Maternal Opioid Misuse (MOM) Model Evaluation

Pre-Implementation Evaluation Report

December 2021

United States Department of Health and Human Services
Centers for Medicare & Medicaid Services
Contract No HHSM-500-2011-00016I 75FCMC20F0018

insight POLICY RESEARCH

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Pre-Implementation Evaluation Report

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The analyses upon which this publication is based were performed under Contract [HHSM-500-2011-00016I 75FCMC20F0018], entitled, “Evaluation of the Maternal Opioid Misuse Model” funded by the Centers for Medicare & Medicaid Services, Department of Health and Human Services. The content of this publication does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does the mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author assumes full responsibility for the accuracy and completeness of the ideas presented.

Suggested Citation

Esposito, D., Simon, L., Tucker, M., Stangle, J., Moore, T., Hill, I., Courtot, B., Burroughs, E., & Witgert, K. (2021). *Maternal opioid misuse (MOM) model: Pre-implementation evaluation report*. Centers for Medicare & Medicaid Services.

Acknowledgements

The authors would like to thank the many MOM Model awardee staff and partners who gave us their time during our site visits and shared their experiences and perspectives with implementing the MOM Model in their States. We would also like to thank the many staff on the MOM Model evaluation team who contributed to this report, including Sade Akinbayo, Caroline Brent-Chessum, Diana Cassar-Uhl, Lizzie Nelson, and Megan Worden from Insight Policy Research and Catherine Hersey from Abt Associates. We are also grateful to our Federal Contracting Officer at the Center for Medicare and Medicaid Innovation, Centers for Medicare & Medicaid Services, Caitlin Cross-Barnet, for her thoughtful guidance, assistance, and advice throughout the conduct of this evaluation.

Abbreviations and Acronyms

CFIR	Consolidated Framework for Implementation Research
CHARM	Children and Recovering Mothers (Collaborative)
CHIP	Children's Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
DV	domestic violence
EHR	electronic health records
EPIS	Exploration, Preparation, Implementation, Sustainment
FAQ	frequently asked questions
FFS	fee for service
IPV	intimate partner violence
IT	information technology
IV	intravenous therapy
MAT	medication-assisted therapy
MCE	managed care entity
MCO	managed care organization
MOHH	Maine opioid health home
MOM Model	Maternal Opioid Misuse Model
NAS	neonatal abstinence syndrome
NICU	neonatal intensive care unit
OUD	opioid use disorder
OTP	opioid treatment program
PARIHS	Promoting Action on Research Implementation in Health Services
PCIC	Patient Care Intervention Center
RAE	regional accountable entity
RE-AIM	Reach, Effectiveness, Adoption, Implementation, and Maintenance
SAMHSA	Substance Abuse and Mental Health Services Administration
SUD	substance use disorder
T-MSIS	Transformed Medicaid Statistical Information System

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Executive Summary

Executive Summary

The Maternal Opioid Misuse (MOM) Model is a Center for Medicare and Medicaid Innovation's (Innovation Center) patient-centered service-delivery model that aims to improve the quality of care and reduce costs for pregnant and postpartum Medicaid beneficiaries with opioid use disorder (OUD) and their infants through State-driven care transformation. The MOM Model is part of the Innovation Center's multipronged strategy to combat the Nation's opioid crisis (CMS.gov, 2021) as rates of OUD and opioid-related overdose deaths in America have rapidly increased over the last 10 years, especially among pregnant and parenting people (CMS, 2019).

A. MOM Model, Awardees, and Sites

The MOM Model strives to solve the challenges related to the care delivery system pregnant and postpartum people with OUD often encounter by supporting interventions focused on reducing fragmentation and improving care coordination for this population. The Innovation Center is supporting awardees in eight States (Colorado, Indiana, Maine, Maryland, New Hampshire, Tennessee, Texas, and West Virginia) to implement the MOM Model with one or more care delivery partners, with the target of serving an overall estimated 3,300 to 5,000 pregnant and postpartum Medicaid beneficiaries and their infants per year across all awardee models.

Through the MOM Model, the Innovation Center is providing payments to participating State Medicaid agency awardees to support the development and implementation of State-designed interventions that target Medicaid beneficiaries with OUD and their infants at several points in time—pregnancy, labor and delivery, and postpartum—because each of these periods presents unique opportunities to diagnose and treat OUD and other health issues. While State Medicaid agencies serve as MOM Model awardees, each has joined with care delivery partners to build service delivery capacity and implement more coordinated care delivery approaches on the ground. Care delivery partners may be local health systems or payers, such as Medicaid managed care organizations (MCOs), and awardees can work with more than one care delivery partner to serve multiple regions or counties within their State. The design of the MOM Model interventions varies by awardee, though all MOM Model awardees agreed to provide physical and behavioral healthcare to MOM Model participants, including prenatal care and medication assisted treatment (MAT).

The MOM Model is a 5-year initiative segmented into three periods: pre-implementation, transition, and implementation. The pre-implementation period provided awardees with time to focus on designing and building their interventions and relationships with MOM

Model partners. Initially, the pre-implementation period was scheduled to begin January 1, 2020, and end December 31, 2020; however, the Innovation Center instituted a 6-month extension of the pre-implementation period to mitigate the disruption of COVID-19 on awardees' planning. This extension postponed model implementation (the beginning of the transition year) from January 2021 to July 2021 for most awardees, with Colorado and West Virginia being granted an additional extension until January 2022 for other extenuating circumstances specific to their States.

B. MOM Model Evaluation

The Innovation Center contracted with Insight Policy Research and its partners—the Urban Institute and Abt Associates—to conduct an independent evaluation of the MOM Model. Using a modified RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance), the evaluation is built on a flexible mixed-methods design to investigate and document the extent to which implementing a coordinated care model for pregnant and postpartum people with OUD improves quality and health outcomes equitably across populations and reduces overall costs to Medicaid. The evaluation will investigate this primary research question by considering three integrated yet distinct components:

- **Qualitative case studies:** Qualitative data and analysis will examine how States design and implement models of care, document stakeholders' perceptions of best practices and lessons learned, examine program sustainability, and describe MOM Model beneficiaries' experiences. Case studies also provide information and context for generating hypotheses for testing and interpreting participant-level process and impact findings.
- **Assessment of participant-level process data:** Quantitative participant-level process data will describe the characteristics of MOM Model beneficiaries, their medical and psychosocial risks, their utilization of services, and beneficiary outcomes associated with program participation. Findings from the process data will also benefit the design of qualitative protocols and interpretation of qualitative data.
- **Evaluation of program impact:** Informed by the qualitative and process data, the evaluation team will use claims and vital statistics data to assess the model's impacts on quality, health outcomes, and costs. The approach is tailored for each awardee to account for factors such as demographic and geographic contexts, specifics of each awardee intervention, and Medicaid program and policy variation.

During the pre-implementation period, the evaluation team focused on developing the pre-implementation and implementation evaluation design plans and conducting pre-implementation site visits with MOM Model awardees.

C. Cross-Cutting Findings

In the pre-implementation period, the evaluation team conducted virtual site visits with seven of the eight MOM Model awardees. The site visits included interviews with MOM Model leads at State Medicaid agencies, MOM Model care delivery partners and other community partners, and providers and care provision staff serving pregnant and postpartum Medicaid beneficiaries with OUD. The evaluation team also conducted virtual structured interactive observations at provider sites that already serve the MOM Model population and Photovoice sessions with providers of care to illustrate and discuss the lived experience of their patients with OUD.

This first annual report describes activities MOM Model awardees have undertaken during the MOM Model's pre-implementation period from January 2020 through June 2021. During this time, MOM Model awardees and their care delivery partners engaged in a wide range of activities (e.g., forming partnerships, designing care delivery plans, developing sustainable financing strategies, developing data systems) in support of preparing to enroll MOM Model beneficiaries beginning July 1, 2021 (or January 1, 2022, in the case of two awardees).

Based on data from these qualitative site visit activities, the evaluation team presents a number of early observations about how awardees and care delivery partners are implementing their MOM Model interventions, common challenges they have faced, and early successes. Early cross-cutting observations follow:

- **The COVID-19 pandemic required changes to clinical operations across all MOM Model States.** As social distancing requirements and fears of contracting coronavirus mounted in 2020, providers reduced in-person care and paused group care activities. A universal and widespread change to clinical services was the increased use of and reliance on telehealth. Interviewees of all types, across all awardees, identified the dramatic increase in virtual care as one of the primary influences of COVID-19 on their MOM Models. Though this shift was seen as a positive development overall, interviewees across all awardees reported some disadvantages to virtual care, such as the clinician's inability to see how a patient was doing physically and emotionally and concerns that women experiencing intimate partner violence would not be able to openly share with the provider if the home environment did not afford them adequate privacy. Providers in MOM's rural States worried that poor internet and cellular access hindered access to telehealth for some clients, thus potentially creating equity issues.

- **MOM Models anticipate common characteristics among the target population.** Most case study interviewees reported that their programs expect to serve beneficiaries who are primarily between the ages of 20 and 30 and White. Interviewees report that beneficiaries who will be served by the providers participating in the MOM Model almost always use substances in addition to opioids, most commonly marijuana, tobacco, methamphetamine, alcohol, and/or prescription drugs. MOM-eligible beneficiaries consistently face a range of psychosocial challenges, including physical and psychological abuse, trauma, intimate partner violence, intergenerational poverty, exposure to substance use (in childhood and/or adulthood), lack of sustainable and safe housing, mental illness, and food insecurity. Most beneficiaries in the target population have children and are either already in treatment when they become pregnant or seek treatment because they became pregnant.
- **Awardees designed their MOM Models based on common goals but considered the unique community characteristics of their service area and strengths of their model partners.** Each MOM Model shares the Innovation Center's goals of improving quality of care for pregnant and postpartum people with OUD and their infants; expanding access, service-delivery capacity, and infrastructure based on State-specific needs; and creating sustainable coverage and payment strategies that support ongoing coordination and integration of care. Four of the eight MOM Models will perform this work statewide, while four will focus their interventions on sub-State regions or communities within their States. While all MOM Models share common components of care coordination and integration of OUD treatment with prenatal care, the main focus of the model design varies. For five MOM Models, service integration is the main focus, while two models are focusing on case management, and one on information sharing. Two awardees' model designs leverage pre-existing programs.
- **Most awardees successfully expanded and formalized partnerships to build capacity in the pre-implementation period.** Most awardees entered the MOM Model with established partnerships that they expected to contribute to MOM Model service provision or implementation processes and used the pre-implementation period to build on and formalize existing partnerships. One awardee used the period to plan a process to make sub-region awards and task those subrecipients with formalizing the necessary Model partnerships. All awardees reported a concerted effort to expand and formalize partnerships that would ensure the capacity to provide MAT prescription opportunities, pregnancy and postpartum care, behavioral healthcare, and social supports. To reinforce these partnerships, collaborative training events, regular meetings, and, in some cases, contractual formalization of roles and relationships took place during the pre-implementation year. Interviewees in the seven sites with full case studies cited new partnership formation and collaboration across stakeholders as the greatest success during the pre-implementation year.

- **Care coordination is a cornerstone of each awardee's MOM Model.** Awardees described the core activities that care coordinators will engage in as including patient intake, risk assessment, care planning, referral to and follow-up with community providers, participation in learning collaboratives and trainings, convening or participating in planning meetings among providers and care delivery partners, and formalizing existing collaborations between providers and partners. Most awardees increased their care coordination capacity by hiring new staff, re-allocating hours for existing staff, and/or reducing care coordinators' caseloads. The qualifications and training of care coordination staff vary across awardees; staff include registered nurses, social workers, peer recovery coaches, and community health workers. Awardees varied in their planned approaches to care coordination. For example, four States will have care delivery partners manage care coordination, one State plans to offer cash incentives to beneficiaries who keep their care coordination appointments, and one State will consolidate all the clinic's MOM Model appointments into a single day of the week and hold a multidisciplinary team meeting at the start of that clinic day to coordinate care of their MOM Model beneficiaries.
- **Awardees took initial steps toward extending eligibility and sustainable funding.** Nearly every MOM awardee State had either already implemented or planned to implement a policy to extend postpartum coverage for Medicaid beneficiaries through 12 months. Many awardees used the pre-implementation period to consider options and decide which financing strategy they would use to sustain their MOM Models. For most States, this involved negotiating contracts with MCOs to clearly establish how MOM Model services would be reimbursed. One State will leverage its section 1115 Medicaid demonstration waiver to build in Federal matching funds for the MOM Model, and one State intends to develop a Medicaid State Plan Amendment to finance MOM Model services under a Maternity Opioid Health Home. Interviewees in most States identified some challenges surrounding transition funding, development of sustainable financing strategies, coordination with MCOs, and Medicaid coverage and billing.
- **Awardees prioritized developing, enhancing, and staffing their systems of data collection and reporting.** To facilitate care coordination, awardees are integrating data system infrastructures to enable data sharing, collection, and reporting. Awardees trained service providers and care delivery partners to understand and eventually collect clinical data that meet the Innovation Center's requirements for MOM Model reporting and evaluation. Some awardees hired or reassigned staff whose primary or only job responsibility would be to develop, manage, and maintain the awardee's MOM Model data system.

  The evaluation will use T-MSIS as its primary source for Medicaid claims, but the MOM Model also requires awardees to submit individually identifiable beneficiary-level data, such as medical information and health screenings, to CMS and its contractors. Most

MOM Model awardees described using the pre-implementation period to establish new or adjust existing data systems to support the collection and reporting of participant-level data.

Interviewees in all MOM Model States reported challenges related to establishing data systems and/or data collection and reporting processes, with many identifying this as their biggest obstacle during the pre-implementation period. Two MOM Model awardees cited data challenges as a reason for their decision to withdraw from the program during the pre-implementation period.

- **Awardees are addressing stigma and health equity.** Interviewees consistently identified societal stigma against pregnant and parenting people with OUD as a primary barrier to seeking help. Interviewees expressed hope that adopting holistic approaches to reduce effects of trauma and efforts to reduce stigma in their interactions with beneficiaries would help maintain care engagement. While interviewees highlighted the increased need for education on the stigma pregnant and postpartum people with OUD experience in the healthcare system, and they reported strategizing to educate providers about stigma and discriminatory behaviors, care delivery partners' plans lacked detail regarding what actions they would take in this area of model implementation.
- **Informants perceived that pregnant and parenting people with OUD encounter numerous barriers to care; however, their strengths, support networks, and resolve to seek care help them overcome obstacles in pursuit of recovery.** Overall, interviewees identified numerous potential psychosocial and practical barriers to care. OUD often co-occurs with mental health challenges, such as depression and anxiety, which present additional barriers to care. When people who are pregnant or parenting with OUD decide to seek treatment, practical barriers may also obstruct access to care. Some may not be housed because of strained relationships with family members or partners. Those living with OUD may have low incomes or struggle to find employment, which can make providing food for themselves and their children a challenge. Others lack transportation to get to and from needed treatment appointments, or childcare so that their children are safe while they are at their appointments. And still others live in communities that lack the provider capacity needed to meet the demand for care. Combined, when basic needs are not met, participating in treatment is harder to prioritize.

  Interviewees described the many ways their clients have used their personal strengths, community resources, and support from their treatment team to overcome barriers and begin recovery. Many interviewees commented on the resilience pregnant and parenting clients with OUD demonstrate during treatment and how that resolve supports their recovery.

D. Project Progress and Plans for Implementation Year

During the pre-implementation period, the evaluation team completed a number of tasks critical to building the foundation for the evaluation. A Pre-Implementation Evaluation Design Report and an Implementation Evaluation Design Report detailed the team's plans for data gathering and analysis. The team conducted the first series of virtual case studies, interviewing various stakeholders from each awardee to understand each awardee's model design, their planning activities in preparation for model implementation, and their experiences with and perspectives about the needs of pregnant and parenting people with OUD. In the coming year, the MOM Model evaluation will continue its data collection activities. The RE-AIM framework will continue to serve as the basic evaluation structure to ensure the smooth and consistent integration of findings from each component (qualitative, process, and impact) and provide an integrated mixed-methods perspective of MOM Model outcomes.

Part 1.

MOM Model Evaluation and Cross-Cutting Findings From Case Studies

1. Overview of the MOM Model and MOM Evaluation

A. Introduction

The Maternal Opioid Misuse (MOM) Model is a Center for Medicare and Medicaid Innovation's (Innovation Center) patient-centered service-delivery model that aims to improve the quality of care and reduce costs for pregnant and postpartum Medicaid beneficiaries with opioid use disorder (OUD) and their infants through State-driven care transformation. The model strives to solve challenges related to the care delivery systems serving pregnant and postpartum beneficiaries with OUD by supporting interventions focused on reducing fragmentation and improving care coordination for this population. The Innovation Center is supporting awardees in eight States (Colorado, Indiana, Maine, Maryland, New Hampshire, Tennessee, Texas, and West Virginia) to implement the MOM Model with one or more care delivery partners, with the target of serving an overall estimated 3,300 to 5,000 pregnant and postpartum beneficiaries and their infants per year across all awardee models.

The Innovation Center at the Centers for Medicare & Medicaid Services (CMS) contracted with Insight Policy Research and its partners, the Urban Institute and Abt Associates, to conduct an independent evaluation of the MOM Model. The evaluation is built on a flexible mixed-methods design to investigate and document the extent to which implementing a coordinated care model for pregnant and postpartum beneficiaries with OUD improves quality of care received and reduces overall costs to Medicaid over time. The evaluation will investigate this primary research question by considering three integrated components: qualitative case studies, assessment of participant-level process data, and evaluation of program impacts. For additional detail on the research questions to be investigated as part of the MOM Model evaluation, see appendix A.

This first annual report describes activities MOM Model awardees and the evaluation team have undertaken during the MOM Model's 18-month pre-implementation period, January 2020 through June 2021. During pre-implementation, MOM Model awardees and their care delivery partners engaged in a wide range of activities (e.g., forming partnerships, designing care delivery plans, developing data systems, developing sustainable financing strategies) in support of preparing to enroll MOM Model beneficiaries beginning July 1, 2021.[1] The evaluation team focused on developing the pre-implementation and implementation evaluation design plans and conducting pre-implementation site visits with MOM Model awardees. Findings from site visits are summarized in this report.

[1] Two awardees requested and received extensions on their pre-implementation period and will begin enrolling in January 2022.

B. Opioid Use Disorder Among Pregnant and Postpartum Beneficiaries

The MOM Model is part of the Innovation Center's multipronged strategy to combat the Nation's opioid crisis (CMS.gov, 2021) as rates of OUD and opioid-related overdose deaths in America have rapidly increased over the last 10 years, especially among people who are pregnant or parenting (CMS, 2019). Although research is limited, opioid-related overdose deaths appear to be a leading cause of maternal death in the United States (Mangla et al., 2019). Research has shown OUD may have especially serious consequences for maternal and infant health in the United States, at least partially because of lack of access to high-quality OUD treatment options, including medication-assisted treatment (MAT) among those who are pregnant or parenting (Patrick et al., 2020).

Many pregnant and postpartum people with OUD face barriers that influence their decisions to pursue OUD treatment. For example, because addiction is often regarded as a personal failing or a crime rather than an illness, pregnant people with OUD often face stigma and criminalization, including prosecution for child abuse, rather than the support they need to pursue and safely treat their OUD addiction (Angelotta et al., 2016; Paltrow & Flavin, 2013; Saia et al., 2016). People with OUD may experience a variety of other personal barriers to receiving treatment, including malnourishment, trauma, sexual assault, intimate partner violence, sexually transmitted infections, and mental illness (SAMHSA, 2018; Winklbaur et al., 2008). Pregnant and postpartum people with OUD may also face a variety of practical barriers unrelated to their OUD diagnosis that reduce their access to treatment, including limited transportation and childcare, stable housing and an overall lack of resources (Goodman, 2015).

Compounding these barriers are those attributed to the healthcare delivery system that can lead to missed opportunities to treat people with OUD. These barriers include lack of access to comprehensive services and fragmented systems of care. There are overall shortages of mental health providers and providers willing to treat pregnant and postpartum people with OUD. These shortages are particularly hard on Medicaid beneficiaries, rural residents, and those with co-occurring mental health conditions. For example, opioid treatment programs (OTPs) often do not provide services specific to pregnant people, and approximately one-third of OTPs do not accept Medicaid insurance. Generally, more than half of other MAT providers also do not accept Medicaid insurance (Smith & Lipari, 2017). Gaps in training among providers and inconsistent treatment guidelines also have been identified as barriers in providing services to this population (Titus-Glover et al., 2020). Many treatment programs do not offer evidence-based best practices for treating OUD in pregnant and postpartum people, and as a result, the majority of them do not receive MAT (Angelotta et al., 2016).

COVID-19 presented additional challenges that may have limited pursuit of and access to perinatal care and OUD treatment. Policy changes and a range of technologies were deployed to address barriers brought on by COVID-19, such as increased access to telehealth services, and expanded access to substance use disorder (SUD) treatment for some people. However, the significant increase in overdose deaths in 2020 suggests these flexibilities may not have offset increased risks (Panchal et al., n.d.). Changes in care and access to prenatal, birth, and postpartum care may have led to worse perinatal outcomes resulting from the disruption and alteration of many Medicaid services accessed by this population. Such challenges could have major implications for the evaluation of the MOM Model in addition to their detrimental effects on the study population.

C. The MOM Model

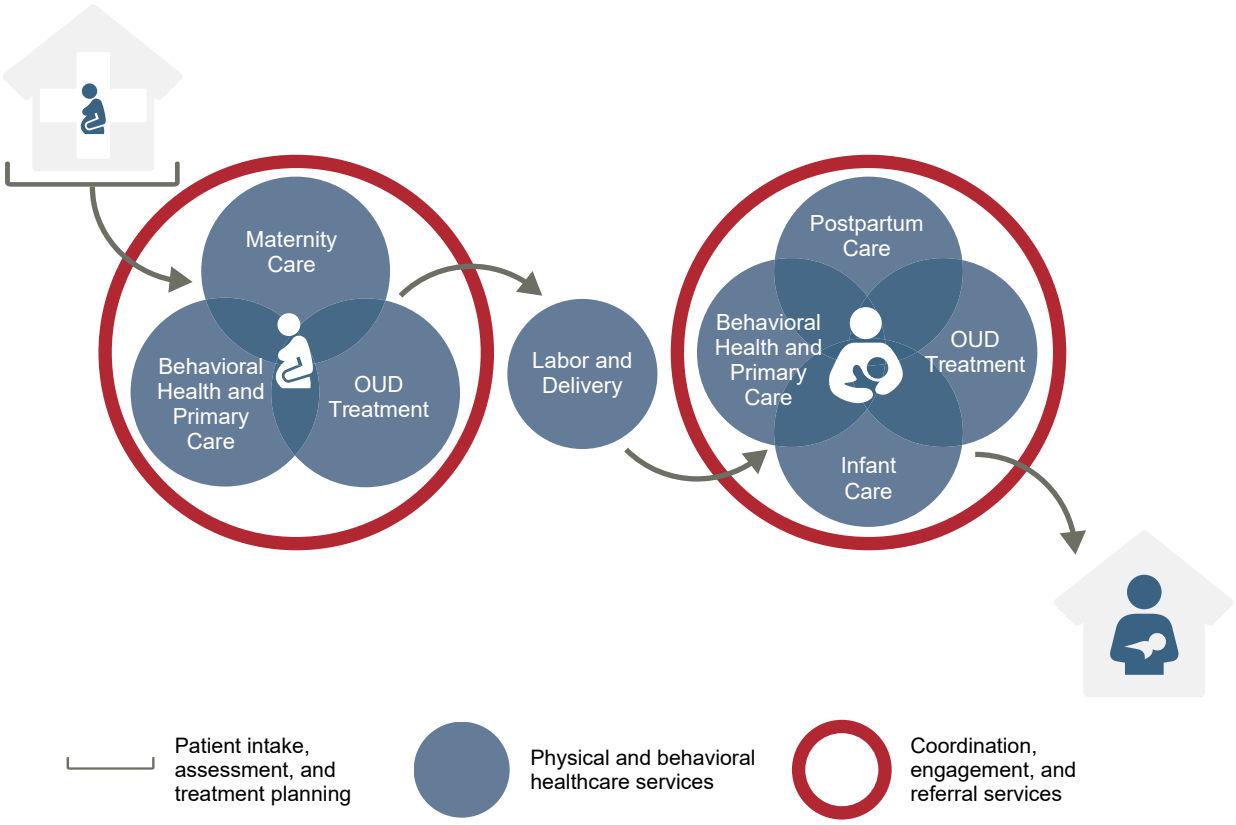
The MOM Model aims to alleviate some of the barriers pregnant and postpartum Medicaid beneficiaries with OUD face when seeking OUD treatment and improve their access to care and the quality of care they receive. A growing body of literature has documented how a continuum of best practices and treatment strategies can lead to improvements in the quality and cost of perinatal and postpartum care for people with OUD and opioid-exposed infants (ACMN [American College of Nurse Midwives], 2018; ACOG [American College of Obstetricians and Gynecologists], 2017; AWHONN [Association of Women's Health, Obstetric and Neonatal Nurses], 2020; Grossman et al., 2017; Jones et al., 2012; Jones et al., 2014; Klaman et al., 2017; MacMillan et al., 2018; NNEPQIN [Northern New England Perinatal Quality Improvement Network], 2018; SAMHSA, 2018; SAMHSA, 2016a). The MOM Model reflects these previously documented best practices and strategies for providing high-quality perinatal and postpartum care identified through other Federal initiatives, and academic studies.

Structure of the MOM Model

The MOM Model requires awardees to ensure that beneficiaries enrolled in the model can access a set of essential physical and behavioral health services. Awardees are also required to coordinate care, engage MOM Model beneficiaries, and provide referrals for services necessary to meet the model population's comprehensive needs (see figure 1). Although each MOM Model awardee has the flexibility to implement its unique intervention to meet the model's primary goals, all programs have certain interventions in common. These include (CMS.gov, 2021): (1) the use of enhanced, coordinated, and integrated physical and behavioral healthcare and wraparound services; (2) flexibility in State Medicaid policies to pay for sustainable care; and (3) strengthened capacity and infrastructure to address the challenges associated with providing coordinated and integrated care for the

model population, particularly for behavioral health. Section 2 (Cross-Cutting Findings Across Awardees: Findings From the Case Studies) details the similarities and variation among MOM Model awardee characteristics, including primary catchment area, intervention design, screening strategies, and Medicaid payment strategies.

Figure 1. MOM Model Design: Integrating Care

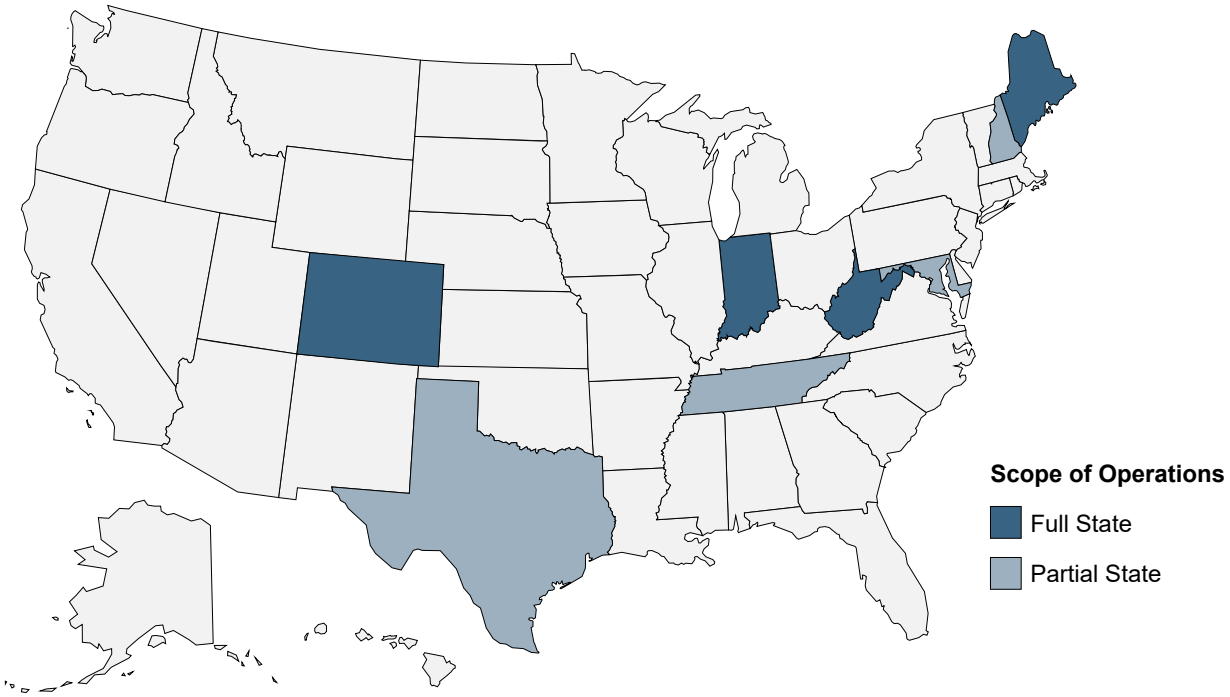


Note: OUD = opioid use disorder
Source: CMS, 2019

MOM Model Awardees and Care Delivery Partners

The MOM Model was initially planned as a 5-year initiative with 10 State Medicaid agencies (Colorado, Indiana, Louisiana, Maine, Maryland, Missouri, New Hampshire, Tennessee, Texas, and West Virginia). However, Louisiana and Missouri ended their participation in the model during the pre-implementation period. Additional details on factors that influenced Louisiana and Missouri officials to withdraw are discussed in chapter 2. A map of current MOM Model awardee States appears in figure 2.

Figure 2. MOM Model States



Source: Insight Policy Research summary of MOM Model States, December 2021

Through the MOM Model, the Innovation Center is providing payments to participating State Medicaid agency awardees to support the development and implementation of State-designed interventions that target Medicaid beneficiaries with OUD and their infants at several points in time—pregnancy, labor and delivery, and postpartum— because each of these periods presents unique opportunities to diagnose and treat both OUD and other health issues. While State Medicaid agencies serve as MOM Model awardees, each has joined with care delivery partners to build service delivery capacity and implement more coordinated care delivery approaches on the ground. Care delivery partners may be local health systems or payers, such as Medicaid managed care organizations (MCOs), and awardees can work with more than one care delivery partner to serve multiple regions or counties within their State. The design of the MOM Model interventions varies by awardee, and interventions take place in a variety of care settings, including primary and specialist care, prenatal and postpartum care, hospital and community-based care, and outpatient substance use treatment facilities. Individual profiles of awardees' MOM Model interventions appear in Part 2 of this report.

MOM Model Implementation Timeline

The Innovation Center segmented the implementation timeline of the MOM Model into three periods: pre-implementation, transition, and implementation. The pre-implementation period provided awardees with time to focus on designing and building their interventions and relationships with MOM Model partners. Initially, the pre-implementation period was scheduled to begin January 1, 2020, and end December 31 , 2020; however, the Innovation Center instituted a 6-month extension of the pre-implementation period to mitigate the disruption of COVID-19 on awardees' planning. This extension postponed model implementation (the beginning of the transition year) from January 2021 to July 2021 for most awardees, with Colorado and West Virginia being granted an additional extension until January 2022 for extenuating circumstances specific to their States.

The MOM Model design supports each awardee's ability to begin delivering coordinated and integrated care to pregnant and postpartum Medicaid beneficiaries with OUD during the transition period (July 1, 2021–June 30, 2022), while supporting States in developing a long-term coverage and payment strategy that aligns with their State Medicaid program. During the transition year, funding for care delivery services not otherwise covered by Medicaid will be provided by Innovation Center funds. By July 1, 2022, the start of the implementation period, States must implement their coverage and payment strategies fully.

D. Evaluation Design and Pre-Implementation Considerations and Activities

An integrated, mixed-methods approach to evaluating the MOM Model is essential to understanding the impact and effectiveness of the model in achieving its goals. The MOM Model evaluation aims to answer research questions that fall within four domains: (1) improving quality and health outcomes equitably across populations; (2) reducing overall costs to Medicaid ; (3) increasing access to treatment and service capacity; and (4) creating sustainable coverage and payment. Appendix A provides the full list of evaluation research questions.

