Illinois Behavioral Health Transformation Section 1115(a) Demonstration

Interim Evaluation Report

Prepared by:
Center for Prevention Research and Development
School of Social Work
University of Illinois at Urbana-Champaign
Crystal Reinhart, PhD
Email: reinhrt@illinois.edu
Phone: 217-333-0927

Contents

Executive Summary

Illinois embarked on a transformation of the Health and Human Services (HHS) system beginning in 2016. The focus of this transformation was on behavioral health (mental health and substance use) service delivery. This was a priority for two reasons. First, data from the Illinois Department of Public Health[1,2] indicated that Illinois was experiencing a public health crisis related to opioids. Second, while only 25% of Medicaid beneficiaries have behavioral health needs, they account for 56% of all spending in Illinois. Therefore, Illinois proposed to implement limited pilots of certain services that were not previously available to Medicaid beneficiaries, which included less costly community-based services that were expected to improve the health and well-being of beneficiaries in Illinois.

The 1115 Medicaid Substance Use Disorder (SUD) demonstration waiver began on July 1, 2018, and is scheduled to end on June 30, 2023. Illinois identified 6 milestones to measure the impact of the waiver on Medicaid beneficiaries. These include:

1. Increased rates of identification, initiation, and engagement in treatment
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
6. Improved access to care for physical health and behavioral health conditions among beneficiaries

However, the start of the waiver experienced several delays due to current re-bidding of provider contracts, a change in administration following the 2018 election cycle, and the worldwide COVID-19 pandemic and related shutdowns. There were also several staffing changes and shortages throughout administrative and provider agencies, which led to transitions in processes between the Department of Human Services – Substance Use Prevention and Recovery (SUPR) and the Department of Healthcare and Family Services (HFS). By the end of demonstration year 1, four pilots had begun, another 4 pilots were moved to the State Plan Authority 1915(i) and are now part of the Pathways to Success Program, and the remaining two pilots are planned for incorporation into the waiver extension. With the revisions to the 1115 that removed the 1915(i)-like and home visiting pilots from its financial authority, HFS is concentrating the 1115 demonstration waiver on the improvement of Illinois' SUD delivery system. An effort that underscores the state's overall commitment to SUD transformation and aligns with ongoing efforts from SUPR to move the SUD service delivery system forward.

The evaluation provided in this report, conducted by the Center for Prevention Research and Development (CPRD) at the University of Illinois (independent evaluator), aims to describe progress and challenges experienced through demonstration year 3. The evaluation compares data from the year prior (2017) until just over halfway through the 5-year waiver. Eighteen metrics were chosen by CPRD, with input from SUPR, HFS, and CMS to address evaluation questions based on the 6 milestones identified above. These metrics were evaluated using Medicaid claims data provided by the Office of Medicaid Innovation (OMI) at the University of Illinois. Despite various challenges with the data, CPRD was able to analyze changes over time and conduct significance testing to measure progress on each of the metrics.

The analysis found that 7 of the 18 (39%) metrics are trending in the expected direction, 10 (56%) have remained consistent, and 1 (5%) is moving in the opposite direction. The progress shown was statistically significant when analyzed with Pearson's Chi-Square. Looking across the data, the metrics that are preventative of consequences are

showing change (i.e., less beneficiaries are using a high dosage of opioids or using benzodiazepines and opioids at the same time), while consequences (emergency room visits and overdose deaths) are remaining steady.

It is very likely that not enough time has passed to show change at this juncture. The implementation of pilots began only two years prior to the most recent data provided in this report and the COVID-19 pandemic occurred during this same timeframe, so the actual implementation was not two full years. Additionally, several programmatic and administrative rules that would likely impact the metrics experienced delays. For example, Illinois passed 4 public acts between 2019-2022 and started more than 8 new programs, including toolkits and a Helpline that are targeted at SUD/OUD services. The State Opioid Response (SOR) grants by SUPR were granted no-cost extensions. The data in this report, however, only demonstrates changes that occurred up until the end of 2021. The passage of time with the new policies and programs will likely further increase the progress that has been shown.

There have been several lessons learned and plans for the future. First, the largest barrier to the demonstration waiver involved multiple delays due to administrative reasons and the pandemic. This has had a lasting impact on the ability of provider agencies throughout the state to staff and administer treatments and programs to Medicaid beneficiaries diagnosed with an SUD. Like other states, Illinois had to pivot their focus during the pandemic and have only recently been able to pass policies and begin new programs. However, the data overall is showing that Illinois is on the right path and, given more time with policies and programs in place, we believe that the impact of the waiver on Medicaid beneficiaries will be resoundingly positive.

Section I: General Background Information

A. Introduction

Illinois is one of the largest funders of health and human services (HHS) in the country. With approximately $32 billion spent across its HHS agencies (40% of the total budget), the state is deeply invested in the health and well-being of its 12.7 million residents and 3.4 million Medicaid members. There is an urgent need to get more from this investment - the state must improve health outcomes for residents while slowing the growth of healthcare costs and putting the state on a more sustainable financial trajectory.

As a result, Illinois embarked on a transformation of the HHS system. The transformation was announced in 2016 and has a broad aim of improving population health, improving experience of care, and reducing costs. It is based in five themes:

1. Prevention and population health
2. Paying for value, quality, and outcomes
3. Rebalancing from institutional to community care
4. Data integration and predictive analytics
5. Education and self sufficiency

The initial focus of the transformation effort was on behavioral health (mental health and substance use), specifically the integration of behavioral and physical health service delivery. Behavioral health was chosen due to the urgency of the issue as well as the potential financial and human impact. Building a nation-leading behavioral health strategy will not only help bend the healthcare cost curve in Illinois but also help turn the tide of the opioid epidemic, reduce violent crime and violent encounters with police, and improve maternal and child health. There is a large financial payoff in improving behavioral health: Medicaid members with behavioral health needs represent 25% of Illinois Medicaid members but account for 56% of all Medicaid spending. Medicaid beneficiaries with behavioral health needs, such as mental illness or drug and alcohol use disorders, incur costs that are 2-3 times higher than those who do not have co-occurring disorders.

Under the demonstration, which was approved May 7, 2018, Illinois proposed the introduction and limited piloting of certain services that were not directly available to Medicaid beneficiaries. The additional services were expected to inform the state's efforts to transform the behavioral health system in Illinois as some beneficiaries would have access to less costly community-based services, which in turn are expected to help beneficiaries improve their health and avoid costlier services provided by institutions. The demonstration period is July 1, 2018, through June 30, 2023.

Rationale for this Waiver Project

Prior to the start of the waiver, a 2017 comprehensive report on opioids by the Illinois Department of Public Health[1] reported alarming increases in consequences of use. Emergency department visits increased by 77% from 2015 to 2016, with the largest increase due to heroin overdoses. Hospitalizations also increased by 42% from 2014-2016. Naloxone administrations by EMS personnel increased 250% from 2013 to 2016, and neonatal abstinence syndrome increased 53% from 2011 to 2016. Overdose data provided in a dashboard maintained by the Illinois Department of Public Health[2] showed that overdoses from heroin and other opioids nearly tripled from 6,868 in 2013 to 15,702 in 2018. In 2018, 2,086 overdoses were fatal. Overdoses were primarily seen in white males between the ages of 25-34 and 45-54. This is especially alarming given that the total number of prescription opioids filled decreased from 7,562,123 in 2015 to 4,850,691 in 2018. Based on these results, it was evident an opioid crisis was ongoing in Illinois and provided ample rationale for the 1115 Medicaid waiver.

The 1115 Medicaid Waiver project addresses several pressing needs in the state of Illinois. First, it fills gaps left at the intersection of the state substance use authority and state Medicaid program regarding the opioid crisis. Specifically, there is a need for high quality residential treatment for individuals, withdrawal management services (i.e., detoxification), case management, and peer recovery support services. Second, there is a strong need to emphasize community-based care for individuals that are severely or persistently mentally ill (SMI). For such individuals, there is recognition that services are needed, and the critical goal was to enhance the quality of life for these citizens by attempting to alleviate the stress of crisis events.

B. Name, Approval Date and Time Period Covered

The Illinois Behavioral Health Transformation Section 1115(a) Demonstration was approved on May 7, 2018, by the Centers for Medicare and Medicaid (CMS). The demonstration began on July 1, 2018, and is currently set to end on June 30, 2023. The evaluation covers the year prior to the start of the demonstration (January 1, 2017-December 30, 2017) through last calendar year of the demonstration (January 1, 2023-December 30, 2023). This interim report includes data from the baseline year (CY2017) through the most recent calendar year available (CY2021).

C. Demonstration Goals

Illinois identified 6 key milestones to address through the implementation of the 1115 Medicaid waiver:

1. Access to critical care levels of care for OUD and other SUDs
2. Use of evidence-based, SUD-specific patient placement criteria
3. Use of nationally recognized SUD-specific program standards to set provider qualifications for residential treatment facilities
4. Sufficient provider capacity at each level of care
5. Implementation of comprehensive treatment and prevention strategies to address OUD
6. Improved care coordination and transitions between levels of care

As outlined in the state's Implementation Plan, Illinois will test whether the demonstration is likely to assist in achieving the milestones through the following goals:

1. Increased rates of identification, initiation, and engagement in treatment
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
6. Improved access to care for physical health and behavioral health conditions among beneficiaries

D. History of Implementation

Illinois proposed 10 pilot programs to address the 6 goals for the 1115 Medicaid waiver. By the end of demonstration year 1, four pilots had begun, four additional pilots were incorporated into a state plan amendment through 1915(i) authority and are now part of the Pathways to Success Program, which uses System of Care principles and utilizes an intensive model of care coordination to meet the needs of the child and family, and the remaining two pilots are planned for incorporation into the waiver extension. With the revisions to the 1115 that

removed the 1915(i)-like and home visiting pilots from its financial authority, HFS is concentrating the 1115 Medicaid waiver on the improvement of Illinois' SUD delivery system.

Illinois' initial implementation of four pilots included: 1) SUD Implementation Protocol featuring up to 30-Day IMD Funding; 2) Clinically Managed Withdrawal Management Services; 3) SUD Case Management; and 4) Peer Recovery Support Services. The aim of these pilots was to facilitate the state's ability to maintain critical access to OUD and SUD services and continue delivery system improvements to provide more coordinated and comprehensive treatment for Medicaid beneficiaries. The pilots enabled the provision of targeted treatment services in certain residential/inpatient treatment settings that otherwise would not be eligible for federal financial participation.

Below is a table that indicates the 10 original pilots, the start dates, and the current status.

Service Name	Start Date	Status in 1115
1. SUD Implementation Protocol featuring up to 30 Day IMD Funding	1/1/2019	Ongoing
2. Clinically Managed Withdrawal Management Services Pilot	2/1/2019	Ongoing
3. SUD Case Management Pilot	2/1/2019	Ongoing
4. Peer Recovery Support Services Pilot	2/1/2019	Ongoing
5. Crisis Intervention Services Pilot	N/A	Anticipated transition to State Plan Authority
6. Evidence-Based Home Visiting Services	N/A	Anticipated transition to State Plan Authority
7. Assistance in Community Integration Services	Forthcoming	Will be included in the 1115 extension
8. Supported Employment Services	Forthcoming	Will be included in the 1115 extension
9. Intensive In-Home Services	N/A	Anticipated transition to State Plan Authority
10. Respite Services	N/A	Anticipated transition to State Plan Authority

As indicated by the start dates in the table above, the implementation of the 1115 Medicaid waiver was delayed. This occurred because of several circumstances and changes in the Medicaid behavioral health landscape in Illinois. At the time of demonstration approval, the Illinois Department of Healthcare and Family Services (HFS) rebid most of the state's existing Medicaid managed care program contracts, consolidating multiple programs into a single streamlined program and expanded managed care statewide. This unprecedented procurement consolidated the Family Health Plans/ACA Adults (FHP/ACA), the Integrated Care Program (ICP) and the Managed Long-Term Services and Supports (MLTSS) program into a single contracting approach while reducing the number of contracted managed care organizations (MCOs) from 11 to 6. Implementation of the new contracts began in January 2018 for existing enrollees, with the full transition timeline for existing and new enrollees taking place by the end of 2018. HFS was still managing the transition to the new MCO contracts when the approval of this demonstration was received in May 2018, which resulted in delays in the initial planning. The second delay was the Illinois gubernatorial election in November 2018 and subsequent change in administration. In 2019, the start-up and ongoing implementation of the demonstration was paused while program and policy decisions, along with staffing assignments, were realigned in accordance with the new administration.

Perhaps the most significant impact on the 1115 Medicaid waiver was the COVID-19 pandemic and subsequent shutdowns nationwide. On January 31, 2020, U.S. Department of Health and Human Services Secretary declared a public health emergency for the United States. Illinois, like the rest of the healthcare world, had to shift focus to address the needs of Illinois' healthcare community in responding to COVID-19. The COVID-19 pandemic had an

unprecedented, substantial impact on Medicaid in the state of Illinois. First, many providers closed during the pandemic, temporarily or permanently. Workforce shortages contributed to the state's issues with addressing capacity and the types of Medicaid services provided shifted away from residential and inpatient treatment to increased outpatient and telehealth services. Fortunately, this impact was short-lived during the shutdown period; however, there are still lasting impacts to Medicaid as the state proceeds with the implementation.

Due to the delays noted above during the first couple of years, there were several changes in staffing and staffing assignments. Initially eligibility determination for the pilot programs was assigned to DHS Division of Substance Use Prevention and Recovery (SUPR), however due to staffing shortages at SUPR, HFS assumed responsibility for pilot eligibility enrollment in the summer of 2020. Additionally, waiver providers experienced issues early on with claims being denied or rejected through the Medicaid MCOs. HFS worked with MCOs to identify the reasons for claim denials and provided billing guidance to approved providers to improve billing and claim submissions for the 1115 Medicaid waiver pilots. Currently the HFS Bureau of Behavioral Health is responsible for reviewing and determining eligibility and tracking eligibility for the SUD Pilots.

The four pilots were set to begin during the first few months of the waiver in 2018, but the first (IMD funding) was delayed for Medicaid Managed Care populations until 1/1/2019 due to the rebidding of contracts. This pilot included a total of 24 residential (Level 3.5) programs and one Medically Monitored Withdrawal Management (Level 3.7) program designated as eligible to participate in the SUD IMD Residential pilot. These 25 SUD residential IMD programs are operated by 14 organizations licensed by SUPR. Between July 1, 2018, and September 30, 2020, six of the original 24 Residential Level 3.5 IMD programs have closed and are no longer in operation. Additionally, one provider has 12 site locations, but a review of available claims records for the past four demonstration years indicates that only five (Belleville, IL; Rock Island, IL; and 3 in Chicago, IL) of the 12 locations have been actively participating and submitting eligibility requests. A second provider with one location has been active and submitting eligibility requests. The other three pilot programs were delayed until February of 2019 to allow the new administration time to make program and policy decisions impacting these pilots.

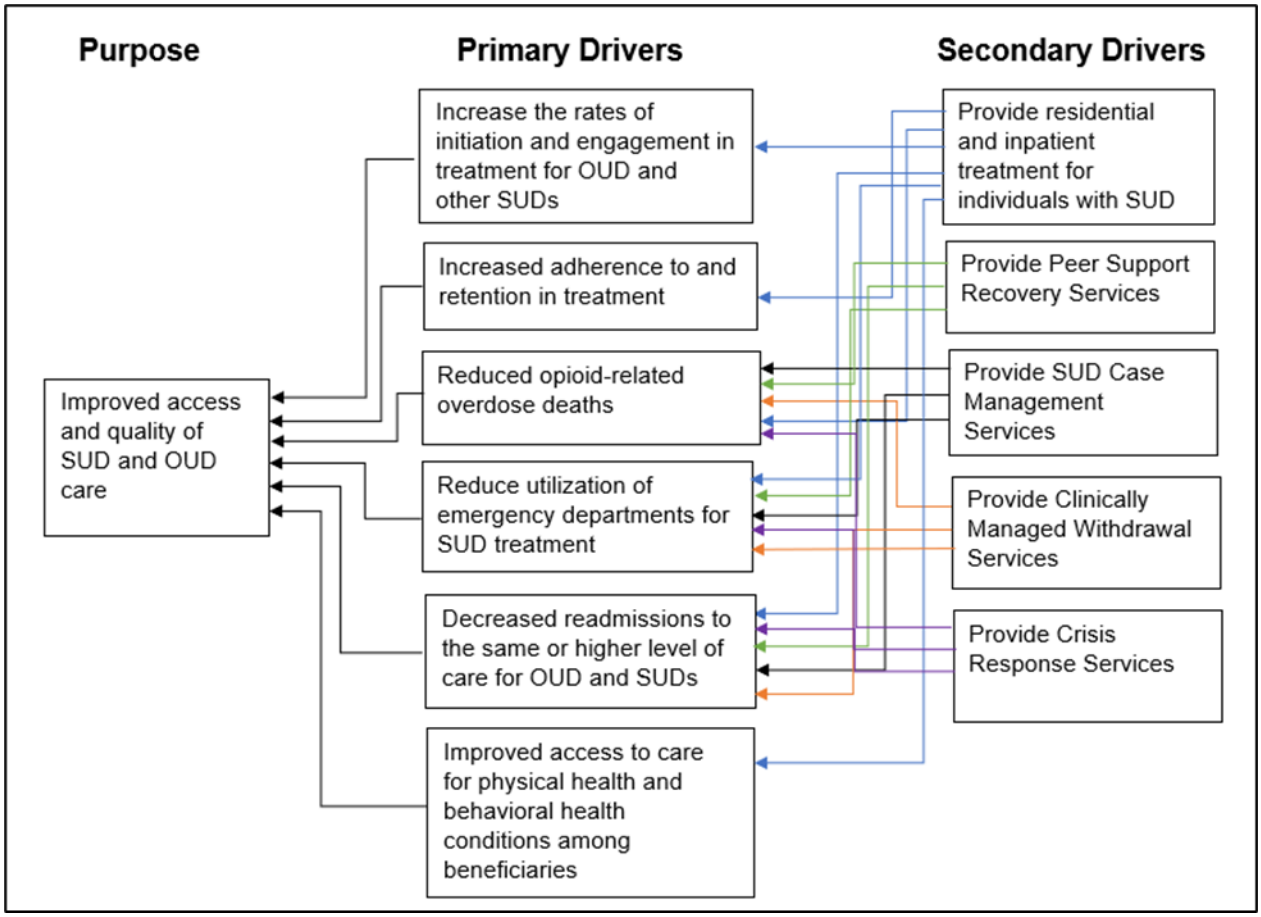
E. Population Groups Impacted

Under the demonstration, there is no change to Medicaid eligibility. Standards for eligibility remain set forth under the state plan. All affected groups derive their eligibility through the Medicaid state plan and are subject to all applicable Medicaid laws and regulations in accordance with the Medicaid state plan. All Medicaid eligibility standards and methodologies for these eligibility groups remain applicable. Eligibility for the third pilot, SUD case management, is targeted to beneficiaries with an OUD/SUD diagnosis that qualify for diversion into treatment from the criminal justice system.

