma has adopted the CCBHC model for statewide expansion. Currently, six of the 13 CMHCs in Oklahoma have achieved CCBHC designation. Under the Demonstration's SMI/SED Implementation Plan, the remaining CMHCs are expected to achieve CCBHC designation by Demonstration year three.

Qualified Residential Treatment Programs

The Oklahoma Department of Human Services (DHS) currently operates congregate care facilities for children in State custody. The State plans to transition these facilities and their care model to serve as Qualified Residential Treatment Programs (QRTPs). As QRTPs are implemented, the Demonstration provides the State with the authority for Medicaid reimbursement of stays of 60 days or less in facilities that the State determines are IMDs.

B. EVALUATION QUESTIONS AND HYPOTHESES

The Demonstration evaluation will consider:

- Nine primary evaluation questions, with eight subsidiary questions related to SUD services.
- Ten primary evaluation questions, with twelve subsidiary questions related to SMI/SED services.

Evaluation questions align with each CMS goal area. Exhibits B-1 and B-2 illustrate the alignment between Demonstration goals and evaluation questions. Exhibit B-1 offers a crosswalk of SUD Demonstration Goals to evaluation questions and Exhibit B-2 offers the same for SMI/SED Demonstration Goals.

Exhibit B-1. SUD Demonstration Goals and Evaluation Questions

CMS Demonstration Goal	OHCA Evaluation Question
1. Increased rates of identification, initiation, and engagement in treatment for SUD	1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD? a. How does service utilization vary by member characteristics (e.g., age, aid category code)? b. How does service utilization vary by geographic area (e.g., urban versus rural)?
2. Increased adherence to and retention in treatment	2. Does the Demonstration maintain or increase adherence to and retention in treatment for alcohol or other drug use?
3. Reductions in overdose deaths, particularly those due to opioids	3. Does the Demonstration contain or reduce opioid prescribing patterns that may lead to misuse or OUD? 4. Does the Demonstration contain or reduce overdose deaths
4. Reduced utilization of emergency department and inpatient hospital settings for treatment where the utilization is preventable or medically inappropriate through improved access to other continuum of care services	5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD? a. How does utilization vary by age and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?
5. Fewer readmissions to the same or higher level of care, where the readmission is preventable or medically inappropriate	6. Does the Demonstration contain or reduce readmissions to the same or higher levels of care?

CMS Demonstration Goal	OHCA Evaluation Question
6. Improved access to care for physical health conditions among beneficiaries with SUD	7. Does the Demonstration maintain or improve access to care for physical health conditions?
Expenditure Analysis: Total Cost of Care	8. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?
Expenditure Analysis: Cost Drivers	9. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?

Exhibit B-2. SMI/SED Demonstration Goals and Evaluation Questions

CMS Demonstration Goal	OHCA Evaluation Question
1. Reduced utilization and lengths of stay in emergency departments among Medicaid beneficiaries with SMI while awaiting mental health treatment in specialized settings	1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI? a. How does utilization vary by age and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?
2. Reduced preventable readmissions to acute care hospitals and residential settings	2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?
	3. Does the Demonstration result in increased treatment for comorbid SUD and physical health conditions after IMD discharge?
3. Improved availability of crisis stabilization services, including services made available through call centers and mobile crisis units; intensive outpatient services, as well as services provided during acute short-term stays in residential crisis stabilization programs; psychiatric hospitals; and residential treatment settings throughout the State	4. Does the Demonstration result in improved availability of crisis outreach and response services?
	5. Does the Demonstration result in improved availability of non-residential, non-hospital crisis outreach and response services?

CMS Demonstration Goal	OHCA Evaluation Question
4. Improved access to community-based services to address the chronic mental health care needs of beneficiaries with SMI, including through increased integration of primary and behavioral health care	6. Does the Demonstration result in improved availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED? a. How does access differ for members receiving CCBHC services? b. How does access differ following the provider's CCBHC designation?
	7. Does the Demonstration improve the integration of primary and behavioral health care to address the chronic mental health care needs of members with SMI/SED? a. How does integration differ for members receiving CCBHC services? b. How does access differ following the provider's CCBHC designation?
5. Improved care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities	8. Does the Demonstration result in improved care coordination for members with SMI/SED? a. How does care coordination differ for members receiving CCBHC services? b. How does care coordination differ following the provider's CCBHC designation? c. Has the CCBHC model of care contributed to decreased length of stay in the ED among members awaiting mental health treatment in specialized settings? d. How does the CCBHC model of care contribute to reductions in utilization and lengths of stays in ED? e. What CCBHC components or characteristics are most effective in reducing utilization and lengths of stays in EDs? f. Are there any obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs?
Expenditure Analysis: Total Cost	9. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?
Expenditure Analysis: Cost Drivers	10. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?

1. Logic Model and Quantifiable Targets

The State's SUD and SMI/SED Implementation Plans include quality enhancements and additions to the Medicaid service array. A summary of activities, their impact on Demonstration goals, and a visual depiction of each logic model (SUD and SMI/SED) are presented below.

SUD Logic Model

Prior to the Demonstration, ODMHSAS supported members who required Medication-Assisted Treatment (MAT) and/or treatment under the following ASAM levels of care:

- 3.1 Clinically Managed Low-Intensity Residential Services;
- 3.3. Clinically Managed Population- Specific High-Intensity Residential Programs;
- 3.5 Clinically Managed Residential Services; and
- 3.7 Medically Monitored Inpatient Programs.

These treatment services were reimbursed through State general funds and/or the use of other non-Medicaid federal funds. This coverage included crisis stabilization, residential treatment, and inpatient hospital services provided in facilities classified as an IMD.

Under the Demonstration, the Medicaid State Plan was amended in early 2021 to include coverage for MAT and ASAM level 3.1, 3.3, 3.5, 3.7, and adolescent residential care services. Residential treatment providers are also required to offer (or arrange for) MAT services. It is expected that authorization of Federal Financial Participation (FFP) for IMD services may serve as an incentive for some providers to expand program capacity. These State Plan enhancements are expected to increase access to care, including MAT services; increase SUD provider availability; and increase follow-up after discharge from ED, inpatient, and residential settings.

The Demonstration includes quality enhancements to support alignment of Utilization Management (UM) processes with ASAM levels of care. This includes uses of ASAM assessment protocols and tools and the creation of an automated level of care assessment for providers to use, at their discretion. These enhancements are expected to increase identification, initiation, and engagement in treatment (Goal 1) and increase adherence to and retention in treatment (Goal 2).

ODMHSAS-contracted providers must adhere to comprehensive standards are care, including attention to the holistic needs of members receiving treatment. The OHCA will adopt these standards for all residential providers enrolled in the Medicaid program. Residential provider requirements will also include accreditation by a nationally recognized accreditation entity. These enhancements are expected to improve the comprehensiveness of assessments and result in increased access to physical health care for enrollees (Goal 6).

Lastly, the State will continue its support for Electronic Health Record (EHR) integration with the Prescription Drug Monitoring Program (PDMP) and support providers in adopting workflows that include PDMP inquires. These activities are expected to support the containment and reduction of opioid prescribing at high doses.

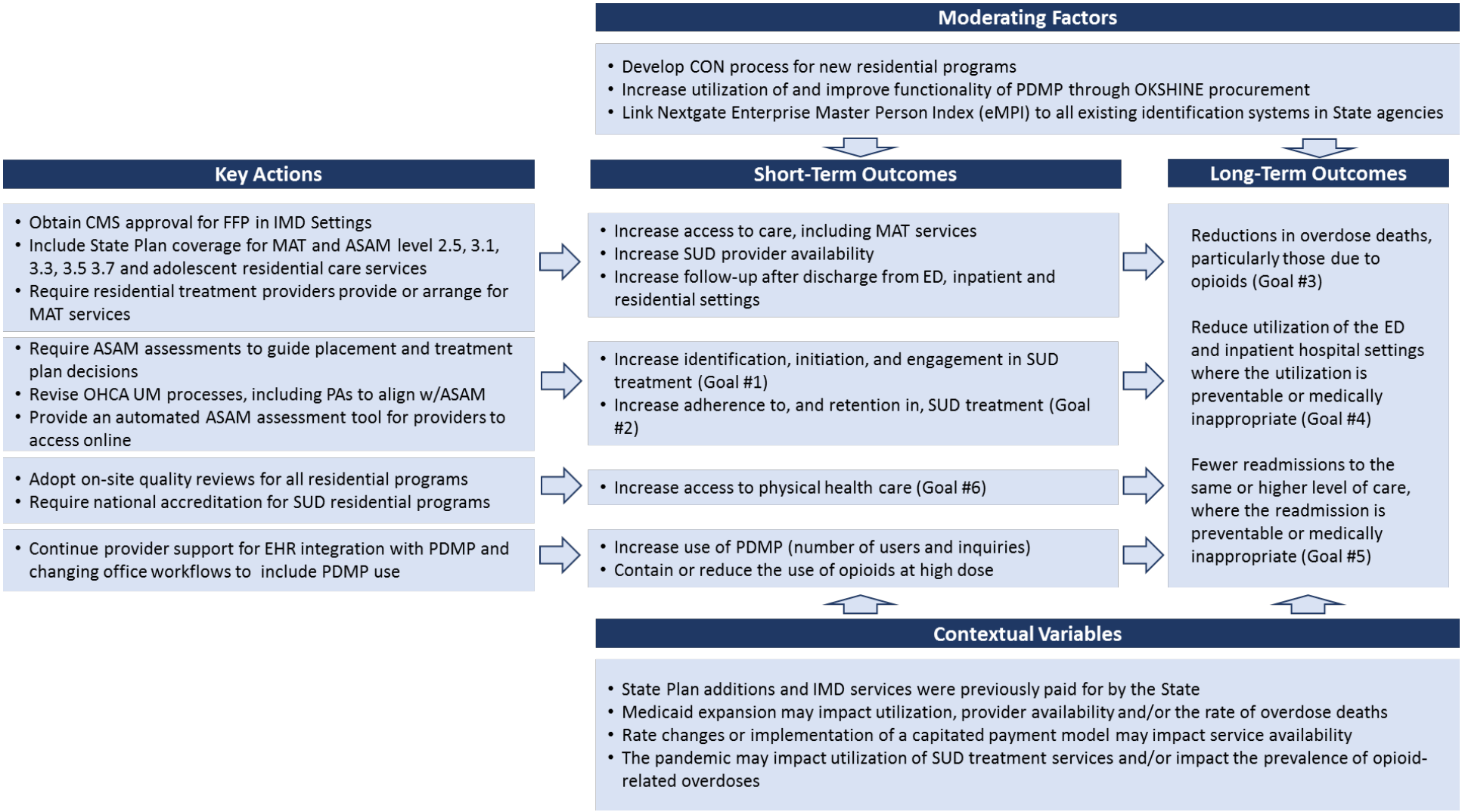
Expanded access, increased initiation, and adherence to treatment, integration of physical health care, and improved opioid prescribing are expected to reduce overdose deaths (Goal 3), reduce utilization of the ED and hospital settings where preventable (Goal 4), and reduce readmissions to the same or higher levels of care (Goal 5.)

Moderating factors contributing to the success of the planned SUD activities include: developing a Certification of Need (CON) process for residential treatment providers; updating and improving the State's Health Information Exchange; offering provider support for modifying office workflows to include PDMP inquires; and linking the Nextgate Enterprise Master Person Index (eMPI) across State agencies.

The evaluation design will consider several contextual factors, including recognition that services added to the Medicaid State Plan were previously funded through non-Medicaid sources; the potential impact of the novel coronavirus pandemic; and the impact of Medicaid eligibility expansion planned for July 1, 2021. The procurement of managed care organizations to begin operation in the fall of 2021 has been placed on hold. Should implementation restart during the Demonstration period, the managed care environment will be considered a contextual factor in the design.

A visual depiction of the Demonstration impact is provided in Exhibit B-3, on the following page.