During the pre-implementation period, the evaluation team conducted its first round of case studies, interviewing various stakeholders from each awardee to understand each awardee's model design and how they were planning for the implementation of their MOM Models (see appendix B for an overview of pre-implementation period research questions). The objectives for the pre-implementation period evaluation follow:

- Describe MOM Model interventions in awardee States, including the following:
  - Care delivery partners and their connection with the State Medicaid agency

  - The full array of services offered to MOM Model beneficiaries corresponding to primary MOM Model components
  - Any special demographic or contextual factors about MOM-eligible beneficiaries served
  - Early plans for sustainable payment strategies
- Identify how awardees used the pre-implementation period to plan and prepare for implementation, including the following:
  - Processes for identifying and formalizing partnerships
  - Strategies for establishing new and adjusting current service offerings
  - Approaches to creating and adjusting data systems to support MOM Model requirements
  - Processes for strategizing and identifying funding approaches to support Model activities
- Refine awardee-level and overall evaluation designs
- Identify external factors that might influence awardee success

1. Evaluation Framework

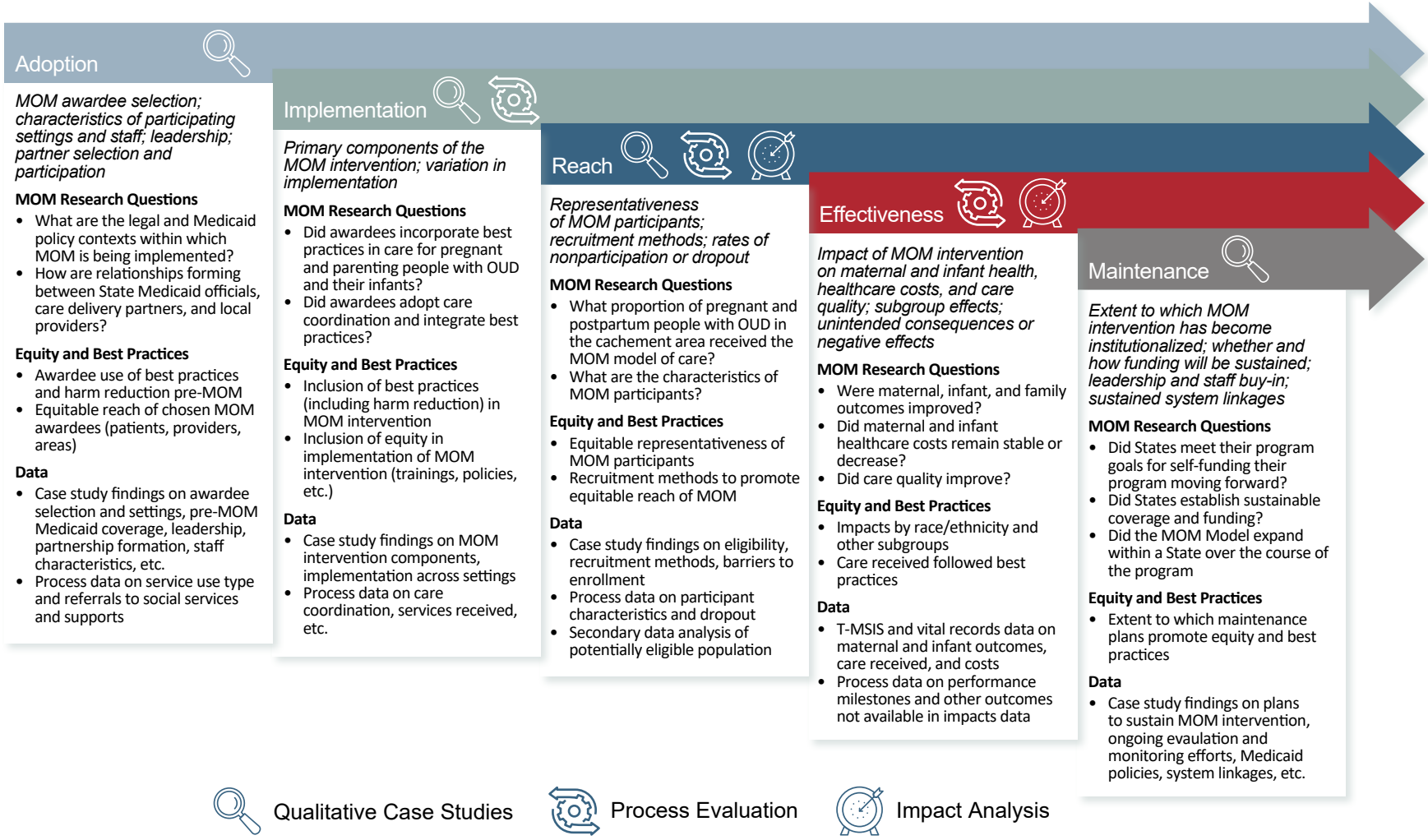
The MOM Model evaluation relies on a flexible, mixed-methods design, which will evolve over the life of the evaluation as more data are gathered. The mixed-methods approach includes the collection of qualitative and quantitative data. Together these data will tell the stories and experiences of MOM Model awardees, providers, and beneficiaries and how MOM Model interventions have affected them. The mixed-methods approach will triangulate findings that help validate the results and generalizability of the evaluation. The evaluation design has three components:

- **Qualitative case studies:** Qualitative data and analysis will examine how States design and implement models of care, stakeholders' perceptions of best practices and lessons learned, program sustainability, and MOM Model beneficiaries' experiences. Case studies also provide information and context for generating hypotheses for testing and interpreting participant-level process and impact findings.
- **Assessment of participant-level process data:** Quantitative participant-level process data will describe the characteristics of MOM Model beneficiaries, their medical and psychosocial risks, their utilization of services use, and beneficiary outcomes associated with program participation. Findings from the process data will also benefit the design of qualitative protocols and interpretation of qualitative data.

- **Evaluation of program impact:** Informed by the qualitative and process data, the evaluation team will use claims and vital statistics data to assess the model's impacts on quality, health outcomes, and costs. The approach is tailored for each awardee to account for factors such as demographic and geographic contexts, specifics of each awardee intervention, and Medicaid program and policy variation.

Given the complexity of an evaluation design featuring three unique evaluation components, the work must be grounded within a structured framework to ensure the smooth and consistent integration of findings from each component and provide a truly integrated mixed-methods perspective. The evaluation team selected the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework as the basis of the evaluation because it aligns with the Innovation Center's equity considerations and is designed to promote both the consistent reporting and translation of research findings into practice in the public health environment (RE-AIM, 2021). The evaluation team made adaptations to the RE-AIM framework to meet the needs of the MOM Model. Appendix C provides additional information on the RE-AIM framework and a description of other evaluation and implementation frameworks the team considered to support the evaluation of the MOM Model.

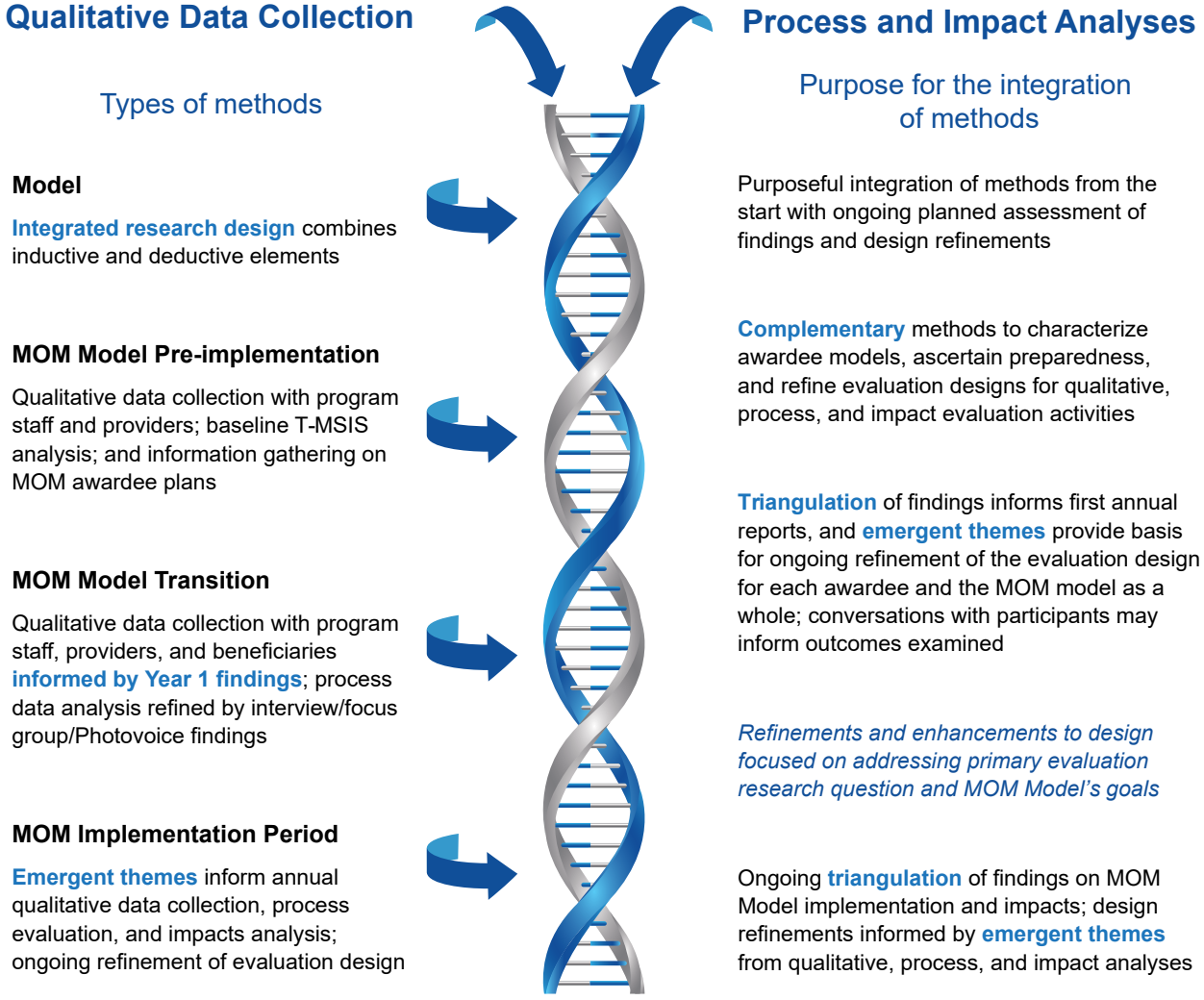
Figure 3. Modified MOM Model RE-AIM Framework



Source: Insight Policy Research modification of RE-AIM Framework (RE-AIM, 2021)

The integration of methods creates an adaptive research design resulting in an evaluation responsive to information collected in real time and self-validating through the triangulation of findings. As displayed in figure 4, this mixed-methods approach connects qualitative and quantitative methods so that findings from each component continuously inform the others, enables refinement of the evaluation design throughout the evaluation period and facilitates more pointed and nuanced questions and interpretations of all data.

Figure 4. MOM Model Evaluation Double Helix Mixed-Methods Framework



Source: Insight Policy Research, MOM Model evaluation mixed-methods framework, December 2021

2. COVID-19 and Implications for the Evaluation

The evaluation team adjusted timelines in response to programmatic changes spurred by States' need to pivot to pandemic response in 2020. In addition, the team modified the qualitative design from primarily in-person data collection to virtual data collection because of travel and engagement limitations.

The evaluation team also recognized the challenges COVID-19 presented to pregnant and postpartum beneficiaries with OUD and their infants regarding the delivery of care. As a result of these challenges, the pre-implementation period will not provide stable baseline findings reflecting the pre-COVID-19 environment the MOM Model was designed for. The evaluation team is considering whether data collected during the pandemic can be used as a baseline for pre-MOM Model care and is working to understand the impacts of new service flexibilities (e.g., expanded telehealth) on outcomes such as receipt of MAT.

Comparison groups for each awardee must consider local and State-based policies affecting access to perinatal care and OUD treatment before, during, and after COVID-19. However, much of this information is not available now. The team will track policy and other related changes through environmental scans to inform differences among comparisons to support the process and impact evaluations. The evaluation team will use the pre-COVID-19, COVID-19, and implementation periods to assess how COVID-19 or related policy changes affected service use and outcomes in the awardee and comparison group areas.

3. Qualitative Case Studies

The qualitative component of the evaluation will examine how States design and implement models of care, document stakeholders' perceptions of best practices and lessons learned, examine program sustainability, and describe MOM Model beneficiaries' experiences. By conducting case studies during pre-implementation and then during each of the model's 4 years of implementation, the evaluation team will describe how implementation proceeded and how models evolved from the baseline pre-implementation period to full implementation. The approach is tailored to each awardee to account for differences in factors such as demographic and geographic contexts, awardee intervention, and Medicaid program design and policy variation. The team will gather input directly from MOM Model awardees, beneficiaries, and providers through key informant interviews, focus groups, structural observations, and community-engaged methods such as Photovoice. The qualitative research task will also include ongoing reviews of the literature relevant to maternal opioid misuse to keep informed about new research findings, evidence-based practices, and initiatives that might influence the MOM Model or the evaluation. Case studies also provide detailed information and context for interpreting participant-level process and impact findings and for ongoing refinement of the evaluation design.

3a. Qualitative Activities During the Pre-implementation Period

During the pre-implementation period, the evaluation team conducted three qualitative activities:

- **Routine environmental scans** to maintain an understanding of the OUD treatment landscape and awareness of other initiatives targeting pregnant and postpartum people with OUD that could impact MOM Model beneficiary outcomes. Environmental scans also enabled the team to track literature describing emerging best practices and care strategies for treating this population. The evaluation team used the information gathered through environmental scans to adjust the evaluation design accordingly when necessary.
- **Review of MOM Model documents,** such as awardee quarterly progress reports, State Medicaid documents, and publicly available demographic data to better understand the environmental context for implementing the model. The review helped the evaluation team understand the specifics of each awardee's model and its operational context and prepare for interviews with awardees and model partners. The review also provided a starting point for identifying explanatory variables that could affect model implementation or outcomes.
- **Virtual site visits** for seven of eight MOM Model awardees to understand intervention design, partnerships, objectives and anticipated outcomes and challenges. Site visits provided an opportunity to meet virtually and build trust with MOM Model stakeholders at this early stage, positioning the team to perform more effectively and efficiently during the implementation period. Cross-cutting findings from the case studies can be found in chapter 2, and a summary of States' models in chapter 3. During the site visits, the evaluation team conducted the following data collection activities:
  - Interviews with MOM Model leads at State Medicaid agencies
  - Interviews with MOM Model care delivery partners and other community partners

In addition to the review of relevant literature and MOM Model documents, qualitative data collection will be informed by findings from analysis of process-level and Medicaid data. These data will help the evaluation team better understand the prevalence of pregnant Medicaid beneficiaries with OUD at different study sites, the extent to which models are enrolling pregnant and postpartum beneficiaries with OUD, and the rate at which prenatal care or OUD treatment services are being provided at each site. The evaluation team also hopes the Medicaid data will provide an understanding of the racial distribution of OUD diagnoses versus MOM Model enrollment patterns.

- Interviews with providers and care provision staff serving pregnant and postpartum beneficiaries at MOM Model care delivery sites
- Virtual structured, interactive observations at provider sites that already serve pregnant or postpartum OUD patients with Medicaid coverage and their infants and are slated to participate in the MOM Model
- Photovoice with providers of care to illustrate and discuss the lived experience of patients with OUD. The team piloted Photovoice with prenatal care and/or OTPs in preparation for conducting Photovoice with MOM Model beneficiaries in future years (see figure 5).

Figure 5. Examples of Photovoice Activities

Source: Insight Policy Research summary of Photovoice steps, December 2021

3b. Challenges for the Qualitative Analysis During Pre-implementation

Conducting case studies virtually in response to COVID-19 provided both advantages and challenges. The greatest advantage was the evaluation team's ability to move forward with planned qualitative data collection activities at a time when travel and in-person interaction were not options. The team successfully employed virtual key informant interviews, structured observations and Photovoice activities in the pre-implementation period. Virtual Photovoice activities with providers who treat pregnant and postpartum Medicaid beneficiaries with OUD provided valuable lessons for conducting future virtual Photovoice activities with the MOM Model patient population. Another advantage was greater flexibility in scheduling because timing was not limited to the days the evaluation team was on site. The virtual engagement accommodated the varying work schedules of the MOM Model care providers. Virtual site visits also allowed many evaluation team members to participate because no travel was required.

The greatest disadvantages to virtual case studies were a limited view of provider and care delivery partner sites, no in-person interactions with MOM Model staff or provider partners, and a more resource-intensive effort than expected. While virtual structured observations provided an opportunity to view provider sites and how a MOM Model beneficiary might journey through the site, being physically present on site would allow a 360 degree view that could provide nuance that was unobservable on telephone and computer screens. In terms of site visit resources, awardees and care delivery partners or other providers were more likely to reschedule interviews than they might be for an in-person site visit. At times, this resulted in some virtual site visits requiring more calendar time than originally anticipated.

4. Participant-Level Process Evaluation

Among the evaluation team's goals are identifying how the MOM Model improves the quality of care pregnant and postpartum beneficiaries with OUD receive and how effectively MOM Model awardees' programs provide care aligned with best practices. Awardee-reported process data will provide information on the demographic characteristics of MOM Model beneficiaries; the risk factors they experience; and the services they receive. The evaluation team will rely on these data to:

- Describe MOM Model beneficiary characteristics, including preexisting psychosocial and medical risk factors
- Track timely prenatal and OUD care utilization and other supportive services, such as care coordination and connections to social services

- Identify and assess program and participant outcomes ranging from best practices in delivery and OUD care to maternal and infant outcomes, postpartum family planning, and pharmacotherapy maintenance
- Interpret findings from the impact and qualitative components of the evaluation
- Inform refinements to the impact analysis design and qualitative data collection and contextualize findings

4a. Data Elements

Potential analyses conducted with process data will be informed by findings from case studies on the implementation of the MOM Model by awardees. For example, awardees may indicate that specific combinations of services appear to be more successful than others at achieving model objectives. To the extent data are available, this information could be used to explore awardee opinions using process data.

The participant-level process data that awardees collect will include two types of data elements that serve dual, and oftentimes overlapping, purposes:

1. Elements to meet MOM Model reporting requirements, including beneficiary participation dates, demographic characteristics, pregnancy characteristics, and OUD and pharmacotherapy history; encounter-level services provided as part of the MOM Model; health-related social needs screening categories assessed and results; depression screening records; tobacco screening records; and pregnancy outcomes, including birth outcomes, length of hospitalization for birth parent and infant, infant opioid screening, and nonmedical out-of-home placements.
2. Elements to enhance the Model's evaluation, including indicators for health insurance before the beneficiary became pregnant; abuse the beneficiary may have experienced; and whether the beneficiary's other children have been placed outside the home. The team will use all participant-level data reported by awardees.

Often times, individual elements support both reporting and evaluation purposes. Together, the process data elements capture participants' medical and social characteristics before the pregnancy, what happens during the pregnancy in terms of services utilized and care provided, and the outcomes associated with the pregnancy, ranging from gestational diabetes to hypertension to infant birthweight and ongoing pharmacotherapy. Appendix D provides evaluation-specific data elements, their description, and rationale for their selection.

4b. Process Evaluation Activities During the Pre-Implementation Period

During the pre-implementation period, the team focused on preparatory work needed to ensure the robustness of the evaluation's process data and the overall process evaluation, while also prioritizing methods that will minimize awardee burden. The evaluation team:

- Established data being collected at the participant level through discussion and data sharing with other MOM Model contractors
- Identified additional data that should and can be collected at the participant level
- Explored the best methods for collecting new data to assist awardee efforts, such as—
  - Identified existing and validated instruments that may be used for data collection and developed and tested new instruments if necessary
  - Established processes for transferring or accessing process data routinely
  - Trained awardees on collecting and submitting process data
  - Established processes for ensuring the quality and reliability of the data

4c. Challenges for the Process Evaluation During Pre-Implementation

The process evaluation design intends to minimize data collection burden on awardees while obtaining the data required for a robust evaluation. During the pre-implementation period, the evaluation team worked with the Innovation Center and the Implementation and Monitoring contractor, Mathematica, to identify essential data elements for answering the evaluation's research questions, with a goal of adding no more than 20. The team selected a final set of 22 evaluation-specific data element additions and modifications based on whether the data could be captured elsewhere and the data lag associated with receiving these data elements from other data sources. The evaluation, implementation, and learning contractors worked together to develop guidance for awardees on how to collect, report, and transmit data.

The evaluation team was challenged by the data system's schedule and resource constraints during process data element specification. Because the Implementation and Monitoring contract began earlier than the evaluation contract, monitoring data had already been programmed by the data contractor; additions or changes to the system, known as the Gateway, had to be proposed on a change request schedule and the number of approved changes was limited. For example, estimated gestational age was already programmed, so the evaluation was not able to add a field for estimated due date to the Gateway. Estimated due date would be more informative to the evaluation than estimated gestational age,

as this variable allows determination of both the timing of beneficiary enrollment in MOM relative to their due date and receipt of services (e.g., OUD treatment, prenatal visits), and the gestation for beneficiaries who terminate or have a miscarriage. The team is continuing to explore how and whether these data can be obtained elsewhere.

Some awardee program requirements presented challenges that affected the evaluation's participant-level data elements. For example, in order to prioritize flexibility and independence for awardees, the program's terms and conditions did not require awardees to use uniform screening tools, and thus data collected through screens will not be uniform across awardee sites making future participant-level analyses more complex. To mitigate potential negative impacts associated with data collected through different screening tools, the evaluation team will track which screening tools each awardee uses and tailor participant-level analyses accordingly.

5. Impact Analysis

The evaluation will assess whether the MOM Model improves uptake of services relevant to MOM Model beneficiaries (e.g., MAT, prenatal care), healthcare quality, and health outcomes while reducing costs for Medicaid beneficiaries with OUD and their infants. The impact analysis will compare outcomes for Medicaid beneficiaries eligible for participation in the MOM Model and their infants to outcomes for beneficiaries with similar characteristics in areas without access to MOM Model programs. The analysis relies on Medicaid eligibility, enrollment, claims, and encounter data from CMS's Transformed Medicaid Statistical Information System (T-MSIS) and when possible links these data with vital statistics data from birth and death certificates. Appendix E provides anticipated implementation period core outcome measures for the MOM Model impact evaluation for the three perinatal phases: the 12 months before birth, the birth month, and the 11 months after the birth.

While the impact analysis will assess the program effects for each awardee independently, the study will also include a cross-site analysis. This analytic approach will be complemented with alternative specifications to ensure findings are robust and account for awardee variation of each MOM Model awardee intervention.

5a. Activities During the Pre-Implementation Period

The evaluation team used the pre-implementation period to lay the groundwork for a rigorous assessment of MOM Model impacts. During this period, the evaluation team:

- Obtained access to Medicaid claims and eligibility T-MSIS data to assess data quality and processing times to support the evaluation of the MOM Model

- Conducted baseline T-MSIS data analysis by calculating initial baseline outcomes for Medicaid-covered births to people with OUD in MOM Model awardee States
- Provided guidance to awardees on required vital records and parent-infant dyad data elements and data submission procedures by developing technical assistance materials, such as frequently asked questions (FAQs) describing required vital records and parent-infant dyad data elements and specifications for data submission
- Developed an approach for identifying comparison groups to support the comparison of MOM Model participant and nonparticipant outcomes within each awardee State (see appendix F for more detail on the evaluation team's approach to creating comparison groups)

5b. Challenges for the Impact Analysis During Pre-Implementation

A primary pre-implementation challenge for the impact evaluation was identifying a data submission system for vital records and parent-infant dyad datafiles that met CMS data security requirements. Although the team initially planned for awardees to submit these datafiles through the MOM Model Data Submission Gateway, modifying the Gateway would take time and delay submissions for a year or more. Instead, the evaluation team set up CMS's secure Box folder platform to allow awardees to submit vital records and parent-infant dyad data, along with guidance and tutorials on how to format and submit files.

E. Overarching Limitations of the Evaluation

The team may face limitations in evaluating the MOM Model beyond the pre-implementation period, such as the following:

- **Impacts of COVID-19:** COVID-19 disrupted the healthcare system in the MOM Model pre-implementation and early implementation periods (2020-2021), which has implications for the usability of data from the MOM Model pre-period for 2020 and the first part of 2021 as baseline data for the evaluation. The evaluation team expects that the effects of COVID-19 may last for years and, therefore, plans to track policy and other changes over time to inform the impact evaluation analyses. The team will use data from the pre-COVID-19, COVID-19, and implementation periods to assess the extent to which COVID-19 differentially affected service use and outcomes in the awardee and comparison group areas.
- **Limited enrollment and small sample sizes:** Annual expected enrollment in the MOM Model varies by awardee, ranging from 30 beneficiaries to 1500 beneficiaries per year. Whether awardees will meet these enrollment targets is uncertain. Small

sample sizes limit the ability to report descriptive statistics, particularly at the awardee, site, or subgroup level, and to determine treatment effects. To protect the identities of all MOM Model beneficiaries, any estimates representing fewer than 11 beneficiaries will be suppressed from process and impact evaluation tables, reports, and Tableau dashboards. The team continues to discuss mitigation strategies for addressing this limitation.

- **Existing programs for pregnant and postpartum people with OUD:** Some awardees will have had services in place for pregnant and postpartum people with OUD during the pre-implementation period that are similar to those services planned for the MOM Model. If the services provided during the pre-implementation period had an impact on the care received by this population, this situation creates a potential challenge for identifying differences between MOM-eligible beneficiaries in the pre-implementation and implementation periods if the program had an impact on beneficiary outcomes prior to the MOM Model. Similarly, in at least one State, beneficiaries who are eligible to participate in the model but decide not to enroll may still receive similar services to those provided under the MOM Model. In the intent to treat analytic design, the impact estimates may appear more favorable for certain awardee's if usual care for all eligible beneficiaries' changes at the same time the MOM Model is implemented, and the new standard of usual care is like MOM Model services. The evaluation team will be careful to account for this model feature in cross-site analyses. The overall approach to comparison group selection will minimize spillover effects by selecting individuals in areas without new MOM model-like services at the time the relevant awardee implemented the MOM Model.
- **Consistency of T-MSIS data:** For the impacts analysis, variations in T-MSIS data quality are likely in some States throughout the MOM Model evaluation period. Reporting of specific SUDs in Medicaid claims data can be inconsistent across States. For example, some States may be more likely to report a diagnosis of "unspecified substance use disorder" than other States, making it difficult to distinguish OUD and non-OUD diagnoses to support the impact evaluation. We will minimize unobserved differences in analytic samples by reweighting observations on observable characteristics related to MOM participation.
- **Consistency of awardee-reported process data:** Awardee-level process analysis will be the team's primary focus when assessing beneficiary characteristics, receipt of services, and outcomes. Awardees are developing their own data collection and reporting methods. This may result in inconsistently measured and reported data across (and in some cases within) awardee programs, limiting the ability to evaluate the MOM Model across awardees.

- **Establishing trust with MOM Model beneficiaries:** Developing a relationship with MOM Model beneficiaries to ensure they will meaningfully participate in the qualitative data collection could be challenging. The team anticipates beneficiaries will have faced, or will fear facing, condescension, judgment, stigma, or in some cases, criminal consequences related to opioid use. Sometimes beneficiaries have other children and may fear jeopardizing their custody of those children. At times, lack of racial, ethnic, or cultural concordance among evaluation team members and beneficiaries could inhibit researchers' ability to build trust with beneficiaries. In-house trainings have sensitized team members to the special issues confronting the population served by the MOM Model and will help them engage with the population using respectful language and careful, sensitive, and appropriate approaches during focus groups, in-depth interviews, and Photovoice. These trust issues may manifest as difficulty in recruiting beneficiaries for focus groups, in-depth interviews, and Photovoice and beneficiaries not fully disclosing personal information during these encounters. The evaluation team will leverage its MOM Model awardee and provider relationships to recruit beneficiaries participating in the program.

2. Cross-Cutting Findings Across Awardees: Findings From the Case Studies

A. MOM Model Communities, Partners, Services, and Key Features

All MOM Model awardees agreed in their applications to provide physical and behavioral healthcare to MOM Model participants, including prenatal care and MAT. Each awardee will integrate a comprehensive network of care providers and community partners who collaborate to serve MOM Model beneficiaries. This section describes the community characteristics of MOM Model awardee service areas, an overview of MOM Model designs, MOM Model partners, and the services that will be provided under each MOM Model program. Additional detail is provided for care coordination interventions, peer support services, and how the COVID-19 pandemic affected MOM Model service delivery approaches.

1. Community Characteristics of MOM Model Awardee Regions

RE-AIM Domain

Reach: What are the characteristics of MOM Model beneficiaries?

Most interviewees participating in our case studies reported that their programs expect to serve beneficiaries who are primarily between the ages of 20 and 30 and White. There are two deviations from this trend: Texas's model may serve a population that consists of approximately 30 percent Black beneficiaries and approximately 5 percent Hispanic or Asian beneficiaries, and Maine expects to enroll a beneficiaries from the Passamaquoddy Tribe living in northern Maine, though this population is small. Interviewees reported that beneficiaries who will be served by the providers participating in the MOM Model almost always use substances in addition to opioids, most commonly marijuana, tobacco, methamphetamine, alcohol, and/or prescription drugs. Interviewees also stated that MOM-eligible beneficiaries consistently face a range of psychosocial challenges, including physical and psychological abuse, trauma, intimate partner violence, intergenerational poverty, exposure to substance use (in childhood and/or adulthood), lack of sustainable and safe housing, mental illness, and food insecurity. Most beneficiaries in the target population have children and are either already in treatment when they become pregnant or seek treatment because they became pregnant.

While interviewees in all States described common barriers to care for pregnant and parenting people seeking treatment for OUD, such as stigma, they also highlighted complexities specific to each MOM Model awardee's State context. As such, beneficiaries will face unique challenges related to geography; differences in State and municipal infrastructure; and differing

State policies across existing safety net programs, such as eligibility for the Supplemental Nutrition Assistance Program or subsidized housing. Public health datasets provide details on community characteristics that illustrate current socioeconomic factors affecting the communities that the MOM Model will serve (table 1). Unless indicated, these data represent per capita characteristics in each community and are not specific to pregnant and parenting women with OUD. While the MOM Model evaluation will examine the model's impacts over time in comparison groups, these data provide context to MOM communities prior to model implementation.

Table 1. Community Characteristics in MOM Communities

Community Characteristic	Statewide Models				Region-Specific/Sub-State Models			
	CO	IN	ME	WV	MD	NH	TN	TX
Percent who report excessive drinking [a]	20.0	17.7	20.3	12.7	19.0	19.9	15.8	20.5
Percent uninsured [b]	8.7	9.6	10.3	7.5	5.2	6.7	11.0	22.1
Primary care physicians/10,000 [c]	8.2	6.7	11.1	7.8	4.0	8.8	6.6	5.9
Mental health providers/10,000 [d]	35.6	16.1	47.6	13.0	11.4	29.8	17.0	11.8
Income inequality ratio (low to high) [e]	4.2	4.3	4.4	4.8	3.9	4.1	4.1	5.0
Median household income [f]	74,114	57,966	56,607	45,444	89,964	83,233	65,474	60,241
Percent of population 19–64 with Medicaid or means tested coverage [g]	13.1	11.1	15.4	21.2	12.2	7.1	10.7	8.7
Percent of children in single-parent households [h]	27.2	34.1	31.4	33.5	25.6	25.9	31.6	36.1
Social deprivation index [i]	34.1	44.0	25.6	42.8	9.0	9.8	41.9	82.0
Total social service provider expenditures: housing, food, intimate partner violence per capita [j]	135.5	65.4	125.0	42.1	38.8	83.2	98.6	85.8
Total social service providers: all categories/ 100,000 [j]	155.9	122.1	196.4	127.9	100.3	170.9	117.4	88.6
Average months on waiting list for subsidized housing [k]	21.1	21.4	23.6	8.7	31.0	33.2	16.2	41.0
Number of housing SSPs/100,000 [j]	5.4	5.0	11.4	4.4	4.4	9.4	4.0	2.4
Percent reporting severe housing problems [l]	16.5	13.2	15.0	11.4	11.8	14.5	14.0	20.1
Percent with no car and limited access to food store [m]	1.0	2.3	2.8	4.3	3.8	1.9	1.7	0.9
Number of social service providers for violence-related needs/100,000 [n]	0.3	0.0	0.3	0.2	0.0	0.2	0.3	0.0

Note: Community characteristic statistics for each State are weighted averages of county-level statistics. For example, for statewide models, the evaluation team used information available for all counties in a State and weighted each county by its 2018 Census population estimate. For statewide models, the weight for each county is that county's population divided by the total population in the State. For region-specific models, the weight for each county is that county's population divided by the total population in all participating counties. For each State, weights add to 100 percent by definition. In

the cases of Texas and Maryland, where there is only one county in the MOM Model, data are presented for the participating county in this table. Region-specific models include data from the following regions: Maryland: St. Mary's County; New Hampshire: Greater Manchester including Hillsborough, Merrimack, and Rockingham counties; Tennessee: Middle Tennessee, including Giles, Wayne, Maury, Wilson, Lincoln, Perry, Hickman, Sumner, Stewart, Lawrence, Dickson, Bedford, Davidson, Williamson, Rutherford, Smith, Lewis, Humphreys, Robertson, Macon, Marshall, Montgomery, Cheatham, Houston, Moore, and Trousdale counties; Texas: Harris County
[a] Centers for Disease Control and Prevention (CDC), 2017
[b] Bowers, Lauren et al., 2019
[c-d] Bureau of Health Professions. Health Resources and Services Administration (HRSA), 2017
[e] CMS, 2006,2019
[f,h,l] United States (U.S.) Census Bureau, 2014–2017
[g] U.S. Census Bureau, 2018
[i] The Social Deprivation Index is a composite measure of seven demographic characteristics collected in the American Community Survey that likely influence a patient's ability to access and maintain treatment, access to reliable transportation, housing, and availability of support services for low-income families including housing, car ownership, and employment, access to reliable transportation, housing, and availability of support services for low-income.
[j] U.S. Census Bureau, 2009-2011
[k] The Urban Institute, 2017
[l] U.S. Department of Housing and Urban Development, 2017
[m] U.S. Department of Agriculture, Economic Research Service, 2021
[n] Urban Institute, National Center for Charitable Statistics (NCCS core PC file, 2017)
Source: Insight Policy Research July 2021 analysis of the Community Characteristics Database compiled by Abt Associates for the Innovation Center's Accountable Health Communities evaluation

2. Model Overviews

MOM Model staff and affiliates considered community characteristics of their service area(s) and the unique strengths of their model partners when developing their programs (figure 6). Each MOM Model shares the Innovation Center's goals of improving quality of care for pregnant and postpartum people with OUD and their infants; expanding access, service-delivery capacity, and infrastructure based on State-specific needs; and creating sustainable coverage and payment strategies that support ongoing coordination and integration of care. Additionally, by accepting the award, MOM Model awardees also agreed to the Innovation Center's goal of reducing costs for beneficiaries and their infants. Notably, four of the eight MOM Models plan to perform this work statewide, while four plan to focus their interventions on sub-State regions or communities within their States.