Section II: Evaluation Questions and Hypotheses

A. Defining Relationships: Aims, Primary Drivers, and Secondary Drivers

Based on the overall goal of improved access and quality of SUD and OUD care, Illinois identified the 6 goals in Section I.C. above. These goals served as the primary drivers for the evaluation. Five pilot programs were also identified as secondary drivers. The following driver diagram presented below shows the relationships between the demonstration's purpose, the primary drivers that contribute directly to achieve the purpose, and secondary drivers necessary to achieve the primary drivers.



B. Hypotheses and Research Questions

The overall goal of the evaluation is to conduct a robust and data-driven analysis to identify, to the greatest extent possible, a causal relationship between the intervention component and the key outcomes of interest. Where possible, it will be important to explore mechanisms either aiding or hindering the impact of the waiver component. The table below outlines the state's 6 goals as well as the evaluation questions and hypotheses.

Goals	Evaluation Questions	Hypotheses
1. Increased rates of identification, initiation, and engagement in treatment.	1. Does the demonstration increase access to and utilization of SUD treatment services?	1. The demonstration will increase the percent of members referred to and engaging in SUD treatment.

2. Increased adherence to and retention in treatment	2. Does the demonstration increase adherence to and retention of SUD treatment services?	2. The demonstration will increase the percent of members adhering to SUD treatment.
3. Reductions in overdose deaths, particularly those due to opioids.	3. Are rates of opioid-related overdose deaths impacted by the demonstration?	3. The demonstration will result in decreased opioid-related overdose deaths.
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.	4. Does the waiver result in fewer preventable ER visits for SUD?	4. The demonstration will result in fewer ER visits for SUD in the member population.
5. Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.	5. Do waiver enrollees receiving SUD/OUD services experience reduction in readmissions to the same or higher levels of care for SUD/OUD?	5. The demonstration will reduce readmissions to the same or higher levels of SUD care.
6. Improved access to care for physical health and behavioral health conditions among beneficiaries	6. Do enrollees receiving SUD services experience improved access to care for physical health conditions?	6. The demonstration will increase the percentage of members with SUD who access care for physical health conditions.

C. Current Report and Previous Findings

The interim evaluation presented here expands on earlier findings in the mid-point assessment report submitted to CMS in September 2022. The mid-point assessment provided the data points for the metrics during the first year of the demonstration waiver (2018) compared to the most recent data available at the time (2021) and calculated the percent change between the two time points. The results below present a deeper exploration of the data by comparing the rates from the year prior to the start of the demonstration (2017) and each year of the wavier until the most recent available data (2018, 2019, 2020, and 2021). This provides a more full and complete picture of the fluctuations in the data over time. In addition, our team conducted Chi-Square analyses on 4 of the metrics to test for significant changes from pre-waiver to the most recent data available.

D. Connection of Waiver Project to Broader Transformation Efforts

At the point of its introduction in 2018, this waiver was the first of a planned series of initiatives under Illinois' HHS transformation initiative. The HHS transformation intended to focus on prevention and public health strategies, pay for performance, and data-driven health efforts. At the core of Illinois' 1115 Medicaid waiver was a package of substance use disorder (SUD) initiatives that targeted the opioid epidemic in Illinois and efforts to serve as a catalyst for a modernization of the Illinois SUD infrastructure. Testing the Medicaid sustainability potential of previously grant-funded services and the introduction of health infrastructure to help inform and reduce problematic prescription practices of medical professionals – the 1115 could clearly be characterized as a SUD-based initiative. Additionally, HFS sought to take advantage of the 1115 financial authority and test several new community-based behavioral health services focused on the more traditional mental health service continuum.

In the two and a half years since the approval and initial implementation of the Illinois Behavioral Health Transformation Demonstration, HFS has refined its healthcare strategy for individuals with complex healthcare needs – those with and without behavioral health conditions. In a more nuanced approach, the Medicaid agency is seeking to replace its original multifaceted approach to testing multiple system enhancements for a more targeted, population management approach. Introducing a new 1915(i) State Plan Amendment in 2020, HFS appears to be implementing services and supports that it once intended to test as a limited-scale pilot under the 1115 now as services available statewide to all individuals that qualify. Additionally, legislation proposed by the Illinois legislature in Spring 2021 seeks to introduce evidence-based home visiting and doula services more broadly into the Illinois Medicaid program.

With the revisions to the 1115 that removed the 1915(i)-like and home visiting pilots from its financial authority, HFS is concentrating the 1115 Medicaid waiver on the improvement of Illinois' SUD delivery system. This effort underscores the state's overall commitment to SUD transformation and aligns with ongoing efforts from SUPR to move the SUD service delivery system forward. At a time when SUPR finds itself re-basing individualized provider rates in favor of cost-based rate structures to establish service equity and introducing system enhancements via federal grants (SAMHSA's State Opioid Response federal grant and CMS' Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act: Section 1003 – Planning Grant) Illinois' 1115 Medicaid Waiver, when considered without its 1915(i)-like and home visiting components, fits within the context of the state seeking to transform its SUD service delivery system.

The state is requesting to continue the IMD/SUD measures forward. Due to implementation delays, the state hasn't learned enough to date, but sufficient progress was made that they want to continue with the metrics to monitor success with these pilots and continue to inform progress in Illinois' healthcare transformation efforts. The direction of the extension will incorporate activities that are aligned with federal initiatives around Social Determinants of Health (SDOH) and recent Health-Related Social Needs (HRSN) approvals, complementing and building on the initiatives Illinois is currently engaged in around SDOH and health equity as part of healthcare transformation.

Section III: Methodology

The results provided in the next section are the first step of a multi-step evaluation as described in the approved Evaluation Plan (Appendix A). For this report, the independent evaluator (Center for Prevention Research and Development – CPRD) used the Medicaid claims data for Illinois beneficiaries to compare the year prior to the start of the 1115 Medicaid waiver (2017) with the most current available data (2021) across 18 proposed metrics. This includes the first three demonstration years of the 5-year waiver. No comparison data has been utilized to date but may be incorporated for the next part of the evaluation proposed for the summative report (i.e., Interrupted Time Series, Propensity Score Matching, etc.) using either a comparison state's data or internal data from non-SUD beneficiaries. Additionally, the individual pilot demonstrations will be evaluated and incorporated into the summative report. The current report analyzes the changes in metrics over time, as well as the significance of these changes where appropriate.

Metrics Used for Interim Evaluation

The 18 metrics were chosen based on research questions and hypotheses to directly measure changes that were experienced by Medicaid beneficiaries in the state of Illinois. Metrics were identified with feedback from CMS and incorporated into the evaluation plan. Each of the metrics directly addresses a primary driver listed in the driver diagram in the evaluation plan and are presented in the table below.

Primary Driver	Associated Metrics
1 - Increase the rates of initiation and engagement in treatment for OUD and other SUDs	Metric 15 – Initiation and Engagement in Treatment
2 - Increase adherence to and retention in treatment	Metric 3 – Percentage of Beneficiaries with an SUD (monthly) Metric 22 – Continuity of Pharmacotherapy for OUD
3 - Reduce opioid-related overdose deaths	Metrics 26/27 - Opioid Drug Overdose Deaths Metric 18 – Use of Opioids at High Dosage in Persons without Cancer per 1,000 Medicaid Beneficiaries Metric 21 – Concurrent Use of Opioids and Benzodiazepines per 1,000 Medicaid Beneficiaries
4 - Reduce utilization of emergency departments for SUD treatment	Metric 23 – Emergency Department Utilization for SUD/OUD per 1,000 Medicaid Beneficiaries Metric 24 – Inpatient Stays for SUD/OUD per 1,000 Medicaid Beneficiaries
5 – Decrease readmissions to the same or higher level of care for OUD and SUDs	Metric 25 – 30-Day Readmission for SUD Treatment
6 – Improve access to care for physical health and behavioral health conditions among beneficiaries	Metric 32 – Access to preventative/ambulatory health services for adult Medicaid Beneficiaries with SUD Annual Dental Visits Child and Adolescent Well-Care Visits Prenatal and Postpartum Care

The metrics above are calculated using technical specifications manuals published by CMS or other contractors. Several instructions change from year-to-year within Medicaid technical specifications that would make the data not comparable across time (i.e., per 1,000 beneficiaries vs. per 100 beneficiaries, changes in MMEs defined as "high dosage", etc.). Therefore, to ensure consistency and comparability over time, all metrics were calculated using the same version or year of technical specifications. CPRD consulted with the state to identify Version 4, or 2021, as the most recent versions during the development of this report. Of the metrics above, those with a number assigned (15, 3, 22, 18, 26/27, 21, 23, 24, 25, 32) were calculated based on the instructions in the "Medicaid Section 1115 Substance Use Disorder Demonstrations: Technical Specifications for Monitoring Metrics".[3] A disclaimer for these technical specifications is below:

Measures IET-AD, FUA-AD, FUM-AD, and AAP [Metrics #15, 17(1), 17(2), and 32] are Healthcare Effectiveness Data and Information Set (HEDIS®) measures that are owned and copyrighted by the National Committee for Quality Assurance (NCQA). HEDIS measures and specifications are not clinical guidelines, do not establish a standard of medical care and have not been tested for all potential applications. The measures and specifications are provided "as is" without warranty of any kind. NCQA makes no representations, warranties, or endorsements about the quality of any product, test or protocol identified as numerator compliant or otherwise identified as meeting the requirements of a HEDIS measure or specification. NCQA makes no representations, warranties, or endorsement about the quality of any organization or clinician who uses or reports performance measures and NCQA has no liability to anyone who relies on HEDIS measures or specifications or data reflective of performance under such measures and specifications.

The measure specification methodology used by CMS is different from NCQA's methodology. NCQA has not validated the adjusted measure specifications but has granted CMS permission to adjust. A calculated measure result (a "rate") from a HEDIS measure that has not been certified via NCQA's Measure Certification Program, and is based on adjusted HEDIS specifications, may not be called a "HEDIS rate" until it is audited and designated reportable by an NCQA-Certified HEDIS Compliance Auditor. Until such time, such measure rates shall be designated or referred to as "Adjusted, Uncertified, Unaudited HEDIS rates."

Analysis for the 4 metrics that were not assigned a number (Annual Dental Visits, Child and Adolescent Well-Care Visits, and 2 Prenatal and Postpartum Care metrics) were calculated using the technical specifications found in the Healthcare Effectiveness Data and Information Set (HEDIS) MY2020-2021 Volume 2 manual.[4]

Target Population and Data Transfer

The target population for the evaluation was limited to Illinois Medicaid and Medicaid Managed Care Organization (MCO) recipients diagnosed with a substance use disorder (identified using ICD-9 and ICD-10 diagnostic codes) who were 18 to 64 years of age during in the study period. SUD individuals that were enrolled in the waiver demonstration were flagged to identify the target population. Of the 3.4 million Medicaid beneficiaries, around 150,000 had been diagnosed with an SUD (about 4.4%) and were included in the evaluation. Note that this is lower than nationally represented research estimates,[5] suggesting that there may be some issues with under detection.

Medicaid claims data was the only data used for the Interim Evaluation report. For the summative report at the end of the waiver, CPRD intends on using comparison group data for the overall evaluation as well as individual pilot evaluations that may include other sources of quantitative or qualitative data to evaluate the success of the implementation of the pilot programs during the waiver period. This was originally proposed in the evaluation plan and will help delay the evaluation of the pilot programs to allow for a longer period of implementation post COVID-19 pandemic. The pandemic resulted in several delays for the pilot programs, so it is essential to allow time for these programs to have an impact. Finally, claims data for Medicaid beneficiaries is the most accurate data to assess the changes that may be occurring in the lives of beneficiaries throughout the state and for this reason the evaluators chose to use claims data as the primary source for this evaluation.

Medicaid claims data was obtained from the Department of Healthcare and Family Services' Enterprise Data Warehouse and transferred to the independent evaluator (CPRD). Currently, this data is housed on Nightingale, a HIPAA compliant cluster at the National Center for Supercomputing Applications (NCSA) at the University of Illinois, in contract with CPRD. Here, the evaluation team has been able to explore and analyze the data for trends over time using a variety of statistical software packages and techniques including SQL, SPSS, and SAS.

Data validation and cleaning was conducted in several stages. CPRD collaborated with SQL programmers at NCSA to build and store an infrastructure to query the claims data to process each metric. The query of each metric using SQL followed the technical specifications outlined by either CMS or HEDIS.[3, 4] Multiple members of the evaluation team worked to ensure that the SQL syntax correctly identified recipients, including verifying that value sets used in metrics such as PPC were aligned with the specifications that were in effect. In addition, to validate the queries, the evaluation team took multiple steps to verify the data after bringing it into SPSS software. Furthermore, the evaluation team collaborated with the Office of Medicaid Innovation (OMI) to ensure that all the computational aspects of generating metric data were correct, and that the team had correctly interpreted the sometimes-vague specifications.

Once beneficiaries eligible for inclusion in the denominator or eligible population were identified, the methods for calculating metrics varied. In some instances, such as metric 18, 21, 23, and 24, the evaluation team at CPRD opted to complete the denominator and/or numerator calculation through SPSS; while in other instances, SQL was used to finalize the numerator. In either case, the team then checked the data while calculating the metrics, by selecting at random cases from each dataset and checking them to ensure no irregularities were present, adding an extra layer of verification. Furthermore, in datasets where fixed values were present (e.g., Metric 18 could only include beneficiaries who received their first prescription prior to October 3rd of the measure year), the team checked the data to ensure that calculations had not inadvertently included beneficiaries who should have been excluded. Finally, the team began a lengthy process of reviewing the SQL syntax used to generate the metrics alongside programmers from OMI, and while this process is still underway, those metrics which were reviewed were almost universally calculated correctly, with any errors being marginal. Where SPSS syntax was used to calculate metrics, no fewer than three analysts at CPRD checked and rechecked the syntax and resulting datasets to validate the output.

The analyses used for the current report include descriptive statistics for all metrics and Pearson's Chi-Square for 6 metrics. Chi-Square was only utilized where feasible for some of the metrics due to the type of data yielded (i.e., rates vs. numbers). Where metrics were analyzed using the Chi-square test, effect size was measured as well, using Cramer's V.

Section IV: Methodological Limitations

As described above, CPRD received claims data from the Office of Medicaid Innovation (OMI) and the data was subsequently transferred to the Nightingale cluster at the NCSA. The claims data that was received included only paid claims for beneficiaries diagnosed with an SUD for 2017-2021. CPRD does not have access to the Enterprise Data Warehouse (EDW) that contains all Medicaid claims data. A few weeks prior to the submission of this report, several data transfer errors were identified by OMI and the evaluation team at CPRD corrected these as soon as they were identified. To help OMI identify any other potential errors, CPRD compared data previously reported by OMI in quarterly and annual reports (when applicable, this report contains several metrics that OMI does not report). While this data is not expected to be the same as previously reported data due to variations in technical specification versions and other factors, it should be similar. CPRD has not been able to independently identify errors without access to the EDW for comparison, so there is some reliance on OMI to double-check this work. OMI and CPRD were able to double-check some, but not all, of the metric data. We anticipate further evaluation and correction in the coming months and there is potential that this data will change.

Version 4 (2021) of the technical specifications includes not only paid claims, but also denied, pending or suspended claims for several metrics. Because the data received included only paid claims, metric 15, annual dental visits (ADV), child and adolescent well-care visits (WCV), timeliness of prenatal care and postpartum care (PPC) only include paid claims. This is indicated in footnotes for the corresponding metrics in the results section. CPRD has requested this data from OMI, and this will be included in the next draft.

CPRD received claims data for calendar years 2017-2021. The EDW has experienced several changes in the past that have rendered 2016 data unavailable. Metrics 3, 15, 23 (OUD Substratum), 24 (OUD Substratum), and 32 require data from 11 months prior, so some baseline data for these metrics was not available. This is indicated in footnotes for the corresponding metrics in the results section.

While the evaluation plan called for metric 3 to be measured as a rate, the CMS technical specifications called for a count to be calculated. Therefore, metric 3 was assessed using the guidelines outlined in the technical specification's manual. Chi-square tests were not performed for Medicaid Beneficiaries with an SUD Diagnosis as it is based on numbers and not percentage rates.

An additional metric "Tobacco use screening and follow-up for people with alcohol or other drug dependence" was included in the approved evaluation plan under Primary Driver 6; however, no analysis was conducted, and it is not included in this report. The last known steward of the measure (NQF 2600), the Physician Consortium for Performance Improvement (PCPI), was dissolved as of June 23, 2020, making the technical specifications for the measure impossible to retrieve. While the non-technical measure specifications are still available on the NQF website, these specifications discuss the rate calculation in very general terms, lacking the details needed for a meaningful analysis. Additionally, the NQF's own endorsement for the measure was removed on December 19, 2019, and the measurement was retired.[6] As such, with a lack of an endorsement, technical specifications, and a steward, the decision was made to not analyze the tobacco use screening metric.

Where tests of statistical significance were conducted, the evaluation team opted to use Pearson's Chi Square test to determine if the changes from the baseline period to the latest available time in the demonstration period were significant. However, there may be some concerns regarding the choice of the Chi-Square test since the samples are not entirely independent of each other. Some Medicaid beneficiaries have been included in both samples due to ongoing eligibility, although these beneficiaries make up a minority of the test samples. Despite these concerns regarding independence, the choice was made to continue using the Chi-Square test, as detailed in the evaluation plan, owing to the large sample sizes used in the analyses, with *n* regularly exceeding 15,000 beneficiaries. Furthermore, the evaluation team ran paired t-tests for several of the metrics and found no meaningful differences in statistical significance; again, this is presumed to be due to the large sample sizes available. Finally, it was felt that

it would be better to use the robust Chi-Square test to have an analysis which encompasses all beneficiaries possible rather than drastically reduce the scope of the analysis using a paired t-test, which itself would be subject to room for error due to non-continuous enrollment, in the likely event that a beneficiary was eligible for Medicaid in 2017 and 2021, but not eligible during one of the intervening demonstration years.