Exhibit B-3. SUD Demonstration Logic Model



SMI/SED Logic Model

Under the Demonstration, the State will expand non-residential crisis services, including mobile outreach, enhance the tracking of crisis and inpatient psychiatric beds, annually assess the availability of mental health services, and take steps to expand capacity as needed. These activities are expected to increase the availability of crisis stabilization services, including call centers, mobile crisis outreach, Intensive Outpatient, residential, and psychiatric inpatient services (Goal 3).

The Demonstration will also support the expansion of entities designated as CCBHCs. The State expects to have CCBHC coverage statewide by Demonstration year three. CCBHC designation requires entities to support integrated primary and behavioral health services and to ensure seamless transitions of care across settings. This includes maintaining contracts or MOUs with regional hospitals, Psychiatric Rehabilitation and Treatment Facilities and other systems to ensure formal care delivery structures are in place for coordination and timely transitions of care, including discharges from the ED. The State will assess and address the need for additional employment supports and crisis outreach services during the Demonstration.

Quality enhancements are also planned for CBSCC providers; all centers classified as an IMD will be required to have accreditation from a nationally recognized entity. National accreditation requires facilities to have demonstrated comprehensive treatment planning and a holistic focus on member's needs. These quality enhancements are expected to:

- Increase access to community-based services, including through increased integration of primary and behavioral health care (Goal #4);
- Improve metabolic monitoring for children and adolescents on antipsychotic medication;
- Increase medication continuation following inpatient psychiatric discharge; and
- Increase follow-up within 7 and 30 days after discharge from an ED for mental illness.

In total the activities outlined in the SMI/SED implementation plan are expected to:

- Reduce ED utilization among Medicaid members with SMI/SED (Goal 1);
- Reduce preventable readmissions to acute care hospitals and residential settings (Goal 2); and
- Improve care coordination, especially continuity of care in the community following episodes of acute care in hospitals and residential treatment facilities (Goal 5) and maintain or reduce length of stay in the ED while awaiting mental health treatment in specialized settings (Goal 1).

Under the Demonstration, the State also has the authority for Medicaid reimbursement of QRTP stays of 60 days or less in facilities that the State determines are IMDs. Currently, the State does not expect any QRTP facility to be classified as an IMD. In addition, the

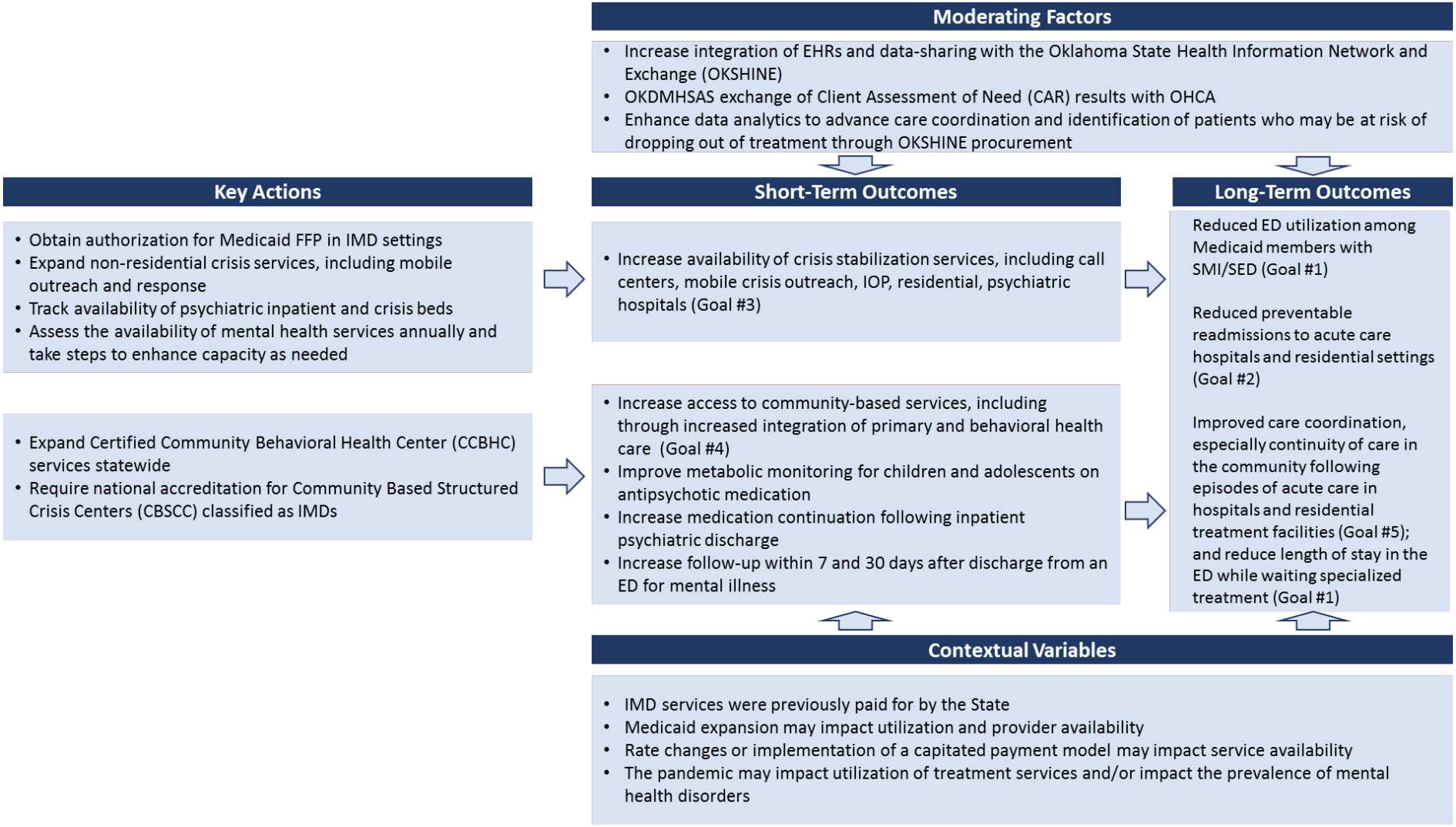
timeline and plan to transition facilities and their care model to serve as QRTPs is being reexamined. QRTP models have not been included in this evaluation design.

Moderating factors contributing to the success of the planned SMI/SED activities include the further integration of EHRs with the State's Health Information Exchange; the exchange of Client Assessment Record information between ODMHSAS and OHCA; and enhanced data analytics to support care coordination and identify clients at risk of dropping out of treatment.

The evaluation design will consider several contextual factors, including services added to the Medicaid State Plan that were previously funded through non-Medicaid sources; the potential impact of the novel coronavirus pandemic; and the impact of Medicaid eligibility expansion planned for July 1, 2021. The procurement of managed care organizations to begin operation in the fall of 2021 has been placed on hold. Should implementation restart during the Demonstration period, the managed care environment will be considered a contextual factor in the design.

A visual depiction of the Demonstration impact is provided in Exhibit B-4, on the following page.

Exhibit B-4. SMI/SED Demonstration Logic Model



2. Evaluation Questions and Hypotheses

The Evaluation Design will consider eight SUD-related evaluation questions, with eight subsidiary questions and ten SMI/SED-related evaluation questions, with twelve subsidiary questions. The evaluation questions will be evaluated through testing of hypotheses related to each IMD authority (SUD and SMI/SED) and goal. The hypotheses associated with each question are presented in Exhibits B-5, for SUD-related questions, and Exhibit B-6 on the second following page, for SMI/SED-related questions.

Exhibit B-5. SUD-Related Evaluation Questions and Hypotheses

Evaluation Question	Hypothesis
1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD? a. How does service utilization vary by member characteristics (e.g., age, aid category code)? b. How does service utilization vary by geographic area (e.g., urban versus rural)?	1. The Demonstration will maintain or increase utilization of SUD treatment services.
	2. The Demonstration will maintain or increase SUD provider availability.
	3. The Demonstration will maintain or increase follow-up after ED visit for alcohol or other drug dependence.
	4. The Demonstration will maintain or increase initiation and engagement in treatment.
2. Does the Demonstration maintain or increase adherence to and retention in treatment for alcohol or other drug use?	1. The Demonstration will maintain or increase continuity of pharmacotherapy for OUD.
3. Does the Demonstration contain or reduce opioid prescribing patterns that may lead to misuse or OUD?	1. The Demonstration will contain or reduce the use of opioids at a high dosage.
4. Does the Demonstration contain or reduce overdose deaths	1. The Demonstration will contain or reduce the rate of overdose deaths due to opioids in the Medicaid population.
5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD? a. How does utilization vary by age and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?	1. The Demonstration will contain or reduce the rate of ED visits for SUD.
	2. The Demonstration will contain or reduce inpatient admissions for SUD.

Evaluation Question	Hypothesis
6. Does the Demonstration contain or reduce readmissions to the same or higher levels of care?	1. The Demonstration will contain or reduce readmissions to the same or higher levels of care for enrollees with a SUD.
7. Does the Demonstration maintain or improve access to care for physical health conditions?	1. The Demonstration will maintain or increase access to care for physical health conditions for enrollees with a SUD.
8. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?	N/A Exploratory
9. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?	N/A Exploratory

Exhibit B-6. SMI/SED-Related Evaluation Questions and Hypotheses

Evaluation Question	Hypothesis
1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI? a. How does utilization vary by age and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?	1. The Demonstration will contain or reduce mental health-related ED use for adults with an SMI.
2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?	1. The Demonstration will contain or reduce readmissions to acute care hospitals or residential settings for adults with an SMI.
3. Does the Demonstration result in increased treatment for comorbid SUD and physical health conditions after IMD discharge?	1. The Demonstration will maintain or increase access to physical health and/or SUD treatment post-discharge for adults with an SMI.
4. Does the Demonstration result in improved availability of crisis outreach and response services?	1. The Demonstration will maintain or improve the availability of crisis outreach and response services throughout the State.
5. Does the Demonstration result in improved availability of non-residential, non-hospital crisis outreach and response services?	1. The Demonstration will maintain or improve the availability of non-residential, non-hospital crisis outreach and response services.
6. Does the Demonstration result in improved availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED? a. How does access differ for members receiving CCBHC services? b. How does access differ following the provider's CCBHC designation?	1. The Demonstration will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED. 2. Expanding CCBHCs statewide will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.
7. Does the Demonstration improve the integration of primary and behavioral health care to address the chronic mental health care needs of members with SMI/SED? a. How does integration differ for members receiving CCBHC services? b. How does integration differ following the provider's CCBHC designation?	1. Expanding CCBHCs statewide will maintain or improve the integration of primary and behavioral health care to address the chronic mental health of members with SMI/SED.

Evaluation Question	Hypothesis
8. Does the Demonstration result in improved care coordination for members with SMI/SED? a. How does care coordination differ for members receiving CCBHC services? b. How does care coordination differ following the provider's CCBHC designation? c. Has the CCBHC model of care contributed to decreased length of stay in the ED while awaiting specialized treatment? d. How does the CCBHC model of care contribute to reductions in utilization and lengths of stays in ED? e. What CCBHC components or characteristics are most effective in reducing utilization and lengths of stays in EDs? f. Are there any obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs?	1. Expanding CCBHCs statewide will maintain or improve care coordination for members with an SMI/SED. 2. Expanding CCBHCs statewide will contribute to maintaining or reducing length of stay in the ED among members awaiting mental health treatment in specialized settings.
9. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?	N/A Exploratory
10. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?	N/A Exploratory

3. Promotion of Title XIX Objectives

At least one objective of Title XIX is to enable states to "furnish… medical assistance" to certain vulnerable populations (i.e., payment for certain healthcare services defined in section 1905 of the Act, the services themselves, or both). CMS has determined that the Oklahoma Demonstration promotes Medicaid's objective by expanding coverage to health care services that would otherwise not be available.

In addition, the provision of this coverage may lower program costs through improved beneficiary health, making it possible for the State to expand services with the dollars saved. This further promotes the coverage objective of the Medicaid statute.

CMS has determined that approval of the Institutions for Mental Diseases Waiver for Serious Mental Illness/Substance Use Disorder Demonstration is likely to promote the objectives of the Medicaid program by:

- Increasing the identification, initiation, and engagement of Medicaid beneficiaries diagnosed with SUD and SMI/SED;
- Increasing adherence to, and retention in, SUD and SMI/SED treatment programs; and
- Reducing inappropriate or preventable utilization of emergency departments and inpatient hospital settings through improved access to a continuum of care services.