Figure 6. Model Overview by State Awardee

	Colorado*	Indiana	Maine	West Virginia
Geographic Scope	Statewide	Statewide	16 sites (in 11 towns) statewide	16 sites statewide
Geographic Location	Rural, suburban, urban	Rural and urban	Rural, suburban, urban	Rural, suburban, urban
MOM Model's Primary Focus	**Service integration** • Integrates SUD treatment into primary and obstetric care sites • Technical assistance to awardees through a learning collaborative model	**Case management** • Coordination supported by peer recovery specialists • Clinicians and case managers will receive tailored training for working with pregnant people with OUD	**Service integration** • Model integrates the delivery of prenatal, birth, postpartum, and OUD treatment • Referred to as "MAT program coordinated with prenatal care"	**Service expansion and integration** • Aims to strengthen and standardize existing services
Model Background	New	New	Builds on existing program	Builds on existing program

* Colorado's MOM Model plans had not been finalized at the time of this report.
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

	Maryland	New Hampshire	Tennessee	Texas
Geographic Scope	St. Mary's County	Greater Manchester region	Counties directly surrounding Vanderbilt University Medical Center	Houston area
Geographic Location	Rural	Rural and urban	Rural, suburban, urban	Urban
MOM Model's Primary Focus	**Case management** • Model enhances the services MCOs already deliver by adding intensive case management and care coordination • Adds statewide provider training	**Information sharing** • Prioritizes investing in a data system to improve coordination and connection across providers to foster service integration	**Service integration and coordination** • Centralizes care to two locations • Adds peer-led case management	**Service integration** • Aligns maternity and behavioral healthcare in a single visit from an integrated care team
Model Background	New	New	Builds on existing program	New

Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

3. Model Partners

Awardees developed a variety of partnership structures for service delivery, including those that rely primarily on institution providers (e.g., hospital-based clinics), others that capitalize on statewide networks of primary care and SUD treatment facilities, and additional structures that include MOM Model services in their contracts with Medicaid MCOs.

- Tennessee, with its single institutional network of providers on one campus, relies on a multidisciplinary advisory board that represents several stakeholders in the MOM Model's catchment area.
- Similarly, in Texas, a single network of providers will administer obstetric care and routine recovery care at a sole hospital site; MOM Model beneficiaries who require residential OUD treatment receive it from a community-based provider.
- Maine and New Hampshire engage Federally Qualified Health Centers for their models' prenatal care provision in cooperation with community SUD providers and MCOs.
- West Virginia's partnership structure is different from the other awardees in that they built the MOM Model into their existing statewide Drug-Free Moms and Babies program.

RE-AIM Domain

Adoption: How are relationships forming between State Medicaid officials, care delivery partners, and local providers?

Implementation: Did awardees incorporate best practices in care for pregnant and parenting people with OUD and their infants?

MOM Models in Tennessee, and West Virginia created stakeholder workgroups that identify organizations' roles and contributions to the care model and assessment of who is missing from the workgroups. This approach aligns with SAMHSA's best practices in models of care *(SAMHSA, 2016a)*.

Table 2 summarizes the types of care delivery partners each MOM Model awardee is working with. More detailed information is provided in each State model summary in part 2 of this report.

Table 2. MOM Model Awardee Partnerships at a Glance

State	Type of Care Delivery Partner	Partner Organizations
CO	An organization within each of the RAEs	• Organizations affiliated with the RAE[a] • Stakeholder groups (further detail forthcoming following Colorado site visit in late 2021)
IN	MCO	• Indiana's four Medicaid MCEs • Opioid ECHO project hosted by university-based medical school • Indiana Department of Health

State	Type of Care Delivery Partner	Partner Organizations
MD	MCO	• Maryland's MCOs • University-based organization providing support to prescribers and practices • Hospital based center for addiction and pregnancy
ME	Institution and FQHC	• Five maternal and behavioral healthcare delivery systems including two FQHCs
NH	Institution and FQHC	• Eleven provider and community agencies
TN	Institution	• University-based hospital with comprehensive outpatient obstetric clinic with SUD counseling • Community advisory board with representative from State divisions, regional support programs, and people with lived experience with OUD • Tennessee's three MCOs
TX	Institution	• Hospital with comprehensive outpatient obstetric clinic with SUD counseling • Residential facility for pregnant women and mothers with SUD
WV	Institution	• A university-based medical school • West Virginia Perinatal Partnership • Sixteen outpatient obstetric clinics and their SUD treatment and community partners • CPS and Office of Maternal and Child Health • West Virginia's Medicaid MCOs

Notes: Full descriptions of model partners are available in each State model summary in part 2 of this report.
[a] Colorado's RAEs and Indiana's MCEs are the State Medicaid MCEs. This report uses MCOs to describe all State Medicaid MCEs moving forward.
CPS = child protective services; ECHO = Extension for Community Healthcare Outcomes; FQHC = federally qualified health center; MCE = managed care entity; MCO = managed care organization; OUD = opioid use disorder; RAE = regional accountable entity; SUD = substance use disorder
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

4. Model Services and Key Features

All awardees will provide maternity care and MAT to MOM Model beneficiaries. Most State MOM Models do not plan to make major changes to the services they already offer to pregnant and parenting Medicaid beneficiaries with OUD, but they all will change how they coordinate care and share information across providers with the intent to improve service coordination and integration for pregnant and parenting people with OUD (as required by the MOM Model). Table 3 categorizes specific services offered through the MOM Models, which vary only slightly across awardees.

Table 3. Services Offered by MOM Models, by Awardee

MOM Model Services	Indiana	Maine	Maryland	New Hampshire	Tennessee	Texas	West Virginia
Physical Health							
Screenings	●	●	●	●	●	●	●
Group prenatal care		●		●			●

MOM Model Services	Indiana	Maine	Maryland	New Hampshire	Tennessee	Texas	West Virginia
Family planning care	●		●	●	●	●	●
Nutrition services	●	●	●	●	●		●
Midwifery care		●	●	●	at delivery only		●
Childbirth education	●	●			●		●
Behavioral Health							
Substance use treatment, MAT	●	●	●	●	●	●	●
Mental health services	●	●	●	●	●	●	●
Peer counselor services	●	●	●	●	●	●	●
Coordination, Engagement, and Referral Services							
Lactation services	●	●	●	●	●	●	●
Referrals to social supports	●	●	●	●	●	●	●
Care coordination, case management	●	●	●	●	●	●	●
Home visits	●	●		●			●
Doula services							
Specialist services (e.g., maternal–fetal medicine)		●		●	●		●
Other (describe): anesthesiology					●	●	

MAT = medication-assisted treatment
Colorado is excluded from this table because the State is still considering which services to include in their model.
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

All awardees emphasized the integration of OUD treatment with prenatal care. For some awardees, this means co-locating all MOM Model services. This might be a single campus or hospital, such as in Tennessee and Texas, or in medical home clinics, such as in Maine. To reduce or eliminate common barriers such as limited transportation and childcare, several awardees aim to consolidate all appointments in one visit to the provider site. In all States except New Hampshire, where peer coaches will engage in only SUD care, peer recovery coaches are expected by interviewees to play a substantial role in both prenatal care and OUD treatment integration and care coordination. No awardees reported plans to cover doula services as part of the MOM Model.

Care Coordination

Care coordination is a cornerstone of each awardee's MOM Model. Awardees described the core activities that care coordinators will engage in as including: patient intake, risk assessment, care planning, referral to and follow-up with community providers, participation in learning collaboratives

Representatives from Tennessee's MOM Model noted they will continue to explore ways to further integrate care and address transportation and childcare needs within the MOM Model.

and trainings, convening or participating in planning meetings among providers and care delivery partners, and formalizing existing collaborations between providers and partners. Considering the more intensive case management beneficiaries are anticipated to need, most awardees increased their care coordination capacity either by hiring new staff, re-allocating hours for existing staff, and/or reducing care coordinators' caseloads (table 4). West Virginia, however, did not make such changes because they will utilize the Drug-Free Moms and Babies program's existing care coordination capacity. Drug-Free Moms and Babies manages and funds care coordination for MOM Model beneficiaries: maternal care coordinators coordinate pregnancy and postpartum care, and peer recovery specialists coordinate OUD recovery services.

The qualifications and training of care coordination staff vary across awardees and include registered nurses, social workers, peer recovery coaches, and community health workers, many of whom already specialize in high-risk pregnancy case management. If providers integral to care coordination, such as peer recovery coaches, do not have the credentials necessary for Medicaid reimbursement, awardees may use program funds to train or certify staff so their services may be billed under the MOM Model.

Table 4. Model Staffing for Care Coordination Activities

State	Care Coordination
CO	Colorado's MOM Model hopes to increase capacity for care coordination and build infrastructure for seven grantees; more details will be available following Colorado site visit in late 2021.
IN	Indiana is reallocating staff to allow existing high-risk pregnancy case managers (registered nurses or licensed clinical social workers) to work only with MOM Model beneficiaries and a reduced caseload. Indiana also plans to introduce a cash-based incentive to obtain buy-in from beneficiaries for care coordination activities.
MD	Designated nurse care managers or clinical social workers affiliated with MCOs will provide care coordination to MOM Model beneficiaries. MCO case managers will also serve as the main liaisons across different providers, the behavioral health administrative services organization, and community service organizations.
ME	Maine is hiring additional dedicated care coordination staff to reduce caseload size among case managers. An additional staff member was hired to submit data from smaller care delivery partners.
NH	The care delivery partner is hiring a community health worker (CHW) to provide care coordination for program beneficiaries. Community partners assist with care coordination: a MOM care coordination committee meets monthly and members will be points of contact for the CHW.
TN	The awardee hired a clinical process flow manager; a care delivery partner was in the process of hiring peer recovery specialists during the March/April 2021 site visit.
TX	The awardee is designating one scheduler and moving all MOM Model beneficiary clinic activities to a single day each week. All providers will "huddle" to discuss cross-disciplinary provision of care.
WV	Existing Drug-Free Moms and Babies program maternal care coordinators will continue to provide their services.

Note: MCO = managed care organization
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

Awardees' approaches to care coordination varied both in terms of which partners would be responsible for these activities and also how care coordination would be implemented.

- In four States (Indiana, Maine, Maryland, New Hampshire), care delivery partners will manage care coordination.
- In Texas and Tennessee, care coordination processes are being established at the awardee level.
- Indiana, Maine, Maryland, and Tennessee reported plans for in-person care coordination encounters.

Tennessee's Firefly Program created a comprehensive process map to link services to program outcomes. The mapping of services to program outcomes reflects a SAMSHA best practice in models of care for the treatment of pregnant people with OUD including the identification of workplans, action steps, and strategies such as plans to measure and monitor outcomes (SAMHSA, 2016a).

All awardees noted that care coordination appointments can be difficult to schedule with beneficiaries and shared various strategies to address this potential challenge. Some States will schedule encounters just before or after beneficiaries' regular clinic visits, and others will offer evening appointment opportunities and telephone encounters when necessary. Texas' approach will be to consolidate all the clinic's MOM Model appointments into a single day of the week—beneficiaries will know their clinic visits occur on Wednesdays, and staff plan a multidisciplinary huddle on Wednesday morning to discuss the social and health needs of the patients they will see in their clinics that day. Indiana's approach involves plans to offer cash incentives to beneficiaries who keep their care coordination appointments.

Peer Recovery Coaches

Peer recovery coaches and peer recovery specialists will offer support to MOM Model beneficiaries in all programs. These individuals are in SUD recovery themselves and are trained and certified to provide one-on-one support to those seeking treatment for SUD.

Although peer support services are included in each awardee's MOM Model, the role may differ across States. In Tennessee, for example, the peer recovery specialist will provide care coordination. One interviewee explained, "We are hiring them specifically to do the care coordination around these patients, giving them someone to talk to. … If they have questions on how to sign up for TennCare, or need help with housing needs or finding nutrition services, the peer recovery specialist is the go-to person for that." A peer recovery coach in Maine emphasized how coaches would provide social-emotional support, noting they "operate outside of [the health system] as much as possible," and their interactions with the clinical care team are limited. These peer support services are patient directed in both the frequency of interactions (e.g., daily, weekly) and the form (e.g., telephone check-ins, coffee breaks, joining participants at an Alcoholics Anonymous or a Narcotics Anonymous meeting).

While many MOM Model States already covered peer services under Medicaid, others do not. As a result, several States will use MOM Model funds to expand peer support services in the transition year. For example, in Maine, recovery coaching has been funded through the State's Opioid Health Home model for several years but has not targeted or been tailored specifically for the pregnant and postpartum population. At the time of the case study interviews:

- MaineMOM was piloting recovery support services at a few sites during pre-implementation with the intention of eventually rolling the service out across all MaineMOM providers.
- In West Virginia, because peer recovery specialists are only eligible for Medicaid reimbursement when employed by a behavioral health center, the State is enrolling existing Drug-Free Moms and Babies programs as Medicaid provider sites so they may bill for these services.
- In Texas, certified peer specialists are already eligible to bill Medicaid, but peer recovery coaches are not. Consequently, the State will use MOM Model funds to train peer recovery coaches to also become certified peer specialists.

Despite differences in how States define and pay for peer support services, interviewees across States emphasized the value of this role. An interviewee in Maine described these services as "perhaps the most important component of the model," while another elaborated that the peer's role was so valuable because they had lived experience and therefore could better understand the beneficiaries, whereas providers without this experience could only "pontificate." An interviewee in Maryland identified the peer recovery specialists as the element of their MOM Model with the greatest potential to yield positive outcomes for beneficiaries and their infants. A community partner in Indiana also highlighted the importance of peer support and felt that "having that lived experience reduces stigma," which they identified as a major barrier to care. Interviewees in Tennessee were particularly enthusiastic about the support peer recovery coaches can provide, as the coaches themselves have navigated pregnancy and parenting in recovery.

Influence of COVID-19 on Services

The COVID-19 pandemic necessitated immediate changes to clinical operations across the U.S., including in all MOM Model States. As social distancing requirements and fears of contracting coronavirus mounted in 2020, providers reduced in-person care and paused group care activities.

- Interviewees in Indiana reported suspending group visits and restricting the number of support people—including family members, partners, and doulas—who could accompany patients to any appointment.

- Clinic staff in Texas discontinued group prenatal visits, group therapy sessions, and breastfeeding groups, though the breastfeeding groups later resumed with up to eight participants.
- Clinics in West Virginia limited patient companions to one per visit. Another site discouraged patients from bringing children under 12 to visits out of fear they could be asymptomatic carriers of COVID-19.

While some sites reported lifting some initial restrictions by the time of pre-implementation site visits, they also expected that policies would continue to evolve over time, especially given the rise of the Delta variant.

A universal and widespread change to clinical services was the increased use of and reliance on telehealth. Interviewees of all types, across all awardees, identified the dramatic increase in virtual care as one of the primary influences of COVID-19 on their MOM Models. Generally, providers in MOM States had rarely used telehealth prior to the pandemic and had to quickly modify rules and processes to effectively reach their patients. Awardee officials in New Hampshire praised the State's ability to make this switch, reporting, "It was amazing how we were able to turn on a dime and change the way clinical services were delivered." A provider in Indiana described the rapid transition as "incredible" and said that "within 2 weeks, we had patients who could engage in care from home."

Interviewees largely agreed the transition to telehealth was mostly smooth and had been a positive development overall. One provider in Maine described telehealth as a "godsend," while another said it was "one of the great gifts of COVID." Providers in several States noted visit attendance had increased since the transition to virtual care, which they attributed to telehealth eliminating traditional barriers to care such as lack of transportation and/or childcare. Providers in West Virginia reported no-show rates dropped from 50 percent to between 20 and 30 percent. For these reasons, interviewees consistently said telehealth should be sustained in some capacity after the pandemic:

> I do think reducing barriers, [like the] State's loosened … restrictions around medication … reduced frictions around telehealth capacity and billing. I hope those remain. I think we need to have the lowest barriers to access all of these things, whatever that looks like.

Interviewees across all awardees also pointed out some disadvantages to virtual care. For instance, providers in Maine, New Hampshire, and West Virginia—largely rural States—worried that poor internet and cellular access hindered access to telehealth for some clients, which could create equity issues. According to one interviewee in rural Maine, "There is no bandwidth. Thirty-five seconds later after you ask a question you get an answer. Your cell phone doesn't work in most [of our] area." Clinicians also feared that women experiencing

intimate partner violence would not have privacy at home when attending a virtual appointment. One interviewee explained, "You can't see who is just off screen when you're talking to someone on Zoom, and you don't know if that is affecting what they're telling you."

Some providers believed in the importance of in-person visits for SUD and OUD treatment services specifically. One SUD treatment provider in New Hampshire noted, "It's incredibly important to have [at least some] in-person visiting … to see how someone is doing physically. What is their attire? Are they clean and washed?" Another explained, "You need to use [all] your senses in treatment and see and be with people." These interviewees still supported some use of telehealth once the pandemic is controlled enough to unrestrict in-person services, but they hoped to create a hybrid approach going forward—blending in-person and virtual care—as opposed to supplanting in-person services altogether.

Interviewees noted the future of telehealth largely rests with State and federal legislators and hoped some flexibilities granted during the public health emergency would be sustained. An interviewee in Texas wanted to continue providing virtual services but explained that it "really depends on what happens with the legislature because those were emergency authorizations." However, they remained optimistic that policy change is possible, sharing that "it's looking fairly positive that [some permanent policy changes] will make it through the system." Overall, interviewees felt confident that "telehealth is here to stay."

Influence of COVID-19 on Model implementation

The Innovation Center supported the MOM Model initiative with initial funding for a yearlong pre-implementation period for awardees. This period, originally planned for January to December 2020, was to provide awardees with time to plan their models, formalize partnerships among providers and community agencies, design data collection and reporting systems, and develop strategies for sustainable funding.

Officials in New Hampshire felt their attention was diverted away from the MOM Model during most of spring and summer 2020, but by late summer, their planning efforts and meetings with MOM partners were back on track.

In response to the COVID-19 pandemic, the Innovation Center enacted a 6-month delay in implementation for all MOM Model awardees, moving the launch date from January 1 to July 1, 2021. Interviewees were near universally grateful for the extension, with some noting the additional time would have been helpful "even in absence of the public health emergency." At the State level, the delay allowed Medicaid and other health officials flexibility to focus on States' pandemic response efforts and adjust to COVID-19's impact on day-to-day care delivery and administrative operations. Awardees valued the additional time to form and nurture relationships with other MOM Model partners.

Additionally, care delivery partners and providers used the delay to establish information technology systems, data collection and reporting processes, services, and hiring the staff needed for implementation.

Though the response among interviewees to the delay was overwhelmingly positive, program officials in Maine and West Virginia also reported their capacity to support implementation had been hampered somewhat by their inability to visit local sites in person during the pandemic. While noting much was accomplished virtually, they maintained there is no substitute for a face-to-face meeting to review practices and protocols and talk through changes required for the MOM Models.

B. Pre-implementation Activities

Subsequent to the extension of the MOM Model pre-implementation period from 12 months to 18 months, awardees focused their efforts on five main areas: 1) formalizing partnerships and building capacity; 2) developing enrollment strategies and eligibility approaches; 3) planning for sustainable funding; 4) enhancing data systems; and 5) addressing stigma and health equity concerns.

1. Awardees Formalized Partnerships that Build Capacity

From the vantage point of RE-AIM's adoption domain, most awardees entered the MOM Model with established partnerships that they expected to contribute to MOM Model service provision or implementation processes. Most awardees used the 18 month pre-implementation period to build on and formalize existing partnerships. However, Colorado took a different approach – they planned a process to make sub-region awards and task those subrecipients with formalizing the necessary Model partnerships.

RE-AIM Domain

Adoption: How are relationships forming among State Medicaid officials, care delivery partners, and local providers?

Early partnership activities often focused on augmenting care provision capacity through data system upgrades, changes to care coordination approaches, and revisions of reimbursement structures. All awardees reported a concerted effort to expand and formalize partnerships that would ensure the capacity to provide MAT, pregnancy and postpartum care, behavioral healthcare, and social supports. To reinforce these partnerships, collaborative training events, regular meetings, and in some cases, contractual formalization of roles and relationships took place during the pre-implementation period.

Successes in Model Partnerships and Capacity Building

Interviewees in the seven sites with full case studies cited new partnership formation and collaboration across stakeholders as the greatest success during the pre-implementation period. By incorporating physical and behavioral health systems, social needs providers, payers, and other stakeholders in the MOM Model, awardees brought a wide variety of partners "to the same table" in a way they had not before. Broadly, interviewees reported participation in the MOM Model strengthened relationships among stakeholders:

- Interviewees in Indiana described getting all four MCEs to work together on a unified initiative as a major success.
- Interviewees in Maine highlighted positive engagement among the 6 care delivery partners with sites in 12 of the State's 16 counties as an important step toward fully integrating a statewide model.

Interviewees in several States noted close communication among partners was responsible for these improved relationships:

- Interviewees in Maine cited the establishment of strong communication channels among partners as a success. These included monthly virtual meetings and frequent emails, which interviewees said helped to create "buy-in and engagement around the MaineMOM work." Interviewees praised the awardee team for being "always available for a quick call if things come up."
- The MCOs, State awardee, and obstetrical care partners in Tennessee described "really strong communication" through biweekly meetings and informal contact that fostered a "collaborative environment" that was "really helpful in moving things forward."
- Partners at a community-based women's shelter and SUD treatment site in Texas felt they were "part of the team" with the partnering hospital's clinical providers and indicated "being in such close communication on patients has really made a difference."

While not directly related to partnership formation, interviewees noted that model leadership promoted the buy-in and enthusiasm for the MOM Model that would foster future Model success. In several States, awardee teams, providers, and community partners were enthusiastic about their MOM Models and serving this population. For instance, interviewees in New Hampshire and Texas mentioned stakeholders felt passionate about the overarching goal of improving the lives of pregnant women with OUD and their babies.

One community partner explained:

> We are doing this because we recognize this is a carved-out population within the community that desperately needs more support, and we need to find a way to reach them and provide more services for them.

As a result of increased communication and partner buy-in, interviewees reported increased awareness of the available community resources as another early success:

- An interviewee in Indiana noted that the Indiana Department of Health's Title V telephone-based call center will help ensure MCE case managers are aware of community resources available to pregnant individuals, including home visiting programs and other community-based services.
- Interviewees noted partner collaboration in New Hampshire generated word-of-mouth communication about the MOM Model and its services among providers and community agencies; there has been "increased education around resources and services that are available and how to access them."

Challenges in Model Partnerships and Capacity Building

Officials in several States faced challenges as they attempted to hire staff and develop contracts with external partners during the pre-implementation period. Ripple effects of the COVID-19 public health emergency created some of these challenges:

- Maryland was delayed in hiring a project coordinator because of a COVID-19 hiring freeze.
- In Texas, Medicaid MCO contracts are not due for renegotiation for a few years. The current Medicaid contracts will hold through the early years of MOM Model implementation. Though these include Medicaid reimbursement for all MOM Model services, implementation of value-based payment methods the State may develop will be delayed until the renegotiated contracts go into effect in June 2024.

Additionally, awardees participating in statewide models are already experiencing challenges related to capacity differences among care delivery partners:

- Interviewees in Indiana were concerned that obstetrical, MAT, and behavioral health provider capacity was insufficient to offer services to all beneficiaries who might seek to enroll in the MOM Model. They hoped to address this issue across the State through another provider capacity grant.

- In contrast, officials in West Virginia were concerned about the rapid growth of MAT providers in their State, finding it challenging to identify providers who "echoed our philosophy and [were] not just in it for dispensing medication."
- An interviewee reported Maine's "equal" allocation of funding resources to care delivery partners is not equitable because of care delivery partner size and operations. MaineMOM gave each participating care delivery partner the same amount of money—a fixed fee—to support care delivery partners' hiring of staff. Because one care delivery partner is operating half of Maine's 16 MOM sites, that fixed fee must cover more than at a rural site that serves a handful of MOM Model beneficiaries but receives the same funds. However, the awardee felt this funding structure would set an "equal playing field" in that each partner would receive sufficient funding for an FTE to support this work.

Interviewees also noted clinical challenges that might impede MOM Model service delivery:

- A provider in Indiana anticipated the biggest challenge to delivering MOM Model services would be "not having the resources to overcome those barriers of… transportation and not being able to provide every patient with a working laptop and working phone."
- A clinical partner in Texas mentioned that the physical capacity of the clinic "limits how many women can be seen each day," and therefore, "if [patient] volume increases under the MOM Model, space could be a limiting factor." They also listed long wait times to be seen at visits and visit length as challenges and reported they had high no-show rates driven by barriers to care such as lack of transportation and childcare.

2. Awardees Developed Enrollment and Eligibility Approaches

Preparing for Enrollment and Referrals Data Sharing

Several MOM Model awardees were successful in upgrading their electronic records systems to better identify potential participants, share data with partners, or streamline referrals. Once awardees enroll beneficiaries, data systems will use established referral systems to connect MOM Model beneficiaries with the resources necessary to address their social needs:

- Maine care delivery partners will use the CradleME system operated by the Maine Center for Disease Control as a referral mechanism to facilitate MOM Model beneficiaries' enrollment in critical pregnancy and

RE-AIM Domain

Implementation: Did awardees adopt care coordination and integrate best practices?

Adoption: How are relationships forming among State Medicaid officials, care delivery partners, and local providers?

early parenting services, such as home visiting services and the Special Supplemental Nutrition Program for Women, Infants, and Children.

- Texas's Department of Health Services and its care delivery partner, Harris Health System, engaged the Patient Care Intervention Center (PCIC) to augment data sharing, case management, and referral tracking. Every provider and community partner will be able to access the system. PCIC has designed a system to link Harris Health's electronic medical records with State Medicaid claims and interface with the MOM Model Gateway to report measures to the Innovation Center.

Preparing Enrollment Processes

Awardees plan to enroll eligible beneficiaries through active recruitment and referrals. Nearly all awardees reported they expect to receive referrals to the MOM Model programs from multiple sources:

- Maine, Maryland, and New Hampshire all specifically stated that "there is no wrong door" to entry into the program. Referrals and recruitment assistance will be provided by community organizations that serve people with OUD who are pregnant.
- Indiana, Maryland, and Tennessee anticipate they will identify most eligible beneficiaries through the MCOs by identifying claims data related to MAT prescriptions, psychological and psychiatric services, and other encounters. Most awardees hope that beneficiaries will also self-refer to the MOM Model.

Awardees expect they will receive referrals from Child Protective Services or the awardee States' legal systems, needle exchange programs, social service providers, pain management clinics, and emergency departments, among others.

Extending Eligibility

RE-AIM Domain

Adoption: What are the legal and policy contexts MOM is being implemented in?

Nearly every MOM State had either already implemented or planned to implement a policy to extend postpartum coverage for Medicaid beneficiaries through 12 months. With the passage of the American Rescue Plan Act of 2021 (Ranji et al., 2021), States will have the opportunity to submit a 5-year State Plan Amendment to extend postpartum coverage for Medicaid beneficiaries through 12 months, regardless of the State's Medicaid expansion status, under the Patient Protection and Affordable Care Act. Interviewees cited the importance of extending postpartum Medicaid eligibility to ensure MOM beneficiaries have access to key physical and behavioral health services for an extended period after the birth of their infant. Table 5 describes awardee activities to extend Medicaid coverage of postpartum care during the pre-implementation period.

Table 5. Overview of Awardee Activities to Extend Medicaid Postpartum Coverage

State[a]	Medicaid/CHIP Income Eligibility for Pregnancy (Percent FPL)	Extension of Postpartum Coverage
CO	265	Enacted legislation to seek federal approval through SPA or 1115 waiver. Postpartum Medicaid extension includes continuous eligibility during the postpartum coverage period, which allows postpartum individuals to remain enrolled during extended postpartum period by disregarding changes in income that would make them ineligible for coverage
IN	213	In June 2021, Indiana withdrew a pending 1115 waiver (Maternal Opioid Misuse Indiana Initiative), which would have extended postpartum coverage for pregnant women with OUD. In a letter to CMS, the State announced its intention to pursue the broader postpartum coverage extension under the American Rescue Plan Act
MD	214	Enacted legislation to seek federal approval through SPA or 1115 waiver
ME	264	Enacted legislation to expand Medicaid postpartum coverage from 60 days to 6 months
NH	185	No
TN	200	Enacted legislation to seek federal approval through SPA or 1115 waiver
TX	203	Enacted legislation to seek federal approval through SPA or 1115 waiver. Since September 2020, Texas has also been using State funds to provide postpartum individuals in the Healthy Texas Women program a limited package of postpartum services. In December 2020, Texas submitted an 1115 request to draw down federal funds for this program
WV	305	Enacted legislation to seek federal approval through SPA or 1115 waiver

Note: CHIP = Children's Health Insurance Program; FPL = Federal Poverty Level; SPA = State Plan Amendment
[a] Kaiser Family Foundation, 2021
Source: Insight Policy Research summary of MOM Model awardee Medicaid policies, December 2021

Successes in Enrollment

With Model enrollment not officially beginning until July 2021, awardees could not yet provide direct experiences with enrollment processes. Awardees that coordinated referral programming across stakeholders expect these efforts will facilitate robust participant enrollment at the start of the program.

Challenges in Enrollment

Interviewees voiced concerns about getting beneficiaries into the MOM Model and then retaining them through their pregnancies and the postpartum period. Specifically, interviewees indicated that stigma associated with OUD in pregnant and parenting individuals is likely to impact all aspects of recruiting, enrolling, and retaining beneficiaries in the MOM Model. For instance, one provider discussed how societal stigma against opioid use might make it challenging to recruit women for the Model. One provider explained, in

addition to stigma in their communities, potential beneficiaries' families may deter them from enrolling because "families tell pregnant people just to stop using, so enrolling women will be a challenge."

Several interviewees pointed out that the MOM Model population is "unique in their needs," and as such their models would need to address "mental health issues, untreated trauma, and under-supported social structures" to retain beneficiaries in their programs. One Maryland official explained "there is always that fear that members will disengage – become unable to reach or just refuse services."

3. Awardees Took Initial Steps Toward Sustainable Funding

Most awardees used the pre-implementation period to determine which financing strategy would best support and sustain their MOM Model implementation (table 6). For most States, this involved negotiating contracts with MCOs to clearly establish how MOM Model services would be reimbursed.

RE-AIM Domain

Maintenance: Did States establish sustainable coverage and funding?

- Maine and West Virginia are employing a bundled payment approach for MOM Model service reimbursement.
- Maine intends to develop a State Plan Amendment to finance MOM Model services within Title XIX's Health Home authority, proposing MOM Model networks will comprise Maternity Opioid Health Homes. Maine reported that intentionally providing care delivery partners with funds to hire staff to support integrating the model into their practices was a major contributor to the strong buy-in Maine obtained from its care providers.
- Maryland plans to make use of the HealthChoice section 1115 waiver renewal to build in Federal matching for the MOM Model beginning July 1, 2022.
- Texas has an 1115 waiver in place that expires in September 2022, but it was unclear whether it would be extended. Texas's care delivery partner will reimburse MCOs for services they cover as part of the MOM Model and is interested in using value-based payment approaches with the MCOs. It is unclear whether the care delivery partner will enact a value-based payment with STAR MCOs for the MOM Model during the model implementation period or use results from the MOM Model to design an alternative payment model to go into effect later.

RE-AIM Domain

Adoption: What are the legal and policy contexts MOM is being implemented in? How are relationships forming among State Medicaid officials, care delivery partners, and local providers?

Interviewees in Maryland, New Hampshire, and West Virginia believed the MOM Model could generate Medicaid and MCO cost savings through improved maternal and infant outcomes well into the future.

Table 6. Medicaid Financing Facts by Awardee as of June 2021

Medicaid Financing Detail	Colorado	Indiana	Maine	Maryland	New Hampshire	Tennessee	Texas	West Virginia
Medicaid expansion State	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Medicaid payment structure to sustain MOM Model services	RAEs	MCOs	MOHH paid a bundled fee	MCOs	MCOs	MCOs	MCOs	MCOs
MOM Model financing through SPA or section 1115 waiver	No	No	SPA to fund MOHH services	Section 1115	No	No	No	No

Note: In all States except New Hampshire, either the majority of beneficiaries remain income-eligible for Medicaid through the first full postpartum year, or another program provides coverage for OUD treatment or other health conditions through the first postpartum year.
MCO = managed care organization; MOHH = Maine opioid health home; RAE = regional accountable entity; SPA = State Plan Amendment
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

Successes in Sustainability Activities

Many MOM awardees used the pre-implementation period to decide on which financing strategy they would use to sustain their MOM Models. Most States are in conversation with participating MCOs to include the MOM Model in MCO contracts for long term sustainability.

Challenges in Sustainability Activities

Progress on sustainability plans varied across awardees. Staff in most States identified some challenges related to transition funding, developing sustainable financing strategies, coordinating with MCOs, and Medicaid coverage and billing.

Under the MOM Model, awardees receive planning year funds, then transition funds to support the first year of program implementation, and then are expected to be self-sustaining (with Medicaid financing) for the remaining years of the award. However, interviewees noted initial confusion about transition funding, including what the funds could support and the time period in which they could be used. The Innovation Center clarified the funding structure with awardees to address such questions. Challenges that States reported include:

- Lack of Medicaid coverage for some of Tennessee's proposed program components (e.g., childcare, group lactation support meetings) presented a challenge because providers shared concerns that MOM Model beneficiaries consequently would not be able to meet all steps in their care plans.

- Concerns about billing West Virginia's Medicaid program for covered services. Because providers in their existing Drug-Free Moms and Babies program—the foundation for their MOM Model—were grant funded, not all care sites have experience with Medicaid billing. Therefore, Medicaid officials predicted implementation "will be a learning curve" for those partners.

Awardees reported they wrestled with deciding how to establish sustainable funding mechanisms for their States:

- In Indiana, the challenge has centered on the complexities of developing and submitting a Section 1115 waiver application. Because Indiana was the only State to take this approach, an interviewee reported that it was "a steep learning curve for [the Center for Medicaid and CHIP Services] and Indiana" as they "hammered out the details."
- West Virginia officials changed their minds a few times regarding how to fund the MOM Model long term, first considering a State Plan Amendment to establish MOM as an opioid health home, then switching to a plan to incorporate coverage of MOM Model services within Medicaid MCO contracts.