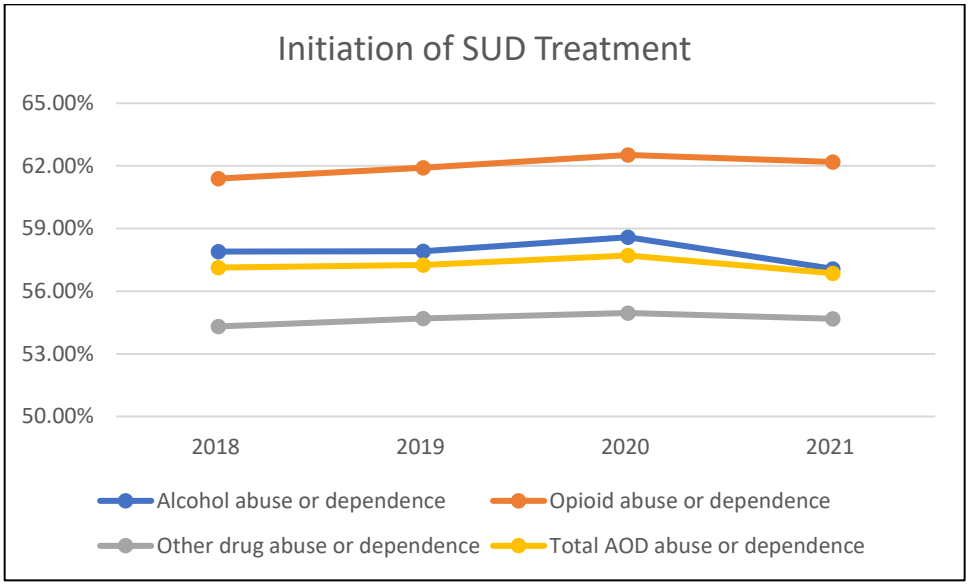
Section V: Results

A. Primary Driver 1 – Increase the rates of initiation and engagement in treatment for OUD and other SUDs

Evaluation Question 1: Does the demonstration increase access to and utilization of SUD treatment services?

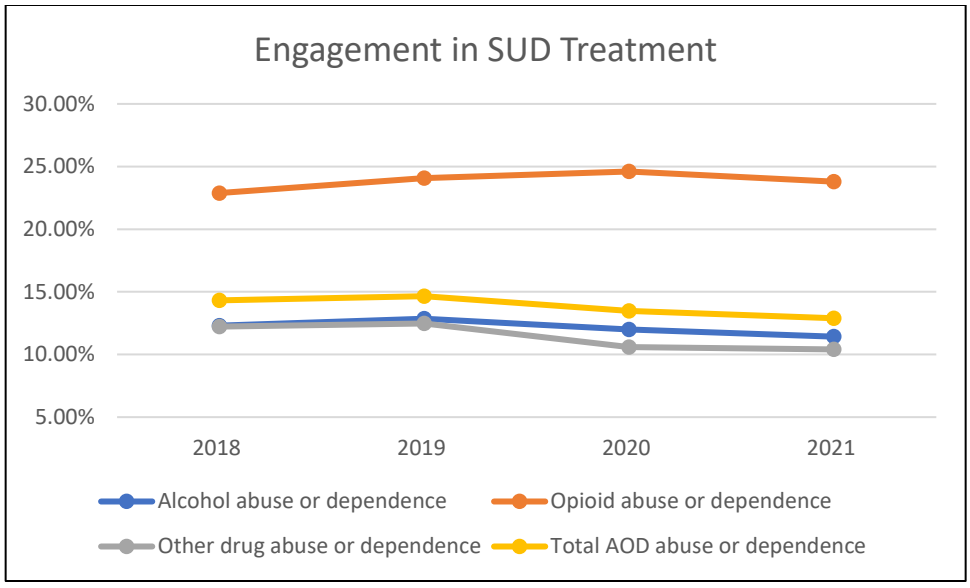
Evaluation Hypothesis 1: *The demonstration will increase the percent of members referred to and engaging in SUD treatment.*

Metric 15: Initiation and Engagement of Alcohol and Other Drug Abuse or Dependence Treatment



Initiation in SUD Treatment					
Metric Name	*Metric #*	*2018**	*2019*	*2020*	*2021*
Alcohol abuse or dependence	S1	57.89%	57.91%	58.58%	57.07%
Opioid abuse or dependence	S2	61.39%	61.91%	62.52%	62.19%
Other drug abuse or dependence	S3	54.31%	54.69%	54.96%	54.69%
Total AOD abuse or dependence	S4	57.13%	57.26%	57.71%	56.86%

Note: CMS Metric 15 was calculated using only paid claims.
*2017 data was not available for Metric 15 at the time of writing



Engagement in SUD Treatment					
Metric Name	*Metric #*	*2018**	*2019*	*2020*	*2021*
Alcohol abuse or dependence	S5	12.31%	12.85%	12.00%	11.42%
Opioid abuse or dependence	S6	22.89%	24.07%	24.60%	23.80%
Other drug abuse or dependence	S7	12.23%	12.47%	10.60%	10.40%
Total AOD abuse or dependence	S8	14.33%	14.65%	13.48%	12.89%

Note: CMS Metric 15 was calculated using only paid claims.
*2017 data was not available for Metric 15 at the time of writing

Metric 15 was broken down into 8 sub-metrics, split into treatment and engagement categories stratified by treatment or engagement for alcohol abuse or dependence, opioid abuse or dependence, other abuse or dependence, and a total trend.

Regarding treatment initiation, the total trend was relatively consistent, scarcely rising above the baseline year in calendar years 2018, 2019, and 2020, but dropping (marginally) below the baseline year in 2021. Examining the substrata reveals that there is slight growth in initiation for alcohol use treatment, a larger drop in opioid treatment initiation, and a consistent trend for initiation of other drug treatment. As a result of the consistent trends demonstrated, the initiation in SUD treatment element of metric 15 neither supports, nor fails to support, the overall hypothesis that the demonstration increases referrals and initiation in SUD treatment.

The trend for engagement in treatment is similarly defined by steady trends, although there is seemingly more variation. Opioid engagement seems to rise across the measurement period, although this rise is blunted in 2021 with a slight drop. The other substratum seems to drop, although these changes are incredibly marginal, dropping by less than 2 percentage points across the measurement period. As a result of these very small changes, it is concluded that metric 15 engagement measures neither support nor fail to support the hypothesis.

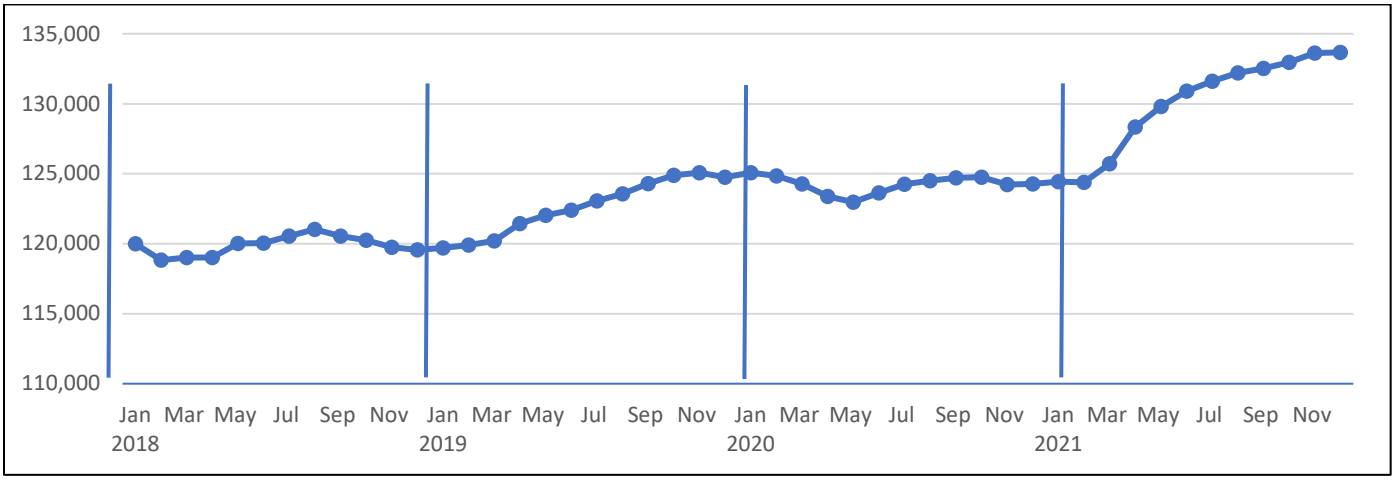
B. Primary Driver 2 – Increase adherence to and retention in treatment

Evaluation Question 2: Does the demonstration increase adherence to and retention of SUD treatment services?

Evaluation Hypothesis 2: *The demonstration will increase the percent of members adhering to SUD treatment.*

Two of the four metrics for this primary driver do not list descriptive statistics or Chi-square in the evaluation plan so they are not included in the Interim Evaluation report. The two metrics, Continuity of Care after Inpatient or Residential Treatment for SUD (NQF #3453) and Continuity of Care after Medically Managed Withdrawal from Alcohol and/or Drugs (NQF #3312), will be included alongside detailed analysis in the summative report.

Metric 3: Medicaid Beneficiaries with an SUD Diagnosis (monthly)

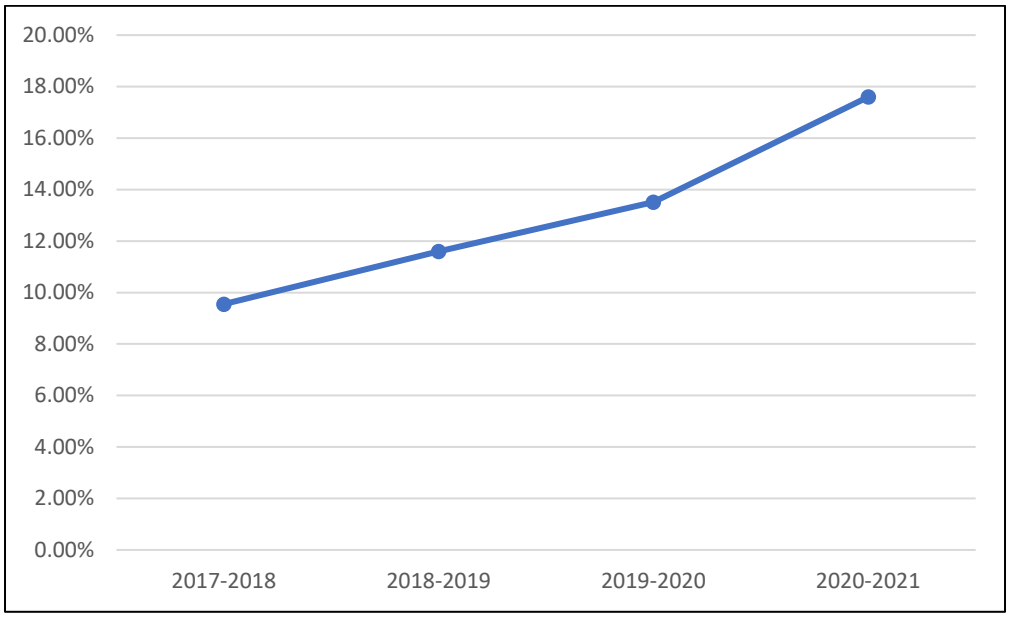


Medicaid Beneficiaries with an SUD Diagnosis (monthly)												
	Jan	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*
*2018**	119,989	118,826	119,014	119,026	120,016	120,050	120,541	121,022	120,541	120,258	119,747	119,561
2019	119,702	119,917	120,210	121,441	122,035	122,395	123,070	123,568	124,306	124,886	125,071	124,749
2020	125,063	124,840	124,281	123,393	122,976	123,632	124,249	124,500	124,697	124,750	124,226	124,269
2021	124,430	124,394	125,718	128,336	129,798	130,893	131,084	131,084	130,888	130,741	130,865	130,385

*2017 data is not available for Metric 3

The results from the monthly Medicaid Beneficiaries with an SUD Diagnosis have gradually increased from January 2018 through December 2021. The increase in the count supports the hypothesis put forward by this evaluation.

Metric 22: Continuity of Pharmacotherapy for OUD



	Baseline (2017-2018)	*CY 2018-2019*	*CY 2019-2020*	*CY 2020-2021*	*p-value*	*Effect Size*
Rate	9.55%	11.60%	13.52%	17.60%	<.001	.111
Count	1706	2,693	3,511	4894		

CMS Metric 22, Continuity of Pharmacotherapy for OUD is an annual metric calculated over a two-year rolling period. The descriptive statistics show improvement, with a growing proportion of Medicaid beneficiaries with OUD receiving continuous care. The number of individuals receiving continuous pharmacotherapy rose from 1,711 in the baseline period to 4,894 by 2020-2021; thus, the overall proportion rose from 9.55% to 17.60%. These results are statistically significant ($p < .001$) but the effect was quite small, indicating that the state has made progress in improving access to and continuity of OUD care, supporting the hypothesis of increasing adherence to treatment.

The COVID-19 pandemic seemed to pose no issue for the upward trend in improving continuity of care – this is possibly due to a decline in in-person services being supplanted by greater use in telehealth. Saloner and colleagues[7] conducted a multi-state survey (which excluded Illinois) and found despite concerns of barriers introduced by telemedicine, the changes in substance use treatment were "generally reported to be successful among our sample respondents, a group with large proportions over the age of 50, homeless, Medicaid enrollment, and low levels of education." Therefore, indicating that changes in access to care were either no obstacle or effective in improving the continuity of pharmacotherapy for OUD.

C. Primary Driver 3 – Reduce opioid-related overdose deaths

Evaluation Question 3: Are rates of opioid-related overdose deaths impacted by the demonstration?

Evaluation Hypothesis 3: *The demonstration will result in decreased opioid-related overdose deaths.*

Metric 26/27: Opioid Drug Overdose Deaths

Demonstration Year	Certified Total OUD Deaths (Count)	Certified Total OUD Deaths (Rate per 1,000 Medicaid Beneficiaries)
Pre-Waiver (7/1/2017-6/30/2018)	2,950	.480
DY1 (7/1/2018-6/30/2019)	2,663	.742
DY2 (7/1/2019-6/30/2020)	3,533	.996
DY3 (7/1/2020-6/30/2021)	1,772	.442

There is no discernible trend in opioid drug overdose deaths. Examining the count of OUD deaths, there is a drop from the pre-waiver period in the first demonstration year, followed by a sharp increase in deaths in Demonstration Year 2, before the count suddenly drops in the third demonstration year. There is a steady increase in the rate of OUD deaths among Medicaid beneficiaries from the pre-waiver period until the third demonstration year, before it is followed by another sharp drop, from 1 death per 1,000 beneficiaries to .44 deaths, alongside a drop in the count of deaths.

Without further information, it is impossible to say where the variation in both the count and rate of OUD deaths comes from, although some portion of the rise in the rate from the pre-waiver period to the third demonstration year may be speculatively attributed to the 'fourth wave' of the opioid epidemic in the United States, in which the widespread availability of illicit fentanyl has fueled a rising number of fatalities due to OUD nationwide.[8] However, this still does not adequately account for the subsequent drop in both the count and rate of opioid overdose deaths in demonstration year 3. It is likely that a more identifiable trend will emerge over time; however, for the interim report, there is not enough data to create an informative analysis of OUD deaths among Medicaid beneficiaries in Illinois. Consequently, these results do not support, nor do they fail to support the hypothesis.

Metric 18: Use of Opioids at High Dosage in Persons without Cancer per 100 Medicaid Beneficiaries

	Baseline (CY 2017)	*CY 2018*	*CY 2019*	*CY 2020*	*CY 2021*	*p-value*	*Effect Size*
Rate	4.45	3.87	3.31	3.47	2.62	<.001	.046
Count	573	456	319	300	186		

The use of opioids at a high dosage (defined as more than 180 morphine milligram equivalents per day over a period of 90 or more days) in persons without cancer shows a significant ($p<.001$) decline over the demonstration period. Though the effect size was small, these results support the hypothesis that the state of Illinois has made progress towards reducing opioid-related overdose deaths, indirectly through the reduction of high-risk opioid usage. Not only does the rate decrease dramatically, the denominator of the measure (defined as beneficiaries who had 15 or more days' supply over an opioid episode of 90 days or more) also sees a steady decrease. This indicates that the number of opioid prescriptions is being curtailed, and, of those that are prescribed, in lower doses over shorter periods of time.

Metric 21: Concurrent Use of Opioids and Benzodiazepines per 100 Medicaid Beneficiaries

	Baseline (CY 2017)	*CY 2018*	*CY 2019*	*CY 2020*	*CY 2021*	*p-value*	*Effect Size*
Rate	30.5	29.6	24.4	23.0	21.4	<.001	.098
Count	5,415	4,857	3,342	2,795	2,236		

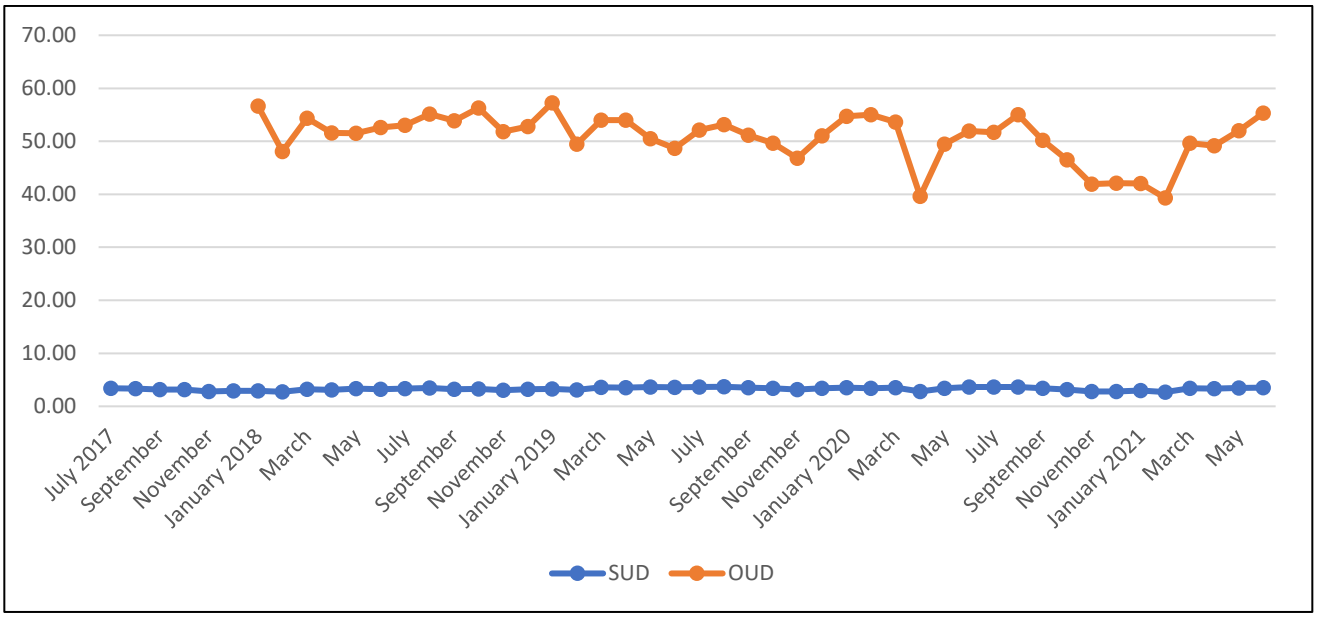
Like metric 18 above, the concurrent use of opioids and benzodiazepines demonstrated a statistically significant decrease ($p<.001$) with a relatively small effect from the baseline period to calendar year 2021. Therefore, this measure supports the hypothesis. The most significant decrease was seen from 2018 to 2019, indicating that the 1115 Medicaid waiver may have had an immediate effect on opioid and benzodiazepine prescriptions as well as generating a sustained downwards trend. These results show progress in decreasing high-risk use of opioids, and therefore the reduction of opioid-related overdose deaths. Additionally, as in metric 18, the denominator for this measure had a sustained decline throughout the demonstration period, again pointing towards an overall decrease in opioid prescriptions alongside the decrease in the overall rate of high concurrent use of opioids and benzodiazepines.