The evaluation methodology presented in the next section is designed to measure the Demonstration's performance in achieving these and other Demonstration goals.

C. METHODOLOGY

The SUD and SMI/SED-related Demonstration activities include expanded access to services and quality enhancements. Quality enhancements include further alignment of SUD assessments and treatment planning with ASAM guidelines, the promotion of integrated physical and behavioral health care, and improving transitions of care.

This evaluation is designed to measure the Demonstration's performance in achieving SUD and SMI/SED program goals, while also providing actionable information for improving the program in the future. The proposed methodology is outlined in detail below.

1. Evaluation Design

The evaluation will rely on quasi-experimental techniques to measure change over time and differential statistics to describe the population and findings. The evaluation will employ a mixed-methods design using time series and comparison group approaches. The evaluator will employ a combination of analytical techniques, based on the evaluation question and hypothesis.

All SUD-related and four SMI/SED-related hypotheses will rely on an interrupted time series (ITS) analysis to evaluate the impact of Demonstration enhancements. Three SMI/SED-related hypotheses will be evaluated longitudinally using descriptive statistics to examine statewide and regional change over time. The remaining hypotheses will be evaluated using a within-subjects time series and/or a propensity score matching (PSM) comparison strategy. The final use of a comparison strategy will be determined by the best available data and the presence or absence of a valid comparison group after a propensity score matching analysis has been completed.

An overview of each question, hypothesis, and analytic approach is provided on the following pages in Exhibit C-1 for SUD design elements and Exhibit C-2 for SMI/SED design elements. Measures and analytic techniques are described in detail in Sections C-4 and C-6.

Exhibit C-1. SUD Design Approach

Evaluation Question	Hypothesis	Approach
1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD? a. How does service utilization vary by member characteristics (e.g., age, race, aid category code)? b. How does service utilization vary by geographic areas (e.g., urban versus rural)?	1. The Demonstration will maintain or increase utilization of SUD treatment services. a. Utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. Utilization will maintain or improve in both urban and rural areas	ITS; t-test
	2. The Demonstration will maintain or increase SUD provider availability.	
	3. The Demonstration will maintain or increase follow-up after ED visit for alcohol or other drug dependence.	
	4. The Demonstration will maintain or increase initiation and engagement in treatment.	
2. Does the Demonstration maintain or increase adherence to and retention in treatment for alcohol or other drug use?	1. The Demonstration will maintain or increase continuity of pharmacotherapy for OUD.	ITS; t-test
3. Does the Demonstration contain or reduce opioid prescribing patterns that may lead to misuse or OUD?	1. The Demonstration will contain or reduce the use of opioids at a high dosage.	ITS; t-test
4. Does the Demonstration contain or reduce overdose deaths?	1. The Demonstration will contain or reduce the rate of overdose deaths due to opioids in the Medicaid population.	
5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD? a. How does utilization vary by age, race and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?	1. The Demonstration will contain or reduce the rate of ED visits. a. ED utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. ED utilization will maintain or improve in both urban and rural areas	ITS; t-test
	2. The Demonstration will contain or reduce inpatient admissions. a. Inpatient utilization will maintain or improve by sub-	

Evaluation Question	Hypothesis	Approach
	population (e.g., age, aid categories) b. Inpatient utilization will maintain or improve in both urban and rural areas	
6. Does the Demonstration contain or reduce readmissions to the same or higher levels of care?	1. The Demonstration will contain or reduce readmissions to the same or higher levels of care for enrollees with a SUD.	ITS; t-test
7. Does the Demonstration maintain or improve access to care for physical health conditions?	1. The Demonstration will maintain or increase access to care for physical health conditions for enrollees with a SUD.	ITS; t-test
8. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?	N/A Exploratory	ITS; t-test Descriptive
9. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?	N/A Exploratory	

Exhibit C-2. SMI/SED Design Approach

Evaluation Question	Hypothesis	Approach
1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI? a. How does utilization vary by age, race and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?	1. The Demonstration will contain or reduce mental health-related ED use for adults with an SMI. a. ED utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. ED utilization will maintain or improve in both urban and rural areas	ITS; t-test
2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?	1. The Demonstration will contain or reduce readmissions to acute care hospitals or residential settings for adults with an SMI.	ITS; t-test
3. Does the Demonstration result in increased treatment for comorbid SUD and physical health conditions after IMD discharge?	1. The Demonstration will maintain or increase access to physical health and/or SUD treatment post-discharge for adults with an SMI.	ITS; t-test
4. Does the Demonstration result in improved availability of crisis outreach and response services?	1. The Demonstration will maintain or improve the availability of crisis outreach and response services throughout the State.	Longitudinal (Descriptive)
5. Does the Demonstration result in improved availability of non-residential, non-hospital crisis outreach and response services?	1. The Demonstration will maintain or improve the availability of non-residential, non-hospital crisis outreach and response services.	Longitudinal (Descriptive)
6. Does the Demonstration result in improved availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED? a. How does access differ for members receiving CCBHC services? b. How does access differ following the provider's CCBHC designation?	1. The Demonstration will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.	Longitudinal (Descriptive)
	2. Expanding CCBHCs statewide will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.	a. PSM w/t-test b. Within-Subjects Time Series

Evaluation Question	Hypothesis	Approach
7. Does the Demonstration improve the integration of primary and behavioral health care to address the chronic mental health care needs of members with SMI/SED? a. How does integration differ for members receiving CCBHC services? b. How does integration differ following the provider's CCBHC designation?	1. Expanding CCBHCs statewide will maintain or improve the integration of primary and behavioral health care to address the chronic mental health of members with SMI/SED.	a. PSM w/t-test b. Within-Subjects Time Series
8. Does the Demonstration result in improved care coordination for members with SMI/SED? a. How does care coordination differ for members receiving CCBHC services? b. How does care coordination differ following the provider's CCBHC designation? c. Has the CCBHC model of care contributed to decreased length of stay in the ED among members awaiting mental health treatment in specialized settings?	1. Expanding CCBHCs statewide will maintain or improve care coordination for members with an SMI/SED.	a. PSM w/t-test b. Within-Subjects Time Series
d. How does the CCBHC model of care contribute to reductions in utilization and lengths of stays in ED? e. What CCBHC components or characteristics are most effective in reducing utilization and lengths of stays in EDs? f. Are there any obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs?	2. Expanding CCBHCs statewide will contribute to maintaining or reducing length of stay in the ED among members awaiting mental health treatment in specialized settings.	c-f. Qualitative; ITS; t-test
9. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?	N/A Exploratory	ITS; t-test; Descriptive

Evaluation Question	Hypothesis	Approach
10. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?	N/A Exploratory	

2. Target and Comparison Populations

All members with an SUD, SMI, or SED will be included in the Demonstration evaluation. The community-based mental health and psychiatric service system in Oklahoma is transforming. CMHCs are enhancing their delivery system and clinical models to meet the requirements for CCBHC certification. This includes an enhanced emphasis on primary care, the integration of physical and behavioral health in treatment planning, and a renewed focus on social determinants of health.

Substance Use Disorder

All full benefit Medicaid enrollees with an SUD are eligible for the Demonstration. Enrollees will be defined as having an SUD if they have one or more of the diagnoses listed in any of the following HEDIS® value sets:

- Alcohol Abuse and Dependence
- Opioid Abuse and Dependence
- Other Drug Abuse and Dependence

All Demonstration enrollees who meet the criteria for the hypothesis and measure under study will be included. The evaluation will not employ random, representative, or other sampling methods. Evaluation measures will be developed based on CMS-defined and HEDIS® specifications that include Medicaid enrollees with an SUD. Inclusion criteria will be specific to each measure.

Residential SUD treatment programs, including IMD treatment facilities, serve residents from across the State. In addition, residential placement decisions for SUD and SMI treatment are made based on nationally recognized placement criteria, including ASAM level of care guidelines for SUD populations. Thus, individuals admitted to residential IMD programs have a clinically different profile and level of care need than those who are not admitted. The statewide nature of the delivery system and clinical differences in service recipients eliminate the possibility of a matched sample of enrollees who receive residential IMD services versus those who did not. The State is not proposing a comparison strategy for SUD-related hypotheses.

Serious Mental Illness

CMHC providers are responsible for comprehensive assessment and designation of members as SMI. Oklahoma defines SMI as:

A condition experienced by persons age 18 and over that demonstrates:

(1) The condition has persisted for six months and is expected to persist for a year or longer;

AND

(2) The condition or serious mental illness is defined by the most recently published version of the DSM or the International Classification of Disease (ICD) equivalent with the exception of DSM "V" codes, substance abuse, and developmental disorders which are excluded unless they co-occur with another diagnosable serious mental illness;

AND

(3) The adult must exhibit either (A) or (B) below:

(A) Psychotic symptoms of a serious mental illness (e.g., Schizophrenia characterized by defective or lost contact with reality, often hallucinations or delusions);

OR

(B) Experience difficulties that substantially interfere with or limit an adult from achieving or maintaining one or more developmentally appropriate social, behavioral, cognitive, communicative, or adaptive skills. This is defined as a functional impairment in at least two of the following capacities (compared with expected developmental level):

(i) Impairment in self-care is manifested by a person's consistent inability to take care of personal grooming, hygiene, clothes, and meeting of nutritional needs.
(ii) Impairment in community function is manifested by a consistent lack of appropriate behavioral controls, decision-making, judgment, and value systems which result in potential involvement or involvement with the criminal justice system.
(iii) Impairment of social relationships manifested by the consistent inability to develop and maintain satisfactory relationships with peers.
(iv) Impairment in family function manifested by a pattern of disruptive behavior exemplified by repeated and/or unprovoked violence, disregard for safety and welfare of self or others (e.g., fire setting, serious and chronic destructiveness, inability to conform to reasonable limitations and expectations.
(v) Impairment in functioning at school or work is manifested by the inability to pursue educational or career goals.

Serious Emotional Disturbance

CMHC providers are responsible for comprehensive assessment and designation of members as SED. Oklahoma defines SED as:

Children and Adolescents (Under 18 years of age) “Serious Emotional Disturbance” (SED) means a condition experienced by persons from birth to 18 that show evidence of each of the following criteria:

(1) The disability must have persisted for six months and be expected to persist for a year or longer;

AND

(3) A condition or serious emotional disturbance as defined by the most recently published version of the DSM or the International Classification of Disease (ICD) equivalent with the exception of DSM "V" codes, substance abuse, and developmental disorders which are excluded, unless they co-occur with another diagnosable serious emotional disturbance;

AND

(4) The child must exhibit one of the following:

(A) Psychotic symptoms of a serious mental illness (e.g., schizophrenia characterized by defective or lost contact with reality, often hallucinations or delusions);

OR

(B) Experience difficulties that substantially interfere with or limit a child or adolescent from achieving or maintaining one or more developmentally appropriate social, behavioral, cognitive, communicative, or adaptive skills. There is functional impairment in at least two of the following capacities (compared with expected developmental level):

(i) Impairment in self-care manifested by a person's consistent inability to take care of personal grooming, hygiene, clothes, and meeting of nutritional needs.
(ii) Impairment in community function manifested by a consistent lack of age appropriate behavioral controls, decision-making, judgment, and value systems which result in potential involvement or involvement with the juvenile justice system.
(iii) Impairment of social relationships manifested by the consistent inability to develop and maintain satisfactory relationships with peers and adults.
(iv) Impairment in family function manifested by a pattern of disruptive behavior exemplified by repeated and/or unprovoked violence to siblings and/or parents, disregard for safety and welfare or self or others (e.g., fire setting, serious and chronic destructiveness, inability to conform to reasonable limitations and expectations which may result in removal from the family or its equivalent).
(v) Impairment in functioning at school manifested by the inability to pursue educational goals in a normal time frame (e.g., consistently failing grades, repeated truancy, expulsion, property damage or violence toward others).