4. Awardees Enhanced Data Systems, Sharing, and Integration

A central innovation of the MOM Model design is the integration of care through care coordination, care and service delivery restructuring in some cases (e.g., certifying peer recovery staff to be eligible to bill Medicaid), and data systems integration. The requirement for care and data systems integration stemmed from lessons learned from the Innovation Center's *Strong Start for Mothers and Newborns Model*, which found that having a care manager was not sufficient to improve pregnancy outcomes for Medicaid participants (Dubay et.al., 2020). In MOM, CMS seeks to have awardees communicate and integrate care through better data systems as well as direct communication among providers and other care team members. In addition, an obligation of the MOM Model funding opportunity is that awardees, their care delivery partners, clinical delivery sites and staff, and other sub-recipients must participate in all MOM Model evaluation activities. A key component of those participation requirements is that awardees must submit individually identifiable beneficiary-level data, such as medical information and health screenings, to CMS and its contractors.

Given the lack of a fully integrated data infrastructure among some care delivery partners, clinical sites and other MOM sites (e.g., SUD providers, community providers), all awardees spent considerable effort in developing, enhancing, and staffing their systems of data collection and reporting during the pre-implementation period. Awardees trained service

providers and care delivery partners to collect clinical data to meet MOM Model reporting and evaluation requirements. Some awardees hired or reassigned staff whose primary or only job responsibility would be to develop, manage, and maintain the awardee's MOM Model data system. Multiple awardees reported integrating data submission capabilities into their EHR systems, a strategy they believe will improve the coordination of care and services provided by MOM Model partners, including community-based organizations, by establishing a central repository. Table 7 describes the types of activities awardees engaged in during the pre-implementation period to ready systems for enrolling Medicaid beneficiaries, along with their individual successes and challenges related to data systems.

Table 7. State Data System Activities in Pre-implementation Period

State	Data Systems Activities	Successes	Challenges
IN	• Developed data sharing systems for care delivery partners (i.e., the MCEs) through Indiana Health Information Exchange, which (1) reports a monthly roster of Medicaid members assigned to each MCE to the Family and Social Services Administration and (2) records members' admissions, discharges, transfers, and laboratory test results to assist case management. • Developed data dashboards to share with MCEs that display indicators for early identification of pregnant beneficiaries, delivery and postpartum measures, and substance use metrics.	• **Onboarding data experts to MOM Model team.** "I think that has been a pre-implementation success too – our data folks saying yes, we see a way to figure this out…We have a really sophisticated group of data experts who are putting in some really innovative data efforts behind the scenes." ***—Awardee***	• **Variability in provider data reporting across the State.** "It is so variable across providers and even within regions of the State… Providers are contributing more data in some of the networks, the larger hospital networks, [compared to] others. And even if a provider is contributing their data, it may only be aspect or a couple of things like lab results, or admissions and discharge, versus the more holistic clinical record, which is what we're sort of looking for." ***—Awardee***
MD	• Built MOM Model data infrastructure in its existing health information exchange platform. MOM case managers will use the platform to track participant progress and coordinate care. • Reduced initial scope of MOM Model in order to scale new systems effectively.	• **Development of the technology infrastructure.** "Chesapeake Regional Information System for our Patients (CRISP) is…the MOM care coordination module and it's really meant to collect the intervention data, the monthly case management encounter(s), and the HRSN screening. It's kind of like a care planning tool that is housed in CRISP but would be accessed by the case managers for MOM." ***—Awardee***	• **Transition from statewide to partial State implementation due to data collection burden.** "The primary reason for narrowing the [implementation] scope is our realization that the data… would come out of EHRs or some kind of clinical data source. We don't currently have EHR connectivity blanketed across the State… the collection of data for MOM is individual outreach to every provider who sees a MOM participant." ***—Awardee***

State	Data Systems Activities	Successes	Challenges
ME	• Designed process for federal data submission at State level and data collection and reporting protocols at local level. • Determined that MaineHealth (the largest care delivery partner), will submit data directly through electronic health records. Smaller care delivery partners will submit data to a State employee hired for MaineMOM.	• **Partnering with State-wide referral system.** "I am partnering with [Maine Center for Disease Control & Prevention] … to understand what services they have available to women with substance use disorders. They also manage the CradleME referral system. That is a direct partnership as we are funding part of the time of a full-time staff member to be part of this statewide referral system… That is a key partnership because we want to have MaineMOM as a referred to service. That is foundational to how we build out access to services." ***—Awardee***	• **Learning to collect and submit data.** One interviewee noted that their biggest concern was "how to submit [data]" once MOM Model implementation begins. ***—Care Delivery Partner***
NH	• Developed data-sharing system to be accessed by all authorized partners, including community-based organizations that previously did not have the infrastructure to collect and report secure data and coordinate with other partners. • Developed an information technology (IT) system; in the interim, the care delivery partner will provide templates for data entry using REDCap, a secure data collection tool, to support data collection and coordination.	• **Development of the technology infrastructure.** New Hampshire is developing an " internal database that [Model partners] will input demographic information into. The purpose is to keep track of the moms we are serving and do referrals… the goal is for all of the [partners] involved [in the Model} to be able to access this database so that it is streamlined and there is one place for us to be able to go." ***—Community Partner***	• **Data collection burden on individual providers.** "We have concerns about the level of data requirements …on providers. There are 100 data elements for every visit for every mom. It is just a lot of data required for the provider to capture. For those who do not have EPIC or a robust EMR, we are trying to figure out how to make data capturing and integration easier." ***—Awardee***
TN	• Linked previously established REDCap data submission system with EPIC electronic health records system for model data submission. • Designated a full-time IT staff member.	• **Development of the technology infrastructure.** One interviewee described that the use of EPIC to collect data had "been a huge win to make the operational pieces happen a little bit easier" as it could "create a seamless experience from the provider end for collecting all of the data." ***—Awardee***	• No specific challenges were reported.

State	Data Systems Activities	Successes	Challenges
TX	• Developed data flow structure for care delivery partner and care provision sites to meet reporting needs and track social services referrals.	• **Development of the technology infrastructure.** One interviewee explained that "The Patient Care Intervention Center [PCIC]… has a community data exchange platform that all of these social and medical services organizations input data into. So they're creating….[a] customized component allowing different partners in the model to communicate and input information…." ***—Awardee***	• **Data collection and sharing capacity of care delivery partner.** "Our biggest challenge has been that we, as a State contractor… have to document in the Clinical Management of Behavioral Health System (CMBHS), and that system does not talk to other systems …even with the MOM Model being awarded to the State, we still haven't been able to get CMBHS to allow for PCIC to connect to them, to pull down information. So, we'll probably have to do some double documentation to make that work, but that's been a challenge is just having different EHR systems." ***—Care Delivery Partner***
WV	• Developing data collection and reporting plans that meet CMS requirements and West Virginia Perinatal Partnership needs while being feasible for MOM Model sites. Uncertain if all 16 Drug-Free Moms and Babies sites will convert to MOM Model in first implementation year because of data collection and reporting capacity.	• No specific successes were reported.	• **Data collection burden on care delivery sites.** "[Providers] are providing these direct services to moms and babies, so the data cannot be burdensome… I know that if it is too burdensome, it will be weaker and less complete. Or it could be a reason that a site drops out because they don't have the personnel, resources, and capacity to complete burdensome data." ***—Care Delivery Partner***
MOM Model Awardees That Exited the Model in Pre-implementation Period			
LA	• Investigated care delivery partner's capacity to collect and report patient-level encounter data.	• No specific successes were reported.	• **Data collection and sharing capacity of care delivery partner and providers.** The awardee planned to contract with one hospital, its contracted physicians, and a large number of unaffiliated community providers. None of these providers share an EHR, and many use paper records. The awardee did not believe it would be realistic or possible to collect detailed, visit level data from the large number of providers they planned to engage in MOM.

State	Data Systems Activities	Successes	Challenges
MO	• Investigated care delivery partner's capacity to collect and report patient-level encounter data. • Planned to hire a data coordinator at care delivery partner level to manage data..	• No specific successes were reported.	• **Data collection and sharing capacity and data privacy concerns.** Though the care delivery partner did not express concerns about collecting the data, the State's processes for obtaining, securely storing, and transmitting patient data from care delivery sites beyond the two pilot sites were complicated by what staff described as Missouri's strict data privacy regulations.

Notes: CMBHS = clinical management of behavioral health system; CRISP = Chesapeake regional information system for our patients; EHR = electronic health record; EMR = electronic medical record; EPIC = electronic health record software ; HSRN = health related social needs screening tool; IT = information technology; MCE = managed care entity; MCO = managed care organization; PCIC = patient care intervention center
Source: Insight Policy Research analysis of MOM Model site visit data, May – August 2021

Successes in Data System Integration

Most awardees made progress in developing new data systems and workflows, especially concerning data system development, during the pre-implementation period. Most awardees noted that the extra six months granted through the postponement of MOM Model implementation from January 2021 to July 2021 due to COVID-19 was particularly valuable for these processes.

- Indiana, Maine, New Hampshire, and Tennessee all noted accomplishments in developing technology infrastructure and data collection and submission processes. Both the Indiana and Maine awardees reported onboarding data experts to their MOM Model teams had been critical to keeping those processes running smoothly. One Indiana official explained, "I think that has been a pre-implementation success too – our data folks saying yes, we see a way to figure this out…We have a really sophisticated group of data experts who are putting in some really innovative data effort behind the scenes."
- Awardee officials in New Hampshire and Tennessee highlighted successes in the development of the technology infrastructure itself. Interviewees in New Hampshire were excited by the prospect of having a new centralized IT system for information sharing and referrals. An interviewee in Tennessee described that the use of EPIC to collect data had "been a huge win to make the operational pieces happen a little bit easier" as it could "create a seamless experience from the provider end for collecting all of the data."

Challenges in Data System Integration

Although the MOM Model did offer funding for data systems infrastructure and technical assistance related to data submittal requirements, interviewees in all the MOM Model States reported challenges related to establishing data systems and/or data collection and reporting processes, with many identifying this issue as the biggest obstacle they faced during the pre-implementation period. Although establishing these data processes were central to standing up the MOM Model, putting these mechanisms into practice proved to be more difficult than State officials and their care delivery partners anticipated. These changes required more planning, coordination with multiple partners and revamping of data systems than anticipated by individual awardees. Two MOM Model awardees (Louisiana and Missouri) cited data challenges as a reason for their decision to withdraw from the program during the pre-implementation period.

- Data-related challenges prompted Maryland to significantly scale back the State's model. Interviewees shared that data collection was "the sole motivating factor for the [State's] pivot" from a statewide model to a single county-level pilot. Maryland's

providers are not universally connected to one EHR, so data collection would have required "individual outreach to every provider who sees a MOM participant." Therefore, it did not seem feasible to roll out the MOM Model statewide.

- One West Virginia interviewee expressed concern that care delivery partner sites may drop out of the MOM Model altogether if they do not believe they will have the resources to meet data requirements in future implementation years.
- Some awardees reported difficulties adjusting their EHR systems to accommodate certain data elements required under the MOM Model, such as patient activation measures and screening tools.
- Other awardees indicated rollout of the mechanism to support the submission of MOM Model data to CMS has been slow, causing awardees to be concerned they may not have enough time to practice the data submission process—which could result in missing data submission deadlines early in the implementation period.
- Interviewees in Indiana and Texas also discussed challenges related to collecting and reporting data. For instance, the Indiana MCEs had difficulties adding screening instruments to EHR systems. In Texas, one provider site's EHR does not facilitate data extraction, requiring staff to do "double documentation" to meet data requirements. Another site had difficulties integrating patient activation measures into its EHR system, which caused challenges in reporting the data.

MOM Model awardees must share data among clinical and non-clinical partners to adequately integrate and coordinate care for MOM Model beneficiaries. Because data from sources such as claims are delayed and do not provide sufficient information on key elements of MOM, awardees are required to submit individually identifiable beneficiary-level data, such as medical information and health screenings, to CMS and its contractors. Though eight of the ten original MOM Model awardees were successful in the pre-implementation year in developing mechanisms and procedures for data sharing among model partners, all reported challenges with this aspect of MOM implementation and two cited data requirements, in part, for their withdrawal from the model. The evaluation team will continue to look at how awardees and their partners manage the complexity of these data innovations as they implement the MOM Model.

5. Awardees Are Addressing Stigma and Health Equity

Interviewees consistently identified societal stigma against pregnant and parenting people with OUD as a primary barrier to seeking help. Interviewees expressed hope that adopting holistic approaches to reduce effects of trauma and efforts to reduce stigma in their interactions with beneficiaries would help maintain care engagement. While plans lacked detail and remarks were often vague, interviewees in several States mentioned hopes that

the MOM Model would reduce stigma among providers caring for beneficiaries and they would become more comfortable caring for pregnant women with SUD generally.

Interviewees indicated traditionally underserved populations such as rural, non-White and populations with limited English proficiency as less likely to seek OUD treatment. Interviewees also highlighted situations where cultural beliefs may influence choices about seeking SUD care.

- One Texas care delivery partner highlighted that although Spanish-speaking residents in her region make up a large portion of patients seeking care at local healthcare clinics, very few Spanish-speaking women seek SUD treatment through her site.
- One Indiana care delivery partner indicated that 95 percent of the pregnant individuals they treat for SUD are White, despite the surrounding neighborhood being predominantly African American. One interviewee noted that "the opioid epidemic has hit Caucasian patients a lot… Or maybe more Caucasian patients are seeking treatment… I just don't know."
- Interviewees from both Maine and West Virginia noted that unreliable cellphone signals and internet connectivity in rural parts of their States may limit access to virtual and telehealth services for individuals located in those areas.

Successes in Designing Approaches to Address Stigma and Inequities

Care delivery partners in all awardee States are strategizing to educate providers about stigma and discriminatory behaviors as the MOM Model is implemented. However, the approaches to education and how they are emphasized within models will vary.

- Indiana and Tennessee mandate formal trainings for staff, while New Hampshire offers voluntary trainings focused on promoting health equity and reducing stigma.
- Some interviewees highlighted informal efforts to educate providers and other staff about the impacts of stigma and health inequity in this population, with one provider in Tennessee indicating that the care team "keeps each other in check" regarding use of stigmatizing language. A provider in Texas indicated that their team psychiatrist distributes information to the obstetrics team on how to identify opioid withdrawal and the person-first language to use when asking about those symptoms.
- Maine providers with experience providing MAT and working with pregnant and postpartum people with OUD have shared their strategies for reducing stigma with their less-experienced colleagues, such as utilizing communications vendors to help with messaging to both potential patients and their families.

Challenges Addressing Stigma

As documented throughout this report, the fear of stigma that accompanies identifying oneself as a person with OUD conflicts with the desire to enter recovery and can be a major obstacle to obtaining that care. When care providers use stigmatizing language and behavior, obstacles are exacerbated.

> We do a lot of education, but I don't think education changes people's opinion until they see someone in recovery.

C. Anticipated Outcomes and Perceptions of Lived Experiences

1. Anticipated Program Outcomes Were Consistent Across Awardees

Anticipated outcomes of the MOM Model were consistent across interviewees in all States. Interviewees hoped for reduced maternal mortality and morbidity rates and higher SUD recovery rates. One care delivery partner also highlighted the potential for improving beneficiary outcomes related to "how they are living day to day" and "other medical issues outside of behavioral health and pregnancy," such as diabetes and obesity. Regarding infant outcomes, interviewees hoped that MOM would contribute to reduced infant mortality rates and neonatal intensive care unit (NICU) stays.

Interviewees also anticipated improved outcomes at the larger family level. Specifically, they stressed the importance of keeping families together, expressing hope that the MOM Model could help prevent family separations. One provider in Maine noted, "I believe that if families are given the resources they need, they take good care of themselves and their kids. If MOM works, it will reduce adverse child experiences, keep families intact, and allow families to succeed." Interviewees in other States shared similar sentiments, noting that "putting the resources … behind them, around them, over them" could help those enrolled in MOM to feel "empowered to have their babies and have control."

Interviewees expected that strengthening integration of healthcare and OUD treatment services across the prenatal, labor and delivery, and postpartum periods would drive improvements. They hoped more coordinated models would connect beneficiaries with OUD to care earlier in pregnancy, and then keep them more consistently engaged through delivery and postpartum. An interviewee in Indiana predicted care earlier in the prenatal period would lead to "healthier parents, healthier infants [and] mothers in sustained recovery

throughout that postpartum period." Interviewees in numerous States anticipated improved integration would foster "easier and quicker" communication and referrals across providers.

As stated above, interviewees hoped that reducing stigma and adopting holistic approaches to reduce effects of trauma would help keep beneficiaries engaged in care. Interviewees in several States specifically mentioned hopes that the Model would reduce stigma among providers caring for MOM Model beneficiaries and that they would become more comfortable caring for pregnant people with SUD generally. Interviewees in two States thought peer recovery specialists would likely be the most critical element in establishing welcoming environments and therefore improving retention and outcomes. One provider described the relationship between the patient and peer recovery coach as "very powerful, very motivating, and very soothing for what is often an extremely turbulent situation," noting that their current patients value talking to someone who "gets it."

Long term, interviewees hoped the MOM Model would produce sustainable, more equitable, and lower cost systems of care. In particular, interviewees in West Virginia stressed the importance of having sustainable, predictable funding for the full range of medical, behavioral, and care coordination services needed. By having a consistent model with stable funding, they hoped providers could focus less on administrative tasks and more on care delivery. Further, interviewees in Maryland, New Hampshire, and West Virginia believed the MOM Model could generate Medicaid and MCO cost savings through improved maternal and infant outcomes in the future.

2. Care Providers Identified Psychosocial and Practical Barriers to Care for Pregnant and Parenting People with OUD

During virtual site visits with each awardee, the evaluation team invited a variety of MOM Model care providers to participate in virtual Photovoice sessions and share their perceptions of the lived experiences of those pregnant and parenting with OUD.[2] Overall, interviewees identified numerous potential psychosocial and practical barriers to care. They also noted personal strengths, support networks, and resolve to seek care as helping to overcome obstacles to recovery.

Psychosocial Barriers

Psychosocial factors discourage many pregnant or parenting people with OUD from seeking care. As mentioned above, stigma was reported as the primary psychosocial barrier.

[2] The evaluation team did not conduct Photovoice sessions during site visits to two States (Colorado and Maryland) because they were in the process of finalizing their models at the time.

Many noted that OUD often co-occurs with mental health challenges, such as depression and anxiety, which present additional barriers to care. Photovoice participants noted behavioral health services are limited in their States, and stigma related to mental health as well as OUD prevents people from seeking help. Mental health may interfere with the ability to participate in the OUD recovery process. However, interviewees believe the coordination of pregnancy and recovery services may alleviate, if not eliminate, this problem.

> It's nice for patients to not have to continually tell their story and talk about moments where they were not their best. Instead of having to come in and warm up to providers, they can come into the space knowing the staff and start making progress. For a lot of ladies that come in and relapse, it's nice they can be comforted knowing we have seen them at their best. On the flip side, if we saw them when they weren't doing so well and they come back successful in their recovery, it's nice for them to say, "Yeah, they saw where I was at and [witnessed] all the progress I made." Having that process and continuum is helpful for them and for us, too.

Photovoice participants reported that those who are pregnant or parenting with OUD are often isolated from prior support systems or have unhealthy forms of support. Many are single parents who may not have the support of family or friends. A portion of pregnant or parenting clients with OUD in current programs are in partnered relationships, though these relationships may negatively impact the treatment process, as some partners also struggle with SUD and may not support recovery. Intimate partner violence (IPV) and domestic violence (DV) are common, and those who enroll in OUD treatment may have experienced violence as children or adults. A controlling or violent partner may restrict a beneficiary's access to care or disrupt treatment appointments. Experiences of IPV and DV are also linked to other care barriers. For example, such trauma can create or exacerbate mental health challenges. Leaving a violent relationship may lead to struggles with finances or housing, in addition to managing addiction, focusing on healthy pregnancy, and caring for other children.

> The majority of the time, partners are not helpful in the process. There are a lot of issues around boundaries and domestic violence and mental health … [and] while women want the fathers to be involved so the kid has a dad … [when] the dad is not a healthy person to be around, it complicates things.

Practical Access Barriers

When people who are pregnant or parenting with OUD decide to seek treatment, practical barriers also obstruct access to care. Some may not be housed because of strained

relationships with family members or partners. Those living with OUD may have low incomes or struggle to find employment, which can make providing food for themselves and their children a challenge. Others lack transportation to get to and from needed treatment appointments, or childcare so that their children are safe while they are at their appointments. And still others live in communities that lack the provider capacity needed to meet the demand for care. Combined, when basic needs are not met, participating in treatment is harder to prioritize.

> There is not enough room in the shelters, and there is not enough affordable housing, and if you don't have housing and food, medical care comes second, whether it is prenatal care or substance use treatment.

Lack of reliable or affordable transportation is common barrier to seeking and participating in treatment. Public transportation is often unreliable or takes significant time to navigate to attend an appointment. Most State Medicaid programs offer transportation services to beneficiaries. In most cases, however, rides must be scheduled through the Medicaid service several days in advance, and though same-day pickup options are usually available in cases of emergency, many beneficiaries and their providers are unaware of this exception. Sites can sometimes secure rideshare services (e.g., Lyft, Uber) for transit to attend appointments; however, Photovoice participants reported that patients in rural areas have few transportation options. See figure 7 for an example a Photovoice participant provided to highlight the transportation challenges many women diagnosed with OUD face when seeking care.

Figure 7. Example of a Practical Barrier to Care

Geography is a challenge to patients receiving medical care, consumer services, educational opportunities, social services, and getting to work. Miles of mountainous roads are difficult to traverse by foot if transportation is not available.

—Photovoice participant

Source: Insight Policy Research example Photovoice photo, December 2021

Interviewees in Tennessee and Maine indicated patients in rural areas may drive up to 3 hours to get to a clinic offering prenatal services for women with OUD, and pregnant patients without transportation in Maine reportedly prioritize OUD treatment over prenatal visits. In West Virginia, interviewees described how a person's location in the State can drastically influence the likelihood of successful recovery.

> If you are in the southern coal fields of the State, you are up a creek without a paddle. We have moms who are driving 2 hours for group. We have had moms sleeping in their cars in the hospital parking lot. They are doing that to stay close after delivery or to be able to make their MAT appointment because it is early in the morning.

Some in OUD treatment are pregnant with or caring for their first child. However, Photovoice participants noted many people they see in their current programs also have other children, making lack of childcare another significant barrier to treatment. Parents often rely on family and friends to provide childcare, but stigma and limited support systems may reduce these options for parenting people with OUD. Specifically, providers participating in Photovoice reported that their patients' families and friends may not be safe caregivers, may discourage beneficiaries from attending treatment, or generally may not be willing to help or maintain their support over time. Some treatment sites offer childcare services or allow women to bring their children to appointments. During the COVID-19 pandemic, though, many sites discontinued childcare services.

When many forms of care shifted to telehealth delivery during the COVID-19 pandemic, further challenges arose. For example, Photovoice participants noted that their pregnant and parenting clients with OUD often had limited or unreliable access to the technology needed for telehealth, which could interfere with their ability to arrange treatment with providers or seek help during a crisis. Providers shared that while many women in OUD treatment have cell phones, most have minute-based plans, which create communication challenges when the plans' minutes expire – though one provider noted it is still possible to send text messages under these circumstances. Providers serving patients living in rural communities also cited limited broadband coverage as a barrier, as this disrupts access to email and virtual care visits.

The lack of affordable housing in some MOM Model regions creates an epidemic of unstable housing and homelessness. Interviewees in Maine, Tennessee, and Texas indicated unstable housing often correlates with patients' adherence to treatment or their ability to keep prenatal appointments. In New Hampshire, the inadequate sober housing

programs available to accommodate women in recovery or postpartum women can create havoc for treatment continuity. Many of the "sober housing" programs and low-income housing programs do not allow any participants to be on methadone or buprenorphine. Many pregnancy housing programs do not allow residents to return once they give birth, and partner and family housing are frequently unsafe or entirely unavailable. In general, available programs offering housing for those in recovery provided few options for families to reside together.

> It is becoming more and more of a challenge for us because we have dads that really want to be involved and want to be in recovery, and we want to support the family unit, but it is like maybe we can find housing for mom and baby, but definitely not dad.

Interviewees from every State indicated there are too few services, particularly prenatal care providers trained to treat pregnant women with OUD, available MAT services to accommodate the volume of pregnant people with OUD, and long-term residential recovery programs. In rural regions, services are commonly inaccessible or non-existent. One provider in Texas summarized the situation:

> Sometimes I get calls from [child protective services], and they'll have somebody in one of the rural areas that's not been getting services because they don't have anywhere to go for services.

Solutions to Access Barriers

Photovoice participants described the many ways their clients have used personal strengths, community resources, and support from their treatment team to overcome barriers and begin recovery. Though people with OUD who are pregnant and parenting have many strengths, they may or may not recognize them. One Photovoice participant shared an anecdote about completing a Plan of Safe Care for a woman living with OUD. Initially, when a provider asked the woman to describe her personal strengths, she replied that she had none. But after the provider helped the women see she had several, including a friendship and financial independence, that would contribute to her success in treatment, the woman felt better about herself and her ability to recover. Many key interviewees commented on the resilience pregnant and parenting clients with OUD demonstrate during treatment and how that resolve supports their recovery.

Several Photovoice participants submitted photos showing how their communities can support pregnant and parenting persons in their recovery. When available, community support was seen as a boon. Communities across awardee States convened social events to highlight the community and familial supports available to pregnant and parenting individuals with OUD that make their recovery a more positive experience. Communities were also able to provide food, baby supplies, and personal care items for women diagnosed with OUD and their children. See figure 8 for a Photovoice photo and caption illustrating how community supports contribute to the successful recovery of families affected by OUD.

Figure 8. Community Support for Families Affected by Opioid Use Disorder

"Happiness is…"

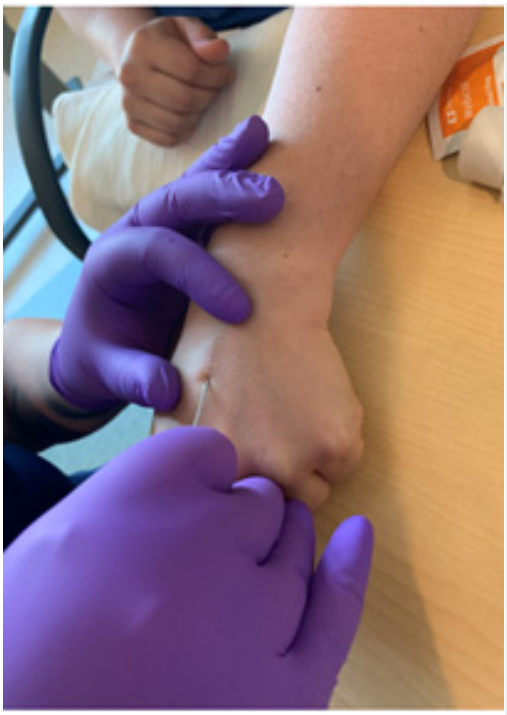
The "Faces of Recovery" … are not all bleak. With support from local community agencies, family, and peer supports, a successful and happy life in recovery is possible. "At-risk" families can and do thrive with the right supports and opportunities to succeed.

—Photovoice participant

Source: Insight Policy Research example Photovoice photo, December 2021

Properly trained and prepared providers can also be assets to OUD treatment and recovery by being sensitive to the unexpected consequences of OUD. For instance, one Photovoice participant shared that starting intravenous therapy (IV) during labor can be a triggering experience for women with OUD. If a woman has a history of IV substance use, she may feel shame and/or discomfort if the provider struggles to locate a vein. Another participant in the Photovoice session, who has lived experience with OUD, acknowledged the empathy the provider showed in understanding how a woman living with OUD may experience a procedure differently than another patient. Recognizing these special considerations allows providers to fill roles as advocates, supporters, educators, and companions. See figure 9 for an example.

Figure 9. Intravenous Therapy as a Trigger for Persons With Opioid Use Disorder



Coming to deliver a baby at the hospital almost always requires an IV start for mom. This is a complicated issue for many reasons—sometimes it is very challenging if a person has IV use history and sometimes little to no options for IV access and we try to limit the number of "pokes" someone gets if we can't get the IV in easily, and sometimes we need Ultrasound guided insertion from specially trained RNs to help us. The patients are aware that we are having a hard time "finding a vein." Or it is simply triggering for a person to have an IV placed. It is an unpleasant experience in the best of times, and with OUD it can be even harder."

—Photovoice participant

Source: Insight Policy Research example Photovoice photo, December 2021

The fear of having a child removed from the home or the desire to regain custody can motivate treatment initiation and adherence for pregnant and parenting people. Interviewees shared that some parents may be involved with their State's child protection agency, and entering treatment during pregnancy or the postpartum period may be a way to demonstrate to the State their ability to care for themselves and their children. However, Photovoice participants (as well as other interviewees) also emphasized that relationships with child protection agencies were complex and could vary by State, caseworker, and/or judge. One participant explained, "There is not a lot of consistency. There are the [child protection agencies that are] helpful at times in terms of getting connected to services…but it seems like that is the minority of cases." They also noted that the stress of working with the agency often led to relapse for their clients.

3. Conclusion

MOM Model awardees invested impressive energy and effort into designing their approaches to serving pregnant and parenting Medicaid beneficiaries with OUD during the 18-month pre-implementation period. Model partners productively devoted time to a wide range of planning activities, including forming and formalizing care delivery partnerships; designing intake and screening processes; exploring alternative approaches to establishing sustainable funding for MOM service delivery; and creating new or enhancing existing data collection, sharing, and reporting systems to support more integrated care. Specific awardee observations include:

- Interviewees in the seven sites with full case studies cited new partnership formation and collaboration across stakeholders as the greatest success during the pre-implementation year.
- Though most States differ in how they will define and pay for peer support services, interviewees across States emphasized the value of this role.
- Eight of the original 10 MOM Model awardees made progress in developing new data systems and workflows, especially concerning data system development, during the pre-implementation period. Most awardees noted that the extra time granted through the postponement of MOM Model implementation from January 2021 to July 2021 due to COVID-19 was particularly valuable for these processes.
- Two awardees dropped out of the MOM Model during the pre-implementation period, citing data challenges, in part, for their withdrawal.
- MOM Models will employ a wide variety of strategies to improve outcomes for birthing people with OUD and their infants. None will significantly expand Medicaid benefits, but rather will focus on providing more intensive and holistic care coordination, peer recovery support, and various strategies to remove barriers to care.
- Many awardees will partner with large medical, hospital, and substance use disorder treatment systems for service delivery, while others will focus their service delivery enhancements through managed care organizations and their networks.

All awardees acknowledge the serious challenges presented by social stigma against persons with OUD – often working to prevent persons from pursuing recovery – and the deeply ingrained inequities that run through American communities and health systems. By addressing these challenges and providing more integrated, coordinated, and person-centered maternity and behavioral healthcare, including medication assisted treatment, to pregnant and parenting persons with OUD, MOM Model awardees hope to achieve a wide array of improved outcomes in maternal health, infant health, sustained recovery, and stronger families.

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Part 2.

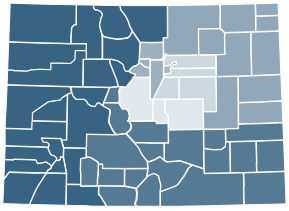
State MOM Models In Brief

Colorado MOM Model In Brief

In Colorado, opioids were involved in approximately two-thirds of all overdose deaths in 2018. That same year, deaths involving prescription opioids declined, while deaths involving synthetic opioids other than methadone rose.[1] Rates of neonatal abstinence syndrome have also risen dramatically (120 percent from 2011 to 2016) in recent years, while birth rates have remained stable.[2]

Geographic Scope

Anticipated statewide in all 64 counties



Urbanicity

urban, suburban, and rural

Anticipated Enrollment/ Population of Interest

up to 700–1,500 beneficiaries to be served annually

What are the Goals of Colorado's MOM Model?

Colorado designed its model to build statewide provider capacity and system infrastructure to support integrated, coordinated care for pregnant and parenting people with opioid use disorder. The goals will be achieved through two approaches: (1) regionally specific sub-grants for integrating substance use disorder treatment into primary and obstetric care sites that are appropriate to each community and (2) technical assistance to awardees through a learning collaborative model. The state anticipates awarding a grant to an organization within each of Colorado's Accountable Entity regions, for a total of up to seven recipients. Grantees will administer Medicaid services for the Colorado Department of Health Care Policy & Financing (HCPF). Because of delays with implementation, the Centers for Medicare & Medicaid Services approved a request from HCPF to extend their pre-implementation period. The State will begin enrolling MOM Model beneficiaries in early 2022.

Medicaid Context

Historically, Colorado's Medicaid delivery system has faced difficulty in adequately responding to behavioral health needs in the primary care setting, given the system's separate payments for behavioral and physical health benefits. The State has undertaken a number of initiatives to integrate behavioral health and physical health in the past several years. State Innovation Model (SIM) funding assisted in this integration in primary care practices and mental health centers and Comprehensive Primary Care Plus (CPC+), a national advanced primary care medical home model, aims to strengthen primary care through regionally-based multi-payer payment reform and care delivery transformation. Most recently under the Accountable Care Collaborative (ACC 2.0), behavioral and

physical health needs are administered together under a Regional Accountable Entity (RAE). RAEs receive a per-member per-month payment and a capitated behavioral health payment. ACC also allows six behavioral health visits if they occur at a clinic enrolled as a primary care medical provider. The State has several value-based payment incentives to support behavioral health for this population (screening, brief intervention, and referral to treatment [known as SBIRT]; behavioral health engagement; and prenatal care rates) and would like to use these more effectively in the obstetrics and gynecology field. The MOM Model will advance Colorado's shift to care coordination and integrated health care.