D. Primary Driver 4 – Reduce utilization of emergency departments for SUD treatment

Evaluation Question 4: Does the waiver result in fewer preventable ER visits for SUD?

Evaluation Hypothesis 4: *The demonstration will result in fewer ER visits for SUD in the member population.*

Metric 23: Emergency Department utilization for SUD/OUD per 1,000 Medicaid beneficiaries



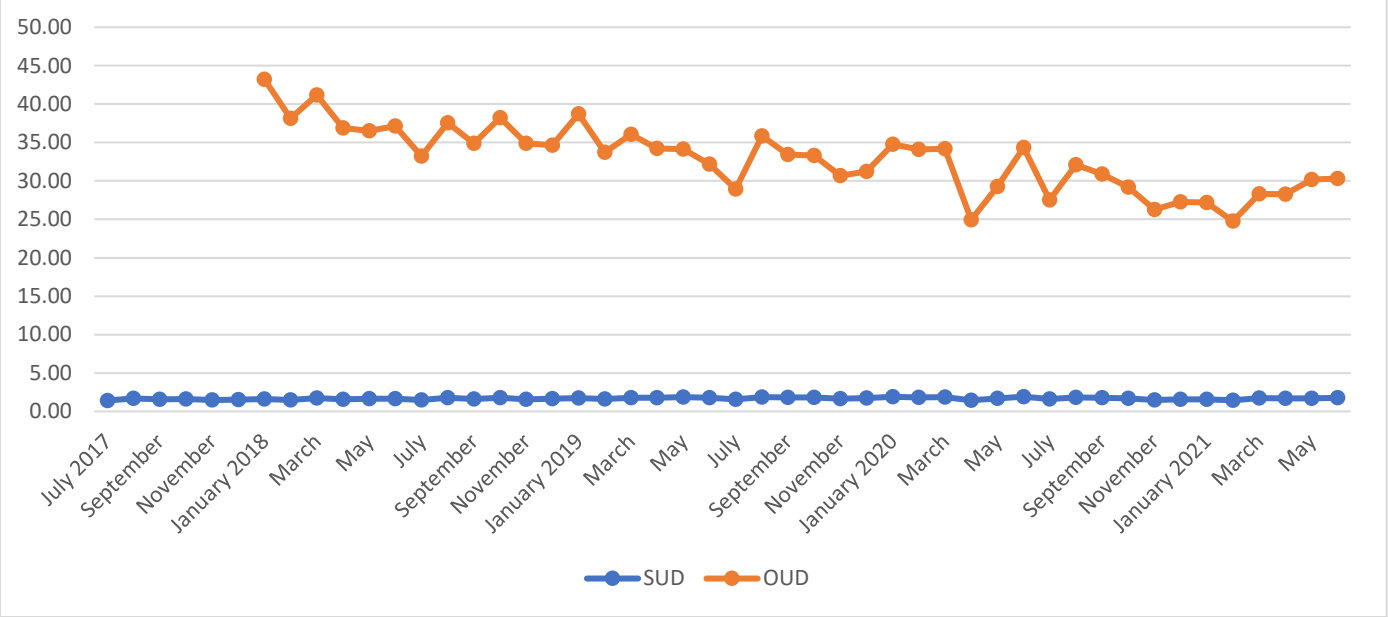
Emergency Department utilization for SUD per 1,000 Medicaid beneficiaries												
	Jul	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*
2018	3.40	3.34	3.16	3.13	2.80	2.94	2.90	2.72	3.22	3.12	3.34	3.25
2019	3.34	3.47	3.22	3.28	3.02	3.24	3.26	3.09	3.58	3.53	3.67	3.61
2020	3.65	3.69	3.53	3.41	3.17	3.38	3.52	3.39	3.53	2.77	3.39	3.64
2021	3.62	3.66	3.39	3.18	2.78	2.83	2.98	2.69	3.41	3.36	3.49	3.52
OUD Substratum												
	Jul	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*
*2018**	NA	NA	NA	NA	NA	NA	56.67	48.06	54.33	51.58	51.51	52.61
2019	53.05	55.15	53.90	56.27	51.83	52.81	57.27	49.44	54.01	53.99	50.51	48.67
2020	52.11	53.13	51.14	49.66	46.83	51.05	54.70	55.04	53.62	39.64	49.45	51.94
2021	51.69	55.00	50.21	46.48	41.89	42.08	42.06	39.30	49.63	49.15	52.01	55.35

* Metric 23 data was not available for Q1 and Q2 of FY 2018 for the OUD substratum

Metric 23 consisted of two metrics, emergency room utilization for SUD per 1,000 Medicaid Beneficiaries, and the same utilization rate for the OUD substratum. For the overall rate, there seemed to be a consistent trend in SUD stays, with little variation in the pre-demonstration period and within the demonstration period. Although there is not enough data to make a meaningful conclusion, there seems to be a drop and subsequent rebound in ED utilization in fiscal year 2021, potentially related to COVID-19. Overall, Metric 23 neither supports nor fails to support the hypothesis due to the steady trend.

The first two financial quarters of 2018, OUD substratum data was not available, as the metric requires that beneficiaries have an OUD diagnosis in the measurement month or the 11 prior months, or the prior 3 quarters, and 2016 data was not available for use in calculating the denominator of the metric. Regardless, OUD ED utilization among beneficiaries with OUD faced a steady, if variable, trend from the demonstration period until Quarter 2 of 2020, when the rate of ED utilization spikes suddenly, before entering a period of fluctuations with a downward trend, finally concluding with a dramatic rise in Quarter 4 of 2021. This drop followed by a rebound aligns temporally with the COVID-19 pandemic and mimics a wider national trend in which "ED visits for SUD returned to baseline [after the COVID-19 pandemic] and increased above baseline for OUD ever since May 2020".[9] The trend in Illinois does exceed Venkatesh's baseline year of 2019, although it does return to a downwards trend, indicating a possible effect of the COVID-19 pandemic. As such, this metric neither supports the hypothesis nor fails to support the hypothesis due to the fluctuations in the data.

Metric 24: Inpatient stays for SUD/OUD per 1,000 Medicaid beneficiaries



Inpatient stays for SUD/OUD per 1,000 Medicaid beneficiaries												
	Jul	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*
2018	1.41	1.70	1.59	1.62	1.50	1.54	1.60	1.50	1.72	1.56	1.64	1.64
2019	1.47	1.76	1.62	1.76	1.58	1.64	1.74	1.63	1.79	1.78	1.86	1.76
2020	1.56	1.86	1.81	1.83	1.66	1.73	1.90	1.80	1.85	1.45	1.69	1.92
2021	1.60	1.84	1.76	1.71	1.49	1.55	1.56	1.43	1.75	1.68	1.71	1.77
OUD Substratum												
	Jul	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*
*2018**	NA	NA	NA	NA	NA	NA	43.24	38.16	41.20	36.88	36.51	37.14
2019	33.22	37.57	34.88	38.24	34.88	34.64	38.73	33.71	36.06	34.21	34.14	32.20
2020	28.95	35.83	33.44	33.33	30.69	31.22	34.78	34.10	34.17	24.95	29.28	34.34
2021	27.52	32.09	30.87	29.19	26.26	27.28	27.19	24.75	28.31	28.28	30.19	30.31

*Metric 24 data was not available for Q1 and Q2 of FY 2018

Similar to Metric 23 above, the overall rate of inpatient stays for SUD remains steady, with a similar drop and rebound in fiscal year 2021, again this is a potential effect of the COVID-19 pandemic, but there is not enough data to draw any certain conclusions, nor is there enough data to determine if the variation beginning in roughly quarter 2 of 2020 will lead to a break from the consistent trend observed over the pre- and post-demonstration periods. As a result, the rate of overall SUD inpatient stays neither supports nor fails to support the hypothesis.

As stated above, metrics 23 and 24 share the same denominator, and OUD substratum rates were not available for the first two quarters of 2018. Nonetheless, the OUD substratum's rate sees a steady, if somewhat saw-toothed,

drop across the demonstration period. Although there is a noticeable drop in inpatient stays in April of 2020, it is difficult to ascertain if this change is due to the COVID-19 pandemic for reasons detailed earlier. Therefore, change in inpatient stay rates for the OUD substratum supports the overall hypothesis.

E. Primary Driver 5 – Decrease readmissions to the same or higher level of care for OUD and SUDs

Evaluation Question 5: Do waiver enrollees receiving SUD/OUD services experience reduction in readmissions to the same or higher levels of care for SUD/OUD?

Evaluation Hypothesis 5: *The demonstration will reduce readmissions to the same or higher levels of SUD care.*

Metric 25: 30-Day Readmission for SUD Among Beneficiaries

	FY 2018	*FY 2019*	*FY 2020*	*FY 2021*
Percentage	25.52%	26.27%	27.26%	26.67%
Count	21,252	21,945	22,136	21,780

Across the demonstration period, the rate of all-cause readmissions during the measurement period among Medicaid beneficiaries with SUD remained consistent, with neither the overall change over time nor any individual measurement year exceeding 2 percentage points of the baseline measurement. Furthermore, of the marginal changes, there is no discernible trend, with a slight upwards trend from FY 2018-2020 followed by a decrease in 2021. While it is possible that this downwards shift in the data is due to a drop in overall healthcare utilization globally due to the COVID-19 pandemic, there is not enough data to draw any conclusions beyond a consistent trend in the data based on the available descriptive statistics, especially since there is not a subsequent rebound in visits in during 2021.[10] Therefore, this neither supports nor fails to support the hypothesis.

F. Primary Driver 6 – Improve access to care for physical and behavioral health conditions

Evaluation Question 6: Do enrollees receiving SUD services experience improved access to care for physical health conditions?

Evaluation Hypothesis 6: *The demonstration will increase the percentage of members with SUD who access care for physical health conditions.*

Metric 32: Access to preventive/ambulatory health services for adult Medicaid beneficiaries with SUD

	Baseline CY 2017	*CY 2018*	*CY 2019*	*CY 2020*	*CY 2021*	*p-value*	*Effect Size*
Percentage	72.67%	79.11%	81.53%	79.33%	75.32%	<.001	.009
Count	68,729	76,809	79,931	84,685	92,962		

Note: Metric PPC was calculated using only paid claims.

Compared to the baseline period, the count of beneficiaries with ambulatory or preventive care increased by a large amount, from 68,729 beneficiaries having had a visit to over 92,962 beneficiaries per calendar year following the implementation of the 1115 Medicaid waiver. Likewise, the proportion of eligible beneficiaries increased from 72.67% in 2017 (prior to the waiver) to 79.11% in 2018, 81.53% in 2019, and 79.33% in 2020. However, the proportion decreases in 2021, with only 75.32% of beneficiaries with an SUD diagnosis having had a preventive care or ambulatory visit. Overall, the results are significant ($p<.001$) but the effect size is very small. Overall, this demonstrates positive progress towards improving access to preventive and ambulatory healthcare for Medicaid beneficiaries with SUD, supporting the hypothesis.

Metric ADV (NQF #1388): Annual Dental Visits (SUD stratum)

	Baseline CY 2017	*CY 2018*	*CY 2019*	*CY 2020*	*CY 2021*
Percentage	3.40%	3.35%	3.94%	3.18%	3.80%
Count	2,470	2,362	2,638	1,863	2,147

Note: Metric PPC was calculated using only paid claims.

Annual dental visits among beneficiaries with an SUD diagnosis have some interesting fluctuations, although the general trend seems to be consistent. The overall count and proportion of beneficiaries with SUD grows from 2017-2018, with a year-over-year change of .54 percentage points once the 1115 waiver came fully into effect in fiscal year 2019 (the waiver was only in place for the last six months of CY 2018). However, the proportion begins to fall, along with the count, suggesting that the eligible population shrank while dental care utilization fell. Consequently, this metric neither supports nor fails to support the hypothesis.

Once again, it is possible that the dramatically reduced count of beneficiaries with an annual dental visit is attributable to COVID-19, as dental visits plummeted due to the pandemic and, once widespread reopening had begun, "dental care use among the publicly insured [e.g. Medicaid] population remained lower than the pre-pandemic level" nationwide, indicating that the drop in the count of beneficiaries with an annual dental visit in 2020 is likely due in large part to the impact of COVID-19.[11] Interestingly, the rate of annual dental visits in Illinois continues to decline, which may mean that the impact of the COVID-19 pandemic is having a more long-term effect than that discussed by Choi et al., or there is another factor hampering access to dental care by Medicaid beneficiaries with SUD in Illinois.

Metric WCV (NCQA W30): Child and Adolescent Well-Care Visits

	Baseline CY 2017	*CY 2018*	*CY 2019*	*CY 2020*	*CY 2021*
Percentage	1.32%	1.30%	1.47%	1.30%	1.83%
Count	1,119	1,114	1,190	956	1,311

Note: Metric PPC was calculated using only paid claims.

Child and adolescent well-care visits saw very little change across both the pre-demonstration period and throughout the demonstration years. There seems to be a negligible impact upon the start of the waiver, with a drop of just 5 beneficiaries from 2017 to 2018. This is likely due to the eligible population (Medicaid beneficiaries between the ages of 3 and 21 with an SUD diagnosis) being very small. Furthermore, much of the eligible population was between the ages of 17 and 21. Interestingly, the rate of well-care visits seems to have been impacted by

COVID-19, as the count of visits falls by 234 beneficiaries year on year from 2019 to 2020, a drop of 11.46%. This is followed by a rebound in 2021, having more visits than even 2019. However, it is difficult to determine the causes of these year over year changes, especially given the relatively small changes compared with other metrics. Consequently, this metric does not support nor fails to support the hypothesis that the 1115 Waiver improves access to care for physical health conditions.

Metric PPC (NQF #1517): Prenatal and Postpartum Care– Timeliness of Prenatal Care (SUD stratum)

	FY 2018	*FY 2019*	*FY 2020*	*FY 2021*	*p-value*	*Effect Size*
Percentage	14.39%	24.90%	23.67%	44.14%	<.001	.222
Count	284	494	449	561		

Note: Metric PPC was calculated using only paid claims.

The proportion of beneficiaries with an SUD diagnosis receiving prenatal care in the first trimester increased dramatically across the demonstration period, with the raw count of beneficiaries almost doubling by 2021. The proportion of beneficiaries increases to reflect this as well, with a rise of 29.75 percentage points from the baseline fiscal year 2018 to fiscal year 2021. Unsurprisingly, this change is statistically significant ($p<.001$), and the effect size indicates a substantial, though small, change over time. Additionally, the proportion of beneficiaries in the SUD subpopulation receiving prenatal care jumped 10.51 percentage points upon the beginning of the 1115 waiver implementation, reflecting an immediate, widespread expansion of access to prenatal care during the demonstration period. While the actual count changes by <100 beneficiaries from year to year aside from the initial shift, this indicates that the denominator, beneficiaries with an SUD diagnosis and a live birth during the measurement year, shrank intensely; this indicates that the state of Illinois has made promising progress on the provision of care and the expansion of access to prenatal care, supporting the hypothesis.

Metric PPC (NQF #1517): Prenatal and Postpartum Care– Postpartum Care (SUD stratum)

	FY 2018	*FY 2019*	*FY 2020*	*FY 2021*	*p-value*	*Effect Size*
Percentage	54.54%	53.18%	49.82%	47.99%	.04	.029
Count	1076	1055	945	610		

Note: Metric PPC was calculated using only paid claims.

Unfortunately, the proportion of deliveries by beneficiaries with an SUD diagnosis receiving postpartum visits between 1 and 12 weeks after delivery exhibited a steady and significant ($p<.04$) decline across the demonstration period. The count of beneficiaries receiving postpartum care is nearly half, with 466 fewer beneficiaries receiving care in fiscal year 2021 than fiscal year 2018. However, the proportion of beneficiaries does not decrease as sharply, only falling by 6.55 percentage points. This indicates that there were less beneficiaries in need of postpartum care during the demonstration period, although this does not sufficiently account for the overall decrease in access and utilization. Furthermore, with a relatively small sample size compared to the other metrics, postpartum care is vulnerable to shocks, such as the one caused by COVID-19, as reflected by the steep drop in 2021, as July-December 2020 is included in FY 2021. However, as the decline is significant, this fails to support the hypothesis that the 1115 Medicaid waiver improved access to care among beneficiaries with SUD for physical health conditions in general.

Section VI: Conclusions

Below is a table that summarizes the results:

Goal	Outcome	Result	
Increase rates of identification, initiation, and engagement in treatment.	**Metric 15a:** Initiation in SUD Treatment	↔	No discernible trends across measurement period for total SUD treatment initiation.
	Metric 15b: Engagement in SUD Treatment	↔	Potential downwards trend. However, this trend is marginal, changing by less than 2 percentage points.
Increased adherence to and retention in treatment.	**Metric 3:** Medicaid Beneficiaries with a SUD Diagnosis.	↑	Steady increase in number of Medicaid beneficiaries across the demonstration period.
	Metric 22: Continuity of Pharmacotherapy for OUD	↑	Rise of 8.05 percentage points in the post-1115 period (p<.001)
Reduction in overdose deaths, particularly due to opioids	**Metric 26:** Certified Total OUD Deaths (Count)	↔	No discernible trends, with high variance across demonstration period for both the rate and raw count of OUD deaths. More data is needed.
	Metric 27: Certified Total OUD Deaths (Rate per 1,000 Medicaid Beneficiaries)	↔	
	Metric 18: Use of Opioids at High Dosage in Persons without Cancer per 100 Medicaid Beneficiaries	↓	Fall of 1.25 percentage points over the demonstration period (p<.001).
	Metric 21: Concurrent Use of Opioids and Benzodiazepines per 100 Medicaid Beneficiaries	↓	Fall of 9.1 percentage points over the demonstration period (p<.001).
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.	**Metric 23:** Emergency Department utilization for SUD per 1,000 Medicaid beneficiaries.	↔	High variation throughout demonstration period, especially during COVID-19 pandemic. Overall trend is steady for SUD, OUD sees more variation, but no directionality.
	OUD substratum	↔	
	Metric 24: Inpatient stays for SUD per 1,000 Medicaid beneficiaries.	↔	Steady trend throughout demonstration period for SUD, OUD sees high variation with an overall drop.
	OUD substratum	↓	
Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.	**Metric 25:** Readmissions Among Beneficiaries with SUD.	↔	No distinct change in readmission rate over the demonstration period.
Improved access to care for physical health and behavioral health conditions among beneficiaries.	**Metric 32:** Access to preventive/ambulatory health services for adult Medicaid beneficiaries with SUD.	↑	Despite fluctuations over the demonstration period, significant (p<.001) increase in access.
	Metric ADV (NQF #1388): Annual Dental Visits (SUD stratum).	↔	Small n and high variation across demonstration period, although the overall trend is consistent.