Comparison Group

An in-state comparison group of members with an SMI or SED not receiving services from a CCBHC will be used for evaluating certain utilization and health outcomes, as identified in Exhibit 9 below. Members are assessed and designated SMI or SED, using the State's criteria, by CMHC and CCBHC providers.

The identification of individuals will be augmented to identify members with an SMI who do not receive CMHC services. Members will be identified using the NCQA definition, as endorsed by CMS in the Section 1115 Serious Mental Illness and Serious Emotional Disturbance Demonstrations: Technical Specifications for Monitoring Metrics (version 2.0, August 2020).

NCQA defines individuals with SMI as those who meet at least one of the following criteria within the measurement period:

(1) at least one acute inpatient claim/encounter with any diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or major depression;

OR

(2) at least two visits in an outpatient, IOP, community mental health center visit, electroconvulsive therapy, observation, ED, nonacute inpatient, or telehealth setting, on different dates of service with a diagnosis of schizophrenia or schizoaffective disorder;

OR

(3) at least two visits in an outpatient, IOP, community mental health center visit, electroconvulsive therapy, observation, ED, nonacute inpatient, or telehealth setting on different dates of service with a diagnosis of bipolar disorder.

3. Evaluation Period

The Demonstration approval period is December 22, 2020, through December 31, 2025. The evaluation will assess CY2017-2020 before the effective date of the Demonstration as the pre-intervention period. Pre-intervention results will be evaluated against the Demonstration period CY2021-2025 (post-intervention timeframe). A claim run out of six months post Demonstration will be applied and a final report produced during the second half of CY2026.

4. Evaluation Measures

The proposed evaluation measures are listed in Exhibits C-3 and C-4 on the following pages, by evaluation question and hypothesis. Where measures are generated based on specifications in the SUD or SMI/SED Monitoring Protocol (MP), the CMS Technical Specifications Manual metric number is included. The evaluation will rely on the most

recent technical manual version published by CMS at the time of measure production and any adjustments needed to align with State-specific claims reporting, as approved by CMS in Oklahoma's final approved SUD and SMI/SED Monitoring Protocols.

Cost measures associated with the Demonstration will be explored using specifications outlined in CMS guidance for SMI/SUD IMD Demonstration Evaluation Design (Appendix C) issued in March of 2019.

One measure, ED length of stay, associated with SMI/SED Evaluation Question 8, Hypothesis C, is currently under development. The evaluators will work with the OHCA and the Health Information Exchange (HIE) staff to refine the metric, as needed, once data extracts are available.

Exhibit C-3. SMI/SED Evaluation Measures

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Evaluation Question 1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI? a. How does utilization vary by age, race and aid category code? b. How does utilization vary by geographic area (e.g., urban versus rural)?				
Hypothesis 1. The Demonstration will contain or reduce mental health-related ED use for adults with an SMI a. ED utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. ED utilization will maintain or improve in both urban and rural areas				
Percent of members using the ED for mental health (SMI MP #16 modified)	Number of members with SMI who used the ED for mental health	Number of members with an SMI	Claims	ITS; t-test; Controlled for member demographics and geography
Evaluation Question 2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?				
Hypothesis 1. The Demonstration will contain or reduce readmissions to acute care hospitals or residential settings for adults with an SMI.				
Rate of 30-day all-cause unplanned readmissions following psychiatric hospitalization (SMI MP #4)	The count of 30-day readmission to an inpatient psychiatric facility that occurs within 30-days after discharge	The count of all inpatient psychiatric hospitalizations	Claims	ITS; t-test; Controlled for member demographics and geography
Evaluation Question 3. Does the Demonstration result in increased treatment for comorbid SUD and physical health conditions after IMD discharge?				
Hypothesis 1. The Demonstration will maintain or increase access to physical health and/or SUD treatment post-discharge for adults with an SMI.				
Percentage of members who receive outpatient treatment for a SUD and/or physical health conditions within 30-days of IMD discharge (HEDIS® TRC-modified)	Number of members with an outpatient visit (e.g., office, home-visit, telehealth) for SUD or physical health care within 30-days of discharge	The number of members discharged from SUD residential or inpatient treatment	Claims	ITS; t-test
Evaluation Question 4. Does the Demonstration result in improved availability of crisis outreach and response services?				
Hypothesis 1. The Demonstration will maintain or improve the availability of crisis outreach and response services throughout the state.				
The annual ratio of crisis outreach and response services to Medicaid members who have an SMI/SED	Number of members with an SMI and SED statewide, reported by OHCA annually	The number of crisis outreach and response providers statewide, reported by OHCA annually	Assessment of the Availability of Mental Health Services	Longitudinal (Descriptive)
Evaluation Question 5. Does the Demonstration result in improved availability of non-residential, non-hospital crisis outreach and response services?				
Hypothesis 1. The Demonstration will maintain or improve the availability of non-residential, non-hospital crisis outreach and response services.				
The annual ratio of non-residential and non-hospital crisis outreach and	Number of members with an SMI and SED statewide, reported by OHCA annually	The number of non-residential and non-hospital crisis outreach providers statewide, reported by OHCA annually	Assessment of the Availability	Longitudinal (Descriptive)

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
response services to Medicaid members who have an SMI/SED			of Mental Health Services	
Evaluation Question 6. Does the Demonstration result in improved availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED? a. How does access differ for members receiving CCBHC services? b. How does access differ following the provider's CCBHC designation?				
Hypothesis 1. The Demonstration will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED				
The annual ratio of Medicaid enrolled Psychiatrist and licensed Mental Health practitioners to Medicaid members who have an SMI/SED	Number of members with an SMI and SED statewide, reported by OHCA annually	The number of psychiatrists and licensed mental health providers statewide, reported by OHCA annually	Assessment of the Availability of Mental Health Services	Longitudinal (Descriptive)
Hypothesis 2. Expanding CCBHCs statewide will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.				
Use of first-line psychosocial care for youth on antipsychotics (SMI MP #2)	Number of members who received psychosocial care in the 121-day period from 90 days prior to the prescription start date through 30 days after the prescription start	Number of members ages 1 to 17 who had a new prescription for an antipsychotic medication	Claims	(a) PSM w/t-test; (b) Within-Subject Time Series
Medication Continuation Following Inpatient Psychiatric Discharge (SMI MP #6)	Number of members who were dispensed evidence-based outpatient medication within 2 days prior to discharge through 30 days post-discharge	Number of members aged 18 years and older discharged from an inpatient psychiatric facility with a principal diagnosis of MDD, schizophrenia, or bipolar disorder	Claims	
Evaluation Question 7. Does the Demonstration improve the integration of primary and behavioral health care to address the chronic mental health care needs of members with SMI/SED? a. How does integration differ for members receiving CCBHC services? b. How does integration differ following the provider's CCBHC designation?				
Hypothesis 1. Expanding CCBHCs statewide will maintain or improve the integration of primary and behavioral health care to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.				
Access to Preventive/Ambulatory Health Services for members who have an SMI (SMI MP #26)	Number of members who had one or more ambulatory or preventive care visits	Number of members with an SMI diagnosis	Claims	(a) PSM w/t-test; (b) Within-Subject Time Series
Metabolic monitoring for youth on antipsychotics (SMI MP #29)	Number of members who had metabolic testing (at least one test for blood glucose, HbA1c, or Cholesterol)	Number of members age 1-17 who had at least two antipsychotic medication dispensing events of the same or different medications, on different dates of service	Claims	

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Evaluation Question 8. Does the Demonstration result in improved care coordination for members with SMI/SED? a. How does care coordination differ for members receiving CCBHC services? b. How does care coordination differ following the provider's CCBHC designation? c. Has the CCBHC model of care contributed to decreased length of stay in the ED among members awaiting mental health treatment in specialized settings? d. How does the CCBHC model of care contribute to reductions in utilization and lengths of stays in ED? e. What CCBHC components or characteristics are most effective in reducing utilization and lengths of stays in EDs? f. Are there any obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs?				
Hypothesis 1. Expanding CCBHCs statewide will maintain or improve care coordination for members with an SMI/SED.				
Follow-up within 7 days after hospitalization for MH (SMI MP #7)	Number of members who had a follow-up visit with a mental health practitioner within 7-days of discharge	Number of members age 6-17 who had an acute inpatient discharge with a principal diagnosis of mental illness or intentional self-harm	Claims	(a) PSM w/t-test; (b) Within-Subject Time Series
Follow-up within 30-days after hospitalization for MH (SMI MP #7)	Number of members who had a follow-up visit with a mental health practitioner within 30-days of discharge	Number of members age 6-17 who had an acute inpatient discharge with a principal diagnosis of mental illness or intentional self-harm	Claims	
Follow-up within 7-days after ED visit for MH (SMI MP #10)	Number of ED visits for which the member received a follow-up visit with any practitioner, with a principal diagnosis of a mental health disorder within 7-days after the ED visit	Number of ED visits for a mental health disorder where the member is age 18 and older on the date of the visit	Claims	
Follow-up within 30-days after ED visit for MH (SMI MP #10)	Number of ED visits for which the member received a follow-up visit with any practitioner, with a principal diagnosis of a mental health disorder within 30-days after the ED visit	Number of ED visits for a mental health disorder where the member is age 18 and older on the date of the visit	Claims	
Hypothesis 2. Expanding CCBHCs statewide will contribute to maintaining or reducing length of stay in the ED among members awaiting mental health treatment in specialized settings.				
Has the CCBHC model of care contributed to decreased length of stay in the ED?	N/A	N/A	Structured interviews or focus groups with hospital, CCBHC, and specialized treatment providers	Qualitative analysis to identify themes associated with the effectiveness of demonstration activities in maintaining or reducing length of stays in EDs
ED Length of Stay	N/A	The median time from ED admission to time of discharge from the ED, calculated quarterly, for members who are admitted or transferred from an ED to inpatient psychiatric treatment	HIE data extract	t-test

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
How does the CCBHC model of care contribute to reductions in utilization and lengths of stays in ED?	N/A	N/A	Structured interviews or focus groups with hospital, CCBHC, and specialized treatment providers	Qualitative analysis to identify themes associated with the effectiveness of demonstration activities in maintaining or reducing length of stays in EDs
What CCBHC components or characteristics are most effective in reducing utilization and lengths of stays in EDs?	N/A	N/A		
Are there any obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs?	N/A	N/A		
Evaluation Question 9. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?				
Hypothesis N/A Exploratory				
Per member per month (PMPM) Medicaid cost for individuals who have an SMI/SED	Sum of all Medicaid payments made for physical health and MH-related services	Total member months	Claims	ITS; t-test; Descriptive; Controlled for member demographics and geography
Per member per month (PMPM) cost of MH-Related treatment for individuals who have an SMI/SED	Sum of all Medicaid payments made for MH-related cost, with breakouts for MH-IMD, MH-other treatment	Total member months	Claims	
Per member per month (PMPM) cost of physical health care for individuals who have an SMI/SED	Sum of all Medicaid payments made for physical health care	Total member months	Claims	
Evaluation Question 10. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?				
Hypothesis N/A Exploratory				
Per member per month (PMPM) cost of outpatient (non-ED) for individuals who have an SMI/SED	Sum of all Medicaid payments made for outpatient (non-ED) care	Total member months	Claims	ITS; t-test; Descriptive; Controlled for member demographics and geography
Per member per month (PMPM) cost of pharmacy for individuals who have an SMI/SED	Sum of all Medicaid payments made for pharmacy services	Total member months	Claims	
Per member per month (PMPM) cost of outpatient ED for individuals who have an SMI/SED	Sum of all Medicaid payments made for outpatient-ED services	Total member months	Claims	

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Per member per month (PMPM) cost of inpatient care for individuals who have an SMI/SED	Sum of all Medicaid payments made for inpatient care	Total member months	Claims	
Per member per month (PMPM) cost of Long-term care for individuals who have an SMI/SED	Sum of all Medicaid payments made for Long-Term Care services	Total member months	Claims	