Pre-Implementation Activities and Program Features

Delayed implementation. Colorado received CMS permission to delay implementation by 6 months, with implementation starting in early 2022.

Sub-grantee selection. HCPF released a request for regionally specific sub-grant applications (Request for Applications, or RFA) in summer 2021. They expect to award sub-grants in fall 2021 and to begin MOM Model enrollment in early 2022. Colorado anticipates awarding one sub-grant per region. Each of the seven RAEs were eligible to apply for the grant, as were individual practices, clinics, or other organizations within that region. For an entity other than a RAE to apply, they must have some type of relationship with the RAE.

In developing the RFA, the department held three stakeholder meetings to solicit feedback about the MOM Model and the application process for subgrantees. They also conducted a survey for stakeholders.

Data systems. HCPF plans to use as much data as possible from their Medicaid claims system. All RAEs and care delivery partners have access to a once-monthly extract of claims data for their region. Data not available through Medicaid claims will be collected through a process specific to each care delivery partner.

Conclusion

In the next round of Colorado case study data collection, the evaluation team will examine sub-grantee implementation processes, differences in implementation by implementor type and location (large or small, rural or urban, RAE or other entity) and equity issues. Key issues to be explored include data systems and the choice of services offered by each implementing entity.

Endnotes

[1] National Institute on Drug Abuse. (2020, April 3). *Colorado: Opioid-involved deaths and related harms*. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state/colorado-opioid-involved-deaths-related-harms

[2] These statistics are reported in the State's MOM application.

Indiana MOM Model In Brief

Each year, more Indiana residents die from drug overdoses than from car crashes.[1] In 2018, there were 1,104 drug overdose deaths in Indiana.[2] Pregnant and postpartum people and their infants are among those affected by drug use. In 2017, Indiana reported 10.4 cases of neonatal abstinence syndrome (or neonatal opioid withdrawal syndrome) per 1,000 hospital births.[3] Indiana law classifies an infant born with fetal alcohol syndrome or neonatal abstinence syndrome as having experienced "child abuse or neglect." As a result, Indiana has prosecuted for substance use during pregnancy.

Geographic Scope

Statewide in Indiana

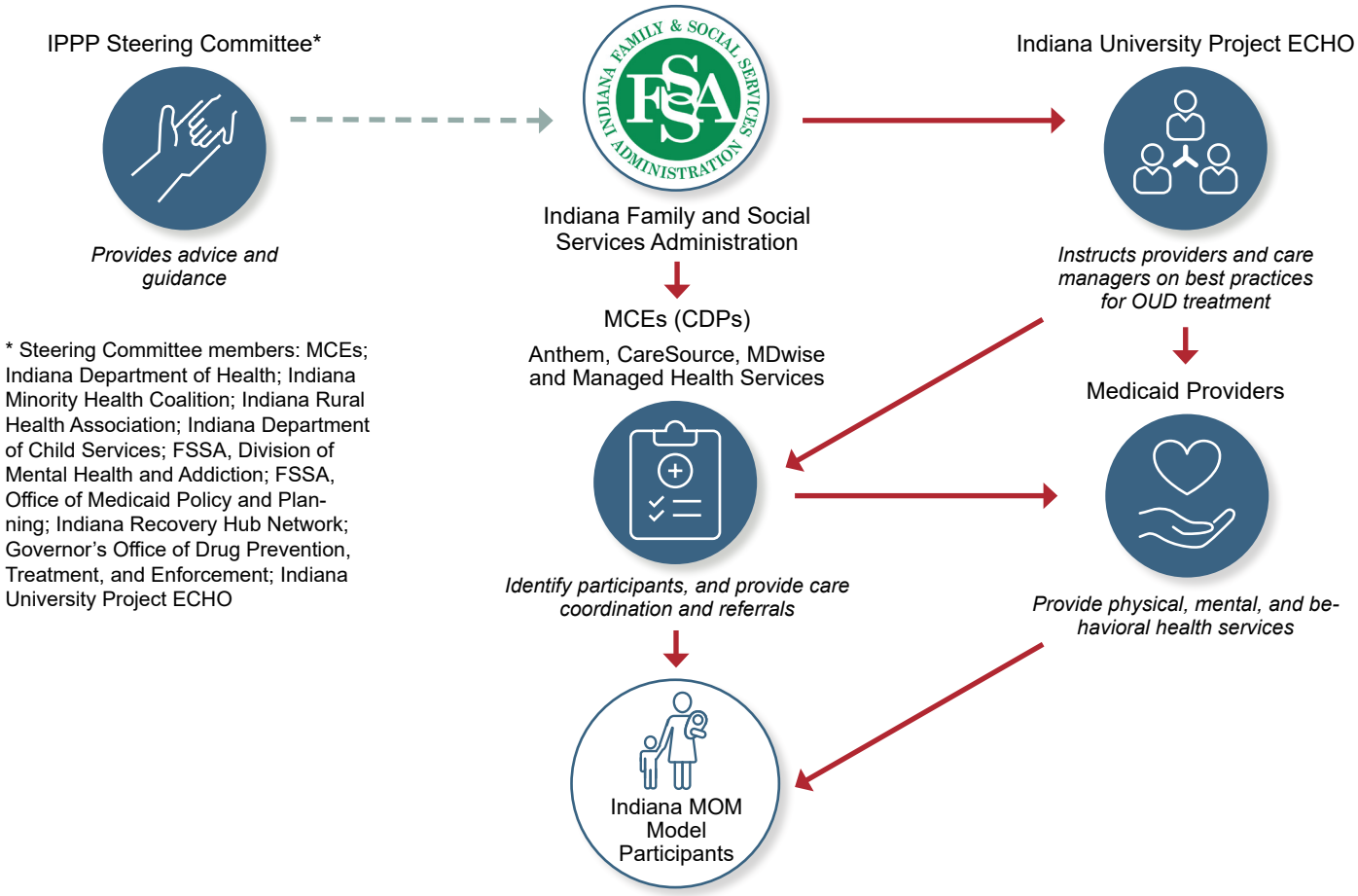
Urbanicity

urban and rural

Anticipated Enrollment/ Population of Interest

725–750 individuals to be served annually

Key Model Partners



What are the Goals of Indiana's MOM Model?

Indiana's Family and Social Services Administration (FSSA) and its partners, the Indiana Department of Health (IDOH) Medicaid managed care entities (MCEs) anticipate the Indiana MOM Model, known as the Indiana Pregnancy Promise Program (IPPP) will lead to a coordinated system of care for pregnant people with opioid use disorder (OUD), improved birth outcomes, and sustained recovery in the postpartum period. It is hoped that IPPP also will reduce stigma associated with OUD and its treatment.

IPPP will offer enhanced case management services, which are built on services and resources already in place, such as educational materials, appointment scheduling and reminders, facilitation of referrals, and consultation about healthcare coverage and benefits. MCEs offer these services and resources to all pregnant Medicaid beneficiaries. Provider sites—the hospitals and outpatient clinics in Indiana that serve pregnant persons, including those with OUD—will continue to offer services as they do now and will continue to be reimbursed according to agreements in place with the MCEs.

Medicaid Context

Pregnancy-based Medicaid coverage in Indiana currently ends 60 days postpartum. FSSA submitted a Medicaid section 1115 waiver that would extend coverage to 12 months for those enrolled in IPPP; however, this was subsequently withdrawn in favor of new flexibilities of the American Rescue Plan Act. A portion of Medicaid beneficiaries coverage ends at 60 days postpartum as a result of income levels while other beneficiaries have continuous coverage through 12 months postpartum. Most Medicaid beneficiaries in Indiana have the option to choose or be assigned to one of four MCEs each of which maintain statewide provider networks: Anthem, CareSource, MDwise, and Managed Health Services. FSSA contracts with MCEs for the delivery of most Medicaid care including inpatient and outpatient SUD treatment, including OUD treatment.

Pre-Implementation Activities and Program Features

Partnership building. FSSA signed contracts for IPPP case management with the four MCEs serving as care delivery partners. Each MCE employs case managers who will conduct IPPP screenings and offer care coordination to pregnant and postpartum individuals with OUD. FSSA conducted outreach to provider sites to inform them about IPPP services. FSSA contracted with Indiana University (IU) Project ECHO to conduct several provider training series on best practices for stigma reduction and treating OUD in pregnancy. IDOH, which supports women's health and SUD initiatives and collaborates with FSSA, serves

as another model partner. Throughout the IPPP implementation period, IDOH will use the MCH MOMS Title V phone-based call center to connect pregnant persons with OUD to IPPP and to home visiting programs and other community-based services.

Participant outreach preparation. FSSA developed outreach plans, a public website,[4] and IPPP program materials for potential enrollees at provider sites statewide. A poster and flyer about IPPP were prepared and translated into English, Spanish, and Burmese. Any other language can be made available upon request.

Influence of COVID-19

FSSA indicated the COVID-19 pandemic increased use of Indiana's health information exchange platform—used for data sharing between FSSA and MCEs—because the state instructed healthcare networks across Indiana to use the tool to track and report COVID-19 metrics. FSSA did not change any planned procedures related to IPPP participant identification, enrollment, or coordination of care in response to the pandemic. MCEs altered in-person outreach as a result of the pandemic. Provider sites either maintained in-person operations for physical medical services with proper social distancing measures in place or transitioned to telehealth alternatives.

Data integration. FSSA established a data-sharing and reporting system for model partners. With input from MCEs and the IPPP Steering Committee, FSSA developed data dashboards with the intent to share with MCEs that display indicators for early identification of pregnancy, delivery and postpartum measures, and substance use metrics.

Key Program Features

Recruitment. IPPP aims to enroll up to 725 beneficiaries per year. Medicaid MCEs will identify those potentially eligible for IPPP through claims and encounter data and providers filing "report of pregnancy" forms. MCE case managers will conduct telephonic or in-person outreach with all beneficiaries known to be pregnant and complete screens by phone to identify those eligible for MOM.

Intake. Beneficiaries who agree to participate in IPPP will be assigned to an MCE case manager. The MCEs currently use "homegrown" (i.e., provider-developed) and commonly used, validated screening tools. FSSA identified additional screening tools to be implemented across the MCEs for IPPP (e.g., Accountable Health Communities, Adverse Childhood Experiences). Case managers will also be required to participate in trainings on attachment-based approaches to intervention, issues of racial disparities and implicit bias, and trauma-informed practice.

Model services. IPPP services will cover enhanced case management that begins in the prenatal period and extends through 12 months postpartum, including case management for the infant during that period. Enrollees will also be connected to services and supports related to their comprehensive care plan such as certified peer recovery specialists and family support home visiting services.

Care setting. Indiana's MCEs maintain statewide provider networks and will provide coordination of care services for IPPP enrollees regardless of where beneficiaries receive their physical and mental health and SUD treatment services. Any Medicaid provider in Indiana serving pregnant individuals with OUD may be considered a IPPP provider site.

Care coordination. The MCEs participating in IPPP will implement care coordination consistently. MCE high-risk obstetrical case managers, who are typically registered nurses or licensed clinical social workers, will serve as IPPP case managers. Each IPPP case manager will assist 35 pregnant members with OUD, compared with a typical caseload of approximately 70 pregnant members for other obstetric case managers. This will allow time for IPPP case managers to coordinate care, meet with patients in person, conduct home visits, accompany patients to appointments (when safe to do so), and collect and report data. MCEs will use the Aunt Bertha closed loop referral tracking platform to address IPPP enrollees' identified health-related social needs. MCE case managers can use Aunt Bertha to locate relevant social services agencies and to track referrals. For MCE case management services currently delivered via telephone, FSSA hopes these services will transition to in person when the COVID-19 public health emergency ends.

Continuing treatment. Beneficiaries who complete IPPP case management remain eligible for Medicaid-covered services, including OUD treatment, assuming they meet Medicaid eligibility criteria. IDOH offers a range of home visiting programs to eligible young families.

Model sustainability. Indiana is paying for IPPP case management services through contracts negotiated individually with the four Medicaid MCEs. The contracts specify IPPP case managers' caseloads and payments.

Early Lessons Learned

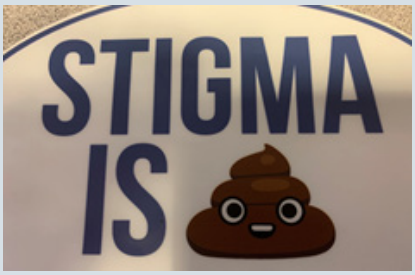
To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

FSSA and IDOH anticipate the case management support and the social services referral platform provided through IPPP will make the system of care easier to navigate, and provider sites are hopeful case management will lead to continued care postpartum. IDOH

also expressed hope that IPPP will add to efforts to reduce stigma associated with SUD treatment. Stigma is one of the primary barriers people with OUD encounter when seeking care or participating in treatment, especially when they are pregnant. If patients with OUD feel judged by care providers at any point during treatment, they may be less likely to continue seeking care. Site visit participants noted that addressing stigma is an essential element of caring for persons with OUD. One provider participating in a Photovoice exercise used a photo of a decal to illustrate the importance of combating stigma by showing kindness and choosing words carefully. Stigma reduction is also an important component of Project ECHO trainings, which are available on a voluntary basis to all clinical providers in Indiana. Through the trainings, IPPP aims to address OUD stigma among care providers and create safe spaces that welcome individuals living with OUD and their children.

Photovoice finding and caption from provider site visit



Words hurt. Mental health and substance use has a long way to go in the eyes of the public. Stigma prevents people from asking for help, seeking care, and feeling like they matter. Kindness goes a long way.

—Decal a provider had that reminds providers to avoid stigmatizing language. A provider submitted this photo as a symbol of the importance of addressing stigma when serving pregnant people with OUD.

Early Successes

FSSA and the MCEs emphasized that organizing all four MCEs to work together on a unified initiative was a major success during the pre-implementation year. IDOH noted the IPPP team successfully coordinated stakeholders to develop the program marketing and outreach materials during the pre-implementation period. Site visit participants noted communities arrange initiatives to support parents with OUD and their children. For example, communities collect food and baby items that are shared to support those in treatment and their families. Site visits participants noted many organizations extend these services to community members in need without requiring recipients to explain their needs. Community programs serving individuals with OUD and their children bolster IPPP's work.

> The community is coming together to provide free resources without judgment.

Early Challenges

FSSA and the MCEs remain challenged by collecting, reporting, and sharing the data needed for IPPP. FSSA is concerned about obstetrician and behavioral health provider shortages and capacity statewide, especially in rural areas. Because most providers in

Indiana are not yet aware of IPPP, referrals to services may be slow initially. FSSA, IDOH, and the CDPs were beginning to conduct provider outreach to address the issue.

Conclusion

In the next round of Indiana case study data collection, the evaluation team will examine contextual factors (e.g., State trends in SUD/OUD, drug screens at birth, other pandemic-related factors), strategies for addressing equity issues, and how implementation proceeded. Key issues to be explored include: outreach approaches for recruiting and enrolling participants, particularly those underrepresented in OUD treatment; interactions and coordination between clinical care sites and MCE IPPP case managers; and feedback on trainings for clinicians and case managers.

Photovoice finding and caption from provider site visit

Free support services. Whether it be a new outfit or another mom to connect with, every little bit of free services helps. First-time pregnancy can be scary, especially when someone doesn't have the resources they need.

—Logo from a local organization that offers free items for babies. A provider submitted this photo as a symbol of the importance of community organizations in supporting pregnant Medicaid beneficiaries.

Endnotes

[1] Indiana University (n.d.). *The crisis in Indiana: Addiction affects every aspect of Hoosier life*. https://addictions.iu.edu/understanding-crisis/crisis-in-indiana.html
[2] National Institute on Drug Abuse. (2020). *Indiana: Opioid-involved deaths and related harms*. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state/indiana-opioid-involved-deaths-related-harms
[3] Ibid.
[4] In.gov. (n.d.). *Indiana pregnancy promise program*. https://www.in.gov/fssa/promise/

Maine MOM Model In Brief

In 2018, the State of Maine ranked 10th nationally in the rate of opioid-involved overdose deaths in the United States, with a rate of 23.4 deaths per 100,000 residents.[1] Maine's incidence of neonatal abstinence syndrome was 31.4 per 1,000 newborn hospitalizations, second only to West Virginia.[2]

What are the Goals of Maine's MOM Model?

Referring to the initiative as "the right opportunity at the right time," Maine's Medicaid agency (the Office of MaineCare in the State Department of Health and Human Services) developed its application to build a statewide MOM Model (MaineMOM) to pursue the following goals:

- Implement a "no wrong door" approach to screening, welcoming, and engaging beneficiaries in care.

Geographic Scope

16 sites (in 11 towns) statewide

Urbanicity

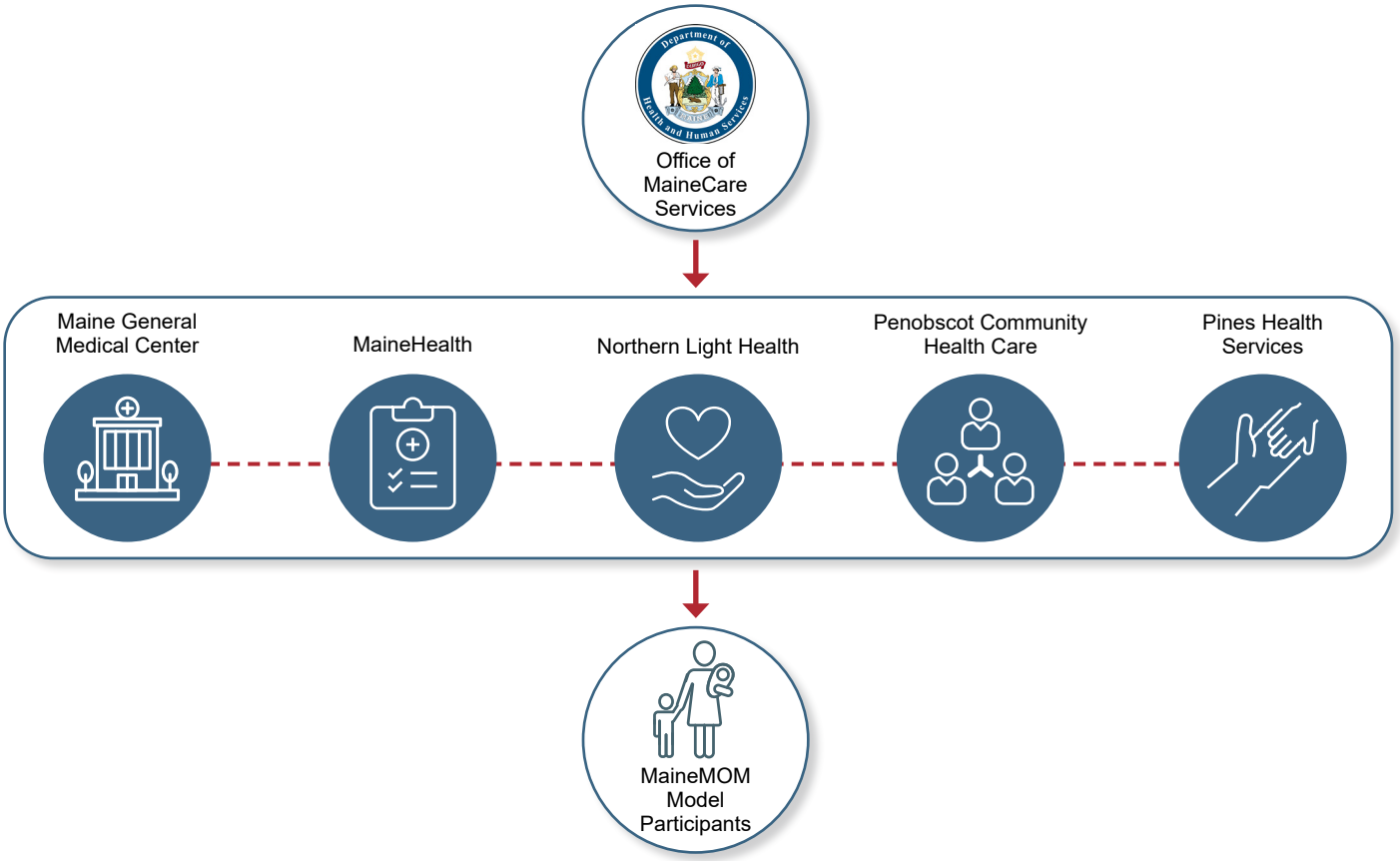
rural, suburban, and urban

Anticipated Enrollment/ Population of Interest

330 in year one with a goal of

950 pregnant and postpartum participants by 2024

Key Model Partners



- Design a system of treatment and recovery for those who enroll, using a medication first model and prioritizing medication-assisted treatment (MAT).
- Increase access to evidenced-based care by integrating perinatal care and substance use healthcare teams.
- Coordinate care for pregnant and parenting people with substance use disorders (SUDs) within local communities and across the State of Maine.
- Conduct a public outreach campaign aimed at increasing awareness of available services and reducing stigma.[3]
- Design the MaineMOM program so its services will be sustainably funded by Medicaid per Federal requirements.

Medicaid Context

Maine's Medicaid program currently covers those who are pregnant with incomes up to 214 percent of the Federal Poverty Level (FPL).[4] This eligibility extends through 60 days postpartum, and the State has no plans or legislation pending to extend the duration of postpartum coverage. Newborns are covered up to 213 percent of FPL.[5] Maine has also expanded Medicaid for single adults earning up to 138 percent of FPL under the Patient Protection and Affordable Care Act.[6] MaineCare is an entirely fee-for-service health system; the State has no Medicaid managed care.

Pre-Implementation Activities and Program Features

Partnership building. At the time of the site visit, MaineCare enlisted five care delivery partners from 16 sites (covering Maine's 16 counties) to deliver integrated MaineMOM services. The awardee engaged care delivery partners, provider sites, and community partners through group meetings, a Project ECHO learning series, committee convenings, and targeted outreach. The State contracted with the University of Southern Maine to provide expertise and analytical support on Medicaid claims and enrollment data and with Ethos, a communications vendor, to develop a messaging campaign for MaineMOM. Establishing cross-agency relationships within Maine's Department of Health and Human Services to facilitate understanding of available services was also a focus during pre-implementation.

Influence of COVID-19

The main influence related to COVID-19 was the CMS decision to implement a 6-month delay in the start date of the initiative. The extension provided time for State and local officials to develop data reporting templates and workflow protocols for MOM and permitted MaineCare and its partners to further build and nurture their relationships, agree on model parameters, explore and discuss alternative approaches, and fine-tune their overall strategy for MaineMOM. The delay also facilitated rapid and reportedly successful expansion of telehealth, which has enhanced service delivery.

Data integration. The State developed processes for data submission, which included designing a data submission template. At the site level, practices are creating data reporting workflows, such as determining who will be responsible for intake, data collection, and submissions. The awardee is also developing workflows for prenatal implementation of the Plan of Safe Care.[7] One care delivery partner site the Addiction Resource Center at Mid Coast Parkview Hospital is currently piloting that process.

Key Program Features

Recruitment. Maine set an initial enrollment goal of 330–950 beneficiaries per year, for a total enrollment target of 2,380. Pregnant and parenting women with OUD in Maine are typically between 20 and 30 and almost entirely White (though members of the Passamaquoddy Tribe living in northern Maine were mentioned as having high rates of SUD). MaineMOM will take a "no wrong door" approach to enrollment, so those eligible can enter the program via several paths. The Maine Center for Disease Control operates the CradleME[8] referral system, a centralized "hotline" and referral hub available to all birthing families in Maine to access public health nursing; home visiting; the Special Supplemental Nutrition Program for Women, Infants, and Children; and other services. This will be an important system for referring potential participants to MaineMOM sites for enrollment. Women already seeing a maternity provider at a participating site will also be offered enrollment in MaineMOM after an SUD has been identified. Similarly, women already in SUD treatment at a care delivery or partner site who become pregnant will be offered enrollment and connected to prenatal care if needed. MaineMOM will also support an outreach campaign on SUD awareness, access to treatment, and other resources to support pregnant and parenting people. This effort is expected to encourage some women not already connected to a care delivery partner to sign up for the program.

Intake. MaineCare's Implementation Plan indicates all sites must administer at least the Parents, Partner, Past, and Present (known as the 4 Ps)[9] or the Car, Relax, Alone, Forget, Friends, Trouble (known as CRAFFT)[10] screening tool. The staff responsible for enrollment and screening will vary by site. At one study site, the program's master's-trained social worker will conduct the screening. At another, the care manager will conduct the screening with the provider and then invite eligible patients to participate in the model.

Model services. Nearly all MaineMOM services are already covered by Medicaid. However, maternity and behavioral health systems are siloed and their delivery is not well integrated. MaineMOM is addressing this challenge by creating a "MAT program coordinated with prenatal care." Maine aims to create a "one-stop shop" approach that puts all the services a pregnant person with opioid use disorder needs under one roof (metaphorically, if not actually). Components of the model include same-day access to "medication first" care, care coordination with referrals to community supports, increased

focus on pain management during delivery, and support from peer recovery coaches. Recovery coaching for pregnant and postpartum individuals is considered a "new" service all provider sites will add to the model. The coach is an individual in SUD recovery who is trained and certified to provide one-on-one support to someone with an SUD. This service was already covered for providers participating in MaineCare's Opioid Health Home model but not specifically for the pregnant and postpartum population.

Care setting. Sixteen sites will participate in MaineMOM, spanning the State's 16 counties and representing both rural and urban areas. One example is a MaineHealth site at Mid Coast Parkview Hospital, which includes an extensive Addiction Resource Center (ARC), obstetric services, and a midwifery practice. ARC is currently located separately from the site's maternity care offices, 8 miles away. The center is not in a walkable neighborhood but is served by the Brunswick Explorer, a public bus service that stops at ARC every few hours.

Addiction Resource Center

Care coordination. Most MaineMOM sites were already providing care coordination in their clinical practice, though usually a less robust version than will be implemented under MaineMOM, and typically without reimbursement. The project team plans to "right size" the care coordination approach, establish Medicaid reimbursement rates, and "fill the gaps" by permitting care delivery partners to hire dedicated care coordination staff to round out the care team. Specifically, MaineMOM's care coordinators will have a variety of qualifications and experience and can include licensed practical nurses, medical assistants, registered nurses, or licensed clinical social workers, and their care will be covered by MOM's bundled payments to sites that become Maternal Opioid Health Homes (MOHHs).

Model sustainability. By integrating maternity and OUD treatment services in the State, Maine will create new MOHHs for pregnant and parenting people with OUD. Plans call for developing a bundled per-member per-month payment for MOHH providers that will cover the costs of delivering the full scope of care needed by this population. The services will include prenatal and postpartum care, MAT, mental health and SUD counseling, peer recovery coach support, and care coordination.

Early Lessons Learned

To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model

plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

State officials and healthcare and behavioral health providers anticipate the model will attract more pregnant and parenting women with OUD to treatment and offer a coordinated and integrated continuum of care through pregnancy, delivery, and 12 months postpartum. MaineMOM aspires to create a system that welcomes and engages women; makes them feel supported, secure, valued, and empowered; and provides resources and tools they can use to succeed in life. Above all, the system should be free from stigma and judgement. According to respondents, if these goals are achieved, MaineMOM will by extension also succeed in improving birth outcomes for mothers and infants and rates of successful and sustained recovery, while keeping more families together.

> I believe that if families are given the resources they need, they take good care of themselves and their kids. If MOM works, it will reduce adverse child experiences, keep families intact, and allow families to succeed.

Anticipated Successes

According to respondents, MaineMOM's primary success to date has been its ability to positively engage with and enlist the support of high-quality, committed care delivery partners across the entire State. As one provider said, "We applied for MOM and won; that's huge! We're really excited. The program has really good people in all the key positions." And as a Medicaid official claimed, "We know that on July 1 (2021), we'll have participants in the program. We have a nice model and a good team of partners at the State and local levels."

Interviews and PhotoVoice activity demonstrated signs of strength in the women who will be served by MaineMOM. One photo a respondent shared depicted blooming daffodils against a backdrop of a graveyard to illustrate how the journey toward recovery involves both movement forward and setbacks. Providers explained that the State's updated Plan of Safe Care document was developed to engage and empower parents. Compared with the previous document, there is now a question asking parents to identify their strengths. While the question initially triggered a negative and hopeless response, effective engagement by the clinician resulted in a productive exchange that helped the patient identify and understand she did possess numerous strengths—she has a car and a job, she is financially independent, and she has a best friend—thereby raising her hope and optimism about recovery.

Anticipated Challenges

Many respondents reported the biggest challenge MaineMOM will face is enrolling large numbers of the target population they hope to serve. Maine, they said, is a small and rural State infused with much societal stigma against opioid use—especially during pregnancy—so women may be difficult to reach and/or convince to enter treatment. Indeed, State officials were already scaling back their initial, ambitious enrollment targets prior to implementation.

> We will chip away at the stigma over our 4 years, slowly but surely. But it will be a challenge.

Conclusion

In the next round of Maine case study data collection, the evaluation team will examine contextual factors (e.g., State trends in SUD/OUD, drug screens at birth, other pandemic-related factors) and how implementation proceeded. Key issues to be explored include how provider sites are integrating SUD treatment and maternity care, the effect of the broad outreach campaign support by Ethos, whether the bundled per-member-per-month payment is adequate for providers, and the role of telehealth in the implementation period. In addition, the evaluation team will explore whether any of the sites are serving American Indian birthing and parenting people through MaineMOM and, if so, were there any special considerations given to tailoring MaineMOM services to fit the needs of this population?

Endnotes

[1] National Institute on Drug Abuse. (2020). *Opioid summaries by State*. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state

[2] Agency for Healthcare Research and Quality. (2020). *HCUP fast stats: Map of neonatal abstinence syndrome (NAS) among newborn hospitalizations*. https://www.hcup-us.ahrq.gov/faststats/NASMap

[3] State of Maine, Department of Health and Human Services, Office of MaineCare Services. (2021). *MaineMOM*. https://www.maine.gov/dhhs/oms/about-us/projects-initiatives/maine-maternal-opioid-model

[4] KFF State Health Facts. (2021). *Medicaid and CHIP income eligibility limits for pregnant women as a percent of the Federal Poverty Level*. https://www.kff.org/health-reform/state-indicator/medicaid-and-chip-income-eligibility-limits-for-pregnant-women-as-a-percent-of-the-federal-poverty-level/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[5] Ibid.

[6] Ibid.

[7] The Plan of Safe Care is a federally mandated document that seeks to ensure the "supported and ongoing safety, well-being, and best possible long-term health and development outcomes for substance-exposed infants and families." See Maine.gov, Division of Disease Prevention. (2021). *Coronavirus disease 2019 (COVID-19), updates and information*. https://www.maine.gov/dhhs/mecdc/population-health/mch/plan-safe-care.shtml.

[8] CradleME is a referral system for all birthing families in Maine. See cradleME.org.

[9] The Institute for Health and Recovery's Integrated 5 Ps screening tool was designed specifically for pregnant women and is based on Dr. Hope Ewing's 4 Ps (Parents, Partner, Past and Pregnancy). Asking a pregnant woman about her use of alcohol in a nonthreatening manner offers an easy and effective tool for use in resource-challenged prenatal care offices. See https://pasbirt.pharmacy.pitt.edu/pluginfile.php/270/mod_page/content/41/5Ps_20180510_V3-0.pdf.

[10] CRAFFT is a series of six questions developed to screen adolescents for high-risk alcohol and other drug use disorders simultaneously. See https://www.masspartnership.com/pdf/CRAFFTScreeningTool.pdf.

Maryland MOM Model In Brief

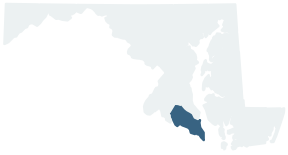
Approximately 90 percent of the drug overdose deaths in Maryland in 2018 were related to opioid use.[1] In St. Mary's County, the MOM Model pilot location, 33 opioid-related deaths occurred in 2020.[2] St. Mary's County is a small, rural county that comprises a total area of 764 square miles and has a population of about 113,000 residents. The county had the greatest difference in opioid-related deaths in the state when comparing the first quarters of calendar year 2020 and 2021, increasing from 3 opioid-related deaths in 2020 to 8 in 2021.[3]

What are the Goals of Maryland's MOM Model?