	Metric WCV (NCQA W30): Child and Adolescent Well-Care Visits	↔	Small n and minor fluctuations, with no distinct trend.
	Metric PPC (NQF #1517): Prenatal and Postpartum Care– Timeliness of Prenatal Care (SUD stratum)	↑	Significant (p<.001) rise of 29.75 percentage points in the post-waiver period.
	Metric PPC (NQF #1517): Prenatal and Postpartum Care– Postpartum Care (SUD stratum)	↓	Steady and significant decline in postpartum care throughout the demonstration period (p=.04).

Overall, 7 of the 18 (39%) metrics are trending in the expected direction, 10 (56%) have remained consistent, and 1 (5%) is moving in the opposite direction. For metric 24, the OUD substratum seems to be making more progress than the overall SUD population. While postpartum care has been decreasing, this directionality was less significant than other metrics (p=0.04 versus p<.001).

Based on the data presented, it is highly likely that more time is needed to see progress on the metrics used for this evaluation. The COVID-19 pandemic prevented the full implementation of several pilot programs and delayed care across the healthcare spectrum. Furthermore, there were unexpected changes in care due to the pandemic, including higher usage of telehealth services, increased ER visits due to the closure of some services, and potential delays in care post-shutdown due to closures and staffing shortages.

Despite all of this, 39% of the metrics are progressing as expected. Of the 10 metrics that have remained consistent, a few are beginning to stabilize and have the potential to show change in the final two years of the 5-year waiver period. The metric that is moving in the opposite direction could also be due to the delays in services post-pandemic. Postpartum care is an ongoing service that may not have had time to recover due to the closure of certain services and known staffing shortages.

One example that helps to illustrate this is that significant progress has been shown in metrics 18 and 21 (use of opioids at high dosage and concurrent use of benzodiazepines and opioids); however, this has not yet translated to decreases in overdose deaths (metrics 26/27), emergency department visits (metric 23), or inpatient stays (metric 24). Further evidence that changes made due to the waiver are working is shown in the increased number of people diagnosed with an SUD (metric 3), though this has not yet impacted initiation and engagement in treatment (metric 15). Finally, increased access to preventive/ambulatory services (metric 32) and prenatal care (metric PPC) have shown progress, but there is still work to be done regarding follow-up services such as dental visits (metric ADV), well-care visits (metric WCV), and postpartum care.

Section VII: Interpretations, Policy Implications, and Interactions with Other State Initiatives

There have been several state-level policy changes that likely impacted the data presented in this report. While policy changes related to SUD can potentially impact all metrics, a few may have impacted specific metric data over the course of the waiver.

Metric 15 (Initiation and Engagement in Treatment) has remained consistent across the first 3 years of the demonstration, but there are two policies that have the potential to move this metric from being consistent to showing increases over the next two years.

1. Illinois passed the Emergency Opioid and Addiction Treatment Access Act (PA 100-1023) restricting the use of prior authorization for all SUD treatments, while PA 100-1024 eliminated the use of prior authorization and step-therapies requirements for all FDA approved MAR for Opioid Use Disorder. Both became effective 1/1/2019.
2. Public Act 102-0598 Screening Brief Intervention and Referral to Treatment (SBIRT) benefit for Medicaid populations served in primary care, hospital, or community behavioral health settings. In addition,

development of opioid specific SBIRT services in emergency departments to include services for initiation of MAR. Effective 1/1/2022.

Metric 22 (Continuity of Pharmacotherapy for OUD) has already shown remarkable increases over the demonstration. However, there are two projects that began recently in demonstration years 3 and 4 related to these metrics that have not yet had sufficient time to impact the data but are likely to do so moving forward. These include:

1. IDHS/SUPR Access to Medication Assisted Recovery (AMAR) Project broadens services in MAR "deserts" - counties with no providers who are approved and actively dispensing or prescribing methadone, buprenorphine, or naltrexone. Five MAR network models (Hub and Spoke) are being implemented in areas of Illinois that currently have relatively few treatment resources for persons with OUD. This Hub and Spoke Model was mentioned in the 1115 demonstration application and began in quarter 3 of demonstration year 3.
2. IDHS/SUPR, and the Chicago Department of Public Health (CDPH) launched the MAR NOW pilot program in Chicago in May 2022 and expanded the program statewide starting on September 1, 2022. Funded through SUPR programming, MAR NOW connects callers through the Illinois Helpline for opioids and other substances (https://helplineil.org/app/home) to immediate treatment for opioid use disorder, including telephonic prescription and home induction on buprenorphine or same-day clinic appointments for methadone, buprenorphine, or naltrexone. MAR NOW can also connect individuals to withdrawal management and residential treatment.
3. Illinois has begun providing a digital toolkit for recovery support services to retain patients in MAR and offer additional support. Illinois Recovery Community Organizations (RCOs) and SUPR-licensed providers have been awarded funds and technical assistance to develop digital recovery support toolkits including secure messaging, web resources, and recovery support mobile applications (apps) for persons with OUD who are active in some form of MAR. Through the NOFO process five providers were identified and began services in December 2019. As of June 30, 2022, 596 clients have been admitted to these services.

Thus far, no progress has been shown in metric 25 (30-Day Readmission for SUD Treatment) as this has remained consistent. However, Public Act 102-0043, passed on April 27, 2021, specifically targets metric 25 (30-Day Readmission for SUD Treatment). Public Act 102-0043 is the sunset of the provision requiring concurrent review to prevent repeat admissions, limiting admission to any hospital-based inpatient detoxification to once every 60 days.

While significant progress was made in increasing prenatal care for the SUD stratum, the steady decline of postpartum care is concerning. However, Illinois is implementing the Service Enhancement for Pregnant and Postpartum Women with OUD program where enhanced services are made available to pregnant and postpartum women with OUD by staff who are certified in the following evidenced-based practices: Community Reinforcement and Family Training (CRAFT), Motivational Interviewing, Seeking Safety, Real Life Parenting, Individual Placement and Support (IPS) Employment. The staffing pattern for the supported enhancement includes Doula Certified Recovery Coaches. A Doula Certified Recovery Coach is a person in active recovery who obtains dual certification as both a birth and a postpartum doula to assist the recovering mother through prenatal and postpartum phases, and with recovery from her addiction. Services have been initiated by the five providers which were selected through the NOFO process. As of June 30, 2022, 1,258 women have been admitted to these enhanced services.

There are also several policy changes/programs that address the entire SUD system in Illinois:

1. In September of 2020, SUPR performed a rate study and analysis of ASAM residential Level of Care (3.1, 3.2, 3.5, and 3.7) and developed a statewide single rate methodology. The new rate methodology established a new state rate of $261 for Level 3.5 residential, increasing rates for 62% of providers. The other 38% had residential rates that exceeded $261 so these providers kept their existing rates. On average, residential providers saw a 46% increase in their rates.

2. The state continues to implement initiatives funded through State Opioid Response (SOR) grants by SUPR. A no-cost extension of this ended on 9/29/2021.
3. HFS was awarded the SUPPORT Act Section 1003 Demonstration Project to Increase Substance Use Provider Capacity planning grant (March 2019-September 2022) to perform an assessment of the behavioral health treatment needs of the state. The goals were to: determine the extent to which providers are needed to address the SUD treatment and recovery needs of Medicaid beneficiaries, develop training and technical assistance to educate practitioners on the data waiver process, and to increase the number and overall capacity of providers delivering MAR.
4. Residential Stabilization Centers for Patients with Opioid Use Disorder - These resources are targeted to the current gap in the service continuum for persons with OUD who lack housing and other supports to effectively engage in MAR during the early stage of their recovery process. Residential/inpatient care is expensive and unnecessarily restrictive for many persons with MAR, but many individuals still need safe, stable, temporary housing and supports like clothing, meals, and access to mental health services and primary health care. As of June 30, 2022, 810 clients have been admitted to the Residential Stabilization Centers.
5. Recovery Homes - Recovery Homes are alcohol and drug free homes whose rules, peer-led groups, staff activities and/or other structured operations are meant to help with maintaining sobriety. ORF grants have allowed IDHS/SUPR to expand Recovery Home services for persons with OUD who have unstable living arrangements and are active in some form of MAR. As of June 30, 2022, 1,012 clients have been admitted to a Recovery Home.
6. Correctional Facility-Based MAR Services - Injectable naltrexone is the form of medication assistance for OUD that is most often preferred by correctional facility administrators because it has no risk of diversion. Federal ORF grant funds support six organizations providing injectable Naltrexone services for persons with OUD in county jails and at the Sheridan Correctional Center, one of Illinois' prisons. These services consist of screening, assessment, initial injections, and post-release treatment referrals before discharge. Through June 30, 2022, 426 persons have been served. About 95% of these offenders were admitted by the community-based treatment providers to which they were referred.
7. Community-based Outreach/Linkage/Referral Services - Specialized and specific community-based outreach, referral, and linkage services are offered for persons with OUD in high-need areas. As a means of identifying individuals who are currently using heroin or other illicit opioids, peer outreach workers canvass multiple locations that are frequented by high-risk individuals, such as parks, street corners, public transportation stations, mini-marts, and liquor stores. Through the end of June 2022: 8,294 persons were provided outreach services; 5,503 of these persons screened positive for opioid and other illegal substance use and expressed an interest in treatment; 3,253 of these completed a meeting with a linkage manager; and 2,572 presented for the treatment intake.

As illustrated here, significant progress on state-level policy changes and the implementation of new programs has occurred over the past 2-3 years. The data in this report, however, only demonstrates changes that occurred up until the end of 2021. The passage of time with the new policies and programs in place will likely further impact the progress that has been shown as well as changing metrics from staying consistent or declining to showing progress.

Section VIII: Lessons Learned and Recommendations

There were several lessons learned from compiling this Interim report. First, the impacts of the COVID-19 pandemic and subsequent shutdowns had a meaningful impact on the state's ability to show change in the first 3 demonstration years. In addition to this, there were delays due to rebidding and changes in administration. While the majority of these impacts were unexpected and unavoidable, CPRD (the independent evaluator) was able to use claims data from the pre-waiver baseline year (2017) through the most recent data available (2021) to identify progress achieved for most metrics. However, due to the delays, CPRD did not have access to the data until recently and therefore is only able to provide basic descriptive statistics and significance testing (Pearson's Chi-Square) at

this time. Furthermore, several data transfer and other problems were identified in the data. Moving forward, it will be imperative that CPRD have access to more/all claims data as well as assistance from the state to identify errors and ensure the data provided is accurate to the best of our ability. We look forward to further investigating changes over time and for specific pilot programs.

Pilot Programs

The state plans to use the information found in this Interim Evaluation report to inform the continued pilot programs. For the 6 pilots that the state will not be asking for renewed authority, the following is an update on the status and lessons learned:

Clinically Managed Withdrawal Services: There was a low uptake during the demonstration. Due to COVID-19, providers stopped delivering this level of service in March 2020 and did not resume service until the beginning of 2021. The providers in this pilot experienced significant staff turnover which resulted in a loss of knowledge related to 1115 waiver pilot implementation. There were periods of time when providers did not submit requests for eligibility, which resulted in claims being denied by Managed Care. HFS will continue to work with providers, managed care plans, and other stakeholders to increase accountability around withdrawal monitoring and to identify innovative, evidence-based services to best serve Medicaid enrollees.

Peer Recovery Support Services: There is only one designated provider for Peer Recovery Support. This provider consistently submitted requests for eligibility in accordance with established plan for pilot enrollment, but there are no fee-for-service claims records found in the EDW Fee For Service indicating that services were billed. There are also no records of claims being submitted to Managed Care Organizations for pilot services. The state has been unable to determine the amount or frequency of peer recovery support services delivered to the identified eligible enrollees. Outside of the waiver SUPR began allowing providers to use contract funding (GRF and Block Grant) to pay for the delivery of peer recovery services. There was a theory that the provider may have submitted peer recovery services delivered under the pilot with other services delivered through the waiver. However, after further review SUPR was unable to identify any services specific to PRS delivered by the provider to Medicaid enrollees. HFS plans to include these services in an upcoming state plan amendment.

Crisis Intervention Services and Evidence-Based Home Visiting Services: HFS plans to include these services in an upcoming state plan amendment.

Intensive In-Home Services and Respite Services: These services have been incorporated into a state plan amendment through 1915(i) authority.

Criminal Justice Case Management: Two providers have delivered pilot services to eligible participants, but there have been ongoing issues with the providers submitting claims to Managed Care and claims being rejected or denied. There have been periods of staffing issues that have contributed to delays in the state approving eligibility. This was most prevalent during the first 12 months of the PHE. HFS and the Bureau of Behavioral Health took ownership of the eligibility process and dedicated staff responsibilities to ensure timely completion of the pilots' eligibility process moving forward.

For the 4 pilots that have been implemented, CPRD will conduct individual evaluations using claims data, but the impact may be less than expected since the implementation started later than anticipated. Due to this, the evaluator may consider alternatives to the originally proposed evaluation, such as interviews with providers.

Rule 2060

Rule 2060 was a large part of the implementation plan and mid-point assessment. SUPR is continuing to work toward appropriate administrative rule changes – with a plan for submission for rule promulgation in April/May with anticipated approval in the fall of 2023.

SUPR does not contract for Medicaid funds. When these milestones were originally developed, SUPR planned to merge the State Medicaid Rule (Part 2090) into Administrative Rule Part 2060. It was subsequently decided to focus only on the licensure components of Part 2060 and leave Part 2090 as the singular Medicaid Rule for SUD services. Therefore, SUPR will amend Part 2090 upon adoption of Part 2060. It is anticipated that the revision process for Part 2090 will begin in late 2023.

Furthermore, regarding case management, clinically managed withdrawal, providers offering MAT on-site or facilitating off-site, and the implementation of policies to ensure residential and inpatient facilities link beneficiaries with community-based services and supports following stays, all are written and required in the provider contracts with SUPR. Therefore, these services should already be in place despite the delay in passing/updating Rules 2060 and 2090.

Other Recommendations

There are three additional areas where we have recommended actions; addressing workforce challenges, addressing structural factors that may drive differences in access and quality for specific racial and ethnic groups, and better defining recovery capital. First, as workforce shortages have plagued the service delivery system since the pandemic, we recommend estimating the number of additional providers required to serve the Medicaid population and invest in additional workforce development initiatives as appropriate. The state could also consider an initiative where SUPR provides student loan relief to qualified professionals that stay in the SUD field for a specific number of years after obtaining licensure.

Regarding structural factors that are driving race/ethnicity differences in access and quality of care, one potential solution to dismissal issues or cultural humility issues in contracted providers may be to a) require all providers to report their length of stay/engagement metrics by racial/ethnicity, and b) offer enhanced rates to providers that have a very low racial/ethnic disparities in such metrics. Additionally, technical assistance to agencies that have high disparities could be offered or beneficiary studies of experiences of racial/ethnic microaggressions during care could be conducted.

Recovery capital, an organizing concept in the recovery movement, needs better definition among low-income Medicaid beneficiaries. Research on which aspects of recovery capital improve outcomes is important, especially the aspects of recovery capital that are modifiable and potentially addressable through beneficiary plan adaptations.

Conclusion

Overall, the state has shown some promise in achieving the goals for the 1115 Medicaid waiver according to the evaluation of key metrics using Medicaid claims data. The implementation was delayed and experienced further challenges during the COVID-19 pandemic that have stalled progress, so pilot programs will need more time to reach beneficiaries. Illinois has also recently implemented programs and passed public acts that are likely to impact progress moving forward. Our recommendations will assist this progress but are few because we believe the most significant factor needed to show change is simply more time, as not enough time has passed to overcome the challenges experienced or for recent programs to impact claims data.

Illinois 1115 Substance Use Disorder Demonstration Evaluation Plan (Revised Per CMS Feedback on March 15th, 2021)

Illinois is one of the largest funders of health and human services (HHS) in the country. With approximately $32 billion spent across its HHS agencies, amounting to more than 40% of its total budget, the State is deeply invested in the health and well-being of its 12.7 million residents and 3.4 million Medicaid members. There is an urgent need to get more from this investment - the State must improve health outcomes for residents while slowing the growth of healthcare costs and putting the State on a more sustainable financial trajectory.

To this end, Illinois has embarked on a transformation of its HHS system. The transformation, which was originally announced in 2016, has the broad aim of improving population health, improving experience of care, and reducing costs. It is grounded in five themes:

1. Prevention and population health
2. Paying for value, quality, and outcomes
3. Rebalancing from institutional to community care
4. Data integration and predictive analytics
5. Education and self sufficiency

The initial focus of the transformation effort is on behavioral health (mental health and substance use) and specifically the integration of behavioral and physical health service delivery. Behavioral health was chosen due to the urgency of the issue as well as the potential financial and human impact. Building a nation-leading behavioral health strategy will not only help bend the healthcare cost curve in Illinois but also help turn the tide of the opioid epidemic, reduce violent crime and violent encounters with police, and improve maternal and child health. There is also a large financial payoff in improving behavioral health: Medicaid members with behavioral health needs (referred to henceforth as “behavioral health members”) represent 25% of Illinois Medicaid members but account for 56% of all Medicaid spending. Medicaid beneficiaries with behavioral health needs, such as mental illness or drug and alcohol use disorders incur costs that are 2-3 times higher than those who do not have co-occurring disorders.

Under the demonstration, which was approved May 7, 2018, Illinois proposed the introduction and limited piloting of certain services that are currently not directly available to Illinois Medicaid beneficiaries. The additional services are expected to inform the state’s efforts to transform the behavioral health system in Illinois as some beneficiaries will have access to less costly community-based services, which are expected to help beneficiaries improve their health and avoid costlier services provided in an institution. The demonstration period is July 1, 2018 through June 30, 2023.

At the point of its introduction in 2018, HFS' Section 1115 Medicaid Demonstration Waiver, entitled: Illinois Behavioral Health Transformation Demonstration, was the first of a planned series of initiatives under Illinois' *Health and Human Services (HHS) Transformation* initiative. The HHS Transformation intended to focus on prevention and public health strategies, pay for performance, and data-driven health efforts. At the core of Illinois' 1115 Waiver was a package of Substance Use Disorder (SUD) initiatives that targeted the opioid epidemic in Illinois and efforts to serve as a catalyst for a modernization of the Illinois SUD infrastructure. Testing the Medicaid sustainability potential of previously grant-funded services and the introduction of health infrastructure to help inform and reduce problematic prescription practices of medical professionals – the 1115 could clearly be characterized as a SUD-based initiative. Additionally, HFS sought to take advantage of the 1115 financial authority and test several new community-based behavioral health services focused on the more traditional mental health service continuum.