Exhibit C-4. SUD Evaluation Measures

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Evaluation Question 1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD? a. How does service utilization vary by age, race, aid category code? b. How does service utilization vary by geographic areas (e.g., urban v rural)?				
Hypothesis 1. The Demonstration will maintain or increase utilization of SUD treatment services. a. Utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. Inpatient utilization will maintain or improve in both urban and rural areas				
Percentage of members receiving any SUD treatment service (SUD MP #6 modified)	Number of members receiving any SUD treatment service	Number of members with a SUD diagnosis	Claims	ITS; t-test; Controlled for member demographics and geography
Percentage of members receiving SUD outpatient treatment services (SUD MP #8 modified)	Number of members receiving outpatient treatment	Number of members with a SUD diagnosis	Claims	
Percentage of members receiving intensive outpatient (IOP) treatment and partial hospitalization (PH) services (SUD MP #9 modified)	Number of members receiving IOP or PH treatment	Number of members with a SUD diagnosis	Claims	
Percentage of members receiving residential and inpatient treatment services (SUD MP #10 modified)	Number of members receiving residential or inpatient treatment	Number of members with a SUD diagnosis	Claims	
Percentage of members receiving withdrawal management services (SUD MP #11 modified)	Number of members receiving withdrawal management services	Number of members with a SUD diagnosis	Claims	
Percentage of members receiving medication-assisted treatment (MAT) (SUD MP #12 modified)	Number of members receiving MAT	Number of members with a SUD diagnosis	Claims	
Hypothesis 2. The Demonstration will maintain or increase SUD provider availability.				
Percentage of providers enrolled in Medicaid and qualified to deliver SUD services (SUD MP #13 modified)	Number of SUD providers enrolled in Medicaid	Number of licensed SUD providers in the State	Licensing Records; Enrollment Files	ITS; t-test
Percentage of providers enrolled in Medicaid and qualified to deliver MAT services (SUD MP #14 modified)	Number of SUD providers who are qualified to deliver MAT services	Number of SUD providers enrolled in Medicaid	Enrollment Files	

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Hypothesis 3. The Demonstration will maintain or increase follow-up after ED visit for alcohol or other drug dependence.				
Percentage of ED visits for AOD abuse or dependence for which the member received follow-up within 7-days of discharge (SUD MP #17(1))	Number of members with ED visit for AOD abuse or dependence with a follow-up within 7-days	Number of ED visits with a principal diagnosis of AOD abuse or dependence	Claims	ITS; t-test Controlled for member demographics and geography
Percentage of ED visits for AOD abuse or dependence for which the member received follow-up within 30-days of discharge (SUD MP #17(1))	Number of members with ED visit for AOD abuse or dependence with a follow-up within 30-days of ED visit	Number of ED visits with a principal diagnosis of AOD abuse or dependence	Claims	
Hypothesis 4. The Demonstration will maintain or increase initiation and engagement in treatment.				
Percentage of members age 18 and older with a new episode of AOD abuse or dependence who initiate in SUD treatment (SUD MP #15a)	Number of members who initiate treatment within 14 days of diagnosis	Number of members with at least one AOD abuse or dependence diagnoses	Claims	ITS; t-test; Controlled for member demographics and geography
Percentage of members with a new episode of alcohol and other drug abuse or dependence who engage in SUD treatment (SUD MP #15b)	Number of members who received two or more services for AOD abuse or dependence within 34 days of the initiation visit	Number of members who initiate treatment within 14 days of diagnosis	Claims	
Evaluation Question 2. Does the Demonstration maintain or increase adherence to and retention in treatment for alcohol or other drug use?				
Hypothesis 1. The Demonstration will maintain or increase continuity of pharmacotherapy for OUD.				
Percentage of members age 18 and older with pharmacotherapy for OUD who have at least 180 days of continuous treatment (SUD MP #22)	Number of members with an OUD who had at least 180 days of continuous pharmacotherapy	Number of members with an OUD who and at least one claim for an OUD medication	Claims	ITS; t-test
Evaluation Question 3. Does the Demonstration contain or reduce opioid prescribing patterns that may lead to misuse or OUD?				
Hypothesis 1. The Demonstration will contain or reduce the use of opioids at a high dosage.				
Percentage of members age 18 and older who receive prescriptions for opioids with an average daily dose greater than or equal to 90 morphine milligram equivalents (MME) over a period of 90 days or more (SUD MP #18)	Number of members with an average daily dosage greater than or equal to 90 MME	Number of members with two or more claims for opioid medications on different dates with a cumulative supply of 15 or more days	Claims	ITS; t-test

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Evaluation Question 4. Does the Demonstration contain or reduce overdose deaths?				
Hypothesis 1. The Demonstration will contain or reduce the rate of overdose deaths due to opioids in the Medicaid population.				
The rate of opioid overdose deaths per 1,000 Medicaid members (SUD MP #27 OUD subgroup)	The number of opioid-related overdose deaths	Members enrolled in Medicaid for at least one month during the measurement period or 30-days prior to the beginning of the measurement period	Eligibility files; Vital Statistics	ITS; t-test
Evaluation Question 5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD? a. How does utilization vary by age, race and aid category code? b. How does utilization vary by geographic areas (e.g., urban versus rural)?				
Hypothesis 1. The Demonstration will contain or reduce the rate of ED visits. a. ED utilization will maintain or improve by sub-population (e.g., age, race, aid categories) b. ED utilization will maintain or improve in both urban and rural areas				
Total number of ED visits per 1,000 members	Number of ED visits	Members enrolled in Medicaid for at least one month	Claims	ITS; t-test; Controlled by member demographics and geography
Hypothesis 2. The Demonstration will contain or reduce inpatient admissions.				
Total number of inpatient stays per 1,000 members	Number of inpatient discharges	Members enrolled in Medicaid for at least one month	Claims	ITS; t-test; Controlled for member demographics and geography
Evaluation Question 6. Does the Demonstration contain or reduce readmissions to the same or higher levels of care?				
Hypothesis 1. The Demonstration will contain or reduce readmissions to the same or higher levels of care for enrollees with a SUD.				
Percentage of readmission to the same or higher level of residential care (SUD #25 modified)	Members who were readmitted to SUD residential or inpatient within 30-days of discharge	Members who were discharged from residential or inpatient treatment for SUD	Claims	ITS; t-test
Evaluation Question 7. Does the Demonstration maintain or improve access to care for physical health conditions?				
Hypothesis 1. The Demonstration will maintain or increase access to care for physical health conditions for enrollees with a SUD.				
Percentage of members with a SUD who had an ambulatory or preventive health care visit (SUD MP #32)	Members who had one or more ambulatory or preventive care visits	Number of members with a SUD diagnosis	Claims	ITS; t-test; Controlled for member demographics and geography

Measure/Steward	Numerator	Denominator	Data Source	Analytic Methods
Evaluation Question 8. How does the cost of care change over time? a. How does the Medicaid eligibility expansion impact cost over time? b. Does increased federal share for IMD services have an association with increased State investments in behavioral health services?				
Hypothesis N/A Exploratory				
Per member per month (PMPM) Medicaid cost for individuals who have an SUD	Sum of all Medicaid payments made for physical health and SUD-related services	Total member months	Claims	ITS; t-test; Descriptive; Controlled for member demographics and geography
Per member per month (PMPM) cost of SUD-Related treatment for individuals who have an SUD	Sum of all Medicaid payments made for SUD-related cost, with breakouts for SUD-IMD, SUD-other treatment	Total member months	Claims	
Per member per month (PMPM) cost of physical health care for individuals who have an SUD	Sum of all Medicaid payments made for physical health care	Total member months	Claims	
Evaluation Question 9. What are the cost drivers? a. Does increased community-based service utilization have an association with lower ED costs? b. Does increased community-based service utilization have an association with lower inpatient costs?				
Hypothesis N/A Exploratory				
Per member per month (PMPM) cost of outpatient (non-ED) for individuals who have an SUD	Sum of all Medicaid payments made for outpatient (non-ED) care	Total member months	Claims	ITS; t-test; Descriptive; Controlled for member demographics and geography
Per member per month (PMPM) cost of pharmacy for individuals who have an SUD	Sum of all Medicaid payments made for pharmacy services	Total member months	Claims	
Per member per month (PMPM) cost of outpatient ED for individuals who have an SUD	Sum of all Medicaid payments made for outpatient-ED services	Total member months	Claims	
Per member per month (PMPM) cost of inpatient care for individuals who have an SUD	Sum of all Medicaid payments made for inpatient care	Total member months	Claims	
Per member per month (PMPM) cost of Long-term care for individuals who have an SUD	Sum of all Medicaid payments made for Long-Term Care services	Total member months	Claims	

5. Data Sources

The evaluation will rely on administrative data collected by OHCA and ODMHSAS. The primary sources of data will be the Medicaid Management Information System (MMIS), including Medicaid Eligibility and Enrollment files. Data will be augmented by information from the State of Oklahoma Public Health Vital Statistics database and information provided to CMS annually on the availability of mental health service providers. Each quantitative data source is described in brief in Exhibit C-5 below. Qualitative data will be derived from provider interviews described separately in Section 7.

Exhibit C-5. Evaluation Design Data Sources

Data Source/Years Used	Description
Medicaid Management Information System (MMIS) Data for CY2017 – CY2025	Claims data submitted to the State by providers used to support HEDIS® and HEDIS-like performance, Medication-Assisted Treatment, service utilization, and cost metrics for all enrollees.
	Eligibility and enrollment detail for Medicaid beneficiaries used to determine the enrollee's aid category and stratify data into sub-groups, when applicable.
	Non-Medicaid claims for SUD and psychiatric treatment services paid for by the State (CY2017-CY2020).
CMS Workbook: Assessment of the Availability of Mental Health Services Data for CY2020-CY2025	Designed by CMS this workbook provides detail on the number and type of mental health providers operating in the state, those enrolled in Medicaid and those accepting new patients. The workbook includes the ratio of providers to members (regionally and statewide) and represents point-in-time data updated annually during the demonstration period. The OHCA completed the baseline assessment February 2020.
Vital Statistics Data Data for CY2017 – CY2025	Public health birth, death, and other vital records are used to track overdose deaths attributed to Oklahoma residents.
Health Information Exchange Under Development - Expected October 2022	The Health Information Exchange (HIE) is the state-designated organization that facilitates the exchange of health information to and from authorized individuals and health care organizations in the state, including interoperability with existing state systems (e.g., Medicaid, behavioral health, and public health). Member detail regarding ED admission and departure times will be included in the architecture of the HIE. OHCA staff will retrieve the detail necessary to track length of stay in the ED for members with an SMI/SED who are admitted or transferred to inpatient psychiatric care.

6. Data Cleaning and Validation

The IMD evaluation team schedules ad hoc meetings with State subject matter experts if anomalies are found in the data. For example, results or sample size that represent a significant departure from the prior year without clear explanation will prompt individual meetings with data and program experts. In addition, the evaluation team inventories change in the measure specifications, if any, and changes in program operations or policy that may have occurred since the last data submission. Processes will be developed for the HIE data extract when the system is operational, and data is available to the evaluation team. Each existing data set is described below.

Medicaid Management Information System Data

The measures identified for the evaluation rely predominately on the MMIS data. This includes Medicaid claims (paid, suspended, and denied); non-Medicaid claims paid through the MMIS (e.g., treatment services paid for by general fund); and member Medicaid eligibility information. PHPG currently serves as the State's independent evaluator. PHPG receives raw claims extracts annually. PHPG then performs a data audit processes to identify problems and inconsistencies with the data received. This includes direct comparisons to previous raw claims extracts to sample trends, as well as doing independent data extracts on random samples to validate consistency. PHPG works with the State to answer questions and provide feedback to resolve discrepancies in output.

Vital Statistics Data

This Public Health Department data base serves as the authority for birth, death, and other vital records in Oklahoma. Death records are recorded with the cause of death and are used to track overdose deaths attributed to Oklahoma residents. The OHCA links with the Vital Statistics database as part of its program integrity process to ensure Medicaid members who have died are removed from the eligibility system. Deaths attributed to opioid and other drug overdose are matched to Medicaid members to calculate the number and rate of overdose deaths among Medicaid beneficiaries. Case of death data may lag up to one year. To ensure the most accurate data possible, the rate of opioid deaths will be refreshed 12 months following the calculation of preliminary results for each year.