Maryland's Department of Health (MDH) and the state's managed care organizations (MCOs) seek to improve the quality of care for

Geographic Scope

St. Mary's County



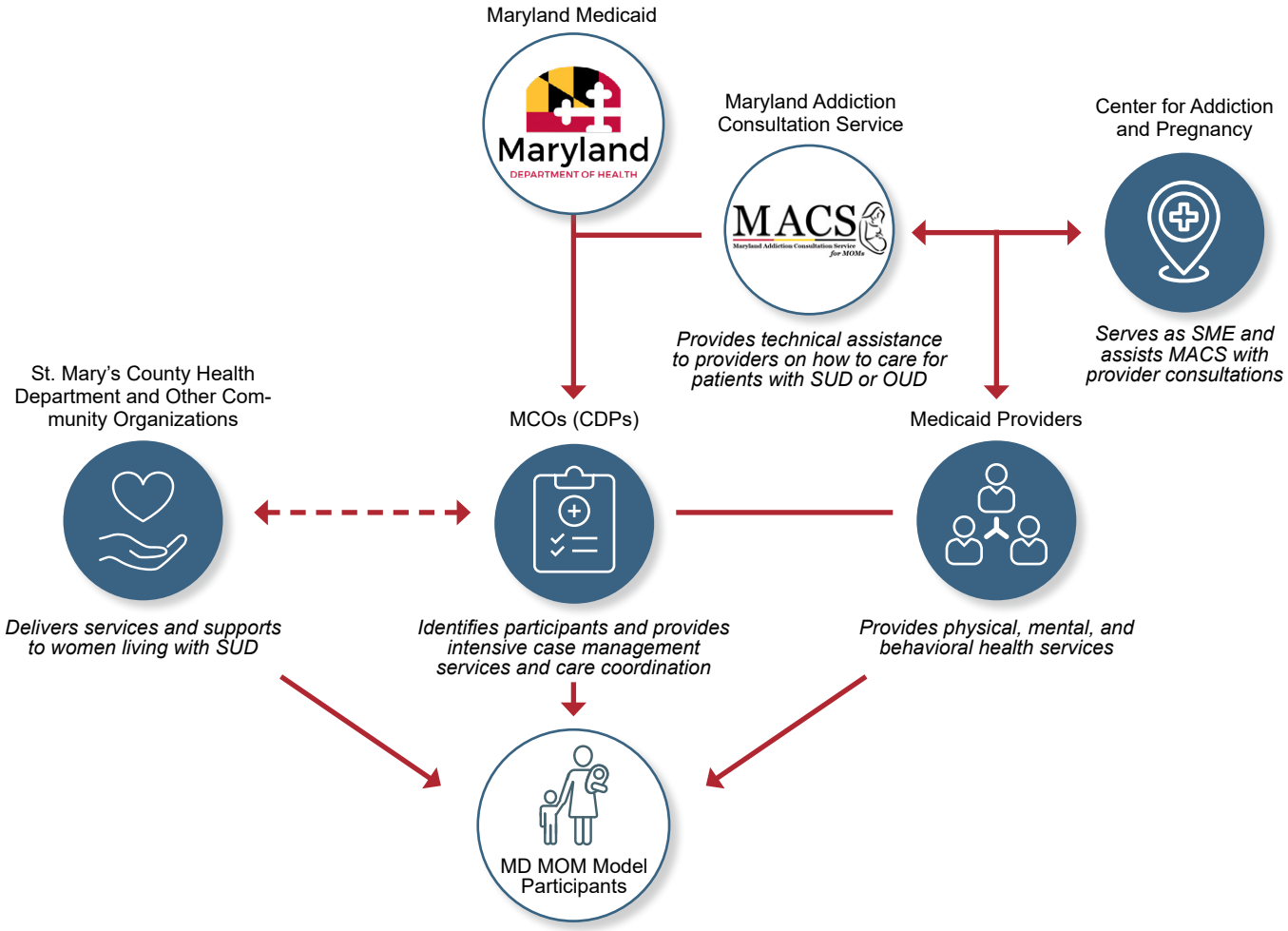
Urbanicity

rural

Anticipated Enrollment/ Population of Interest

30 beneficiaries per year in pilot

Key Model Partners



pregnant and postpartum Medicaid beneficiaries with opioid use disorder (OUD). They also seek to improve health outcomes for infants by reducing the incidence and severity of neonatal abstinence syndrome while simultaneously reducing stays in the neonatal intensive care unit.

Considering the MCOs' long history working with the MOM Model target population, MDH designed an approach that would not change practice workflow. Rather, the approach is to enhance the services MCOs already deliver by adding intensive case management and care coordination and increasing data-sharing capabilities among MCOs, the behavioral health administrative services organization (ASO), and healthcare providers through the Chesapeake Regional Information System for our Patients (CRISP) system.

Medicaid Context

Maryland's Medicaid program contracts with MCOs for the delivery of most Medicaid care. MCOs participating in HealthChoice (Maryland's statewide Medicaid-managed care program) will receive a per-member per-month payment for their MOM Model members to provide a set of enhanced case management services, standardized social determinants of health screenings, and care coordination.[4] The MOM Model does not change funding strategies for the treatment of pregnant Medicaid beneficiaries with OUD and their infants.

Pre-Implementation Activities and Program Features

Partnership building. The Maryland MOM Model is built on established relationships between MDH and nine participating Medicaid MCOs. MDH worked closely with the MCOs throughout the model design and implementation phase. The state asked MCOs to indicate their interest in the MOM Model during the application stage and sought their input in the model design. MDH also consulted with the MCOs to inform the county selection process for the more limited pilot approach.

Influence of COVID-19

MDH indicated the 6-month delay in the implementation of the MOM Model aligned well with Maryland's transition funding period and enabled them to postpone their budget request for the MOM Model from state fiscal year 2022 to 2023.

Regarding changes made to the delivery of care, MDH indicated many providers in Maryland implemented strategies for providing prenatal care via telemedicine and reported the strategies have been well used and may become permanent, pending support for recently proposed legislation.

Model pilot change. During the pre-implementation period, MDH did not have the infrastructure needed to gather clinical information from providers across the entire state. MDH transitioned the Maryland MOM Model to a pilot in one county, St. Mary's County, rather than using a statewide model. While the county is rural and doesn't represent the diversity of a state with urban, suburban, and

rural communities, a key factor in selecting the county was the St. Mary's County Health Department's Strong Beginnings program which provides intensive case management services for people of reproductive age who are facing issues or have needs related to behavioral health, including mental health and substance use concerns for themselves or a partner. [5] Many beneficiaries eligible for the MOM Model are served by a local Strong Beginnings program.

The pivot enabled the state to better align their data collection and reporting capabilities with MOM Model data requirements, with hopes to scale to other counties over time. The pivot was beneficial in finalizing model design, developing a contracting process for MCOs and local health departments, and preparing MCOs for data reporting. MDH is exploring how it will expand its MOM model statewide.

Data system. MDH invested pre-implementation resources to enable the organizations involved in the beneficiaries' care—MCOs, healthcare providers, and the ASO—to share data on the MOM Model beneficiary through CRISP. The sharing of data will support early screening and identification of pregnant people with OUD and care coordination on behalf of enrollees. MDH also built a data dictionary identifying data sources, established a data collection process, and designed a data submission system.

Provider training. Recognizing the shortage of providers able and willing to provide medication-assisted treatment (MAT) to pregnant and parenting beneficiaries, MDH contracted with Maryland Addiction Consultation Service (MACS) to deliver technical assistance to providers by offering training sessions and hosting a "warmline," a telephone center offering real-time consultation to providers on how to treat pregnant and postpartum people with OUD. MACS contracted with the Center for Addiction and Pregnancy at the Johns Hopkins Bayview Medical Center to bring maternal subject matter expertise to its technical assistance services. The provider training element of the Maryland MOM Model will launch statewide, even though the program is implemented only in St. Mary's County at this time.

Key Program Features

Recruitment. Maryland will take a "no wrong door" approach for enrollment of eligible beneficiaries. The state hopes to enroll up to 30 beneficiaries across seven MCOs operating in St. Mary's County during the first year of implementation. Community partners are expected to refer eligible people to the program. Data mining through MCO and the ASO's records is another approach that can identify potential MOM Model beneficiaries, and the Maryland Prenatal Risk Assessment is expected to be an additional referral source. In calendar year 2023, MDH plans to fund historically-black colleges and universities in Maryland to conduct a study on increasing Black, Indigenous, (and) People of Color

(BIPOC) in the MOM Model with consideration given to rural populations to inform toolkits for providers and community-based organizations.

Intake. Eligible beneficiaries who express interest in the MOM Model will attend a meeting with a designated case manager to review components of the program and enroll. After a beneficiary is enrolled, the case manager will review informed consent criteria and work with the individual to develop a care plan. If a patient is not connected to a behavioral health provider, the case manager will facilitate enrollment with a MAT provider or mental health/ substance use therapist.

Model services. Though services offered to are also available to other MCO Medicaid members as part of their standard of care, intensive case management and support from a peer recovery specialist have been added to the MOM Model. Informants believe these pieces of the model are essential for success.

Care setting. Beneficiaries will receive care from providers who are in-network with any of the seven MCOs active in St. Mary's County. Most participants are expected to deliver at MedStar's St. Mary's Hospital, the only hospital in the county with a labor and delivery unit. Those requiring maternal fetal medicine specialist care due to high risk pregnancies are often referred or transferred to a MedStar facility or other hospital in the Washington, DC, area. Transportation is likely to be a challenge for some beneficiaries in St. Mary's County given the rurality of the county and the lack of reliable transportation resources available to them.

Care coordination. Designated nurse care managers or clinical social workers will provide care coordination to MOM Model beneficiaries. Case managers will help ensure patients receive appropriate referrals to treat their OUD effectively (e.g., behavioral health services). They will also communicate with beneficiaries and providers to ensure beneficiaries can attend their medical appointments consistently.

Continuing treatment. The Strong Beginnings program in St. Mary's County will continue providing services similar to those offered under the MOM Model to pregnant and parenting people who are ineligible to participate in the MOM Model, including uninsured and underinsured people. For eligible pregnant Medicaid beneficiaries who choose not to enroll in the MOM Model, MCOs will continue to monitor their members' care provision, although intensive case management services offered through the model will not be provided.

Model sustainability. MDH amended MCO contracts to include the MOM Model and plans to make use of section 1115 coverage when transition funding expires. Maryland's HealthChoice section 1115 waiver renewal will build in federal matching for the MOM Model PMPM beginning July 1, 2022. Because the MOM Model is not statewide and is limited to the Medicaid managed care population, the state does not plan to submit a State Plan Amendment to sustain the model.

Early Lessons Learned

Anticipated Outcomes

Key informants shared a similar outlook on the outcomes the MOM Model could achieve. These include improving quality of care and better coordination of care, reducing stigma providers may attach to the SUD patients they treat, earlier prenatal care and OUD treatment for eligible pregnant beneficiaries, and reduced cost of care from pregnancy through the infant's first year. Peer recovery specialists are the element of the model with the greatest potential to yield positive outcomes.

> Hopefully in 10 years, [providers and MCOs] won't remember a time when this wasn't a key part of their prenatal care, and this will just be one of the things you provide for a healthy birth, whereas not through a special program.

Anticipated Successes

MDH's MOM Model team highlighted the transition from a statewide model to a county-specific pilot as a pre-implementation year success. Even though the transition was unforeseen, it went smoothly and will help MDH and MOM Model partners launch a strong model with communication among all stakeholders in St. Mary's County. A respondent gave MDH "huge credit" for their agility in pivoting to a model that aligns with the MOM Model's objectives for greater coordination between mental health and physical health providers. One MCO-affiliated informant cited their relationship with St. Mary's County Health Department as a major success and is "very excited about building relationships with the local health department, especially with the peer support specialists."

Anticipated Challenges

Data collection presented the most significant challenge for MDH during the pre-implementation period. Building an information technology platform in CRISP to house required beneficiary and monitoring data took time. The pivot to a county-specific pilot addressed this challenge, in part, by reducing the number of providers the MOM Model team needed to source data from to fulfill the reporting requirements. Key informants also expressed concern about coordinating with other model partners efficiently. Challenges may arise when working across partners (e.g., local health department, department of social services), though these issues will likely resolve over time after the model is in operation.

Conclusion

In the next round of Maryland case study data collection, the evaluation team will examine contextual factors (e.g., state trends in SUD/OUD use, drug screens at birth, pandemic-related factors), strategies for addressing equity issues, and how implementation has proceeded thus far. Key issues to be explored include: St. Mary's County Department of Health's role, status of MCO learning collaboratives, effectiveness of MCO's care coordination data system and the provider training through the MACS program, and plans to expand the MOM Model to other counties.

Endnotes

[1] National Institute on Drug Abuse. (2020). *Maryland: Opioid-involved deaths and related harms*. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state/maryland-opioid-involved-deaths-related-harms
[2] St. Mary's County Health Department. (2021). *Opioid data: Opioid dashboard*. https://smchd.org/opioid-data/
[3] Maryland Opioid Operational Command Center. (2021). *2021 first calendar quarter report: January 1, 2021–March 31, 2021*. https://beforeitstoolate.maryland.gov/wp-content/uploads/sites/34/2021/06/OOCC-Q1-2021-Quarterly-Report.pdf
[4] Maryland Department of Health. (2021). *DRAFT Maryland HealthChoice Program section 1115 waiver renewal application*. https://health.maryland.gov/mmcp/Documents/1115%20Waiver%20Medicaid/Maryland%20Draft%201115%20Renewal%20Application%202021_5.4.21.pdf
[5] See a description of the program on St. Mary County Health Department's website at https://smchd.org/strongbeginnings/.

New Hampshire MOM Model In Brief

In 2018, the State of New Hampshire ranked third nationally in the rate of opioid-involved overdose deaths in the United States, with a rate of 33.1 deaths per 100,000 residents.[1] Among the first states to be hit hard by the opioid epidemic, New Hampshire has observed dramatic increases in the number of people admitted to state-funded treatment programs for heroin and prescription drug use in recent years, including people who could become pregnant. In 2018, the State experienced a rate of 4.5 percent of births with documented exposure to opioids. In the Greater Manchester region, the rate of infants experiencing neonatal abstinence syndrome or other evidence of opioid exposure was 5.7 percent.[2]

Geographic Scope

unspecified

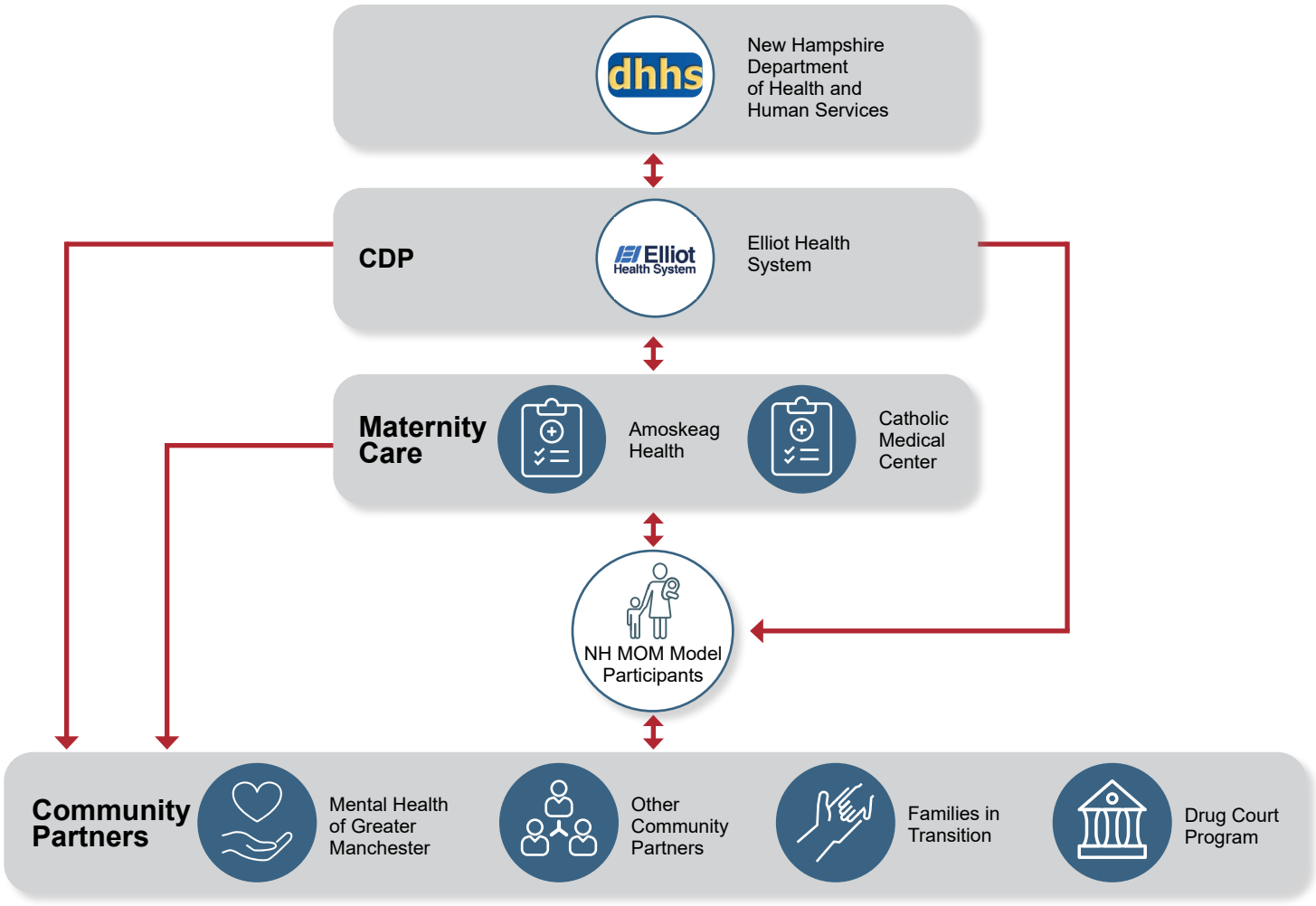
Urbanicity

mixed urban and rural

Anticipated Enrollment/ Population of Interest

250–300 pregnant and postpartum participants per year

Key Model Partners



What are the Goals of New Hampshire's MOM Model?

In response to the opioid crisis and record high rates of prenatal exposure to opiates in the State, the New Hampshire Department of Health and Human Services and several providers saw the MOM Model as an opportunity to strengthen maternity care and behavioral health integration in the Greater Manchester region. New Hampshire's MOM Model builds on the region's opioid misuse prevention and treatment efforts for those who are pregnant and postpartum and focuses on establishing systems to facilitate coordination across prenatal care, OUD care, and other social support services.

Medicaid Context

New Hampshire covers adults up to 138 percent of the Federal Poverty Level (FPL) and pregnant people up to 196 percent of the FPL. Pregnant beneficiaries are covered up to 60 days postpartum and are then determined eligible for either traditional Medicaid or Affordable Care Act Marketplace coverage.

Pre-Implementation Activities and Program Features

Relationship building. Informants shared that providers caring for people with substance use disorders (SUDs) in the Manchester area have a history of working collaboratively. The State's MOM Model aims to help formalize those relationships. At the time of the site visit, the State's care delivery partner, Elliot Hospital, had received commitments from 11 provider and community agencies to participate in New Hampshire's MOM Model and was recruiting additional partners. Amoskeag Health, a federally qualified health center, and Catholic Medical Center (CMC), a hospital system offering addiction services for pregnant people through their Roots for Recovery program, will serve as provider sites for the MOM Model. Monthly partner meetings are helping to foster those relationships.

Influence of COVID-19

COVID-19 spurred rapid expansion of the use of telehealth in New Hampshire. Except for those in some small practices, most providers had the capacity to adapt and employ virtual technologies to engage with their patients. Telehealth visits reportedly helped many, especially those with children, keep appointments and continue to receive care during quarantine. Behavioral health providers, in particular, had success in continuing to engage with their clients and support them in recovery. Still, providers described common limitations with telehealth, including problems accessing virtual care for people without broadband internet access or devices, privacy concerns for those attending visits from home, and the inability to gain a complete sense of how their patients were doing. For MOM Model implementation, the 6-month extension of the pre-implementation period resulting from COVID-19 provided extra time for Elliot Hospital to develop its information technology (IT) system and data reporting templates and to further develop and nurture partnerships among provider and community partners.

Integrated data system. The backbone of New Hampshire's MOM Model is the creation of an integrated data system that will facilitate communication, promote information sharing and care coordination, and offer accessibility to all authorized partners such as healthcare and community-based providers. New Hampshire recently contracted with a third-party vendor that supports "closed-loop referrals"[3] and connects healthcare and community-based organizations to coordinate screening, referral, care, and more. While the integrated data system is being developed, the care delivery partner has provided community and provider partners with data templates to facilitate the collection and reporting of data. New Hampshire has indicated that it plans to use claims data for some participant-level data submission requirements. For the first quarter submission (October 2021), however, the State did not rely on claims at all.

Plans of Safe Care. In New Hampshire, prenatal care providers are responsible for establishing Plans of Safe Care, but there are concerns not all those who need to see the plans—such as delivery providers and partners working with families to support their recovery—have access to them when necessary. The New Hampshire MOM Model is extending prior work with the New Hampshire Department of Health and Human Services to establish Plans of Safe Care and ensure the consistent development and use of these plans.

Key Program Features

Recruitment. The awardee and Elliot Hospital plan to ensure beneficiaries have the opportunity to enroll in the program through any of the partners—essentially establishing a no wrong door approach—to "make sure there are as many entry points as possible." They intend to print materials that will be distributed around the community and will use social media to promote the program. Health and community-based providers plan to offer the program to any person they encounter who is pregnant and has OUD.

Intake. When engaging potential participants, provider sites are expected to conduct screenings on social determinants of health in addition to those required by the Center for Medicare and Medicaid Innovation. The State expects enrollment numbers to be approximately 250–300 beneficiaries annually.

Model services. The New Hampshire MOM Model does not involve adding any additional services to Medicaid. In Manchester, most Medicaid beneficiaries receive prenatal care from either Amoskeag Health or CMC. Both practices offer comprehensive prenatal care and medication-assisted treatment (MAT) for patients with OUD. Many people who receive prenatal care at Amoskeag and deliver at Elliot Hospital, however, receive methadone maintenance treatment from another site in the area not affiliated with the MOM Model. Interviewees expressed concern that this could lead to discontinuities in care and

challenges at Labor and Delivery in setting up plans of safe care and support during the postpartum period. Peer counseling services are also available to women with SUD who are enrolled in Medicaid.

Care setting. Amoskeag Health has four sites in Manchester, each offering a full array of services, including adult and pediatric primary care, obstetric services, behavioral health, and MAT. They also have a prenatal SUD program, which has a current caseload of approximately 40 and is run by a clinical social worker who is also a certified recovery support worker. CMC's St. Mary's Bank Pregnancy Care Center (PCC) offers prenatal care, weekly recovery groups, and MAT in one location attached to the hospital. PCC offers addiction services through the Roots for Recovery program.

Care coordination. Nearly all pregnant Medicaid beneficiaries are enrolled in managed care. Care management is a feature of the Medicaid managed care contract terms for high risk pregnancy. Care coordination occurs at specific sites. For instance, one site has a care coordinator focused on pregnant people with SUD, one site is hiring a community health worker to focus on care coordination, and another provides care coordination services as an integral part of its program.

Continuing treatment. New Hampshire plans to follow beneficiaries enrolled in the MOM Model for 2 years but had not extended postpartum Medicaid eligibility at the time of the site visit. As a result, some enrolled in the program may lose eligibility after 60 days postpartum if they no longer qualify for Medicaid. The State has not indicated how many beneficiaries they expect to be affected by this policy.

Model sustainability. Because no new services or eligibility groups are being added to New Hampshire's MOM Model, the State does not plan to submit a State Plan Amendment to sustain the model. Instead, they are enhancing their current opioid misuse prevention and treatment efforts for beneficiaries who are pregnant and postpartum, so no additional funding should be necessary when the MOM Model award ends.

Early Lessons Learned

To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

Interviewees shared a wide range of views on what they believed, or at least hoped, the MOM Model would accomplish in New Hampshire. Primary for many was hope that the program would result in improved health outcomes for those who enrolled and their infants. After one person acknowledged that improved outcomes would only come "if they get it right," she and others described the characteristics of "it" as a more effective and integrated system of care for pregnant and parenting people with OUD, "where women feel supported" and "are empowered to have their babies and have control." They envision a new system that will provide "easier access to services and systems … [where] referrals and relationships will be easier and quicker."

Healthcare and behavioral health providers all stressed the importance of reducing stigma surrounding the receipt of care and their desire to create a system where "it is okay to be in touch, to get treatment … that it is a safe place to come." Others expressed excitement over "the big opportunity to reach more moms" and their desire to become "a resource … propping these moms up and putting the resources … behind them, around them, over them. … It is about building a community for these moms to feel supported and provide them with whatever they need."

Getting "it" right also holds the potential for reducing healthcare costs. Medicaid officials believe savings to the system will eventually accrue because of better infant outcomes, though they acknowledged that would likely be a long-term consideration.

Photovoice finding and caption from provider site visit

"Happiness is…"

The "Faces of Recovery" in Manchester are not all bleak. With support from local community agencies, family and peer supports, a successful and happy life in recovery is possible. "At-risk" families can and do thrive with the right supports and opportunities to succeed.

Anticipated Successes

Identified successes centered on both the positive partnerships being forged across Manchester's healthcare and behavioral health systems and the encouraging progress Elliot Hospital has made to develop the new IT system that will support more integrated care delivery. Community agencies and partners continue to meet with Elliot Hospital and seem "highly motivated and engaged." As word of mouth about New Hampshire's MOM Model has spread, Elliot Hospital continues to receive inquiries about the program from community organizations that want to learn more and get involved. Getting that word out and "the increased education around resources and

services that are available and how to access them" is one of the biggest successes thus far, in one official's opinion. With regard to the IT system, interviewees described a strong commitment among the partners to help develop and use the new system for information sharing and referrals.

Anticipated Challenges

Concerns about how coordination among partners will work and "what the IT system will look like," along with challenges with "making it work," balanced enthusiasm about the progress being made, with recognition there will be inevitable "bumps" along the way. One provider expressed anxiety over how staff will feel about serving the Model MOM population—their fears, potential judgements, and need for education to feel comfortable providing care for the population.

Conclusion

In the next round of case study data collection, the evaluation team will track several topics that emerged in the pre-implementation year case study. For instance, the team will examine progress on implementation of the New Hampshire MOM Model IT system, how it is being used by partners, and whether it is facilitating collaboration across providers. The team will also track the evolution of MOM Model partnerships and whether there have been any challenges or confusion regarding efforts by the MOM Model partners to coordinate care and care management services offered by all Medicaid MCOs in the State. The team will inquire about the role telehealth is playing on an ongoing basis, and how plans of safe care are being implemented by MOM Model partners. Finally, the team will consider any challenges related to retaining and tracking participants postpartum, given that the State has not expanded postpartum Medicaid coverage.

Endnotes

[1] National Institute on Drug Abuse. (2020). *Opioid summaries by state*. https://www.drugabuse.gov/drug-topics/opioids/opioid-summaries-by-state
[2] These statistics are reported in the state's MOM application. The National Institute on Drug Abuse does not have current rates of neonatal abstinence syndrome for New Hampshire.
[3] A closed-loop referral secures the right resources for a patient at the right time, ensuring needs are met. The healthcare provider can send the patient to the appropriate follow-up care.

Tennessee MOM Model In Brief

Rates of both opioid overdose[1] and neonatal abstinence syndrome (NAS) in Tennessee are among the highest in the Nation.[2, 3] Tennessee's Department of Health found substance use contributed to 18 percent of all pregnancy-associated maternal deaths in 2017–2018.[4]

What Are the Goals of Tennessee's MOM Model?

Tennessee's Department of Medicaid Services (TennCare) and its care delivery partner Vanderbilt University Medical Center (VUMC) seek to better coordinate care for pregnant and postpartum people with opioid use disorder (OUD) and their infants. Tennessee's model aims to create an

Geographic Scope

2 sites for counties directly surrounding VUMC

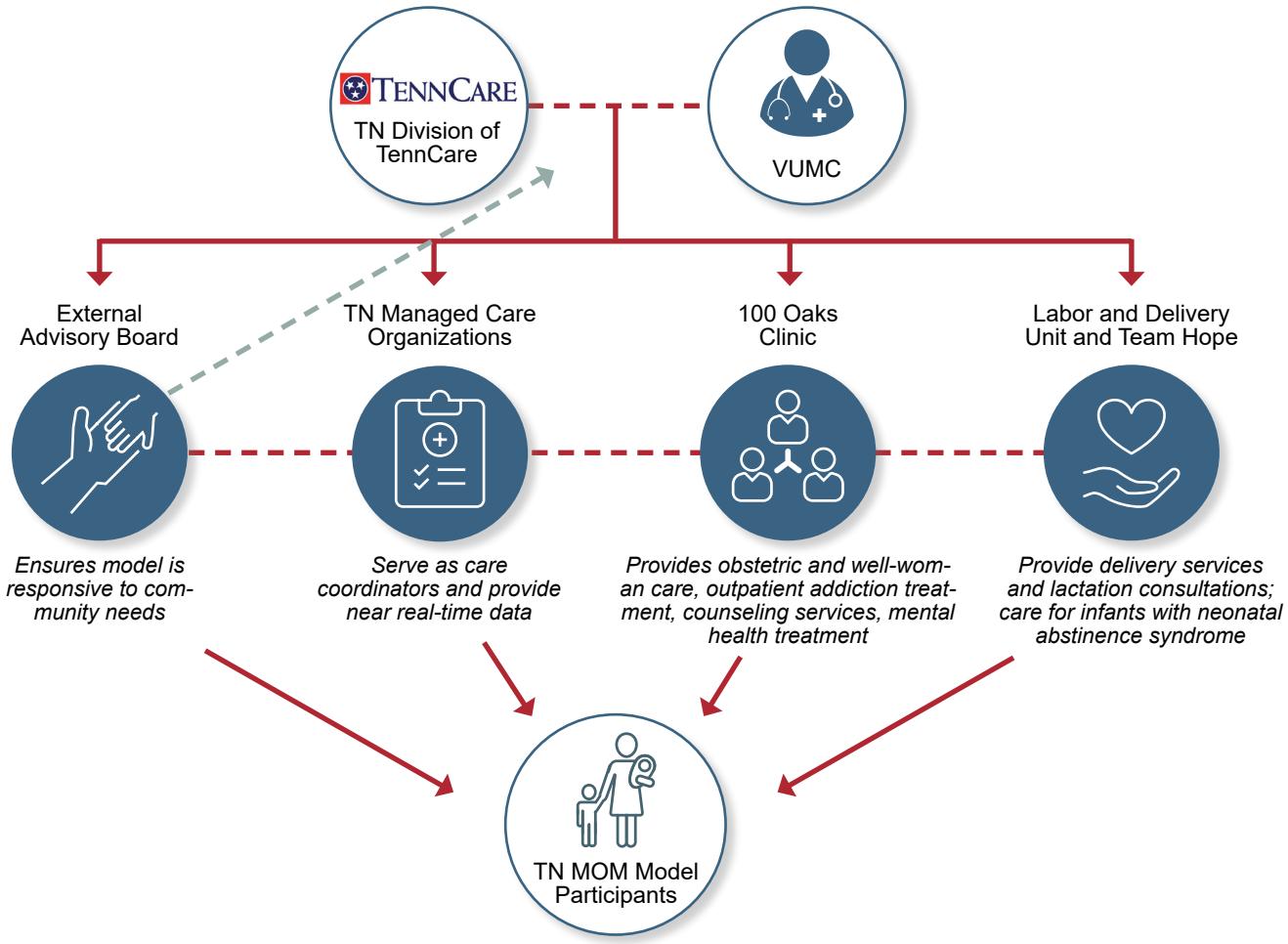
Urbanicity

urban, suburban, and rural

Anticipated Enrollment/ Population of Interest

300+ to be served annually

Key Model Partners



evidence-based, unifying program for pregnant people who receive treatment for OUD, therapies such as medication-assisted treatment (MAT), prenatal and postpartum care, and behavioral health services. Building on services in place through the Vanderbilt Maternal Addiction Recovery Program (VMARP),[5] the Tennessee Maternal Opioid Misuse (MOM) Model, named Firefly, has two provider sites and a network of partners.

Medicaid Context

TennCare administers Tennessee's 100 percent managed care Medicaid program, contracting with three managed care organizations (MCOs) that provide inpatient and outpatient substance use disorder (SUD) treatment benefits and counseling for SUDs.

Pre-Implementation Activities and Program Features

Partnership building. TennCare has partnered with VUMC's Center for Child Health Policy, which helped launch VUMC's Team HOPE, a program that cares for opioid-exposed infants in the hospital after delivery and people in the immediate postpartum period. VUMC's outpatient clinic for prenatal and postpartum support for people with OUD is the 100 Oaks Outpatient Clinic. Firefly brings these entities together into one program and adds components to offer a suite of services to care for those with OUD and their infants during the prenatal, delivery, and postpartum periods. An external advisory board composed of state divisions, regional support programs, and people with lived experience with OUD advises on these efforts quarterly.

Data integration. During the pre-implementation period, the Firefly team invested time, effort, and resources in data integration to facilitate easy coordination of care and services across providers. Vanderbilt hired a full-time Firefly data project manager to address data integration needs. The team has spent 9 months updating the Epic platform and considering data system needs and the clinical workflow of when and where certain data are collected.

Influence of COVID-19

The extended pre-implementation period supported provider efforts to establish the services and staffing necessary for implementation. Both Medicaid agency staff and providers indicated the initial pre-implementation timeline would have been challenging to meet even without the additional challenges of the pandemic. However, they found the pandemic has reduced pregnant and postpartum person's access to OUD treatment in Tennessee. At least one provider indicated access to and the use of medication-assisted treatment and other OUD treatments have been steadily increasing as more people get vaccinated.

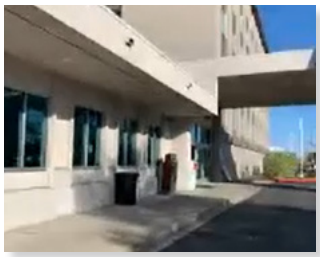
Program Features

Recruitment. Firefly aims to enroll 150–300 pregnant people during the first year of implementation and then approximately 300 annually. Participants will learn of and enroll in the program through several means, with MCOs' review of billing codes for services received and pharmacy fills for MAT as the most common method of patient identification and referral. Regional pain management clinics, community-based organizations serving persons with and recovering from OUD, and emergency departments are also expected to refer clients.

Intake. The primary goal at the intake appointment is to engage pregnant or parenting people, get to know them, assure them they will be safe and cared for in a "judgment-free zone," and lay a foundation to keep them engaged during the program. Providers highlighted various strategies to address health equity considerations and the impact of stigma on pregnant and postpartum people with OUD. Clinical managers, social workers, and peer recovery specialists must complete trainings developed by the Tennessee Initiative for Perinatal Quality Care upon being hired. These trainings are likely to cover trauma-informed care, implicit bias, OUD and pregnancy, and other topics related to health equity and reducing stigma. Care delivery partner providers reported their data integration efforts facilitate this process, and patients have minimal paperwork to complete during this stage, which helps patients focus on personal interactions with staff.

Model services. The Firefly program intends to keep prenatal care and addiction recovery services co-located and easily accessible. When VMARP began in 2011, this collaborative, co-located care was built around obstetric services with adjunctive psychiatric care. The growth and evolution of VMARP and the services it provides have been evidence focused, and the Firefly program is seen as the next step in that evolution.