In the two and a half years since the approval and initial implementation of the Illinois Behavioral Health Transformation Demonstration, HFS has refined its healthcare strategy for individuals with complex healthcare needs – those with and without behavioral health conditions. In a more nuanced approach, the Medicaid agency is seeking to replace its original multifaceted approach to testing multiple system enhancements for a more targeted, population management approach. Introducing a new 1915(i) State Plan Amendment in 2020, HFS appears to be implementing services and supports that it once intended to test as a limited-scale pilot under the 1115 now as services available statewide to all individuals that qualify. Additionally, legislation proposed by the Illinois Legislature in Spring 2021 seeks to introduce evidence-based home visiting and doula services more broadly into the Illinois Medicaid program.

With the impending revisions to the 1115 that will surely remove the 1915(i)-like and home visiting pilots from its financial authority, HFS appears to be concentrating the Demonstration Waiver on the improvement of Illinois' SUD delivery system. An effort that underscores the State's overall commitment to SUD transformation and aligns with ongoing efforts from the State's Department of Human Services, Division of Substance Use Prevention and Recovery (SUPR) to move the SUD service delivery system forward. At a time when SUPR finds itself re-basing individualized provider rates in favor of cost-based rate structures to establish service equity and introducing system enhancements via federal grants (SAMHSA's State Opioid Response federal grant and CMS' Substance Use Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act: Section 1003 – Planning Grant) Illinois' 1115 Demonstration Waiver, when considered without its 1915(i)-like and home visiting components, fits within the context of the State seeking to transform its SUD service delivery system.

List of 1115 Demonstration Waiver Pilot Programs

Service Name	Start Date	Status in 1115
1. SUD Implementation Protocol featuring up to 30 Day IMD Funding	7/1/2018	Ongoing
2. Clinically Managed Withdrawal Management Services Pilot	2/1/2019	Ongoing
3. SUD Case Management Pilot	2/1/2019	Ongoing
4. Peer Recovery Support Services Pilot	2/1/2019	Ongoing
5. Crisis Intervention Services Pilot	Anticipated 2021	Ongoing
6. Evidence-Based Home Visiting Services	N/A	Anticipated transition to State Plan authority
7. Assistance in Community Integration Services	N/A	Transition to 1915(i)
8. Supported Employment Services	N/A	Transition to 1915(i)
9. Intensive In-Home Services		Transition to 1915(i)
10. Respite Services	N/A	Transition to 1915(i)

Rationale for this Waiver Project

This 1115 Medicaid Waiver project will address several pressing needs in the state of Illinois. First, it will fill gaps left at the intersection of the state substance use authority and state Medicaid program regarding the opioid crisis. Specifically, there is a need for high quality residential treatment for individuals, withdrawal management services (i.e., detoxification), case management, and peer recovery support services. Second, there is a strong need to emphasize community-based care for individuals that are severely or persistently mentally ill (SMI). For such individuals, there is recognition that services will be needed, and the critical goal is to enhance these citizens' quality of life by attempting to alleviate the stress of crisis events. Below, we briefly discuss the impact of the opioid crisis on the State of Illinois and rationale for the pilots Illinois will implement to address the crisis. Additionally, we will discuss the need for improving the quality of life of individuals with severe and persistent mental illnesses, and how we address it with our pilot that focuses on crisis intervention services.

Overview of the Opioid Crisis in Illinois

In a 2017 comprehensive report on opioids, the Illinois Department of Public Health[1] reported alarming increases in consequences of opioid use across the board. Emergency department visits increased by 77% from 2015 to 2016, with the largest increase due to heroin overdoses. Hospitalizations also increased by 42% from 2014-2016. Naloxone administrations by EMS personnel increased 250% from 2013 to 2016, and neonatal abstinence syndrome increased 53% from 2011 to 2016. The most recent data from the Illinois Department of Public Health[2] showed that overdoses from heroin and other opioids nearly tripled from 6,868 in 2013 to 15,702 in 2018. In 2018, 2,086

overdoses were fatal. Overdoses were primarily seen in white males between the ages of 25-34 and 45-54. This is especially alarming given that the total number of prescription opioids filled decreased from 7,562,123 in 2015 to 4,850,691 in 2018.

Illinois 1115 SUD Demonstration Goals

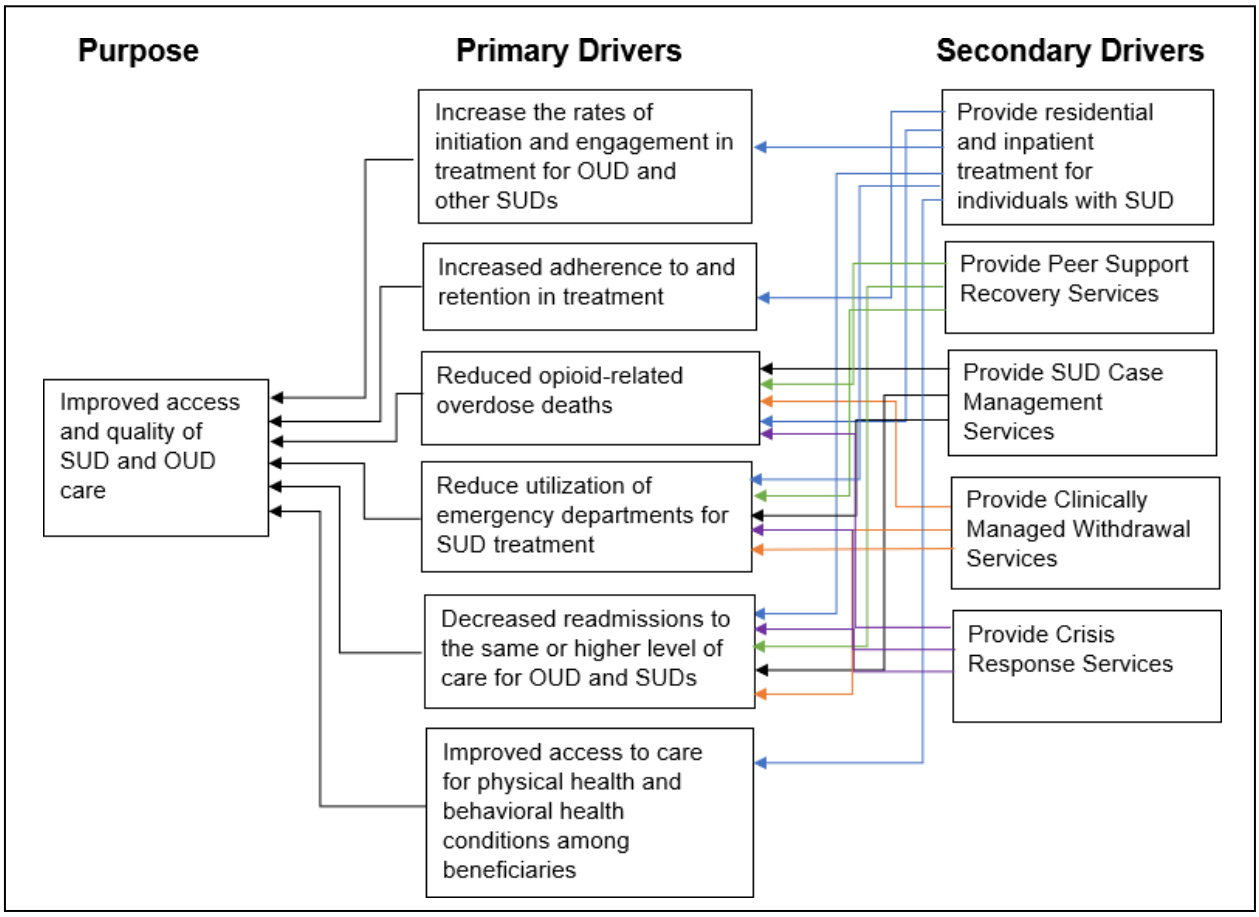
Against the backdrop provided, this project has six goals, including:

1. Increased rates of identification, initiation, and engagement in treatment;
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 and behavioral health conditions among beneficiaries.

Evaluation Questions and Hypotheses

The following driver diagram presented in Figure B-1 shows the relationships between the demonstration's purpose, the primary drivers that contribute directly to achieve the purpose, and secondary drivers necessary to achieve the primary drivers.

Figure B-1. Purpose and Drivers



Illinois 1115 SUD Demonstration Goals, Evaluations Questions and Hypotheses

The overall goal is to conduct a robust and data-driven analysis to identify, to the greatest extent possible, a causal relationship between the intervention component and the key outcomes of interest. Where possible, it will be important to explore mechanisms either aiding or hindering the impact of the Waiver component. Table B-1 outlines our goals, evaluation questions and hypotheses.

Table B-1. Illinois 1115 SUD Demonstration Goals, Evaluation Questions, and Hypotheses		
Goals	**Evaluation Questions**	**Hypotheses**
1. Increased rates of identification, initiation, and engagement in treatment.	1. Does the demonstration increase access to and utilization of SUD treatment services?	1. The demonstration will increase the percent of members referred to and engaging in SUD treatment.
2. Increased adherence to and retention in treatment	2. Does the demonstration increase adherence to and retention of SUD treatment services?	2. The demonstration will increase the percent of members adhering to SUD treatment.
3. Reductions in overdose deaths, particularly those due to opioids.	3. Are rates of opioid-related overdose deaths impacted by the demonstration?	3. The demonstration will result in decreased opioid-related overdose deaths.
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.	4. Does the waiver result in fewer preventable ER visits for SUD?	4. The demonstration will result in fewer ER visits for SUD in the member population.
5. Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.	5. Do waiver enrollees receiving SUD/OUD services experience reduction in readmissions to the same or higher levels of care for SUD/OUD?	5. The demonstration will reduce readmissions to the same or higher levels of SUD care.
6. Improved access to care for physical health and behavioral health conditions among beneficiaries	6. Do enrollees receiving SUD services experience improved access to care for physical health conditions?	6. The demonstration will increase the percentage of members with SUD who access care for physical health conditions.

Outcome Evaluation – Primary Drivers

As shown in the driver diagram for the overall SUD Demonstration (Figure B-1, above), the six primary drivers and five secondary drivers support the hypotheses for the evaluation questions (Table B-1, above) to the performance of the SUD Demonstration. The SUD Demonstration evaluation questions and hypotheses are matched to their respective drivers and measure details within tables B-2 through B-7 below. Additional information about a cost analysis is provided in table B-8.

Table B-2. Summary of Measures and Analytic Approach for Primary Driver 1

Demonstration Goal 1: ***Increased rates of identification, initiation, and engagement in treatment.***
Evaluation Question 1: *Does the demonstration increase access to and utilization of SUD treatment services?*
Evaluation Hypothesis 1: *The demonstration will increase the percent of members referred to and engaging in SUD treatment.*

Measure Description	Steward	Numerator	Denominator	Data Source	Analytic approach
Initiation and Engagement in SUD Treatment (IET)	NQF #0004 NCQA	Initiation: Number of members who began initiation of treatment through an inpatient admission, residential, outpatient visits, intensive outpatient encounters, or partial hospitalization within 14 days of the index episode start date	Initiation: Members who were diagnosed with a new episode of SUD during the first 10½ months of the measurement year	State Medicaid Claims Data	Descriptive statistics; Interrupted Time Series (ITS) design (pre- & post-intervention period comparison)
Initiation and Engagement of SUD Treatment (IET)	NQF #0004 NCQA	Engagement: Initiation of treatment and two or more engagement events (inpatient admissions, residential, outpatient visits, intensive outpatient encounters or partial hospitalizations) with any SUD diagnosis within 34 days after the initiation event	Engagement: Members who were diagnosed with a new episode of SUD during the first 10½ months of the measurement year	State Medicaid Claims Data	Descriptive statistics; Interrupted Time Series (ITS) design (pre- & post-intervention period comparison)

Table B-3. Summary of Measures and Analytic Approach for Primary Driver 2					
Demonstration Goal 2: Increased adherence to and retention in treatment. **Evaluation Question 2:** *Does the demonstration increase adherence to and retention of SUD treatment services?* **Evaluation Hypothesis 2:** *The demonstration will increase the percent of members adhering to SUD treatment.*					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
Percentage of beneficiaries with an SUD diagnosis (including beneficiaries with an OUD diagnosis) who used SUD services per month (CMS Metric #3)	CMS	Number of enrollees who receive a service during the measurement period by service type	Number of enrollees	State Medicaid Claims Data	Descriptive statistics; chi square tests of significance comparing target population to baseline and to the comparison group
Continuity of pharmacother-apy for OUD	NQF #3175	Number of participants who have at least 180 days of continuous pharmacotherapy with a medication prescribed for OUD without a gap of more than seven days	Individuals who had a diagnosis of OUD and at least one claim for an OUD medication	State Medicaid Claims Data	Descriptive statistics; chi square tests of significance comparing target population to baseline and to the comparison group
Continuity of Care after Inpatient or Residential Treatment for SUD	NQF #3453	Members with an outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth or filled a prescription for or were administered or ordered a medication for SUD within 7 and 14 days after discharge	Adult Medicaid beneficiary discharges from inpatient or residential treatment for SUD with a principal diagnosis of SUD during from January 1 to December 15 of the measurement year	State Medicaid Claims Data	Propensity-score matching- with control groups (i.e., pre-test period beneficiaries; beneficiaries not receiving case management) after matching on demographic characteristics. Logistic regression (i.e., predicting dichotomous variable of

					receipt of subsequent services, coded 0 for no and 1 for yes)
Continuity of Care After Medically Managed Withdrawal from Alcohol and/or Drugs	NQF#3312	Discharges in the denominator who have an inpatient, intensive outpatient, partial hospitalization, outpatient visit, residential, or drug prescription or procedure within 7 or 14days after discharge from an inpatient hospital, residential addiction program, or ambulatory medically managed withdrawal.	Adult Medicaid beneficiary discharges from medically managed withdrawal from January 1 to December 15 of the measurement year.	State Medicaid Claims Data	Propensity-score matching- with control groups (i.e., pre-test period beneficiaries; beneficiaries not receiving case management) after matching on demographic characteristics. Logistic regression (i.e., predicting dichotomous variable of receipt of subsequent services, coded 0 for no and 1 for yes)

Table B-4. Summary of Measures and Analytic Approach for Primary Driver 3					
Demonstration Goal 3: ***Reduction in overdose deaths, particularly those due to opioids.*** **Evaluation Question 3:** *Are rates of opioid-related overdose deaths impacted by the demonstration?* **Evaluation Hypothesis 3:** *The demonstration will result in decreased opioid-related overdose deaths.*					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
Opioid Drug Overdose Deaths (CMS Metric #27, OUD Stratum)	CMS	Number of overdose deaths due to opioids among eligible beneficiaries	Number of adult Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the Measurement Period	Mortality data (Vital Statistics); State Medicaid Eligibility and Enrollment data	Descriptive statistics; Trend analysis via Mantel-Haenszel (MH) chi-square test or Fisher's Exact test for comparison of percentages for final year (2023) and pretest year (2017)
Use of Opioids at High Dosage in Persons without Cancer per 1,000 Medicaid beneficiaries (CMS Metric #18)	NQF #2940 (Adult Core Set) PQA NCQA	Number of beneficiaries with opioid prescription claims with daily dosage greater than 120 morphine milligram equivalents for 90 consecutive days or longer	Number of adult Beneficiaries without cancer divided by 1,000. Note: Hospice patients will be Excluded	State Medicaid Claims Data	Descriptive statistics; Interrupted Time Series (ITS) design (pre- & post-intervention period comparison.
Concurrent use of opioids and benzodiaze-pines per 1,000 Medicaid beneficiaries (CMS Metric #21)	PQA (Adult Core Set)	Number of beneficiaries with concurrent use of prescription opioids and benzodiazepines for at least 30 days	Number of adult Beneficiaries without cancer divided by 1,000. Note: Excludes patients in hospice care and those with Cancer	State Medicaid Claims Data	Descriptive statistics; Trend analysis via Mantel-Haenszel (MH) chi-square test or Fisher's Exact test for comparison of percentages for final year (2023) and pre-test year (2017).

Table B-5. Summary of Measures and Analytic Approach for Primary Driver 4					
Demonstration Goal 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.*** **Evaluation Question 4:** *Does the waiver result in fewer preventable ER visits for SUD?* **Evaluation Hypothesis 4:** *The demonstration will result in fewer ER visits for SUD in the member population.*					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
ED utilization for SUD per 1,000 Medicaid beneficiaries (CMS Metric #23)	CMS	Number of ED visits for SUD during the measurement period	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period divided by 1,000	State Medicaid Claims Data	Descriptive statistics; Interrupted Time Series (ITS) design (pre- & post-intervention period comparison).
ED utilization for OUD per 1,000 Medicaid beneficiaries (CMS Metric #23, OUD stratum)	CMS	Number of ED visits for SUD during the measurement period	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period divided by 1,000	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis
Inpatient stays for SUD per 1,000 Medicaid beneficiaries (CMS Metric #24)	CMS	Number of inpatient discharges related to a SUD stay during the measurement period.	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period divided by 1,000	Encounter, eligibility, and enrollment data	Descriptive statistics; ITS design; Trend analysis.
Inpatient stays for OUD per 1,000 Medicaid beneficiaries (CMS Metric #24, OUD stratum)	CMS	Number of inpatient discharges related to an OUD stay during the measurement period.	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period divided by 1,000	Encounter, eligibility, and enrollment data	Descriptive statistics; ITS design; Trend analysis.

Table B-6. Summary of Measures and Analytic Approach for Primary Driver 5					
Demonstration Goal 5: ***Fewer readmissions to the same or higher level of care where the readmission is preventable or medically inappropriate.*** **Evaluation Question 5***: Do waiver enrollees receiving SUD/OUD services experience reduction in readmissions to the same or higher levels of care for SUD/OUD?* **Evaluation Hypothesis 5***: The demonstration will reduce readmissions to the same or higher levels of SUD care.*					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
30-Day Readmission for SUD treatment (CMS Metric #25)	CMS	Number of discharges with a subsequent admission to a residential or inpatient facility for SUD treatment at the same or higher level of care within 30 days (i.e., inpatient-to-inpatient, inpatient-to-residential, and residential-to-residential)	Number of discharges from a residential or inpatient facility for SUD treatment.	State Medicaid Claims Data	Descriptive statistics; Interrupted Time Series (ITS) design (pre- & post-intervention period comparison).