7. Analytic Methods

The evaluation data analysis will consist of both exploratory and descriptive strategies and incorporate univariate, bi-variate, and multi-variate techniques. The analysis will be performed to systematically apply statistical and/or logical techniques to describe, summarize, and compare data within the State and across time.

Descriptive statistics will be used to describe the basic features of the data and what they depict, and to provide simple summaries about the sample and the measures. They also will

be used to provide summaries about the participants and their outcomes. An exploratory data analysis will be employed to compare many variables in the search for organized patterns. Data will be analyzed as rates, proportions, frequencies, and measures of central tendency (e.g., mean, median, mode), and/or qualitatively analyzed for themes. Where appropriate, results will be compared to national benchmarks.

Most of the evaluation questions and hypotheses will use member level data to draw program level conclusions. This is illustrated in Exbibit C-6 below and C-7 on the following page.

Exhibit C-6. SUD level of analysis and conclusions drawn by evaluation question and hypothesis

Evaluation Question	Hypothesis	Level of Analysis	Level of Conclusion
1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD?	1. The Demonstration will maintain or increase utilization of SUD treatment services.	Member	Program
	2. The Demonstration will maintain or increase SUD provider availability.	Provider	Program
	3. The Demonstration will maintain or increase follow-up after ED visit for alcohol or other drug dependence.	Member	Program
	4. The Demonstration will maintain or increase initiation and engagement in treatment.		
2. Does the Demonstration maintain or increase adherence to and retention in treatment for alcohol or other drug use?	1. The Demonstration will maintain or increase continuity of pharmacotherapy for OUD.		
3. Does the Demonstration contain or reduce opioid prescribing patterns that may lead to misuse or OUD?	1. The Demonstration will contain or reduce the use of opioids at a high dosage.		
4. Does the Demonstration contain or reduce overdose deaths?	1. The Demonstration will contain or reduce the rate of overdose deaths due to opioids in the Medicaid population.		
5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD?	1. The Demonstration will contain or reduce the rate of ED visits.		
	1. The Demonstration will contain or reduce inpatient admissions.		

Evaluation Question	Hypothesis	Level of Analysis	Level of Conclusion
10. Does the Demonstration contain or reduce readmissions to the same or higher levels of care?	1. The Demonstration will contain or reduce readmissions to the same or higher levels of care for enrollees with a SUD.		
11. Does the Demonstration maintain or improve access to care for physical health conditions?	1. The Demonstration will maintain or increase access to care for physical health conditions for enrollees with a SUD.		
12. How does the total cost of care change over time?	N/A Exploratory	Program	Program
13. What are the cost drivers?	N/A Exploratory		

Exhibit C-7. SMI/SED level of analysis and conclusions drawn by evaluation question and hypothesis

Evaluation Question	Hypothesis	Level of Analysis	Level of Conclusion
1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI?	1. The Demonstration will contain or reduce mental health-related ED use for adults with an SMI.	Member	Program
2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?	1. The Demonstration will contain or reduce readmissions to acute care hospitals or residential settings for adults with an SMI.		
3. Does the Demonstration result in increased treatment for comorbid SUD and physical health conditions after IMD discharge?	1. The Demonstration will maintain or increase access to physical health and/or SUD treatment post-discharge for adults with an SMI.		
4. Does the Demonstration result in improved availability of crisis outreach and response services?	1. The Demonstration will maintain or improve the availability of crisis outreach and response services throughout the State.	Provider	Program
5. Does the Demonstration result in improved availability of non-	1. The Demonstration will maintain or improve the availability of non-residential, non-hospital		

Evaluation Question	Hypothesis	Level of Analysis	Level of Conclusion
residential, non-hospital crisis outreach and response services?	crisis outreach and response services.		
6. Does the Demonstration result in improved availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED?	1. The Demonstration will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.		
	2. Expanding CCBHCs statewide will maintain or improve the availability of community-based services needed to comprehensively address the chronic mental health needs of beneficiaries with SMI/SED.		
7. Does the Demonstration improve the integration of primary and behavioral health care to address the chronic mental health care needs of members with SMI/SED?	1. Expanding CCBHCs statewide will maintain or improve the integration of primary and behavioral health care to address the chronic mental health of members with SMI/SED.	Member	Program
8. Does the Demonstration result in improved care coordination for members with SMI/SED?	1. Expanding CCBHCs statewide will maintain or improve care coordination for members with an SMI/SED.		
9. How does the total cost of care change over time?	N/A Exploratory	Program	Program
10. What are the cost drivers?	N/A Exploratory		

As appropriate, analysis methods will include Logistic Regression, t-test, ANOVA, and propensity score matching with t-test. These tests are used for comparing sample and population means against each other; this can be the same population across time or within the same time but for populations receiving different treatments, or one group does not receive treatment while others do.

t-tests and ANOVA are appropriate when granular (patient-level) data is not available, but population-level means and standard deviations are, the outcome variable is continuous, and the objective is to determine whether the mean of a certain outcome variable of interest

is significantly different between two or more groups. t-tests allow for comparison of means between two groups whereas ANOVA allows this to be done for more than two groups.

The analysis will be stratified into urban and rural subgroups, subject to sample size limitations. The urban subgroup will consist of the counties comprising the greater Oklahoma City, Tulsa, and Lawton metropolitan areas; the rural subgroup will consist of the remainder of the State.

Where feasible, based on sample size and availability of data, the analysis will be stratified by racial and ethnic sub-populations.

The traditionally accepted significance level ($p \leq 0.05$) will be used for all comparisons.

Interrupted Time Series

The time series will include four years of data preceding the program expansion. The four-year baseline period will include CY2017-2020. Evaluation measures being studied using an interrupted time design will be examined quarterly. However, the underlying technical specifications for many measures are designed for the annual calculation of results.

Except for the opioid prescribing and overdose measures, each of the remaining measures selected is event-driven (i.e., action is measured within 31 days after an event has occurred), suggesting that quarterly measurement is viable. To ensure that quarterly measurement is an appropriate interval, for what are otherwise annual measures, the evaluator will assure that quarterly data preserves sufficient variation for comparison study.

Specifically, the evaluator will compare annual results to the baseline period using a t-test. An ANOVA will be used when trends for two or more years are compared. The evaluator then will perform an interrupted time series analysis with quarterly data for the same metrics to confirm that any statistically significant differences seen on an annual level, are also present in the quarterly data.

If the evaluator detects a significant difference in a comparison of means between the annualized measures but not the quarterly measures, it suggests more frequent measurement does not provide sufficient variation for the analysis. If the evaluator detects statistically significant differences in the quarterly data but not on the annual data, the quarterly analysis may be creating an artificial variation (e.g., measuring too frequently).

If either of the phenomena is found, the evaluator will not proceed with the interrupted time series method and will instead conduct annual comparisons of means using a t-test or ANOVA, based on the number of annual means being compared. Logistic regression to the baseline year also may be considered.

Absent any problems with quarterly measurement, the results of the interrupted times series analysis will be reported. The analysis will determine whether any of the following inferences can be made: (1) there was no effect; (2) there was only an immediate effect; (3) there was only a sustained long-term effect; or (4) there was both an immediate and a sustained long-term effect. To model the time series, the evaluator will estimate the following equation:

$$Y = \beta_0 + \beta_1 Time + \beta_2 D + \beta_3 P + \varepsilon$$

where Y is the outcome variable or metric of interest, Time indicates the quarter since the beginning of the observational period (i.e., 1, 2, …), D is an indicator variable (takes on either value 0 or 1) that indicates whether this period is before or after the Demonstration, and P denotes the period or quarter since the Demonstration started (i.e., 0's until the Demonstration effective date then 1, 2, …).

Prior to Medicaid reimbursement, ASAM-aligned treatment services were supported by ODMHSAS through State general funds and other non-Medicaid funds. It is expected that encounter data will be available for Medicaid members who received state-supported services.

If data is not available or sufficient to assess the three years prior to the Demonstration, the evaluator will use logistic regression to measure change over time. If this secondary assessment method is employed, the first year of the Demonstration (2021) will be used as the baseline year.

Controlling for Member Characteristics

The design relies on measures that by nature include participants with attributes that are highly correlated. For example, many measures focus on specific diagnosis, medications, age bands or treatment conditions. The inclusion and exclusion criteria for each measure limits the variability of beneficiary characteristics that are observe in the data. In addition, as measure specificity increases (e.g., youth under 17 on antipsychotic meds), sample size decreases, limiting the conclusions that may be drawn from the analysis.

However, several evaluation questions focus on broader population trends. As part of the interrupted time series analysis and based on the viability of the sample size, the evaluator will control for the following member demographic characteristics: age, race, gender, and aid category code using the following equation:

$$\begin{aligned} Y_t = \beta_0 &+ \beta_1 T_t + \beta_2 X_t + \beta_3 X_t T_t + \beta_4 D_{AGE} + \beta_5 D_{AGE} T_t + \beta_6 D_{AGE} X_t + \beta_7 D_{AGE} X_t T_t \\ &+ \beta_8 D_{GENDER} + \beta_9 D_{GENDER} T_t + \beta_{10} D_{GENDER} X_t + \beta_{11} D_{GENDER} X_t T_t \\ &+ \beta_{12} D_{URBANRURAL} + \beta_{13} D_{URBANRURAL} T_t + \beta_{14} D_{URBANRURAL} X_t \\ &+ \beta_{15} D_{URBANRURAL} X_t T_t + \beta_{16} D_{AIDCAT} + \beta_{17} D_{AIDCAT} T_t + \beta_{18} D_{AIDCAT} X_t \\ &+ \beta_{19} D_{AIDCAT} X_t T_t + \varepsilon \end{aligned}$$

These variables are defined as:

- T_t (time since beginning of data collection)
- X_t (a dummy variable indicating if the current time period is pre-intervention (X_t =0) or post-intervention (X_t =1))
- D_{AGE}, D_{GENDER}, $D_{URBANRURAL}$ (demographic + geography variables)
- X_t T_t, $D_{GENDER}T_t$, $D_{GENDER}X_t$, $D_{GENDER}X_tT_t$, $D_{AGE}X_t$, $D_{AGE}T_t$, $D_{AGE}X_tT_t$, $D_{URBANRURAL}T_t$, $D_{URBANRURAL}X_t$, $D_{URBANRURAL}X_tT_t$, $D_{AIDCAT}T_t$, $D_{AIDCAT}X_t$ and $D_{AIDCAT}X_tT_t$ (interaction variables)

Research questions and outcome measures for the controlled time series analysis are outlined in Exhibit C-8 below and C-9 on the following page.