Care setting. The 100 Oaks Clinic, where most care is co-located, is in a shopping mall with ample parking, a hospital shuttle stop and bus stop nearby, and a dropoff area near the front entrance that enhances access for patients with disabilities. The clinic is about a block from a major highway and residential housing. Several departments are in the clinic, and the variety of patients treated does not outwardly identify people at the clinic as those with OUD. The waiting area is open and bright, and exam rooms are clean and well lit.



View of entrance from hospital shuttle stop

Care coordination. As of April 2021, the Firefly team had not assigned staff to specific care coordination roles, although staff agreed much of this work will fall to peer recovery specialists. Firefly is hiring peer recovery specialists and a social worker who will supervise these specialists and their caseloads. The peer recovery specialist, a person who has lived

experience with pregnancy and parenting with OUD, will serve as a trusted contact, and as one interviewee called it, a "concierge" through all aspects of the Firefly program. Each peer recovery specialist will have a caseload of 15–30 beneficiaries.

Continuing treatment. If a Firefly participant loses Medicaid coverage at 60 days postpartum, they will be eligible for Tennessee's Substance Abuse and Mental Health Block grant funding to continue treatment with Firefly through 1 year postpartum.

Model sustainability. The state plans to sustain MOM Model services through contracts with TennCare's three MCOs—BlueCare of Tennessee, Amerigroup (Anthem), and UnitedHealthcare Community Plan—and will begin contract negotiations with these MCOs during the first year of implementation.

Early Lessons Learned

To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

Key informants agreed the co-location and coordination of physical and mental health services, along with the program's focus on the special behavioral health needs of pregnant and postpartum people with OUD, would lead to a higher likelihood of long-term recovery and better outcomes for parents and infants. Firefly services extend beyond clinical care for pregnancy and postpartum care to integrate substance use, and behavioral health treatment.

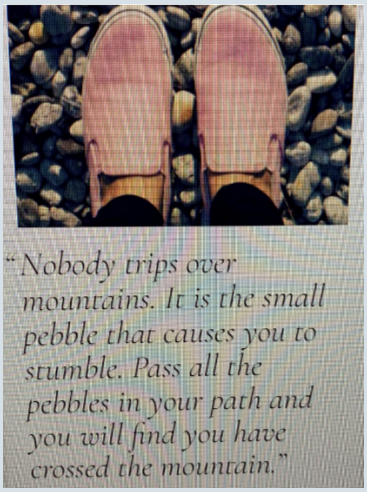
> I think if we do this right, and I think we're on track to do this, where it's seamlessly viewed that there's not one silo of physical health or behavioral health or addiction; instead it's whole-woman care and whole-family care.

Early Successes

The Firefly team is proud of its cohesive and collaborative efforts. Key informants noted success of Firefly's early integration of data collection and reporting efforts; patient files

can be shared across providers, and data can also feed into model-required reporting metrics. The team was confident it would be ready to begin MOM Model enrollment on July 1, 2021, with nearly all project components in place except onsite childcare. Key informants indicated confidence in program rollout because they had incorporated patient input in the program to ensure it meets patient needs. Program leaders were working with MCOs to build services into the model from the ground up before Firefly's first patient was active. Several informants reported co-location of services will be a major strength of the program.

Photovoice finding and caption from provider site visit



"Addiction doesn't exist alone. Our clients obtaining mental health services have many pebbles under their feet."

Firefly services extend beyond clinical care for pregnancy, postpartum care, substance use, and behavioral health treatment. Service providers recognize that transportation, childcare, housing, food security, and personal safety are barriers pregnant people face when trying to obtain behavioral health services for their substance use. Providers indicated that co-locating comprehensive wraparound services is an integral part of program success. TennCare's incorporation of solutions to these barriers in the model approach "shows that our state Medicaid agency really understands that there is a better way to do things and understands that there are barriers that prevent people, particularly [those who are] pregnant... from being successful in their recovery, and that impact a lot of health consequences downstream."

- Onsite social workers keep food, infant formula, diapers, and clothing on hand for people who need these necessities. Several providers identified transportation as a barrier to consistent patient treatment.
- The Firefly program works with TennCare to coordinate transportation for patients who need it to receive program-related care, mostly through shuttle service, or in emergency situations, reimbursement from a car service.

Providers now know all prenatal and postpartum appointments, including OUD treatments, may be classified as "urgent care visits," which means Medicaid beneficiaries do not have to schedule transportation with TennCare 72 hours in advance.

Firefly services will educate patients on these options and how to use them. Adding peer support staff to guide MOM Model participants through the early stages of the model will likely help providers efficiently deliver these services and retain those in treatment.

Early Challenges

Funding for some proposed program components will not be covered by Medicaid, including childcare and group lactation support meetings. This lack of funding continues to be a challenge that providers feel may affect participants' ability to meet all steps in their care plan. One key informant posed this question:

> This is one of the challenges I have overall with MOM—what if childcare is the most cost-effective thing that helps us prevent relapse and keeps women engaged?

Photovoice finding and caption from provider site visit

"Bus stop outside the hospital. No one is waiting for the bus, but there is evidence (e.g., empty beer box, empty cans scattered around) of life happening here."

Conclusion

In the next round of Tennessee case study data collection, the evaluation team will examine contextual factors (e.g., State trends in SUD/OUD, drug screens at birth, other pandemic-related factors), strategies for addressing equity issues, and how implementation proceeded. Key issues to be explored include: VUMC's role as the care delivery partner; changes in contracting between Medicaid and the State's MCOs to include the MOM Model; and whether the role of peer recovery specialists and their interactions with participants corresponds with MOM Model plans.

Endnotes

[1] Centers for Disease Control and Prevention. (2021). *Drug poisoning mortality, by state and by race and ethnicity: United States 2019*. https://www.cdc.gov/nchs/data/hestat/drug_poisoning_mortality/drug-poisoinging-mortality.htm

[2] Warren, M. D., Miller, A. M., Traylor, J., Bauer, A., & Patrick, S. W. (2015). Implementation of a statewide surveillance system for neonatal abstinence syndrome: Tennessee, 2013. *Morbidity and Mortality Weekly Report, 64*(5), 125–128.

[3] Patrick, S. W., Davis, M. M., Lehmann, C. U., & Cooper, W. O. (2015). Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *Journal of Perinatology, 35*(8), 650–655.

[4] Tennessee Department of Health. (n.d.). *2020 Tennessee maternal mortality annual report*. https://www.tn.gov/content/dam/tn/health/documents/mch/MMR-Annual-Report-2020.pdf

[5] Vanderbilt will officially change the name VMARP to Firefly in the first year of implementation. This report refers to Tennessee's MOM Model and the VMARP program as Firefly.

Texas MOM Model In Brief

In Texas, drug overdose was the leading cause of maternal death from delivery to 365 days postpartum in 2012 to 2015, accounting for 17 percent of all maternal deaths. Of the maternal deaths due to drug overdose, opioids (either alone or in combination with other drugs) were found in 58 percent cases.[1, 2] The rate of infants exposed to drugs in utero has doubled since the mid-2000s and in 2016 impacted 9.4 of every 1,000 births in Texas. Nearly 35 percent of those substance exposed newborns had a diagnosis of neonatal abstinence syndrome.[3] The 2016 rate of prenatal drug exposure and neonatal abstinence syndrome combined for Harris County, where Houston and the MOM Model sites are located, is reported as approximately 6.6 of every 1,000 births.[4]

Geographic Scope

1 site in Houston

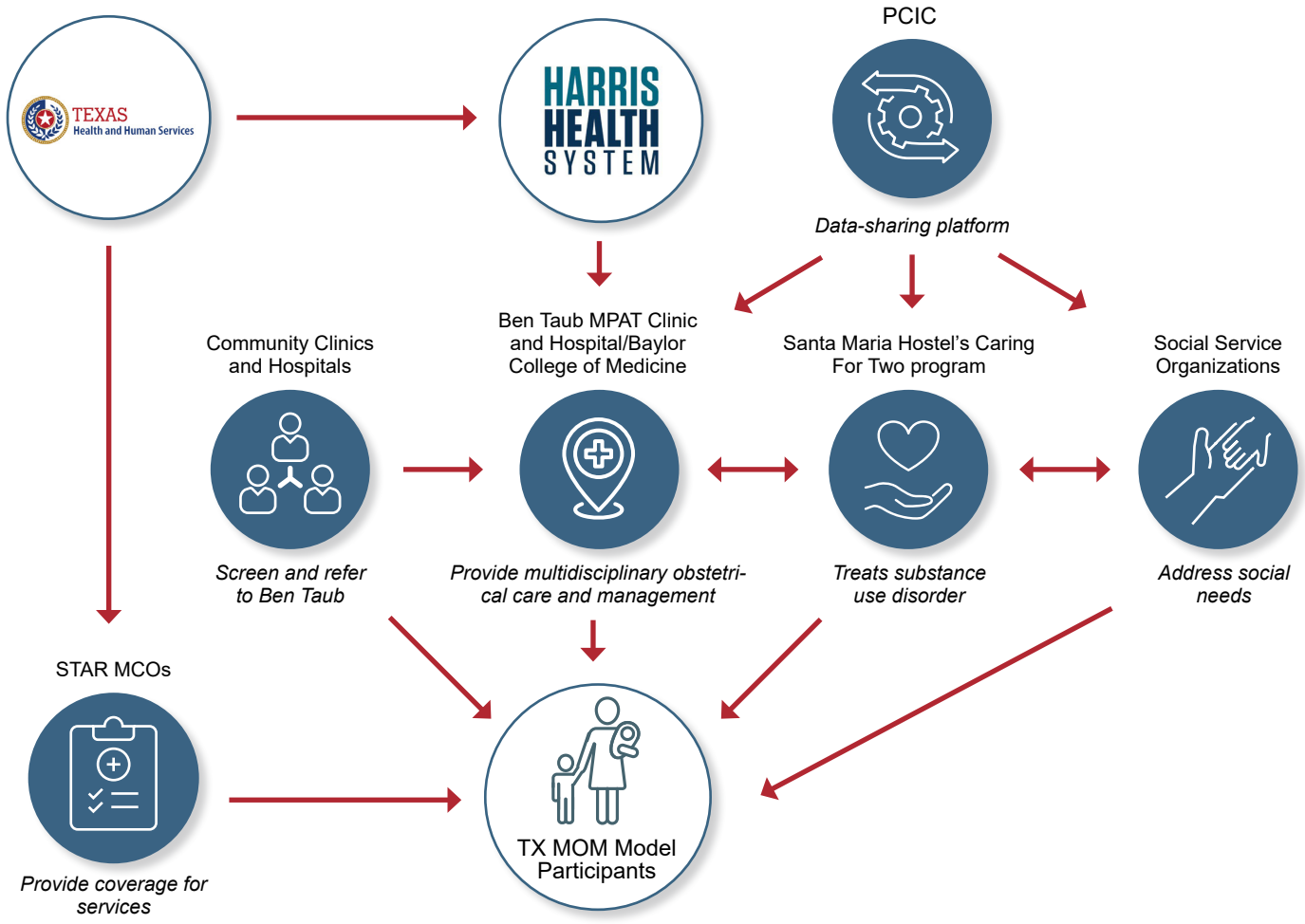
Urbanicity

urban

Anticipated Enrollment/ Population of Interest

200 served annually

Key Model Partners



What Are the Goals of Texas's MOM Model?

The MOM Model in Texas builds on an existing maternal perinatal addiction treatment (MPAT) clinic at Ben Taub Hospital in Houston. The model will provide pregnant and postpartum people with opioid use disorder (OUD) comprehensive physical, mental, and behavioral healthcare and substance use disorder (SUD) treatment, while also linking them to social services. By piloting the MOM Model in Houston, the Texas Health and Human Services Commission (HHSC) expects to develop sustainable methods to decrease maternal morbidity and mortality for women with OUD for expansion throughout the State of Texas.

Medicaid Context

In Texas, pregnant women are eligible for Medicaid with incomes up to 198 percent of the Federal Poverty Level. They remain covered for 60 days postpartum and most are enrolled in Medicaid managed care organizations (MCOs) known as STAR MCOs. Five STAR MCOs serve the Houston region. Texas has not expanded Medicaid and outside of pregnancy-related eligibility, parents, and related caretakers are eligible for Medicaid coverage up to 17 percent of the federal poverty level. For up to 12 months postpartum, women may also receive care for mental health services (including postpartum depression), cardiovascular and coronary conditions, SUD counseling, medication-assisted treatment (MAT), peer specialist services, diabetes care, and asthma care through Healthy Texas Women Plus. Medicaid financing for the MOM Model will occur through contracts with the STAR MCOs. The Healthy Texas Women program provides family planning services and care for some chronic conditions. Postpartum women whose pregnancy-related Medicaid coverage concludes may be eligible to receive additional behavioral health benefits for up to 12 months through Healthy Texas Women.

Influence of COVID-19

Ben Taub and Santa Maria staff described several challenges related to COVID-19. The MPAT clinic had to repurpose some of its rooms for COVID-19 testing and postpone trainings on best practices for Screening, Brief Intervention, and Referral for pregnant women with SUD because of limits on group gatherings. The hospital discontinued obstetrical unit tours, group prenatal visits, and group therapy sessions, though breastfeeding groups have resumed with up to eight participants. The number of volunteers at the hospital also decreased, including those who cuddle substance-exposed newborns. However, informants noted some silver linings, including the opportunity to incorporate telemedicine flexibilities into the Model. Remote outpatient services that began during the pandemic have increased access for beneficiaries in rural parts of Texas and others with transportation or childcare challenges. Those who transitioned from residential treatment can now connect with their support groups, outpatient treatment, or coaches over the phone.

Pre-Implementation Activities and Program Features

Partnership building. HHSC awarded a subgrant to Harris Health, the public health system for Houston and surrounding areas of Harris County, to serve as the care delivery partner for the Texas MOM Model. Harris Health implemented its MOM Model in a single site, Ben Taub Hospital. The hospital, staffed by providers from Baylor College of Medicine and making use of a close relationship with a residential substance use disorder treatment facility, Santa Maria Hostel, further specialized the MPAT clinic by dedicating one clinic day a week to the MOM Model population and pregnant people with OUD. Santa Maria's Caring For Two program focuses on pregnancy and postpartum interventions and their Bonita House support services, healthcare navigation, health education, parent coaching, and care coordination. Patient Care Innovation Center (PCIC), another partner, is designing a data collection system specific to the MOM Model. HHSC began holding calls with MOM Model partners in 2019 when applying for MOM Model funding. These calls increased to weekly throughout the pre-implementation period.

Data-sharing capabilities. HHSC, Harris Health, and PCIC diagramed data collection and reporting plans to meet Centers for Medicare & Medicaid Services' requirements for the MOM Model. Model participant data will flow from Harris Health's Electronic Medical Records (EMR) system to PCIC. Within PCIC, providers will enter data required for the MOM Model that the EMR systems cannot generate. These data will flow back to the EMR system, where they will be visible to the participant's medical team. Eventually, the MOM Model team may be able to use PCIC to track case management, with appropriate fields visible to medical and social services providers.

Trainings. Because certified peer specialists are eligible to bill Medicaid but peer recovery coaches are not, HHSC, Santa Maria Hostel, and Harris Health developed an approach to train Santa Maria's peer recovery coaches as certified peer specialists. Santa Maria staff reported conducting initial trainings with the Ben Taub staff on best practices for MAT, reducing stigma, and resources available at Santa Maria.

Key Program Features

Recruitment. Most of Ben Taub's MPAT clinic patients are referred from Santa Maria Hostel. Others self-refer or are referred from Texas Child Protective Services, community clinics, emergency departments, other inpatient hospitals, or local jails. Santa Maria refers most women who are pregnant and receiving OUD treatment to Ben Taub for prenatal care. Santa Maria staff will also conduct active outreach at churches, community centers, and other neighborhood gathering places. To increase referrals from community clinics, Harris Health is training providers to use the Drug Abuse Screening Test and raising awareness of referral sources for women who screen positive.

Intake. A Ben Taub clinical social worker embedded in the MPAT clinic meets with each patient and initiates an Accountable Health Communities Health-Related Social Needs screen to assess what social services may be needed. She coordinates closely with the Santa Maria staff to ensure services are not duplicated and patients receive consistent information. She also facilitates referrals when a woman needs specialized services within Ben Taub but outside the MPAT clinic. The social worker is available to conduct limited counseling if other providers are unavailable.

MOM Model services. Holistic services, including medical and mental healthcare, will be provided to MOM participants. Ben Taub's MPAT clinic offers psychiatry, psychology, and MAT services. MPAT patients who are also enrolled in Santa Maria's Caring For Two program receive residential SUD treatment, peer recovery support, health navigation, parent coaching, and group counseling support. Santa Maria offers residents the flexibility to bring their children with them when entering treatment and provides those enrolled in residential programs with transportation to the MPAT clinic.

Care setting. The MPAT clinic is located on the fourth floor of Ben Taub Hospital, which is situated in the Texas Medical Center in downtown Houston. Entry to the clinic is located on Ben Taub Loop, a major roadway. A bus depot is nearby. Santa Maria's Bonita House is located in northeast Houston in a former gated apartment complex, about 20 miles from Ben Taub Hospital.

Care coordination. Each morning of MPAT clinic, a team of physicians, nurses, a psychologist, a peer support coach, and a social worker meet to discuss the needs of patients scheduled to be seen that day. These multidisciplinary huddles inform relevant staff of any updates and potential issues and help the team avoid duplication of services. The team develops a written plan of care for each patient, documenting medical and social needs and how they are being addressed. The MPAT clinic coordinator, described as the "super-scheduler," coordinates all the appointments, tracks patient attendance, and follows up with patients who miss their appointments.

Continuing treatment. Santa Maria Hostel will continue to rely on Substance Abuse and Mental Health Services Administration and other grant funds to support a substantial portion of its residential and outpatient OUD treatment programs, including services for former MOM Model beneficiaries when their pregnancy-related Medicaid coverage concludes.

Model sustainability. Harris Health's ability to help eligible adults apply for Medicaid and for their institution to bill Medicaid for services assured HHSC that a MOM Model based at Harris Health could be sustainable. Texas is using MOM Model transition funds to pay recovery coaches until they complete training to become Medicaid-reimbursable certified peer specialists. HHSC plans to negotiate payment terms with MCOs that serve the MOM Model population. Because Texas Medicaid contracts require a percentage of MCO payments to be made using a value-based arrangement, HHSC plans to encourage adoption of alternative payment models specific to the MOM Model.

Early Lessons Learned

To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

Interviewees expect MOM Model outcomes to include improved physical, behavioral, and psychosocial health for beneficiaries; reduced hospital stay for infants; and reduced maternal morbidity and mortality related to overdose. The co-location of services, including high-risk obstetrics, psychology, psychiatry, social work, and nursing "gives moms the best chance to address their OB and substance use and medical issues but also that mental health component." Interviewees expressed hope that the data collected from the MOM Model will lead to larger system change and be used to make recommendations for additional Medicaid benefits, depending on what is shown to be effective for treating pregnant people with OUD.

Providing high-level support that "envelopes" the MOM-eligible population requires "meticulous coordination" and "trust and long-term engagement from staff and patients." Clinical staff at Ben Taub presented a deep sense of obligation to making sure their patients feel safe and are treated fairly while in the clinic.

Participants also described pregnant people with OUD as reluctant to enter treatment, noting they often feel afraid, doubtful, and insecure. Residential treatment, where participants "change their entire lives," can be overwhelming but offers a place where residents are "learning how to take care of babies in recovery," and "they're also taking care of themselves." The subject of one set of photos from a Photovoice session described the change from feeling disgusted, hopeless, scared, and struggling with treatment to "fearless" as she "just [reached] 5 months" of sobriety.

> When you come through our doors [at Santa Maria's Bonita House], it is where your addiction can end, and your recovery can begin. Because you come in one person, and you leave … another person.

Early Successes

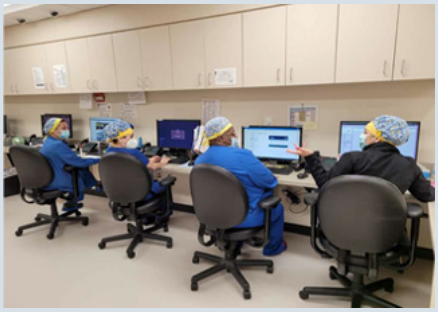
Ben Taub Hospital and Santa Maria Hostel staff expressed overall success in developing a dedicated team with a strong working relationship. Staff at Santa Maria noted there is an integrated approach among partners, and they are in regular, close communication with Ben Taub staff about patients. Informants commented on their shared passion for the goal of the Texas MOM Model—to improve the lives of pregnant people with OUD and their babies—and noted the success of the integrated team approach and MPAT care team "huddles." Photovoice participants described the work as tedious at times and difficult, with emotions running high and low for "not just the patient, but the clinical team giving the care." Yet they also recognized, "[The patients] could go anywhere, but they have never been treated the way they have been treated here. I want them to feel that way when they leave. That resonates with the team and comes from the team."

Photovoice finding and caption from provider site visit

"Are you ready???"

—This photo shows a clinician reviewing a care plan with a pregnant patient with OUD in an effort to build trust and long-term engagement from the start of the SUD treatment process.

Photovoice finding and caption from provider site visit



After the MPAT clinic huddle: "It takes a dedicated and committed team to take care of patients. The nurses show compassion, they educate and take care of not just the patient but each other as well."

Early Challenges

The MPAT clinic reported challenges establishing primary care for beneficiaries after delivery, in part because of long wait times for appointments and the need for extended visit lengths to manage complex care. MPAT staff would like to improve how they transfer women to primary care after delivery. Providers described challenges with individuals accessing pain management interventions and MAT prescriptions due to reluctance from some pain management providers and pharmacists to prescribe these treatment options. MOM Model partners described informal education efforts aimed at such providers to correct these perceptions. Clinic staff also expressed concern about the physical capacity of the clinic, noting if referrals increase under the MOM Model, space could be a limiting factor. Implementing data collection and data sharing continue to pose some challenges, which PCIC is striving to address. The timing of the most recent Medicaid MCO procurement delayed HHSC's engagement of MCOs in the planning period. New contracts will not be effective until summer 2024, so HHSC has begun engaging the current STAR MCOs with the care delivery partner.

Conclusion

In the next round of Texas case study data collection, the evaluation team will examine contextual factors (e.g., State trends in Medicaid coverage, drug screens at birth, other pandemic-related factors), and how implementation proceeded. The team will explore strategies for addressing equity issues, given that though Harris County is 44 percent Hispanic/Latino, only 5 percent of those receiving services under the model are Hispanic/Latino. Key issues to be explored include: how data sharing is evolving, the impact of increased patient volume, the population served and services provided by the model and whether they are consistent with the community's needs, pain management and breastfeeding protocols, and model sustainability.

Endnotes

[1] Maternal Mortality and Morbidity Task Force (2018), Maternal Mortality and Morbidity Task Force and Department of State Health Services Joint Biennial Report. Maternal Mortality and Morbidity Task Force and DSHS Joint Biennial Report (texas.gov)
[2] Van Horne, B., Mandell, D., Vinez, M., Nong, Y., Correa, N., Keefe, R., & Clover-Brown, I. (2019) *Supporting mothers and infants impacted By perinatal opioid use: A cross-sector assessment, Houston and San Antonio, Texas*. Perinatal Opioid Report Final_ march 2019.pdf (texaschildrens.org)
[3] Ibid.
[4] Ibid.

West Virginia MOM Model In Brief

West Virginia has the highest rates of opioid overdose and neonatal abstinence syndrome (NAS) in the country.[1, 2] West Virginia's Department of Health found evidence that almost 20 percent of West Virginia's newborns were substance-exposed,[3] with an overall NAS incidence rate of 50.6 cases per 1,000 live births in 2017.[4]

What Are the Goals of West Virginia's MOM Model?

In 2012, West Virginia's Perinatal Partnership (WVPP) developed Drug Free Moms and Babies (DFMB), a comprehensive and integrative medical and behavioral health program for pregnant and postpartum individuals

Geographic Scope

16 sites (in 11 towns) statewide

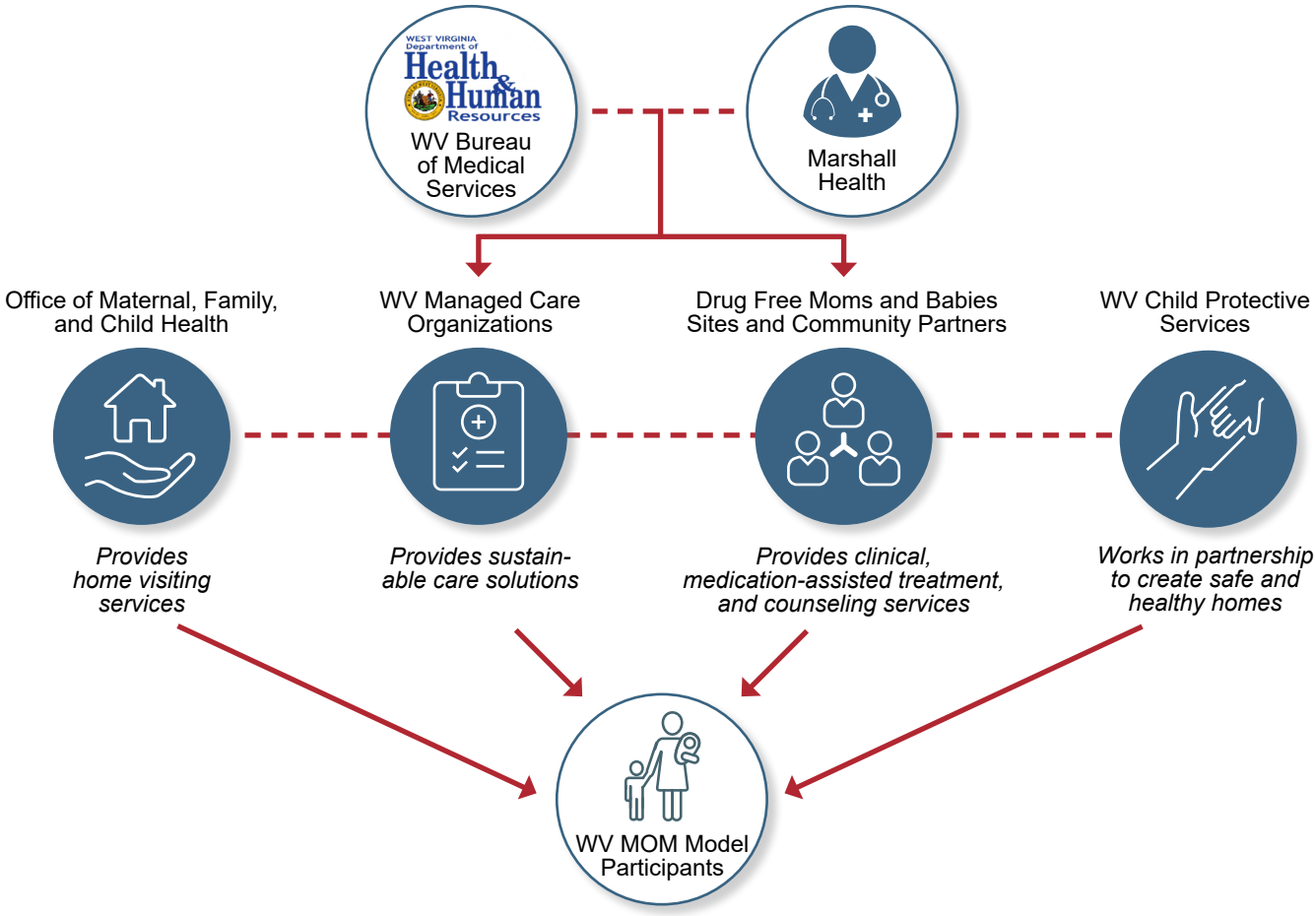
Urbanicity

rural, suburban, and urban

Anticipated Enrollment/ Population of Interest

800–1,000 individuals to be served annually

Key Model Partners



to address the opioid epidemic and support healthy baby outcomes.[5] Key components of DFMB design include: (1) integration of behavioral health and maternity care; (2) incorporation of Screening, Brief Intervention, Referral, and Treatment (SBIRT) services into existing service delivery; (3) long-term follow-up with participants from pregnancy through their infant's 2nd birthday; and (4) work with statewide and/or local initiatives to address the issue of substance use in pregnancy.[6] The West Virginia MOM Model will build on the success of the DFMB program by addressing current gaps in service and transitioning the program from grant support to more sustainable funding by integrating the MOM Model into the state's maternity care system.

To continue the work of DFMB, the state's goals for the MOM Model follow:

- Create sustainable Medicaid funding for the program.
- Standardize best practices across the 16 current DFMB sites statewide.

Medicaid Context

About 90 percent of pregnant Medicaid beneficiaries in West Virginia are enrolled in one of three Medicaid managed care organizations (MCOs). As of October 2020, Medicaid covers all perinatal services, case management, care coordination, peer support, and all forms of medication-assisted treatment (MAT). Medicaid-enrolled pregnant people also have access to the Right from the Start home visitation program, which provides care coordination services and social services referrals for up to 12 months postpartum. West Virginia received approval from the Centers for Medicare & Medicaid Services (CMS) for a NAS State Plan Amendment that allows for reimbursement for NAS services to be an all-inclusive bundled cost per diem rate. Medicaid reimburses Lily's Place, a Neonatal Abstinence Syndrome Treatment Center in Huntington, West Virginia to treat infants' withdrawal symptoms. West Virginia's 1115 substance use disorder (SUD) waiver covers residential treatment, methadone, support services, and peer recovery specialists.

Influence of COVID-19

Key informants noted that the main impact of COVID-19 in the planning year was the increased use of virtual communication and telemedicine. Marshall Health and the Medicaid agency conducted site visits with all the current DFMB sites virtually rather than in person. Greater adoption of virtual communication tools was seen as a "silver lining" for communication in rural areas. Marshall Health reported they supported maintaining loosened restrictions on MAT prescriptions and on telehealth as it would allow MOM Model sites that lack direct access to a MAT or behavioral health provider to access these specialists through telemedicine. The Medicaid agency heard care coordinators are more successful in reaching clients since the public health emergency began because patients are more likely to be home. Providers are seeing absentee rates decrease from 50 percent to between 20 and 30 percent since relying more on telemedicine.

Pre-Implementation Activities and Program Features

Partnership building. During the pre-implementation period, the West Virginia Bureau of Medical Services, the state's Medicaid agency, worked with Marshall Health, a state medical school and the care delivery partner to support the MOM Model. WVPP founded and manages the DFMB program and played an integral role encouraging the state to pursue MOM Model funding. West Virginia chose Marshall Health as the formal care delivery partner because West Virginia state legislation allows quick contract deployment with the state's medical schools. Marshall Health also has significant experience operating programs for people with SUD, including some for those who are pregnant or parenting. West Virginia anticipates that all 16 DFMB sites will serve as MOM Model sites. Other partners are the state's Office of Maternal Child and Family Health, which oversees the statewide home visitation program, and the Bureau of Children and Families, which houses Child Protective Services.

Data system. The West Virginia Bureau of Medical Services and the West Virginia Health Information Network developed data collection and reporting plans that meet CMS requirements and the needs of the WVPP while being feasible for MOM Model sites. It is possible not all 16 DFMB sites will convert to the MOM Model in the first implementation year based on their capacity to collect and report data.

Standardization. A significant component of MOM Model pre-implementation has been to determine which services to standardize for prenatal, pregnant, and postpartum care across DFMB sites. The MOM Model intends both to standardize the services sites will provide and to identify the staff who will provide them. Providers have reported support for the standardization of services across sites, though most noted that preservation of community-based approaches and flexibility of care delivery should be considered in the decision process.

Program Features

Recruitment. West Virginia projects the MOM Model will eventually serve 800–1,000 people annually. This number is consistent with the number of people served at DFMB sites currently, but Marshall Health wants to understand how best to boost referrals across sites. Child Protective Services, pediatricians, the legal system, or other social or healthcare providers may refer people to DFMB and some people will self-refer. When pregnant people who lack obstetrical care are referred to DFMB, the DFMB site will connect them to clinical providers. The sites the study team visited do not have eligibility requirements, such as needing to be at a particular stage in recovery, and interviewees at both sites referred to "meeting [the clients] where they are."

Intake. The DFMB sites where the evaluation team held interviews are embedded within maternity care practices, so obstetrical staff can seamlessly refer individuals with a positive drug screen to DFMB. At one site, the DFMB coordinator meets with every pregnant patient as part of their obstetric intake. At another site, obstetricians enter the DFMB referral in the medical record, which triggers the DFMB coordinator to arrange for a peer recovery specialist to meet the patient at the first prenatal visit. Thus, DFMB coordinators at each site have de facto responsibility for enrolling people in the program.

MOM Model services. MOM Model services are expected to align with those currently in use for DFMB. While they vary somewhat by site, DFMB services typically include care coordination, obstetrical care, behavioral health, support from peer recovery specialists (staff with SUD and at least 2 years of recovery), MAT, and home visitation. To achieve more consistency, the MOM Model intends to standardize the services the sites will provide.

Care setting. As of October 2020, West Virginia had 16 DFMB sites statewide and anticipated all will serve as MOM Model sites. DFMB programs are typically embedded within obstetrics or multispecialty clinics. For example, Greenbriar, a rural multispecialty clinic, has an embedded staff member who coordinates DFMB services for those who need them. In Morgantown, the Assist, Connect, Encourage program (known as ACE) is part of West Virginia University Medicine's obstetric/gynecological clinic.

DFMB care manager closet of donated items

Care coordination. In its application, West Virginia described the use of both care coordinators and community health workers for the pregnant and postpartum population. All the DFMB sites prioritize ease for individuals to access and engage in any health and social services they need. While there is variability in how DFMB sites establish access to those services, the goal is seamless care that supports recovery.