Table B-7. Summary of Measures and Analytic Approach for Primary Driver 6					
Demonstration Goal 6: Improved access to care for physical health and behavioral health conditions among beneficiaries **Evaluation Question 6:** *Do enrollees receiving SUD services experience improved access to care for physical health conditions?* **Evaluation Hypothesis 6:** *The demonstration will increase the percentage of members with SUD who access care for physical health conditions.*					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
Access to preventive/ ambulatory health services for adult Medicaid beneficiaries with SUD	NCQA	Number of beneficiaries with SUD who had an ambulatory or preventive care visit during the measurement period	Number of beneficiaries with an SUD diagnosis	State Medicaid Claims Data	Descriptive statistics; chi square tests of significance comparing target population to baseline and to the comparison group
Tobacco use screening and follow-up for people with alcohol or other drug dependence	NQF #2600	Tobacco use screening and follow-up for people with alcohol or other drug dependence	Total number of beneficiaries	State Medicaid Claims Data	Descriptive statistics; chi square tests of significance comparing target population to baseline and to the comparison group
Annual Dental Visits (ADV) (SUD stratum)	NCQA	Eligible beneficiaries 2–20 years of age with SUD diagnosis enrolled in Medicaid	Number of members 2–20 years of age who had one or more dental visits with a dental practitioner during the measurement year	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis
Adults' Access to Preventive/ Ambulatory Health Services (AAP) (SUD stratum)	NCQA	Eligible beneficiaries 20 years and older with SUD diagnosis enrolled in Medicaid	Number of members 20 years and older who had an ambulatory or preventive care visit during the measurement year	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis
Adolescent Well-Care Visits (AWC) (SUD stratum)	NCQA	Eligible beneficiaries 12–21 years of age with SUD diagnosis enrolled in Medicaid	Number of members 12– 21 years of age who had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis

			the measurement year		
Prenatal and Postpartum Care (PPC) – Timeliness of Prenatal Care (SUD stratum)	NCQA	Number of deliveries with live births for eligible members with SUD diagnosis	Number of deliveries that received a prenatal care visit in first trimester, on or before enrollment start date, or within 42 days of enrollment in the Organization	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis
Prenatal and Postpartum Care (PPC) – Postpartum Care (SUD stratum)	NCQA	Number of deliveries with live births for eligible members with SUD diagnosis	Number of deliveries that had a postpartum visit on or b/w 7 & 84 days after delivery	State Medicaid Claims Data	Descriptive statistics; ITS design; Trend analysis

Cost Analysis

As part of the overall evaluation and in addition to the evaluation measures listed above, a cost analysis of the 1115 Waiver in Illinois will be conducted using three approaches (see table B-8 below). Difference-in-difference analyses comparing beneficiaries two years pre-waiver with those who received services under the waiver will be used for Illinois beneficiaries if feasible, depending on data quality and availability. If not, comparison state data and/or Interrupted Time Series analysis will be considered as alternatives.

The first approach will examine total costs across all beneficiaries with a SUD diagnosis and/or treatment service by month. This will be based on the claims data for inpatient, outpatient, pharmacy, and long-term care claims. Second, the total SUD costs will be calculated, including IMD costs, other SUD costs, and non-SUD costs to determine the level of costs related to diagnosis and treatment of SUD. Third, changes in expenses as a predictor or driver will be considered, including ED visits, overdose deaths, service utilization, and any other relevant predictor variables encountered during our investigation that are reasonable to include in the analysis.

Approximately 80% of Illinois' Medicaid beneficiaries are in managed care. SUD treatment services, including demonstration pilot program costs, are built into the Managed Care capitation rates. Payment rates reported by MCOs on encounter claims will be used to identify costs for MCO-enrolled beneficiaries, depending on data quality and availability. If it is determined this data is not sufficient, the Medicaid FFS cost for the same service will be applied to encounter claims to calculate costs.

Table B-8. Overall Evaluation Cost Analysis					
Measure Description	**Steward**	**Numerator**	**Denominator**	**Data Source**	**Analytic approach**
Total Cost PMPM	CMS-constructed	Total cost for all claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
Non-IMD SUD Spending	CMS-constructed	Total cost of non-IMD claims for SUD diagnosis and treatment	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
SUD Spending within IMDs	CMS-constructed	Total cost of SUD IMD claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
Outpatient costs, non-ED	CMS-constructed	Total cost of outpatient, non-ED claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
Outpatient costs, ED	CMS-constructed	Total cost of outpatient, ED claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
Inpatient costs	CMS-constructed	Total cost of inpatient claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
Pharmacy costs	CMS-constructed	Total cost of pharmacy claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate
LTC costs	CMS-constructed	Total cost of LTC claims for beneficiaries with SUD	Total number of beneficiaries with SUD diagnosis and/or treatment services	State Medicaid Claims Data	Descriptive statistics; Difference-in-difference or ITS as appropriate

Individual SUD Pilot Demonstration Evaluations

In addition to the overall demonstration evaluation shown above, Illinois will also conduct evaluations for four of the individual pilots that are currently being implemented. Due to the varying implementation dates, the pre- and post-waiver data will be gathered according to reflect the demonstration period. These four pilots support the secondary drivers and the hypotheses for the evaluation questions (Table B-1, above) to the performance of the SUD Demonstration. The SUD Demonstration hypotheses and research questions are presented in tables B-9 through B-12 below, along with measure details and the analytic approach to be used. Demonstrations 1-3 began on February 1, 2019. Propensity score matching will compare pre-intervention groups from July 2017 through June 2018 and post-intervention groups who received services on or after February 1, 2019.

Table B-9. Pilot Demonstration 1 (Clinically Managed Withdrawal Management Services Pilot)

Hypothesis 1: *Individuals receiving clinically managed withdrawal management for OUD/SUD will have fewer ED visits relative to matched controls.*

Research question 1: *Will Medicaid recipients exposed to clinically managed withdrawal management have fewer ED visits?*

Measure description	Steward	Numerator	Denominator	Data source	Analytic approach
Emergency department visits for SUD-related diagnoses and specifically for OUD	None	The number of ED visits for SUD during the measurement period	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period	State Medicaid Claims data	Propensity score matching-comparing withdrawal management recipients in Waiver with control groups after matching on demographic characteristics.

Table B-10. Pilot Demonstration 2 (SUD Case Management Pilot)

Hypothesis 1: *Individuals newly receiving SUD Case Management will have reduced criminal justice involvement.*

Research question 1: *Will Medicaid recipients receiving SUD case management report fewer arrests at discharge from treatment?*

Measure description	Steward	Numerator	Denominator	Data source	Analytic approach
Number of Arrests reported in the 30 days prior to discharge from SUD treatment	None	Number of beneficiaries reporting any (i.e., 1+) arrests in the past 30 days prior to Discharge	Total number of beneficiaries receiving SUD case management services.	DARTS discharge data collected as part of monitoring SAMHSA's National Outcome Monitoring Standards (NOMS)	Propensity score matching comparing participants receiving case management in Pilot 3 vs. Matched controls reporting 1+ arrest but not receiving case management.

Hypothesis 2: *Individuals receiving SUD Case Management (CM) will have improved continuity of care.*
Research question 2: *Will Medicaid recipients exposed to SUD CM have an additional SUD visit within 7 to 14 days post index service?*

Measure description	Steward	Numerator	Denominator	Data source	Analytic approach
Continuity of Care after SUD CM	NQF #3453	Members with an Outpatient visit, Intensive Outpatient encounter or Partial hospitaliza-tion, telehealth or filled a Prescription for or were administered or ordered a Medication for SUD within 7 and 14 days after Discharge	Adult Medicaid beneficiary discharges from inpatient or residential treatment for SUD with a principal diagnosis of SUD during from January 1 to December 15 of the measurement year	State Medicaid Claims Data	Propensity-score matching- with control groups (i.e., pre-test period beneficiaries; beneficiaries not receiving case management) after matching on demographic characteristics. Logistic regression (i.e., predicting dichotomous variable of receipt of subsequent services, coded 0 for no and 1 for yes)

Table B-11. Pilot Demonstration 3 (Peer Recovery Support Services (PRSS) Pilot)

Hypothesis 1: *Individuals newly receiving peer recovery support services will have improved continuity of care after receiving the service.*
Research question 1: *Will Medicaid recipients exposed to peer recovery support services have an additional SUD visit within 7 to 14 days post index service?*

Measure description	Steward	Numerator	Denominator	Data source	Analytic approach
Continuity of Care after Peer Recovery Support Services (PRSS)	NQF-3453	Members with an outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth or filled a prescription for or were administered or ordered a medication for SUD within 7	Adult Medicaid beneficiary discharges from inpatient or residential treatment for SUD with a principal diagnosis of SUD during from January 1 to December 15 of the measurement year	State Medicaid Claims Data	Propensity-score matching with control groups (i.e., beneficiaries receiving residential from an MCO-covered facility not providing PRSS) after matching on demographic characteristics. Logistic regression (i.e., predicting dichotomous variable of receipt of subsequent services, coded 0 for no and 1 for yes)

		and 14 days after discharge			
ED utilization for SUD per 1,000 Medicaid beneficiaries (CMS Metric #23)	None	Number of ED visits for SUD during the measurement period	Beneficiaries enrolled in Medicaid for at least one month (30 consecutive days) during the measurement period divided by 1,000	State Medicaid Claims Data	Propensity-score matching with control groups (i.e., beneficiaries receiving residential from an MCO-covered facility not providing PRSS) after matching on demographic characteristics Logistic regression (i.e., predicting dichotomous variable of receipt of ED services, coded 0 for no and 1 for yes)

Crisis Intervention Pilot Demonstration Evaluation

In addition to the SUD-based evaluation components detailed above (overall and individual pilots), Illinois seeks to evaluate its piloted introduction of Crisis Intervention, an alternative to inpatient hospitalization. Demonstration 4, the Crisis Intervention Pilot, is slated to begin in 2021. This evaluation's post-intervention comparison will be based on the actual start the date and the pre-intervention period will be the preceding year.

Table B-12. Pilot Demonstration 4 (Crisis Intervention Services Pilot)

Hypothesis 1*: Individuals Newly Receiving Crisis Intervention Services Will Have Greater Initiation and Engagement in Treatment*

Research question 1: *Does the demonstration increase access to and utilization of SUD treatment services?*

Measure description	Steward	Numerator	Denominator	Data source	Analytic approach
Plan All-Cause Readmissions	None	At least one acute unplanned readmission for any diagnosis within 30 days of the date of discharge from the index hospital stay, that is on or between the second day of the measurement year and the end of the measurement year	Medicaid beneficiaries age 18 and older with a discharge from an acute inpatient stay (index hospital stay) on or between January 1 and December 1 of the measurement year.	State Medicaid Claims Data	Descriptive statistics; chi square tests of significance comparing target population to baseline and to the comparison group

Thirty-day all-cause unplanned readmission following psychiatric hospitalization in an inpatient psychiatric facility (IPF)	NQF # 2860	The measure estimates the incidence of unplanned, all-cause readmissions to IPFs or short-stay acute care hospitals following discharge from an eligible IPF index admission. A readmission is defined as any admission that occurs within 3-30 days after the discharge date from an eligible index admission to an IPF, except those considered planned.	The target population for this measure is beneficiaries discharged from an inpatient psychiatric facility with a principal diagnosis of a psychiatric disorder. A readmission within 30 days is eligible as an index admission, if it meets all other eligibility criteria.	State Medicaid Claims Data	Logistic regression: Predicting dichotomously scored variable of readmission within 30 days after index event (coded as 0 for no and 1 for yes).

Methodology

Overall Evaluation

Because the Illinois Medicaid Section 1115 Demonstration Waiver is open to all eligible Medicaid recipients, an experimental evaluation design is not feasible. The overall evaluation of the waiver demonstration will utilize a strong quasi-experimental pre-post design that compares trends in outcome measures before implementation of the waiver amendment to the time period directly after. Such designs are recommended by CMS for waiver demonstrations (see https://www.medicaid.gov/medicaid/section-1115- demo/downloads/evaluation-reports/causal-inference.pdf). In order to attribute any observed changes over time to the amendment, a comparison group will be matched to the target population, if possible. Comparison groups will be utilized on an outcome-by- outcome basis when an adequate comparison pool is available. The comparison group will be selected from a similar state who does not have the same community-based behavioral health transformation waiver.

Interrupted Time Series

Interrupted Time Series is an increasingly popular quasi-experimental alternative to true experiments. It is particularly useful when a randomized trial is not feasible or unethical, but multiple measurements are still viable. It works best with short-term outcomes that are expected to change relatively quickly after a policy is implemented.

Interrupted Time Series involves collecting data at multiple time points before and after an interruption; an interruption of introducing a policy or program, such as the Illinois 1115 Waiver Demonstration for behavioral health transformation. It detects whether an intervention has a significantly greater effect than any underlying secular trend.

Interrupted Time Series assumes that in the absence of an intervention (waiver demonstration), the trend would remain constant when measuring the changes. It uses segmented regression to measure immediate level changes (i.e., a change in the intercept) in the rate of the outcome as well as changes in the trend (slope). ‘Segmented’ simply refers to a model with different intercept and slope coefficients for the pre- and post-interruption time periods. Figure C-1 below displays the intended one- year baseline measurements from July 2017 to June 2018 and the five-year intervention period from July 2018 – June 2023.

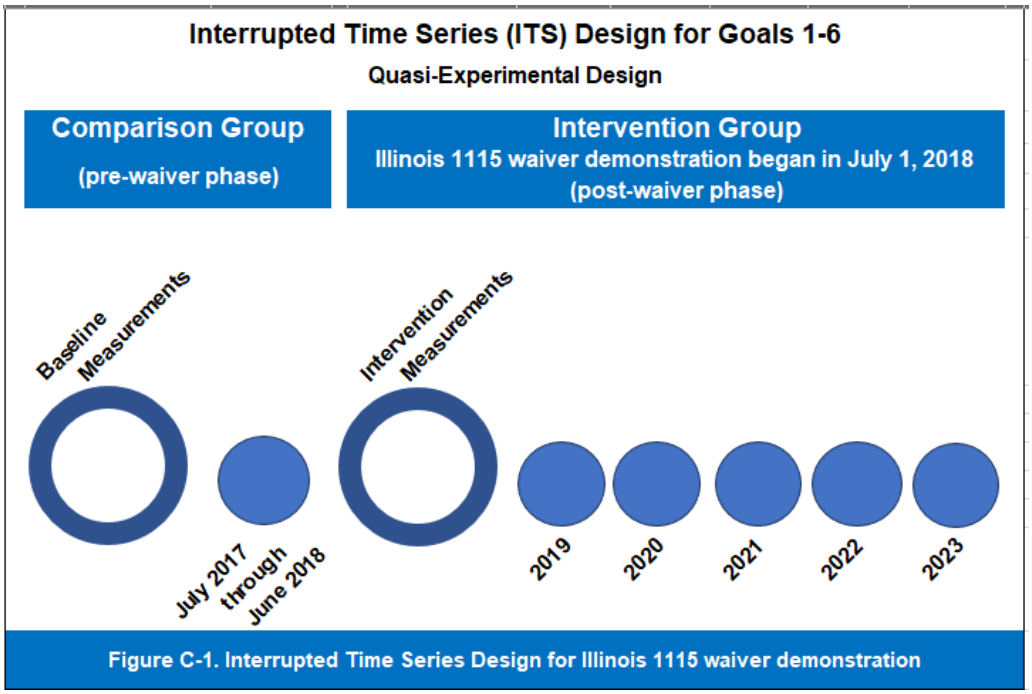


Figure C-1. Interrupted Time Series Design for Illinois 1115 waiver demonstration

A single time series describes only the interruption/waiver state. The pre-waiver trend projected into the waiver period serves as the counterfactual. Such a regression model can be explained as below:

$$Y = \beta_0 + \beta_1 T + \beta_2 X + \beta_3 XT + \varepsilon$$

Where T is the time elapsed beyond the start of the study (July 2017 to June 2018 as pre-period, July 2018 as interruption time, July 2019 to June 2023 as post- interruption time)

X is the study phase (pre-waiver=0, post-waiver=1) Y is the outcome at time T

XT is the time after interruption/waiver

β_0 represents the intercept or starting level of the outcome variable

β_1 is the slope or trajectory of the outcome variable until the introduction of the waiver in July 2018

β_2 represents the change in the level of the outcome that occurs in the period immediately following the introduction of the waiver (compared with the counterfactual)

β_3 represents the difference between pre-waiver and post-waiver slopes of the outcome

We will look for significant p-values in β2 to indicate an immediate waiver effect, or in β3

to indicate a waiver effect over time (Linden and Adams 2011).

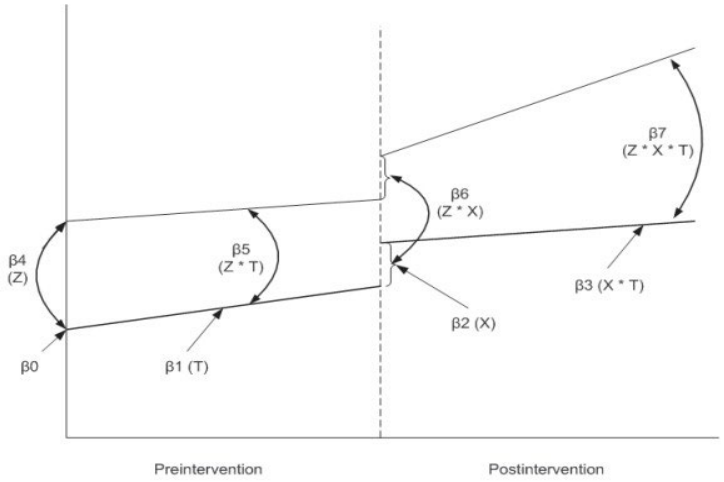


Figure 1. Visual depiction of a single group (lower line) and multiple group (upper and lower lines) interrupted time-series design, from Linden and Adams (2011)

A single interrupted time series cannot exclude confounding due to other interventions or events occurring around the time of the intervention. One approach to minimize such potential confounding events is to add a control series so that there are both before- after comparison and an intervention-control group comparison. Therefore, the above model can be strengthened by including a comparable "control" state where the 1115 waiver demonstration didn't occur. In this case, data will be collected from both treatment state and control state during the same time period. This will compare the changes at the intervention/waiver state (IL) to changes at another state where no intervention/waiver occurred. In this case, the regression equation expands to:

$$y = \beta_0 + \beta_1 T + \beta_2 X + \beta_3 XT + \beta_4 Z + \beta_5 ZT + \beta_6 ZX + \beta_7 ZXT + \varepsilon$$

Where Z is a dummy variable indicating treatment (1) or control (0)

ZT is time for treatment and 0 for control

ZX is study phase for treatment and 0 for control

ZXT is time after interruption/waiver for treatment and 0 for control

β_4 is the difference in the level between treatment and control prior to the waiver β_5 is the difference in the slope between treatment and control prior to the waiver β_6 is the difference in the level between treatment and control in the period

immediately following the waiver

β_7 is the difference between treatment and control in the slope after initiation of the waiver

In order to estimate the level and slope changes, Interrupted Time Series requires a minimum of 8 data points before and 8 data points after the waiver implementation to maintain sufficient power to estimate the regression coefficients.[3] However, to incorporate any seasonality in time series data, if the unit of time is month, 12 data points are recommended to avoid seasonal biases.[4]

In selecting a comparison state, the state needs to be exposed to any other interventions or events that might affect the intervention/waiver state. However, it should not be exposed to any interventions or events that could impact on the comparison state alone. Our effort will be to select a comparison state that is similar to our state in terms of exposure to other interventions and demographic characteristics, if possible. Details regarding the selection of a comparison state and any challenges related to data access will be further outlined in the evaluation reports.