Exhibit C-8. SMI/SED Cohort - Controlling for Member Characteristics

Evaluation Question	Outcome Measure
1. Does the Demonstration result in reductions in emergency department utilization among members with an SMI?	Percent of members using the ED for mental health
2. Does the Demonstration result in reductions in preventable readmissions to acute care hospitals or residential settings for members with an SMI?	Rate of 30-day all-cause unplanned readmissions following psychiatric hospitalization
9. How does the cost of care change over time?	Per member per month (PMPM) Medicaid cost for individuals who have an SMI/SED
	Per member per month (PMPM) cost of MH-Related treatment for individuals who have an SMI/SED
	Per member per month (PMPM) cost of physical health care for individuals who have an SMI/SED
10. What are the cost drivers?	Per member per month (PMPM) cost of outpatient (non-ED) for individuals who have an SMI/SED
	Per member per month (PMPM) cost of pharmacy for individuals who have an SMI/SED
	Per member per month (PMPM) cost of outpatient ED for individuals who have an SMI/SED
	Per member per month (PMPM) cost of inpatient care for individuals who have an SMI/SED
	Per member per month (PMPM) cost of Long-term care for individuals who have an SMI/SED

Exhibit C-9. SUD Cohort - Controlling for Member Characteristics

Evaluation Question	Outcome Measure
1. Does the Demonstration maintain or improve identification, initiation, and engagement in treatment for SUD?	Percentage of members receiving any SUD treatment
	Percentage of members receiving SUD outpatient treatment
	Percentage of members receiving intensive outpatient (IOP) treatment and partial hospitalization (PH)
	Percentage of members receiving residential and inpatient treatment services

Evaluation Question	Outcome Measure
	Percentage of members receiving withdrawal management services
	Percentage of members receiving medication-assisted treatment (MAT)
	Percentage of ED visits for AOD abuse or dependence for which the member received follow-up within 7-days of discharge
	Percentage of ED visits for AOD abuse or dependence for which the member received follow-up within 30-days of discharge
	Percentage of members age 18 and older with a new episode of AOD abuse or dependence who initiate in SUD treatment
	Percentage of members with a new episode of alcohol and other drug abuse or dependence who engage in SUD treatment
5. Does the Demonstration contain or reduce ED visits and inpatient hospitalizations for individuals with a SUD?	Total number of ED visits per 1,000 members
	Total number of inpatient stays per 1,000 members
7. Does the Demonstration maintain or improve access to care for physical health conditions?	Percentage of members with a SUD who had an ambulatory or preventive health care visit
8. How does the cost of care change over time?	Per member per month (PMPM) Medicaid cost for individuals who have an SUD
	Per member per month (PMPM) cost of SUD-Related treatment for individuals who have an SUD
	Per member per month (PMPM) cost of physical health care for individuals who have an SUD
9. What are the cost drivers?	Per member per month (PMPM) cost of outpatient (non-ED) for individuals who have an SUD
	Per member per month (PMPM) cost of pharmacy for individuals who have an SUD
	Per member per month (PMPM) cost of outpatient ED for individuals who have an SUD

Evaluation Question	Outcome Measure
	Per member per month (PMPM) cost of inpatient care for individuals who have an SUD
	Per member per month (PMPM) cost of Long-term care for individuals who have an SUD

Propensity Score Matching

Propensity score Matching with t-test will be used for evaluating CCBHC and non-CCBHC comparison groups. Propensity score matching is intended to reduce confounding variables associated with the observational data. Variables examined for the analysis will include age, geography (recipient county of residence), aid category code, and gender. Geography is characterized as "Urban" and "Rural". The urban subgroup will consist of the counties comprising the greater Oklahoma City, Tulsa, and Lawton metropolitan areas; the rural subgroup will consist of the remainder of the State.

The analysis will account for these variables by selecting similar-looking comparison and treatment groups from the larger population such that the groups look comparable across the demographic factors. A logit regression will be used to estimate propensity scores and to match using the propensity score. After the matching, sample means will be compared between the treatment and control groups to verify that they are indeed comparable before regressing the outcome of interest. This allows for an estimate of the effect of the treatment on the outcome.

The evaluator will use propensity score matching in alignment with Rosenbaum and Rubin (1983)[3] where the propensity score collapses many observable demographic factors that could contribute to the outcome metric of interest to a one-dimensional score that can be used to compare member characteristics and create a comparison group comparable to the treatment group. This allows the evaluator to attribute more of the differences in the metrics of interest across these two groups to their treatment (or lack thereof in the case of the comparison group) and not to one of the demographic factors which could also explain some or all the differences between the groups' outcomes.

The observed baseline covariates include gender, age, geography, and Medicaid aid category codes (enumerated below). The evaluator will perform a separate analysis for each year; thus, the year will enter as a covariate.

Since propensity score is a common, but not the only method of comparing multi-dimensional/multi-attributed objects by collapsing the many dimensions to a one-dimensional score, the evaluator will also look at the coarsened exact matching to produce good covariate balancing between the treatment and comparison groups. After

[3] The central role of the propensity score in observational studies for causal effects. Rosenbaum P.R., Rubin D. B., Biometrika (1983), 70, 1, pp. 41-55

matching, the evaluator will compare the two groups on the aforementioned demographic factors to determine if there are statistically significant differences in any of those factors.

Ideally, the evaluator should not find such differences, thereby attributing greater explanatory power to the variation in the metrics of interest to the member's association with the comparison or the treatment group.

The propensity score matching formula is defined as:

$$P(Z_i|gender, age, geo, one-hot\ encoded\ aid\ codes) = p$$
$$= \frac{1}{1 + e^{-(\beta_0+\beta_1(gender)+\beta_2(gender)+\beta_3(age)+\beta_4(\text{aidcode1})+\beta_5(\text{aidcode2})+\cdots)}}$$

The aid category field which determines how a member qualified for Medicaid will be one-hot encoded to become the following binary variables:

- New Adult
- Aged, Blind and Disabled (ABD) Medicaid Only
- ABD-Dual Medicaid/Medicare
- Non-ABD Adult
- Non-ABD Child

The propensity score provides balancing such that conditional on a propensity score, the distribution of the demographic variables enumerated above is not statistically significantly different. After deriving the propensity scores, the control and treatment groups are matched using the "nearest neighbor" search. Then the design will verify that covariates above are all balanced in the post-matching groups and then compare the results using a t-test.

If the evaluator cannot find appropriately balanced comparison and treatment groups, the hypothesis being studied will be evaluated using a Logistic Regression. The Logistic Regression will compare results for the baseline year of CY2019, to each year of the Demonstration.

Logistic Regression

If either the comparison or ITS analysis cannot be performed due to data limitations, logistic regression will be used to measure change over a baseline year. If this secondary assessment method is employed, the first year of the Demonstration (2021) will be used as the baseline year.

The outcome of interest in the majority of measures is binary, in that the member either received/engaged in the outcome of interest or did not (yes or 1 /no or 0) as denoted. The probability of 'yes' is 'p' and the probability of 'no' is thus '1-p'. 'l = log(p/1-p)' is the log odds (or logit) which we estimate with the year where the base year is typically 2021 (the effect is captured in the intercept) and the years following 2021 are interpreted as incremental effects compared to the base year 2021. The design examines whether the incremental years are statistically significant on the log-odds of saying yes vs no to the measures of interest.

If they are statistically significant, the interpretation is that the year in question (e.g., each year of the Demonstration extension) shows a marked difference compared to the base year. This combined with a comparison of the rates (p = # saying yes/total # of that year) shows that there was a statistically significant increase (or decrease) in the rate of yes to a measure from the base year 2021 to a future year. Outcomes (which are always binary in these cases) will be calculated annually for each of the five Demonstration years and a baseline period.

$$l = ln\frac{p}{1-p} = \beta_0 + \beta_1(year) + \varepsilon$$

which is solved algebraically for p:

$$p = \frac{1}{1 + e^{-(\beta_0+\beta_1(year)+\varepsilon)}}$$

Autocorrelation in Time Series Data

Autocorrelation is likely to be observed. IMD and other continuum of care services were available to enrollees prior to the Demonstration, although not cost-shared with Medicaid. Quality improvement efforts in the behavioral health system also have been ongoing. It is likely that the distribution is stable and highly correlated to the previous year(s)'data. Due to the Medicaid expansion, it is also likely that increases in utilization because of new eligibility rules would be maintained year over year.

Part of the intent of the Demonstration is to measure shifts in these measures over time. Removing autocorrelation by removing newly eligible members would also mean not being able to measure the effect of expansions or the true shift over time on the measures.

Identifying autocorrelation is important relative to violating assumptions of time series modeling and inference. However, autocorrelation is mostly a concern when using time series modeling for forecasting where accuracy may be impacted.

To identify autocorrelation, the findings will include a plot of the actual time series and a plot of the partial autocorrelation function (pACF) for each outcome measure to show which lags (if any) are significant at a 5% level.

Impact of the Novel Coronavirus Public Health Emergency

Given the unique circumstances of 2020, the evaluator will assess whether 2020 data will be used in the interrupted time series analysis. The analysis will be performed using data collected during CY2020 as part of the baseline period 2017 - 2020. If the 2020 analysis yields noticeable anomalies in the trend line, the results will be presented with and without 2020 data.

Expenditure Analysis

Cost of Care and Cost Drivers

In addition to hypothesis testing, the evaluation will monitor the impact of the demonstration and expanded Medicaid eligibility on expenditures for members with an SUD or SMI/SED diagnosis. Cost of care measures, not associated with a hypothesis, will be examined for year-over-year change and utilization trends. This will include total cost and SUD, SMI/SED treatment related cost trends. Expenditures will be examined relative to drivers such as ED utilization, inpatient hospitalization, and pharmacy services. For example, access to IMD services may result in improved engagement in MAT treatment and, subsequently, an increase in expenditures, while a decline in ED use and hospitalizations may result in corresponding decreases in expenditures.

Descriptive statistics such as frequency, average, percent change, and comparison to national results, where applicable, will be employed for all cost measures. The evaluation will include an exploratory examination of utilization and cost patterns and trends, for recipients, by categories of service. Cost trends will be explored in alignment with CMS guidance for SMI/SUD IMD Evaluation Design Appendix C.

Eligibility Expansion and Treatment Related Expenditures

The evaluator will also employ an ITS model to analyze the cost of SUD and SMI/SED services over time, as associated with Medicaid eligibility expansion (effective 7/1/2021) and the increased federal share of IMD expenditures (effective 1/1/2021). The intervention period (i.e., effective date) and quarterly data will be used to assess whether there is a change in total cost following the start of the Demonstration and following the Medicaid expansion.

To study cost drivers associated with SUD and SMI/SED expenditures, the evaluator will analyze quarterly and yearly data (the two should lead to similar conclusions) to regress community-based service utilization against (a) ED costs and (b) inpatient costs. The regression will follow the following parametric form, where x represents service utilization and ε is an error term.

$$Cost_{ED} = \beta_0 + \beta_1 * x + \varepsilon_{ED}$$

$$Cost_{inpatient} = \beta_2 + \beta_3 * x + \varepsilon_{ip}$$

The evaluator will report out β_1 and β_3, which can be interpreted as "for each unit increase in community-based service utilization, what is the change in ED costs" and "for each unit increase in community-based service utilization, what is the change in inpatient costs?", respectively. The evaluator will also report the 95% confidence interval of the estimates of β_1 and β_3. It is important to note here that if the 95% confidence interval includes 0 in the range, then there is not a significant correlation between cost and utilization.

The evaluator may engage further analysis and impact assessments depending on staff and budget, data availability, administrative burden, and value to program managers and policymakers.

Isolating Effects of the Demonstration

Behavioral Health Delivery System

Activity related to the behavioral health delivery system involves assessing service gaps and identifying opportunities for quality improvement. In most cases, quality planning and improvement activities as they relate to the Medicaid program are outlined in the approved SUD and SMI/SED Implementation Plans and are accounted for in the Logic Model Diagrams (e.g., national accreditation, CCBHC certification, PDMP use, online ASAM screening tools).

Community, provider, and member educational efforts not targeted exclusively for Medicaid enrollees may be occurring at the same time as the Demonstration. These initiatives will be documented and provide context for findings but cannot be controlled for in the analysis.

Medicaid Expansion

To account for the effects of Medicaid Expansion, the evaluator will compare outcomes during the pre-expansion period (2017-2020) and during the demonstration with and without the expansion group included in the calculation. The evaluator will measure the significance of the difference between the pre-expansion and demo period with and without expansion group. The evaluator will perform a regression with the outcome of interest for members in the New Adult eligibility group as well as examine the interaction between the expansion and Demonstration using the following equation:

$$\begin{aligned} Y_{t,exp} = {} & \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 X_t T_t + \beta_4 D_{AGE} + \beta_5 D_{AGE} T_t + \beta_6 D_{AGE} X_t + \beta_7 D_{AGE} X_t T_t \\ & + \beta_8 D_{GENDER} + \beta_9 D_{GENDER} T_t + \beta_{10} D_{GENDER} X_t + \beta_{11} D_{GENDER} X_t T_t \\ & + \beta_{12} D_{URBANRURAL} + \beta_{13} D_{URBANRURAL} T_t + \beta_{14} D_{URBANRURAL} X_t \\ & + \beta_{15} D_{URBANRURAL} X_t T_t + \varepsilon \end{aligned}$$

$$\Delta_t = Y_{t,exp=1} - Y_{t,exp=0}$$

The variables are defined as:

- $Y_{t,exp=0}, Y_{t,exp=1}$ (the variable of interest for excluding and including expansion populations, respectively)
- T_t (time since beginning of data collection)
- X_t (dummy variable indicating if the current time period is pre-intervention (X_t =0) or post-intervention (X_t =1))
- D_{AGE}, D_{GENDER}, $D_{URBANRURAL}$ (demographic and geography variables)
- X_t, T_t, $D_{GENDER}T_t$, $D_{GENDER}X_t$, $D_{GENDER}X_tT_t$, $D_{AGE}X_t$, $D_{AGE}T_t$, $D_{AGE}X_tT_t$, $D_{URBANRURAL}T_t$, $D_{URBANRURAL}X_t$, and $D_{URBANRURAL}X_tT_t$ (interaction variables)
- Δ_t (the estimate of the upper bound of the effect of Medicaid expansion on the variable of interest)

Although causal inference cannot be concluded, the evaluator will estimate an upper bound on the effect of the expansion as well as any synergistic effects associated with being simultaneously enrolled in the demo and being part of the expansion population.

