Evaluation of the Maternal Opioid Misuse (MOM) Model

Third Annual Report (Implementation Year 2)

May 2024

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Abbreviations and Acronyms

APM	alternative payment model
CHIP	Children's Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
CMS Innovation Center	Center for Medicare & Medicaid Innovation
CPS	child protective services
DATA 2000	Drug Addiction Treatment Act of 2000
DFMB	Drug Free Moms and Babies
ECHO	Extension for Community Healthcare Outcomes
EHR	electronic health record
HRSN	health-related social need
MAT	medication-assisted treatment
MCO	managed care organization
MOM Model	Maternal Opioid Misuse Model
MOUD	medications for OUD
NICU	neonatal intensive care unit
NOWS	neonatal opioid withdrawal syndrome
OUD	opioid use disorder
PAM	Patient Activation Measure
PHE	public health emergency
PMPM	per member per month
PRS	peer recovery specialist
RAE	regional accountable entity
RE-AIM	Reach, Effectiveness, Adoption, Implementation and Maintenance
SAMHSA	Substance Abuse and Mental Health Services Administration
SPA	State Plan Amendment
SUD	substance use disorder
T-MSIS	Transformed Medicaid Statistical Information System

Executive Summary

In 2018, the Centers for Medicare & Medicaid Services' (CMS) Center for Medicare & Medicaid Innovation announced the Maternal Opioid Misuse (MOM) Model as part of federal strategies to address the ongoing opioid epidemic and improve maternal and infant health. Medicaid agencies are on the frontlines of this crisis, covering 42% of births in 2020. As of 2020, the national rate of neonatal opioid withdrawal syndrome (NOWS), a diagnosis resulting from in utero exposure to opioids, was 12.4 per 1,000 Medicaid births (West et al., 2023). Medicaid bears a disproportionate share of costs related to pregnant and postpartum people with OUD and infants with NOWS. Data from 2012 indicate that Medicaid patients accounted for three-quarters of maternal hospital stays related to substance use (Fingar et al., 2015).The MOM Model provides resources to support delivery system transformation for pregnant and postpartum people enrolled in Medicaid who have opioid use disorder (OUD). Table ES-1 describes key takeaways from the evaluation of the MOM Model Implementation Year 2.

Table ES-1. Key Takeaways From Evaluation of Implementation Year 2

System-level barriers influenced enrollment	**Maternal Opioid Misuse (MOM) Model enrollment nearly doubled in Implementation Year 2, but it remains well below initial awardee projections**. Various factors hinder enrollment, such as changing patterns in opioid and other substance use, stigma, provider capacity limitations and fear of child welfare involvement, among others.
Equity challenges affect reach and access	**Patients experienced inequitable access to MOM Models.** Challenges to access include significant health-related social needs like transportation, housing and food security challenges. MOM Models are implementing strategies to address inequities with varying levels of success.
Peer recovery services emerge as a promising practice	**MOM Model staff shared unanimous support for peer recovery services for pregnant and postpartum women undergoing opioid use disorder (OUD) treatment.** Characteristics of peer staff vary, with some having direct experience with OUD during pregnancy and others having experience supporting individuals in similar situations through nonclinical activities. The care approach peer staff take may be more important to a client's recovery than having shared experiences of pregnancy and OUD.
Different care integration approaches vary in their effects	**MOM Models have adopted different approaches to care integration.** Co-located integrated care models excel in consistent sharing of patient information across providers, while enhanced care management models within standard managed care organization systems show the most consistent completion of patient assessments and medication reviews.
MOM Models make progress toward sustainability	**All MOM Models made progress in planning for sustainability during Implementation Year 2.** MOM Models are moving toward sustainability by expanding connections with community partners to increase program visibility, fostering supportive organizational cultures and leadership buy-in and establishing and improving interoperable data systems.
Future evaluation plans will address best practices, care integration and other topics	**The evaluation of Implementation Year 3** will investigate MOM Models' continued implementation of clinical best practices, integration of maternity and OUD treatment care services, impact on patient outcomes and costs and plans for sustaining model services.

A. MOM Model

The primary goals of the MOM Model are to (1) improve the quality of care for pregnant and postpartum people with OUD; (2) expand access, service delivery capacity and infrastructure based on state-specific needs; (3) reduce costs for pregnant and postpartum individuals with OUD and their infants through pregnancy and the first postpartum year; and (4) create sustainable coverage and payment strategies to support ongoing coordination and integration of care. The model intends to achieve these goals by ensuring access to evidence-based treatment for patients; fostering integrated care delivery, with support from CMS Innovation Center authorities and state financing flexibilities; and strengthening provider capacity and infrastructure (CMS, 2022).

Planned as a 5-year initiative, the MOM Model made awards to 10 state Medicaid agencies (Colorado, Indiana, Louisiana, Maine, Maryland, Missouri, New Hampshire, Tennessee, Texas and West Virginia). This third annual report describes activities for the seven MOM Model awardees that remained active participants through the second implementation year, July 1, 2022, to June 30, 2023.[1]

MOM Model Evaluation Design and Data Collection

The CMS Innovation Center contracted Insight Policy Research, along with partners Urban Institute and Abt Associates, to independently evaluate the MOM Model. This evaluation uses a flexible mixed-methods approach to assess how implementing an integrated care model for pregnant and postpartum individuals with OUD enhances quality and health outcomes equitably across populations and reduces Medicaid costs. It does so through qualitative case studies, participant-level process data assessments and program impact evaluations (see Table ES-2). For more information, see Chapter 1.