Data Source

De-identified Medicaid claims and encounter data covering one year prior to waiver (July 1, 2017 to June 30, 2018) and 5 years post waiver (July 1, 2018 to June 30, 2023) will be collected from the Illinois Department of Healthcare and Family Services (HFS). Additional data sources include the Illinois Department of Public Health's data on opioid overdoses, as well as the DARTS data forms collected by the Illinois DHS' Division of Substance Use Prevention and Recovery (SUPR).

The administrative Medicaid and Medicaid Managed Care claims data include the following:

- ICD-9/10 Diagnosis Codes
- CPT procedure codes
- Service dates
- Reimbursement amounts (allowed amounts)
- Deductibles/copays/coinsurance paid (Managed Care patients)
- Identity of the provider (Physician NPI codes)
- Identify of referring provider (Physician NPI code)
- Identity of the facility of service (Organization NPI codes)
- Provider 5-digit zip code
- Place of Service (POS) codes (e.g., physician office, outpatient clinic, etc.)
- Facility type codes (e.g., inpatient, outpatient, ER, Nursing Home, etc.)
- Individual patient identifiers (masked)
- Identifier for plan subscriber (masked)
- Patient age
- Patient income
- Patient gender
- Patient 5-digit zip code of residence
- Admission and discharge dates
- Reason for discharge
- Admission type code (e.g., admitted through ER, transfer from another hospital, etc.)
- Target population

Data will be limited to Illinois Medicaid and Medicaid Managed Care (MCO) recipients with Substance Use Disorder (identified using ICD-9 and ICD-10 diagnostic codes) who

are 18 to 64 years of age in the study period. SUD individuals that are enrolled in the waiver demonstration will be flagged to identify the target population.

Comparison Group

Following CMS's "SMI/SED AND SUD EVALUATION DESIGN GUIDANCE", we strive

to collect two ideal comparison groups that include another state Medicaid population similar to ours and/or prospectively collected information prior to the start of the intervention/waiver.[5]

Limitations

Limitations in this evaluation include the availability/comprehensiveness of records in the pre-test period and data lag. Per billing record trends, there were fewer than anticipated SUD claims in 2017 (pre-test period). This would result in a possible upward bias in the waiver effects. Because of this, analyzing comparison state data may help address shortcomings of our pre-test period data from the Illinois claims. While the evaluation aims to incorporate such comparison state data, difficulties in identifying an appropriate comparison state and/ or obtaining claims data would present a further limitation.

An additional limitation is that there is often a billing lag in submitting claims, as well as a lag in terms of posting clean statewide datasets. For example, at this writing (March 9th, 2021), the 2019 data for other states is listed as "pending." Thus, our project will access the most recent data possible to fulfill the analyses described above.

Supplemental Pilot Evaluations

The overall evaluation using the Interrupted Time Series design provides a strong quasi-experimental evaluation of the overall 1115 waiver demonstration project.

Additionally, whenever it adds value, we will complete supplemental evaluations on select pilots to enhance our understanding of the impact of each individual pilot.

For example, there is little data on whether adding Peer Recovery Support Services (PRSS) to residential treatment enhances outcomes. Thus, by matching those receiving PRSS to comparable control participants, we can isolate the potential benefits of the PRSS services. This adds substantial value to the overall evaluation, as there is much recent interest in adopting PRSS. Furthermore, understanding whether case management reduces criminal involvement, relative to matched controls not receiving case management, would be highly informative.

The outcomes for each pilot evaluation were listed above in tables B6-B8. These pilots include the following services: clinically managed withdrawal support, SUD case management, and peer recovery support.

Each of these evaluations are similar to the overall evaluation, with a key exception. When considering the effects of each of these services separately, we will construct control groups using propensity score matching.

Propensity Score Matching

In many settings, participation in a treatment (in our case, a particular pilot) is voluntary. As a result, outcomes across the participants and non-participants would likely differ even in the absence of any treatment. For example, if individuals who would participate in a given pilot are healthier on dimensions which are unobservable to researchers but contribute to good outcomes, then it would not be surprising to see them have better outcomes (than those who would not participate in the same pilot) even in the absence of any pilot participation or actual treatment.

What is of interest in the effect of the pilot on outcomes NET of any of these unobservable differences. In the absence of a randomized control trial, one could compare outcomes across individuals who participated in a pilot to those from very similar individuals who did not. Although finding a perfect "twin" among non-participants for each participant may be impossible (as it requires matching on all observable and unobservable dimensions), one could at least try to do so using available observable information.

Matching Variables

The following is a non-exhaustive list of potential variables on which participants can be matched.

- County of residence/treatment
- Age group
- Gender
- Income as a percentage of Federal Poverty Level (FPL) (<100% FPL, 100-138% FPL, 138%+ FPL)
- Medicaid plan type (traditional Medicaid, Medicaid Managed Care plan)
- Presence of children in the household
- Presence of comorbidities (i.e., other ICD psychiatric or physical health diagnoses)
- Number of prior hospitalizations for OUD/SUD-related diagnosis (ICD-9) codes
- Presence of a chronic condition as defined by the Healthcare Cost and Utilization Project (HCUP)

Data sources-Treatment and Comparison Groups

Table C-1 summarized the treatment and comparison groups used in the individual pilot evaluations. We present information on the pilot, the outcome variables, the treatment and comparison groups, and the potential limitations of using propensity score matching to make the comparisons. Additional detail about the outcomes appears in Tables B6- B8.

Table C-1. Summary of Treatment and Control Populations for Propensity Score Matching Analyses					
Hypotheses: Relative to matched controls, participants in the pilots will have better outcomes.					
Pilot	Outcomes	Treatment Group	Matched Controls	Data sources	Potential Limitations

Clinically Managed Withdrawal	ED visits	Members receiving residential services under waiver	Members with a diagnosis of substance intoxication receiving ED services	State Medicaid Claims Data	Too low a ratio of potential matches to waiver recipients Unobserved variables
Case Management	Number of Arrests Continuity of Care	Members receiving case management under waiver	Members with similar history of criminal involvement not receiving case management under waiver	SUPR DARTS	Too low a ratio of potential matches to waiver recipients Unobserved variables
Peer Recovery Support Services	Continuity of Care ED visits	Members receiving case management under waiver	Members receiving residential but not PRSS	MCO-Residential data; Comparison State Data	Too low a ratio of potential matches to waiver recipients Unobserved variables

Potential limitations

Although a one-to-one matching of participants to non-participants based on every single observable variable would be favorable, this may require a large ratio of available comparison subjects. Potential solutions involve use of K:1 matching with replacement, where comparison subjects (i.e., good matches) can be matched multiple times to treatment participants (e.g., beneficiary receiving Peer Recovery Support under the waiver). Additionally, purchasing other state's claims data may result in a much larger pool of potential control subjects that would enable the analysis.

Bias could still occur if participants and non-participants remain different on dimensions which are unobservable to the researcher but, nevertheless, contribute to the measured outcomes.

Timeline

Task	Projected Dates
Evaluation Contractor (CPRD) Data Processing	
Determine required variables, timeline of variables (monthly, quarterly), and dates needed for overall evaluation and individual pilot evaluations.	July 2021
CPRD requests and receives access to Illinois Medicaid Claims Data	July 2021
CPRD receives data and examines for accuracy and feasibility	July 2021 – August 2021
CPRD processes data – cleaning and merging of data files received	August 2021 - October 2021
Initial Data Analysis and Interim Report Writing	
Descriptive Statistics Primary Driver 1 – Descriptive statistics for 2 measures Primary Driver 2 – Descriptive statistics for one measure	September 2021

Primary Driver 3 – Descriptive statistics for 3 measures Primary Driver 4 – Descriptive statistics for 4 measures Primary Driver 5 – Descriptive statistics for 1 measure Primary Driver 6 – Descriptive statistics for 7 measures	
Chi-Square Analyses Primary Driver 2 – Chi-square for 2 measures Primary Driver 3 – Chi-square for 2 measures Primary Driver 6 – Chi-square for 2 measures	September 2021
CPRD team works to develop interim report update to CMS	September 2021
Interim Report Due	October 2021
Accessing Comparison State Data	
Investigate state data sets and waiver status to determine a suitable comparison state dataset	June 2021-July 2021
Determine required variables, number of cases, timeline, dates, and other required information to include in the request	August 2021
Develop a Security Plan for data transfer and data sharing between the University of Illinois and the comparison state's data custodian	October 2021
Submit a request and process payment to access the 2017-most current comparison state data.	October 2021
Estimated date of receipt for comparison state dataset	October 2022
Additional data requests for subsequent year(s) of data	October 2022
Estimated date of receipt for comparison state dataset	October 2023
Overall Evaluation Analysis	
Interrupted Time Series (ITS) Analysis Primary Driver 1 – ITS for 2 measures Primary Driver 3 – ITS for 1 measure Primary Driver 4 – ITS for 4 measures Primary Driver 5 – ITS for 1 measure Primary Driver 6 – ITS for 5 measures	September 2022 – June 2023
Propensity Score Matching (PSM) Analysis Primary Driver 2 – PSM for 2 measures	September 2022 – June 2023
Summarize analysis findings for overall demonstration evaluation	July 2023 – September 2023
Individual Pilot Demonstration Analyses	
Descriptive Statistics and/or Chi-Square Analyses Crisis Intervention Pilot Evaluation, All Cause Readmission	October 2023 – April 2024
Propensity Score Matching (PSM) Analysis and/or Logistic Regression and/or difference-in-differences approach Clinically Managed Withdrawal – 1 measure SUD Case Management – 1 measure under hypothesis one and 1 measure under hypothesis two Peer Recovery Support Specialists – 2 measures Crisis Intervention – 1 measure	October 2023 – April 2024
Summarize analysis findings for pilot demonstration evaluations	May 2024 – July 2024
Compile Analysis Summaries and Develop Final Summative Evaluation Report	July 2024 – December 2024
Summative Evaluation Report Due	December 2024

Evaluation Budget

Table D-1. Evaluation Budget FY21-23			
Hypotheses: Relative to Matched controls, participants in the pilots will have better outcomes.			
Description	Percent Effort	Role/Description	Budgeted Amount
Personnel			
Evaluator	.15	Oversee entire evaluation Lead evaluation reports	Salary: $552,853 Fringe: $259,342 Total: $812,195
Project Manager	.4	Assist with evaluation reports	
Data Analysts	2.20	Analyze data	
Graduate Assistant	.625	Clean data Assist with data analyses Assist with writing reports	
Supplies			
Computers		Two computers, one each for 2.0 FTE data analysts	$3,200
Travel			
National Travel	N/A	Presentation of findings at national conferences (3 staff members at one conference annually)	$12,240
Other			
Comparison claims data/ Telecom	N/A	Purchase of other state's beneficiary data ($120,000) Telecom costs ($7,233)	$127,233
CPRD Lease		Lease expense prorated per FTE	$22,386
Consultant		Christina Andrews-five days of consulting per year	$15,608
ICR		ICR (Charged at 21.7% of MTDC)	$233,138
Total Budgeted Amount (Estimated at for full three years, from July 1, 2020 through June 30th, 2023)			$1,329,891

ILLINOIS
CPRD | Center for Prevention Research & Development
SCHOOL OF SOCIAL WORK

March 9, 2020

To Whom It May Concern,

This purpose of this letter is to provide a statement about my status as an Independent Evaluator for the State of Illinois' Behavioral Health Transformation 1115 demonstration. Currently, I serve as the director of the Center for Prevention Research and Development (CPRD) at the University of Illinois in Urbana-Champaign. Our agency agrees to do this evaluation under contract with the Office of Medicaid Innovation and the Illinois Department of Healthcare and Family Services.

I was involved in developing the initial evaluation plan in collaboration with other professors at a separate campus in the Illinois system. They have since left the project. I have worked with OMI and IL DHFS to revise the original evaluation plan. Below please find a description of my evaluation team, as well as a detailed response to the reviewer comments on the original evaluation plan.

My experience and that of my staff at CPRD are well suited to conduct a fair and impartial evaluation and ensure that there are no conflicts of interest. We look forward to preparing an objective Evaluation Report for this project.

Sincerely,

Douglas C. Smith, Ph.D. Professor, School of Social Work

University of Illinois at Urbana-Champaign (UIUC)-Personnel

Douglas C. Smith, PhD (Evaluator), is an Associate Professor of Social Work and Director of the Center for Prevention Research and Development (CPRD) at the University of Illinois at Urbana-Champaign. He has prior direct practice experience working in residential substance use disorder (SUD) treatment and providing case management services in state-funded facilities serving individuals from low-income backgrounds. His research focuses on substance use disorder treatment outcomes among adolescents and emerging adults (ages 18-29). The latter comprise an especially at-risk population that account for approximately 25% of all opiate users in the United States, have poorer retention and engagement in treatment, are of childbearing age, and may need developmentally appropriate case management services focused on occupational functioning. Dr. Smith has previously been funded to complete substance use disorder (SUD) treatment evaluations by the National Institutes of Health (NIH), the Substance Abuse and Mental Health Administration (SAMHSA), and the United States Department of Justice (DOJ). His nearly 50 peer-reviewed publications largely focus on substance use disorder treatment outcomes. Among those most relative to this evaluation are articles or chapters on 1) how the presence of DSM- 5 diagnosed withdrawal syndromes predict a return to substance use (Davis, Smith et al., 2017), 2) the limited work on peer recovery support specialists (Smith, Schwebel, and Larimer, 2017) in SUD treatment, 3) the use of case management services in family-based adolescent substance use disorder treatment (Smith et al., 2006), and 4) the use of propensity score matching in evaluating SUD treatment outcomes (Smith et al., 2011).

Crystal Reinhart, PhD, (Project Manager) Dr. Crystal Reinhart is a Research Scientist at the Center for Prevention Research and Development (CPRD) at the University of Illinois in Urbana-Champaign. She currently works on the Illinois Youth Survey project, which collects data from middle and high school students in Illinois. This data has contributed to several peer-reviewed publications and collaborations with researchers around the state to further understanding of substance use, perceptions about substance use, and a variety of other health and safety issues among youth. She is passionate about addressing the opioid crisis in Illinois, is a member of the Illinois Opioid Advisory Council, and recently developed a comprehensive epidemiological profile on opioid use in Illinois. In addition to her work on the survey, Dr. Reinhart is contracted with the Leukemia & Lymphoma Society and Tufts University Medical Center to study cancer survivorship among adolescents and young adults. She received her PhD in Community Psychology from Wichita State University in 2010.

Alex Lee, (PhD Student), is a PhD student supervised by Dr. Smith. He will assist with data cleaning, report writing, and analyses.

Data Analysts (TBA). CPRD currently employs one full time Master’s and one full-time PhD level data analysts who have experience working on very large substance use prevention (Illinois Youth Survey, IYS, n=230,000) and home visitation datasets (i.e., MIECHV). We will hire two full-time analysts to work on this project to join our data analysis unit at CPRD. Additionally, Shahana Begum will allocate .25 effort on this project. Thus, we will have 2.25 data analysts dedicated to this project.

References

Illinois Department of Public Health. (2017). State of Illinois comprehensive opioid data report. Available at: http://www.dph.illinois.gov/sites/default/files/publications/publicationsdoil-opioid data-report.pdf.

Illinois Department of Public Health. (2019). Opioid data dashboard [online data portal]. Retrieved from https://idph.illinois.gov/OpioidDataDashboard/.

A. K. Wagner, S. B. Soumerai, F. Zhang and D. Ross-Degnan; Journal of Clinical Pharmacy and Therapeutics (2002) 27, 299–309

Hategeka C, et al. BMJ Global Health 2020; 5:e003567. doi:10.1136/bmjgh-2020- 003567

Comparison Group Evaluation Design. https://www.medicaid.gov/medicaid/section- 1115-demo/downloads/evaluation-reports/comparison-grp-eval-dsgn.pdf

Appendix B: Citations

1. Illinois Department of Public Health. (2017). State of Illinois comprehensive opioid data report. Accessed January 15, 2023: https://dph.illinois.gov/content/dam/soi/en/web/idph/files/publications/publicationsdoil-opioid-data-report.pdf
2. Illinois Department of Public Health. (2019). Opioid data dashboard [online data portal]. Accessed January 15, 2023: https://idph.illinois.gov/OpioidDataDashboard/
3. Centers for Medicare and Medicaid. *Monitoring Metrics for Section 1115 Demonstrations with SUD Policies.* 2020. HHS-0938-2020-F-1934. Accessed March 20, 2023: https://www.hhs.gov/guidance/document/monitoring-metrics-section-1115-demonstrations-sud-policies-0
4. National Committee for Quality Assurance. *HEDIS Measurement Year 2020 & Measurement Year 2021 Volume 2 Technical Specifications for Health Plans.* 2020. Item #10284-100-21. Accessed February 2023: https://store.ncqa.org/hedis-my-2020-my-2021-volume-2-epub.html
5. Saunders H, Rudowitz R. Demographics and health insurance coverage of nonelderly adults with mental illness and substances use disorders in 2020. Accessed April 24, 2023: https://www.kff.org/medicaid/issue-brief/demographics-and-health-insurance-coverage-of-nonelderly-adults-with-mental-illness-and-substance-use-disorders-in-2020/.
6. National Quality Forum. *Tobacco Use Screening and Follow-up for People with Serious Mental Illness or Alcohol or Other Drug Dependence.* 2015. Accessed March 9, 2023: https://www.qualityforum.org/Qps/QpsTool.aspx
7. Saloner B, Krawczyk N, Solomon K, Allen ST, Morris M, Haney K, et al. Experiences with substance use disorder treatment during the COVID-19 pandemic: Findings from a multistate survey. Int J Drug Policy. 2022; 101: 103537. doi:10.1016/j.drugpo.2021.103537
8. Ciccarone D. The rise of illicit fentanyls, stimulants and the fourth wave of the opioid overdose crisis. Curr Opin Psychiatry. 2021; 34(4): 344-350. doi:10.1097/YCO.0000000000000717
9. Venkatesh AK, Janke AT, Kinsman J, Rothenburg C, Goyal P, Malicki C, et al. Emergency department utilization for substance use disorders and mental health conditions during COVID-19. PLoS One. 2022; 17(1): e0262136. doi:10.1371/journal.pone.0262136
10. Roy CM, Bollman EB, Carson LM, Northrop AJ, Jackson EF, Moresky RT. Assessing the indirect effects of COVID-19 on healthcare delivery, utilization and health outcomes: a scoping review. Eur J Public Health. 2021; 31(3): 634-640. doi:10.1093/eurpub/ckab047
11. Choi SE, Simon L, Basu S, Barrow JR. Changes in dental care use patterns due to COVID-19 among insured patients in the United States. J Am Dent Assoc. 2021; 152(12): 1033-1043.e3. doi:10.1016/j.adaj.2021.07.002