The evaluator cannot disentangle all interaction effects between the expansion and all other factors (demographic and otherwise) because there is not sufficient variation in the data for all covariates across all affected measures to estimate all such interaction effects. However, a difference between the effects on the traditional (non-expansion) and expansion eligible groups should yield a conservative upper bound on the effects of the expansion on the outcomes of interest.

Sensitivity Analysis

The Evaluation Design does not rely on sampling methods. Measures are constructed using CMS recognized, reliable, and valid measure sets, and include all members who meet the criteria for the outcome being studied (e.g., diagnostic, age, gender). All eligible members are included in the design. Thus, there are limited evaluation design elements that may skew findings.

However, to test the robustness of results derived from the interrupted time series and/or propensity score matching with t-test analysis the evaluator will apply the following procedures.

- For the analyses using interrupted time series, the evaluator will test the robustness of findings by removing outliers (e.g., +/- 2 standard deviations from the mean) and re-running the original analysis to determine if trends and results are significantly different. This will be in addition to comparisons of annualized results with quarterly findings for each measure to determine if the analysis has either lost meaningful variation or introduced artificial variation by increasing the frequency of measurement.

- For the analyses using propensity score matching the evaluator will test the robustness of findings associated with the comparison strategy by using two types of matching algorithms (specifically propensity score matching and coarsened

exact matching) to create subgroups that are balanced on observable demographic factors. The evaluator will compare their resulting matched groups for balance. The evaluator will conduct t-tests on the demographic factors post-matching to ensure that any differences in means are statistically insignificant.

Findings will report any occurrence where the results of statistical probability at the 0.05 level conflict between methods.

Qualitative Methods

Qualitative methods will be employed to measure providers' perception of the length of time members are in the ED while awaiting treatment in specialized mental health settings. The evaluator will work with the OHCA to identify hospitals with Medicaid behavioral health ED visits. Structured interviews or focus groups with representatives of hospitals, CCBHC program staff and specialized treatment providers will be conducted in each CCBHC region of the State.

Structured interviews will be conducted by phone, via Zoom/Microsoft Teams or face-to-face and will last approximately 30 to 45 minutes. The State and its employees will not conduct, transcribe, or have access to interview notes or transcripts. Interview questions will be finalized by the independent evaluator and approved by the OHCA. The interview will examine:

- Whether the CCBHC model of care contributed to decreased length of stay in the ED.
- How the CCBHC model of care contributed to reductions in utilization and lengths of stays in ED.
- What components or characteristics of the CCBHC model providers feel are most effective in reducing utilization and lengths of stays in EDs.
- Whether there are obstacles that hinder the effectiveness of the demonstration in reducing utilization and lengths of stays in EDs.

A Thematic Analysis will be used to assess interview responses. These analyses examine structured interview data for patterns across interviews. Themes will be defined based on their appearance in the data and not on a pre-defined content structure. Thematic analysis will be conducted separately on each structured interview transcript, for each group of interviewees using an inductive approach. Patterns in the transcripts will be identified and grouped into themes. Themes will be checked against the original transcripts for validity. To ensure inter-coder reliability and the reliability of the analyses, both methods will utilize at least two coders. The analysis is not intended to support comparison between groups of interviewees or follow principles of statistical significance.

D. METHODOLOGICAL LIMITATIONS

Due to the quasi-experimental nature of the design and the limitations identified below, the evaluation results cannot be attributed to causal inference. The findings may suggest an association or correlation with various aspects of the Demonstration. However, language suggesting causation or analyses of counterfactuals may not be appropriate when describing results.

The IMD evaluation has been designed to yield accurate and actionable findings but does have methodological limitations, most of which are inherent to Section 1115 demonstrations. Data and design limitations are outlined below.

Data Limitations

Use of Administrative Data: The evaluation may be limited by its reliance on claims and diagnostic codes to identify the beneficiary population with SUD. These codes may not capture all participants especially if the impact or severity of the SUD is not evident on the initial assessment. For example, an ED visit for a broken arm due to inebriation may not be coded as SUD-related, if the member does not present as inebriated, the ED provider has not ascertained causation, or the member fails to disclose the cause. These limitations will be noted in the findings report.

Additionally, due to the nature of some measures, sufficient variability to estimate the effect of covariates (demographic and geography) on the outcome of interest is not observed and thus cannot be estimated. This means some interaction effects or effects due to covariates cannot be controlled and cannot be estimated.

Design Limitations

Lack of True Experimental Control Groups: Many IMD facilities serve residents from across the State. Thus, regional control or comparison groups for IMD service recipients are not available. In addition, residential placement decisions are made based on nationally recognized mental health and ASAM level of care guidelines; thus, individuals admitted to a residential SUD program or a psychiatric facility have a clinically different profile and level of care need than those who are not admitted. These clinical differences eliminate the possibility of a matched sample of IMD enrollees who receive services versus those who did not. Lastly, all Medicaid enrollees who meet SUD and SMI/SED criteria are eligible for the Demonstration. The design will employ propensity score matching and interrupted time series techniques to mitigate the impact of these limitations. The design will also consider coarsened exact matching as an alternative to propensity score matching and evaluate which one to use based on if one yields better balanced covariates post matching.

Comparison Group Limitations: The evaluation will employ a comparison strategy to study delivery system transformation of CMHC programs to CCBHCs. However, as the CCBHC expansion nears completion (expected in Demonstration year three) the likelihood of a

balanced comparison sample decreases over time. The design will employ logistic regression techniques in the event that a balanced matching group cannot be found.

Medicaid Enrollment/Disenrollment: Medicaid enrollment changes on an annual basis related to eligibility. For example, someone may be attributed to a study cohort in year one, disenroll in year two and reenroll in year three. The design will examine trends using an interrupted time series to mitigate this limitation.

E. SPECIAL METHODOLOGICAL CONSIDERATIONS

SUD and SMI/SED IMD treatment facilities are existing statewide providers that have been delivering care to Medicaid enrollees prior to the implementation of the Demonstration. The Demonstration allows the State to continue services that have been in place albeit with a new funding partner. Independent variables expected to result in change throughout the Demonstration are based on delivery system enhancements and quality improvement strategies and not new IMD expenditure authorities.

ATTACHMENTS

1. Independent Evaluator

The OHCA procures evaluation services through a qualification RFP process, in which potential contractors furnish information on their qualifications, along with references through which the OHCA can verify past performance. The OHCA has signed a task order with one of these contractors, The Pacific Health Policy Group (PHPG), to perform the independent evaluation.

The OHCA selected PHPG because the firm has performed multiple independent evaluations of SoonerCare Choice program components over the past decade, including the first and second generation SoonerCare HMP and the Health Access Networks. PHPG's evaluations included the use of comparison groups where applicable, consistent with the methodological considerations and guidance outlined by CMS.

PHPG also serves as the OHCA's contractor for the calculation of core measures for reporting to CMS. The firm, therefore, is knowledgeable about the OHCA MMIS and the process for generating HEDIS rates using OHCA administrative data. PHPG assurances including "No Conflict of Interest" are on file with the OHCA.

2. Evaluation Budget

Assuming no Demonstration amendments or changes to the Evaluation Design, independent evaluator costs are expected to be $598,390 over the project period 2021-2027. The estimated budget amount will cover independent evaluation expenses, including salary, fringe, administrative costs, other direct costs such as travel for data collection, conference calls, etc., as well as all costs related to data collection, validation, analysis, and report development.

OHCA also will incur costs for State staff to support the independent evaluator efficiently and effectively. The State data, analytic, and program staff will have to undertake data gathering, prepping, and submitting information to the evaluator in line with the evaluation goals and objectives. State staff will provide technical assistance and share their in-depth knowledge of existing State programs; State populations; Medicaid operations; and will leverage existing relationships with partner organizations, as needed.

The evaluation budget may be modified to address contract deliverables and analytical needs and if the terms of the current Demonstration agreement are amended during the project period. The OHCA will report on progress and any known challenges to the evaluation budget, timelines, and implementation in its quarterly and annual reports to CMS.

Exhibit A2-1 offers an overview of external evaluator costs by evaluation activity and Exhibit A2-2 provides total costs including State staff and administrative expenses.

Exhibit A2-1. Independent Evaluator Budget

Project Deliverable	CY2021	CY2022	CY2023	CY2024	CY2025	CY2026	CY2027	Total
Evaluation Design and Approval								
Develop Evaluation Design	$45,000							$45,000
Review CMS feedback and collaborate on revisions	$7,580							$7,580
Evaluation Implementation								
Define data extraction specifications and timelines for each data source	$15,000							$15,000
Clean and validate data received	$49,375	$49,375	$49,375	$49,375	$49,375	$49,375		$296,250
Analyze data		$20,000	$20,000	$20,000	$20,000	$20,000		$100,000
CMS Reporting								
Draft Annual Monitoring Report summary on progress		$10,000	$10,000	$10,000	$10,000			$40,000
Submit Draft Interim Evaluation Report to CMS				$33,000				$33,000
Submit Final Interim Evaluation Report to CMS					$7,580			$7,580
Submit Draft Summative Evaluation Report to CMS						$46,400		$46,400
Submit Final Summative Evaluation Report to CMS							$7,580	$7,580
Annual Total	$116,955	$79,375	$79,375	$112,375	$86,955	$115,775	$7,580	
Grand Total								$598,390

Exhibit A2-2. Total IMD Evaluation Budget

Project Expense	CY2021	CY2022	CY2023	CY2024	CY2025	CY2026	CY2027	Total
Independent Evaluator	$116,955.00	$79,375.00	$79,375.00	$112,375.00	$86,955.00	$115,775.00	$7,580.00	$598,390.00
OHCA Admin	$203,950.56	$203,950.56	$203,950.56	$203,950.56	$203,950.56	$203,950.56	$203,950.56	$1,427,653.92
DMH Admin	$112,222.68	$112,222.68	$112,222.68	$112,222.68	$112,222.68	$112,222.68	$112,222.68	$785,558.76
Grand Total	$433,128.24	$395,548.24	$395,548.24	$428,548.24	$403,128.24	$431,948.24	$323,753.24	$2,811,602.68

3. Timeline and Major Milestones

MILESTONE	CY2021 (DY 1)				CY2022 (DY 2)				CY2023 (DY 3)				CY2024 (DY 4)				CY2025 (DY 5)				CY2026				CY2027			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Evaluation Design and Approval																												
Develop Evaluation Design																												
Submit draft Evaluation Design to CMS																												
Review CMS feedback and collaborate on revisions																												
Submit revised final Evaluation Design to CMS																												
Evaluation Implementation																												
Define data extraction specifications for each data source																												
Define data extraction timelines for each data source																												
Clean and validate data received																												
Analyze data																												
CMS Reporting																												
Draft Annual Monitoring Report summary on progress																												
Submit Draft Interim Report to CMS																												
Review CMS feedback and collaborate on revisions																												
Submit Final Interim Evaluation Report to CMS																												
Submit Draft Summative Report to CMS																												
Review CMS feedback and collaborate on revisions																												
Submit Final Summative Evaluation Report to CMS																												
Post Final Summative Evaluation Report																												