Continuing treatment. Pregnant people are eligible for Medicaid up to 190 percent of the Federal Poverty Level (FPL) until 60 days postpartum, after which the income eligibility limit drops to 138 percent FPL (the general Medicaid eligibility threshold for adults). Because West Virginia is a Medicaid expansion state, and most individuals eligible in pregnancy meet the lower income threshold, few who were Medicaid-enrolled during pregnancy would lose coverage in the postpartum year.

Model sustainability. The state plans to sustain MOM Model services through contracts with MCOs; however, this decision had not been finalized at the time of the site visit. If this plan moves forward, DFMB sites that implement the MOM Model will enroll as Medicaid providers and be paid by MCOs for the MOM Model services they provide.

Early Lessons Learned

To augment the information gathered from key informant interviews, the evaluation team conducted virtual Photovoice activities with providers during the pre-implementation period to learn more about the lives of patients with OUD in the communities that the MOM Model plans to serve. Photovoice is a community-based participatory research method by which people can identify, represent, and describe their "lived experience" in their community through a specific photographic technique.

Anticipated Outcomes

Several informants stated that better standardization across MOM Model sites will lead to more consistency in provider practices and services, producing better outcomes for participants, especially those who change care locations. It is anticipated that the data MOM Model sites will collect will help the Medicaid agency make better policy decisions that could lead to the expansion of services provided to pregnant beneficiaries with SUD. Other interviewees hope the expansion of services will reach pregnant and postpartum individuals in currently underserved, often rural, areas of the state by expanding the availability of services and facilitating collaboration across sites.

Early Successes

Informants broadly noted the success of obtaining widespread buy-in for the transition of the grant-funded DFMB program to the Medicaid-reimbursable MOM Model:

> One of the positives is that all of the sites … know that they will be able to sustain DFMB. They won't have to worry and constantly think about grant funding; they can just focus on the job that they love … helping the moms and babies.

Providers cited improved communication among state agencies, organizations dedicated to maternal and child health, and clinical providers as an early success of the MOM Model's planning year. Another area of success identified was the continuation of low rate of turnover among care team staff with the transfer from the DFMB program to the MOM Model. Providers noted this has facilitated stable, long-term relationships with patients who otherwise may not have felt comfortable seeking

care. Because patients had established rapport with DFMB staff, they were more likely to participate in treatment, for example, by showing up for appointments and not fearing judgment.

> It's nice for patients to not have to continually tell their story and talk about moments where they were not their best. Instead of having to come in and warm up to providers, they can come into the space knowing the staff and start making progress. For a lot of ladies that come in and relapse, it's nice they can be comforted knowing we have seen them at their best. On the flip side, if we saw them when they weren't doing so well and they come back successful in their recovery, it's nice for them to say, "Yeah, they saw where I was at and [witnessed] all the progress I made." Having that process and continuum is helpful for them and for us, too.

Early Challenges

The data collection capacity at DFMB sites is limited, and the MOM Model reporting and Medicaid billing requirements may be too burdensome for some sites. Despite widespread support for transitioning DFMB sites to the MOM Model, Medicaid agency officials noted they encountered initial skepticism from some stakeholders, including clinical and community partners, who were concerned the shift to Medicaid funding would detrimentally alter the structure of the DFMB program.

Providers also discussed the persistent stigma of OUD as a barrier that stands between pregnant people with OUD and comprehensive, integrated maternal healthcare.

Photovoice finding and caption from provider site visit

"Mothers who have struggled with a SUD in the community feel so alone and on the edge at times. If a mother who has struggled with a SUD feels so judged in her own home, she fears judgement from others in the world that are providing services."

> I've had patients tell me they don't seek care because of stigma. I've had patients tell me they don't go to treatment because of how they're treated. Providers make them seem as if they are active addicts, and they've worked hard to get where they're at and that's not taken into consideration. That on top of the access to care. They feel defeated and they just don't go.

Conclusion

Since the West Virginia case study was conducted, the State requested and received from CMS a six-month extension for their MOM Model start date from July 1, 2021, to January 1, 2022. In the next round of West Virginia case study data collection, the evaluation team will examine contextual factors (e.g., State trends in SUD/OUD, drug screens at birth, other pandemic-related factors) and how implementation proceeded. Key issues to be explored include: how the roles of Marshall Health as the care delivery partner, MVPP, and other partners have evolved; the transition of DFMB sites to Medicaid funding; changes in contracting between Medicaid and the State's MCOs; and the impact of standardization of services and/or provider types and improved data collection across MOM Model sites.

Endnotes

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Part 3.

Appendices

Appendix A. Primary Implementation Research Questions by Domain and Data Source

Table A.1. Primary Implementation Research Questions by Domain and Data Source

	Source of Data		
	Qualitative	Process	Impacts
Improving Quality and Health Outcomes and Reducing Cost Domain			
1. Did MOM Model awardees and providers incorporate best practices and guidelines in care for pregnant and parenting people with opioid use disorder (OUD) and their infants? How did health equity concerns influence implementation?	•	•	
2. Were maternal outcomes improved (e.g., retention in treatment, lower emergency department use, reduced birth complications)? Were improvements experienced equitably across all beneficiaries?	•	•	•
3. Were infant outcomes during birth hospitalization improved (e.g., shorter length of birth hospital stay; lower neonatal intensive care unit (NICU) admission; reduced rates of preterm birth, low birth weight, fetal or neonatal death; reduction of pharmacological treatment for neonatal opioid withdrawal syndrome? Were improvements experienced equitably across all infants?		•	•
Reducing Treatment and Service Costs Domain			
4. Did maternal and infant healthcare costs decrease or remain stable (e.g., maternal ambulatory-sensitive inpatient, emergency department, and residential care use; NICU admission/use)?			•
Increasing Access to Treatment and Service Capacity Domain			
5. Did MOM Model awardees adopt care coordination and care integration best practices (e.g., the Substance Abuse and Mental Health Services Administration's "Collaborative Approach" framework)?	•	•	•
6. Did pregnant/postpartum beneficiaries with OUD receive a full array of medical, behavioral, and mental health services and opioid agonist treatment as needed? Was there an adequate supply of providers to serve beneficiaries? Were all beneficiaries served equitably?	•	•	•
7. Were referrals to needed social supports and services (e.g., housing, nutrition, intimate partner violence counseling/shelter) successfully achieved? Was there an adequate supply of social supports and services to serve beneficiaries? Were all beneficiaries served equitably?	•	•	
8. Were family outcomes improved (e.g., fewer infants placed in State custody)?	•	•	
Referrals to social supports			
9. Did States meet their program goals for self-funding their program moving forward? If not, what were the barriers to achieving milestones?	•		
10. Did States establish sustainable coverage/funding via Section 1115 waivers, State Plan Amendments, and/or other mechanisms?	•		

Source: Insight Policy Research Implementation Evaluation Design Report, October 2021

Appendix B. Pre-Implementation Period Research Questions

The evaluation's driving research questions during the pre-implementation period follow:

- What are the legal and Medicaid policy contexts the MOM Model is being implemented in? What other initiatives are in place to improve services for individuals, infants, and families affected by substance use that might operate alongside the MOM Model? What current laws are punitive and therefore may increase the difficulty in reaching and serving those with OUD?
- What changes to the Medicaid program, such as 1115 waivers, State Plan Amendments, and new payment arrangements, are being implemented to fund services for MOM Model participants?
- How are relationships forming among State Medicaid officials, care delivery partners, and local providers? Do strong collaborative relationships already exist, or is the MOM Model being built around a set of new relationships? Are there signs these relationships are positive and productive or tenuous, fragile, or contentious?
- To what extent are State MOM Models pursuing and incorporating best practices and guidelines in State plans for prenatal care, delivery, postpartum, and infant care?
- Is strong care coordination being established to facilitate the integrated delivery of medical, behavioral, and mental health and opioid treatment services? Is there a sufficient supply of these services available to meet the needs of pregnant beneficiaries with OUD?
- Are awardees recruiting and making connections with the full array of social support service agencies and providers that might support beneficiaries enrolled in the MOM Model, including food, nutrition, intimate partner violence, and housing providers? Is there an adequate supply of these services available in the community to meet the needs of pregnant people with OUD?
- What challenges are MOM Model awardees and their partners encountering while trying to design best practice approaches to care delivery and care coordination, and how are they attempting to overcome those challenges?
- What data will be routinely available from MOM Model awardees and their care delivery partners? What data will be available from the MOM Model implementation contractor? What additional data collection instruments or protocols must the evaluation develop to fill gaps in data needs?
- How well do Federal Transformed Medicaid Statistical Information System (T-MSIS) data meet the needs of the evaluation to measure service utilization, costs, and outcomes? Will the evaluation team need to obtain eligibility, claims, and encounter data from the States? What lags in data availability might be expected from T-MSIS, and what are the implications of those lags for the evaluation? How well will the T-MSIS data support the development of valid comparison groups?
- Has the State merged T-MSIS or State data to birth certificate records? What processes will be needed to obtain access to these data?

Appendix C. Evaluation Framework Methodology

This appendix provides an overview of the methods used to select and adapt the RE-AIM Framework for the MOM Model evaluation. The evaluation team was motivated to identify an evaluation framework to organize and focus the qualitative, process, and impacts components of the evaluation to ensure comprehensive understanding of the implementation processes involved in establishing the MOM Model across multiple sites and guiding data analysis.

Review of Frameworks

The evaluation team reviewed five evaluation and implementation frameworks to determine which (if any) could be adopted for the evaluation, either "as is" or with minor modification. Frameworks reviewed were not limited to evaluation frameworks used only in health services research. Educational evaluation frameworks were also considered. To identify potential frameworks, the evaluation team reviewed articles published in 2005 and later. The team assessed elements of the four frameworks or models described below:

- **Consolidated Framework for Implementation Research (CFIR).** Implementation researchers associated with Veterans Affairs Diabetes Quality Enhancement Research Initiative developed the CFIR to assess context according to potential facilitators and barriers to successful implementation. CFIR is composed of 39 constructs associated with effective implementation. These constructs are arranged across five domains that can be applied to a range of settings and scenarios. CFIR can provide theory-based constructs for developing context-specific logic models or a guide for systematically assessing potential facilitators and barriers for implementing an innovation. CFIR promotes consistent use of system analysis, constructs, and organization of findings from implementation studies (CFIR, 2021).
- **Children and Recovering Mothers (CHARM) Collaborative.** The CHARM Collaborative in Burlington, Vermont, is a multidisciplinary group of agencies serving pregnant and postpartum people with OUD, their families, and their infants. This group emerged in the late 1990s in response to the increasing need for MAT resources for pregnant people with opioid use disorders. Collectively the Collaborative provides this population with coordinated comprehensive care from child welfare, medical (including obstetrics and pediatrics) and substance abuse treatment professionals across Vermont. The policies and practices of CHARM were developed across intervention points in a five-point framework created by the National Center on Substance Abuse and Child Welfare that addresses screening, assessment, referral, and engagement across all stages of development for affected children. There are 10 elements of

system linkages: (1) underlying values and principles of collaboration, (2) screening and assessment, (3) engagement and retention in care, (4) services to children of parents with substance use disorders, (5) joint accountability and shared outcomes, (6) information and data systems, (7) budgeting and program sustainability, (8) training and staff development, (9) collaboration with related agencies, and (10) collaboration with the community and supporting families (SAMHSA, 2016a).

- **Exploration, Preparation, Implementation, Sustainment (EPIS).** The EPIS Framework emphasizes four phases that guide and describe the implementation process. It identifies common and unique factors within and across levels of outer context (system) and inner context (organizational) throughout the four phases. EPIS also identifies factors that connect the outer and inner context and specifies the nature of the innovation or practice being implemented as well as the role of the practice developers (EPIS, n.d.).
- **Promoting Action on Research Implementation in Health Services (PARIHS).** Research and practice development teams at the Royal College of Nursing Institute in the United Kingdom accumulated knowledge and experience about implementation and changing practice from their involvement in multiple practice development, research, and quality improvement projects. PARIHS was developed in the late 1990s and represents the interaction among three factors that play a key role in successful research implementation: evidence, context, and facilitation. PARIHS depicts successful implementation as a result of the relationship among these factors in addition to its interdependence. It also positions the three elements on a high to low continuum. For implementation of evidence to be successful, there must be clarity on the nature of evidence being used, on the quality of context, and the type of facilitation required to establish a successful change process (Rycroft-Malone, 2004).
- **Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM).** The RE-AIM framework, originally developed by Glasgow, Vogt and Boles (1999) is most commonly used for determining public health impacts of programs and is widely used by implementation scientists and health program evaluators. RE-AIM "is intended to be used at all stages of research from planning through evaluation and reporting." (Gaglio et al., 2013) The dimensions of the framework, as described by Gaglio et al. (2013) include the following:
  - Reach: the number, proportion, and representativeness of individuals willing to participate in a given initiative
  - Effectiveness: the impact of an intervention on outcomes
  - Adoption: the number, proportion, and representativeness of settings and their agents willing to initiate a program
  - Implementation: fidelity to the program model or intervention protocol
  - Maintenance: the extent to which a program or policy becomes institutionalized

Selecting RE-AIM

To select the framework best suited for MOM, the evaluation team considered the following questions:

- What elements of the framework apply to the MOM Model and the evaluation's priorities?
- Are primary aspects of the MOM Model captured within the framework?

After examining each framework, the team chose RE-AIM as the best framework for MOM because its dimensions are inclusive of all required aspects of the MOM Model evaluation.

The literature scan revealed RE-AIM is a framework consistent with and/or adaptable to measures and checklists (CONSORT, 2010; RE-AIM, n.d.) necessary for rigorous evaluation, and the team was not certain if the other frameworks could be so easily adapted to the criteria. RE-AIM is also adaptable to elements of both the CHARM model and the MOM Model Driver Diagram; it balances internal and external validity, includes equity considerations, is well suited for mixed-methods research (RE-AIM Qualitative Evaluation for Systematic Translation), provides a mixed-methods framework developed by Forman et al. (2017), and values qualitative data as a mechanism used to not only answer domain questions but also explain the findings and detail the rationale for the conclusion. .

Adapting RE-AIM for the MOM Model Evaluation

Prior to modifying the RE-AIM framework, the team discussed factors to consider for the MOM Model evaluation and potential measures and data that would be captured under each domain. The team assessed key considerations for the MOM Model in each domain and mapped the domain to the MOM Model Driver Diagram and Research Questions.

The team then reorganized the domains—from Reach, Effectiveness, Adoption, Implementation, and Maintenance to Adoption, Implementation, Reach, Effectiveness, and Maintenance—and reframed the domain descriptions and primary research questions to align with the MOM Model and an equity framework. Because RE-AIM is focused on the setting/facility/staff level, the team broadened the equity considerations of the framework to include patient-centered elements.

Appendix D. Evaluation-Specific Data Elements Added to the Gateway

Table D.1. Evaluation-Specific Data Elements Added to the Gateway

Data Element Name	Description
HEALTH_INS_PREPREG	Health insurance before beneficiary became pregnant
ABUSE_EXPERIENCE	Types of abuse ever experienced by the beneficiary (sexual abuse, physical abuse, emotional abuse, transactional sex)
PRIOR_CHILD_PLACED	Indicator for whether beneficiary's prior children have ever been placed outside the home
RELATIONSHIP_STATUS	Beneficiary's current relationship status
HIGH_SCHOOL_OR_GED	Indicator for whether the beneficiary obtained a high school diploma or General Educational Development certificate
SUBSTANCE_USE_RECENT	Indicator for whether the beneficiary used any of the following substances in the last year (alcohol, cigarettes or other tobacco, vaping, cannabis, amphetamines, benzodiazepine)
YOUNG_ONSET_SUBSTANCE_USE	Indicator for whether the beneficiary first used any of the following substances before age 18 (alcohol, cigarettes or other tobacco, vaping, cannabis, opioids, amphetamines, benzodiazepine)
PRIOR_BIRTH_DATE	Date of most recent prior birth
PRIOR_BIRTH_EXPERIENCE	Outcomes from prior pregnancies (premature birth, low birth weight, stillbirth, neonatal abstinence syndrome, other)
PRIOR_PREG_RISK	Pregnancy risk factors during prior pregnancies (preeclampsia, gestational diabetes, gestational hypertension, HELLP syndrome [life-threatening liver disorder], hemorrhage, other)
OUDTREATMENT_TYPE_POSTPARTUM	Pharmacotherapy type during beneficiary's postpartum period (none, buprenorphine, naltrexone, methadone, other)
LABOR_PAIN_MANAGEMENT	Pain management during labor (epidural, intravenous narcotics, other, none)
DELIVERY_METHOD	Beneficiary's delivery method (vaginal, induced, augmented, vaginal birth after cesarean, emergency C-section, planned C-section)
POSTPARTUM_CONTRACEPTION	Contraception plan during postpartum period (none, natural family planning, pullout method, barrier or spermicide, hormonal, injectable, long-acting reversible contraception, tubal ligation, other)
PRIOR_BIRTH	Indicator for whether the beneficiary had a prior birth
INFANT_PHARMA_TREATMENT	Infant pharmacotherapy treatment (for neonatal abstinence syndrome)
INFANT_FEEDING	Infant feeding method postpartum (breastfeeding, pumping, both breastfeeding and pumping, supplementing with formula, formula only)
ALCOHOL_USE	Number of alcoholic drinks the beneficiary consumed in an average week during the last month (14+, 8–13, 4–7, 1–3, < 1, did not drink)
CIGARETTES_NUM	Number of cigarettes beneficiary smoked per day (0–180)
ANXIETY	Anxiety screening result (none, mild, moderate, severe)
DEPRESSION_SCREENER_USED	Depression screener used (at each screening)
DEPRESSION_SCREENER_SCORE	Depression screening result (score of screener)

Source: Insight Policy Research Implementation Evaluation Design Report, October 2021

Appendix E. Anticipated Implementation Period Core Outcome Measures for MOM Model Impact Evaluation

Table E.1. Anticipated Implementation Period Core Outcome Measures for MOM Model Impact Evaluation

Outcome Measures	Recommended Use	Healthcare Quality	Healthcare Outcomes	Cost	Perinatal Phases		
					12 Months Before Birth	Month of Birth Hospitalization^	11 Months After Birth
Gestational age initial prenatal visit, month*		●			●	N/A	N/A
Any prenatal visits (number before and during MOM Model, if data available)*	●	●			●	N/A	N/A
Parent and Infant's Total Healthcare Cost							
Total maternal cost of care				●	●	●	●
Total infant cost of care				●		●	●
Maternal Medications Related to OUD and Other Behavioral Health Needs							
Gestational age at the start of opioid-agonist therapy (methadone or buprenorphine), week*		●			●	N/A	N/A
Opioid agonist therapy (methadone or buprenorphine)	●	●		●	●	N/A	●
Opioid antagonist therapy (e.g., Vivitrol); days of treatment	●	●		●	●	N/A	●
Methadone weeks of treatment	●	●			●	No data	●
Buprenorphine weeks of treatment	●	●			●	No data	●
Maternal Screenings							
Screenings (e.g., HIV, hepatitis, SUD, mental health, SDOH, social-emotional, depression, urine, if data available)	●	●		●	●	●	●
Maternal Care							
Maternal death		●	●		●	●	●
Any maternal postpartum checkup, within 3 weeks after birth	●	●		●			●
Any maternal postpartum checkup, 3–12 weeks after birth	●	●		●			●
Contraceptive services	●	●		●	●	●	●
C-section	●	●	●	●		●	

Outcome Measures	Recommended Use	Healthcare Quality	Healthcare Outcomes	Cost	Perinatal Phases		
					12 Months Before Birth	Month of Birth Hospitalization^	11 Months After Birth
Maternal birth complications		●	●	●		●	●
Emergency department visits for ambulatory care sensitive conditions; overdose-related visits	●	●		●	●	●	●
Newborn Care Measures							
Total cost for birth hospital stay (for infants ≥ 37 weeks)†				●		●	N/A
Length of birth hospital stay (for infants ≥ 37 weeks)	●	●				●	N/A
Fetal/neonatal death		●	●		●	●	N/A
NICU during birth hospitalization	●	●		●		●	N/A
Number of NICU days, if any NICU, if data available*	●	●				●	N/A
Length of birth hospital stay for infants with any NICU use (for infants ≥ 37 weeks)	●	●				●	N/A
Preterm (< 37 weeks)		●	●			●	N/A
Low birth weight (less than 2,500 grams)		●	●			●	N/A
Infant birth complications		●	●	●		●	●
Maternal-Infant Dyad Care and Measures							
Breastfeeding/lactation services or counseling, if data available	●	●	●	●		●	●
Infant Care Measures							
Well-child visits	●	●		●			●
Inpatient stays	●	●		●			●
Emergency department visits for ambulatory care sensitive conditions	●	●	●	●		●	●

Note: HIV = human immunodeficiency virus; N/A = not applicable; NICU = neonatal intensive care unit; OUD = opioid use disorder; SDOH = social determinants of health; SUD = substance use disorder
* Vital records are likely needed to construct this measure.
^ The "month of birth hospitalization" time period will include claims related to the entire hospitalization stay, even if it crosses into the next month.
† The evaluation team will also examine total costs and length of stay for birth hospitalizations for infants born at < 37 weeks of gestational age. Because of confounding factors contributing to premature birth, birth event costs and length of stay are not included among core outcomes.
Source: Insight Policy Research Implementation Evaluation Design Report, October 2021

Appendix F. Comparison Group Design Approach for Impacts Evaluation

Selecting a method for creating a comparison group for each awardee is a complex and iterative process and will depend on characteristics of the interventions and the quality of available data (see figure F.1). It is important to note how the COVID-19 public health emergency has affected the health and provision of healthcare for many people, including the MOM Model beneficiary population. One consequence is the pandemic period prior to implementation of the MOM Model may not provide an ideal baseline reference point for evaluating the effects of the MOM Model. However, COVID-19 has fundamentally changed key aspects of MOM Model-related healthcare delivery (e.g., increased access to telehealth related to MOUD maintenance).

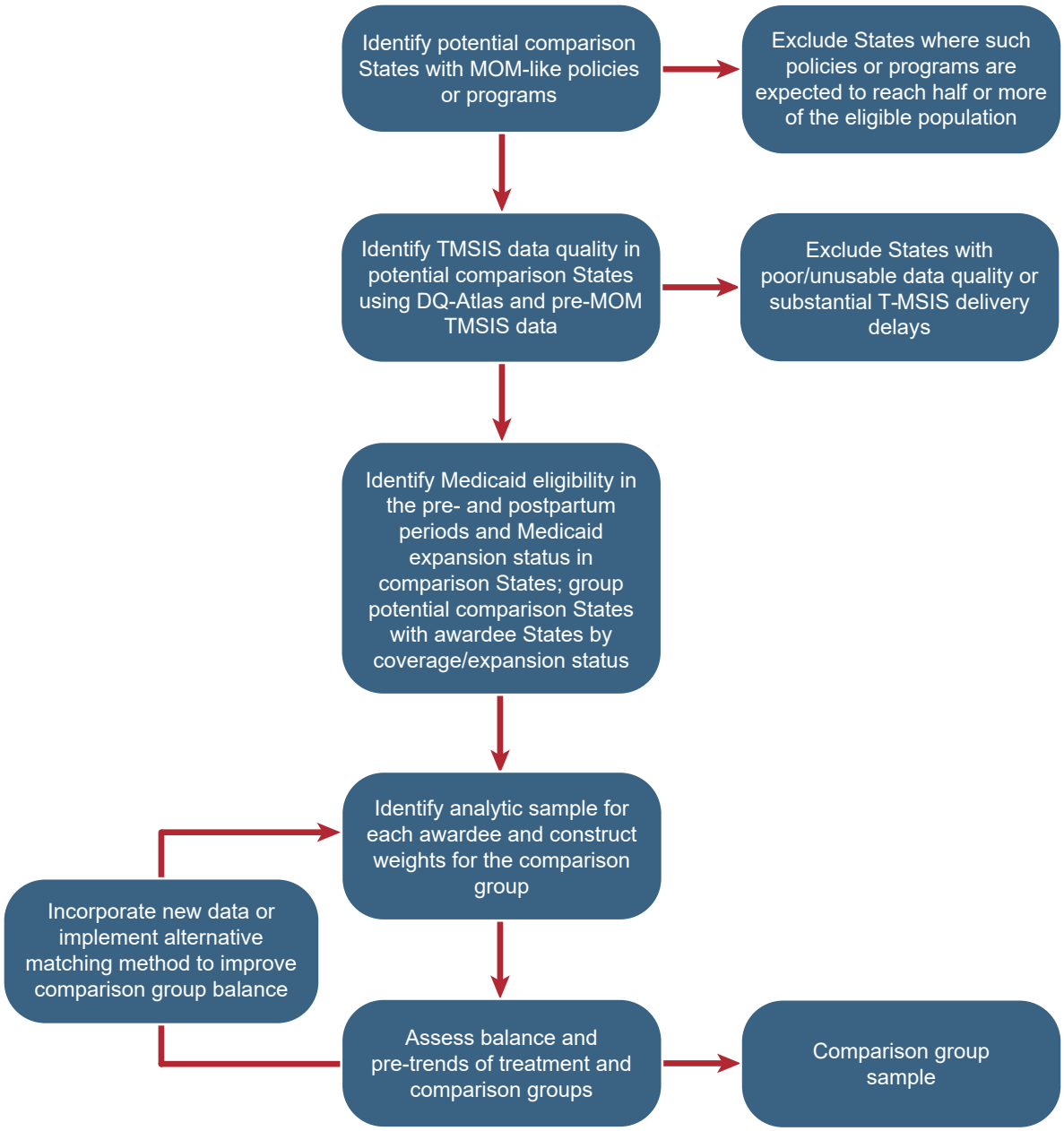
The evaluation team recognizes the importance of having a comparison group that experienced similar policies related to access to perinatal care and OUD treatment before, during, and after COVID-19, although the availability of this information is not yet known. The planned approach is to assess pre-implementation trends in outcomes and sample characteristics to determine the most suitable baseline data ranges. This process could potentially result in the exclusion of parents with birth events during much of 2020 and the first 6 months of 2021 for use as a baseline for some or all outcomes (e.g., the number of well-child visits) determined to be temporarily affected by the pandemic.

Step 1. Determine State-level inclusion and exclusion criteria for potential comparison groups. Identifying geographic areas from which to draw each MOM Model awardee's comparison group sample will depend on several factors, including whether the awardee has implemented the demonstration statewide or in a sub-State area, and on State-level characteristics of potential comparison States. The evaluation team has established an initial set of criteria that will guide the selection of eligible comparison group areas. The comparison group exclusion and inclusion criteria will be period (year) specific to account for any changes to the policy landscape in comparison group areas.

Exclude nonawardee State or sub-State regions with MOM-like programs that are similar in scope and size to the MOM Model. States or sub-State regions with MOM Model-like programs[3] that are expected to reach one-quarter or more of the potential MOM Model comparison group population will be excluded. Small MOM Model-like programs will not necessarily disqualify an area, but they will be considered as potential comparison areas only if other options are exhausted. As described above, the evaluation team will incorporate findings from the qualitative and process evaluations on other MOM Model-like programs to inform the comparison group sample inclusion and exclusion criteria.

[3] Examples of MOM Model-like programs that may exempt a State from inclusion in the comparison group sample are large Section 1115 demonstrations or Section 5052 State Plan Amendments.

Figure F.1. Comparison Group Creation Process Diagram



Note: T-MSIS = Transformed Medicaid Statistical Information System
Source: Insight Policy Research Implementation Evaluation Design Report, October 2021

Exclude nonawardee States with poor T-MSIS data quality or long data delivery lag.[4] Any States the DQ Atlas (Medicaid.gov, n.d.) deems as having "unusable" inpatient, prescription drug, or other services data for years 2018 onward will be excluded. Also

[4] The evaluation team will also check and document data quality and missingness for MOM Model awardees.

excluded will be nonawardee States that have either T-MSIS delivery delay of at least 3 years or are missing more than 30 percent of any of the T-MSIS variables listed in table F.1. These data elements are necessary to correctly implement the sample inclusion criteria or construct impact study outcomes. If these criteria yield a comparison group that would result in underpowered statistical inference, these criteria will be relaxed. This could include allowing States with higher levels of missing data among some of the variables related to impact outcome measures (see table F.1). Missing or poor data quality of this subset of variables would not affect the evaluation team's ability to apply the sample inclusion criteria; however, it would potentially reduce the number of outcomes the evaluation could examine with the impact analysis.

Table F.1. T-MSIS Variables Required to Have Sufficient Quality for Comparison Group Inclusion

Variable	Description	Purpose
Inpatient File		
PRVDR_LCTN_CD*	Provider location code	Identify birth location
BLG_PRVDR_NPI*	Billing provider NPI	Identify birth location; determine NICU use
REV_CNTR_CD*	Revenue center code	Determine NICU use
BIRTH_DT*	Infant date of birth	Determine length of stay
DSCHRG_DT*	Infant date of discharge	Determine length of stay
Diagnosis and procedure codes		Identify births and complications
Pharmacy File		
NDC	National Drug Code	Verify the validity of prescription drug claims
RX_FILL_DT*	Prescription fill date	Verify the validity of prescription drug claims
Other Services File		
Diagnosis and procedure codes		Verify the validity of methadone claims
Annual Demographics and Eligibility File		
MASBOE_CD_XX	Basis of eligibility	Verify the validity because missingness often relates to eligibility
AGE_NUM*	Maternal age	Verify the validity because missingness can occur in age
RACE_ETHNCTY_CD*	Beneficiary race/ethnicity	Necessary for comparison groups, although vital records could be used instead, if available; can be cross-validated with vital records or imputed, if necessary
ELGBL_CNTY_CD	Beneficiary county of residence	Necessary for comparison group

Note: NICU = neonatal intensive care unit; NPI = national provider identifier
* If the initial data quality criteria result in a sample with low statistical power, the evaluation team will relax the minimum nonmissing rate threshold on these variables to increase the available sample.
Source: Insight Policy Research Implementation Evaluation Design Report, October 2021

Step 2. Group awardee and potential comparison group State/areas by relevant State-level characteristics. The evaluation team will select potential comparison areas by grouping awardees and nonawardee States/regions by characteristics exogenous to

the MOM Model and relevant to the measurement of impacts. This grouping process will minimize system-level differences that make States/regions incomparable in a way that cannot be controlled for by statistical reweighting or adding individual-level controls. The comparison group exclusion and inclusion criteria will be period (year) specific to account for any changes to the policy landscape in comparison group areas. The three grouping characteristics for the comparison group in the first year of implementation follow:

- Medicaid expansion status in January 2020 (adapted by State to allow for variation in the timing of expansion, as in Maine)
- Medicaid program eligibility level for pregnant people and parents in January 2020
- Medicaid coverage of pre/postpartum people in January 2020

The evaluation team will constrain the potential comparison group States/areas to be similar according to Affordable Care Act Medicaid expansion and Medicaid eligibility for pregnant people and parents (table F.2). Medicaid programs that differ greatly on eligibility will have differences in populations and availability of services that will make some outcomes unmeasurable for the MOM Model population and result in an inability to control for differences in access to care. States will be designated as "high eligibility" if their income eligibility for pregnant people to receive Medicaid is above the median of State eligibility thresholds (205 percent of the Federal poverty level, as of January 2020) or "low eligibility" if the State's income eligibility is equal to or less than the median. States/areas will also be grouped based on whether they offer extended Medicaid eligibility the full year after an infant's birth.

Table F.2. Policy-Related Grouping Characteristics for MOM Model Treatment and Comparison Groups

Grouping Characteristics	Data Source	Description	Awardee Frequency
Medicaid expansion status	Kaiser Family Foundation	Binary indicator of State Medicaid expansion	Six expansion States Two nonexpansion States
Medicaid program eligibility for pregnant people and parents	MACPACa ACOGb	Binary indicator of high or low eligibility, where high eligibility is defined by program eligibility thresholds higher than the national State-level median in January 2020	Seven "high eligibility" One "low eligibility"
Medicaid coverage of pre/postpartum people	MACPAC	Binary indicator of whether the State extends the Medicaid coverage period beyond the typical 60 days postpartum for people with pregnancy-specific Medicaid eligibility as of January 2020	Two extend coverage Six do not extend coverage

Note: ACOG = American College of Obstetricians and Gynecologists; MACPAC = Medicaid and CHIP Payment and Access Commission
a Medicaid and CHIP Payment and Access Commission, 2019
b Source: ACOG, 2019

Step 3. Identify comparison group areas to be used in the impact analysis. Grouping States by relevant Medicaid program characteristics will provide a pool of comparison group States or areas for each MOM Model awardee. The evaluation will determine the specific set of comparison group States/areas for each awardee based on several additional criteria depending on answers to these two questions:

- **Is the initial comparison group out of State or within State?** The evaluation team will initially seek to identify a within-State comparison group for awardees that implement a MOM Model program that will reach one-third or fewer of the State's eligible population. All other comparison groups will include people with Medicaid-covered births from other States/areas within their pool of States as defined in step 2 above. In each case, the comparison group sample should be larger than the treatment group population because the impact estimation strategy will downweight some comparison observations and upweight others. Impact estimates may become imprecise if the number of individuals in a comparison group is not larger than the number in a treatment group.
- **Which States or counties will be included in each awardee-specific comparison group?** For awardees for which a within-State comparison group will be used, the initial approach will include all nonawardee counties.[5] For awardees requiring out-of-State comparison groups, the evaluation team will identify comparison groups based on the exclusions and grouping in steps 1 and 2 above. If the initial comparison group is a single State or county, the team will examine whether to relax the criteria applied above to obtain a larger comparison group.

Step 4. Identify the analytic sample for each awardee and comparison group. Following the study sample definitions described above, the analytic samples used in the evaluation will be unique for each awardee, based on the application of the sample definitions to the data for each treatment and comparison group area.

[5] Sample weights will be adjusted to account for differences in population- and county-level characteristics.