Table ES-2. MOM Model Evaluation Design and Implementation Year 2 Data Collection

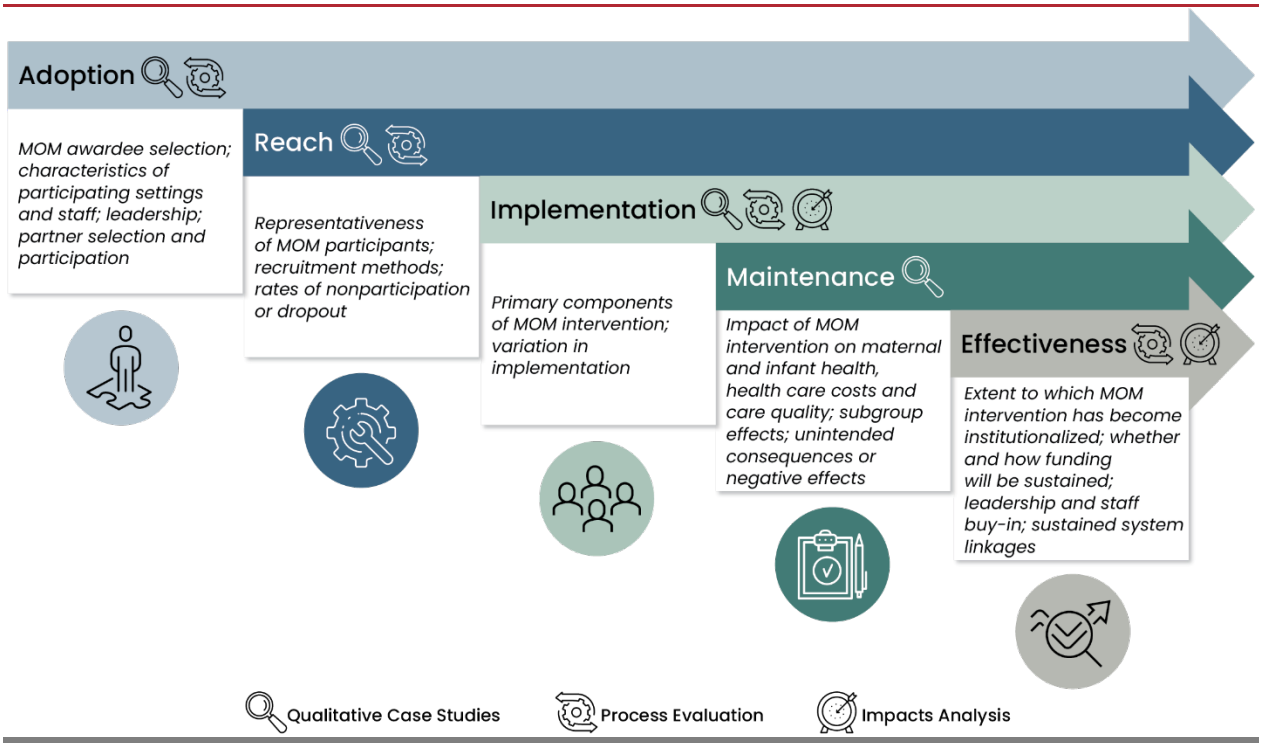
	Evaluation Design	Implementation Year 2 Data Collection
Qualitative Case Studies	Qualitative case studies examine how states design and implement models of care, document best practices and lessons learned, examine program sustainability and describe patients' experiences	▪ In-person site visits with six awardees and a virtual site visit with one ▪ Semi-structured interviews with state Medicaid agencies, care delivery partners and other community partners, providers and care provision staff ▪ Virtual structured observations at provider sites ▪ Focus groups, interviews and Photovoice sessions with patients
Process Evaluation	Quantitative participant-level (process) data on the characteristics of patients, their medical and health-related social needs, their utilization of services and outcomes associated with program participation	▪ Process data provided by awardees through June 30, 2023 (March 31, 2023, for West Virginia)
Impacts Analysis	Quantitative data on outcomes for enrolled patients and eligible patients who were not enrolled	▪ Process data ▪ 2021 T-MSIS data linked to state vital records from birth certificates and maternal, infant and fetal death records

T-MSIS = Transformed Medicaid Statistical Information System

[1] Three awardees have dropped out of the model: Missouri (in November 2020), Louisiana (in April 2021) and Maryland (in December 2022).

Evaluation framework. The evaluation uses a modified Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) framework (Glasgow et al., 1999; Kwan et al., 2019), chosen for its adaptability, utility in formative and summative evaluation and capacity to address equity. The evaluation team tailored RE-AIM for the MOM Model by reorganizing domain order and descriptions while retaining the framework's primary characteristics. Figure ES-1 illustrates the modified MOM Model RE-AIM framework, including the types of data used to examine each domain.

Figure ES-1. MOM Model Modified RE-AIM Framework



Source: Insight Policy Research modification of RE-AIM Framework

B. Implementation Year 2 Primary Findings

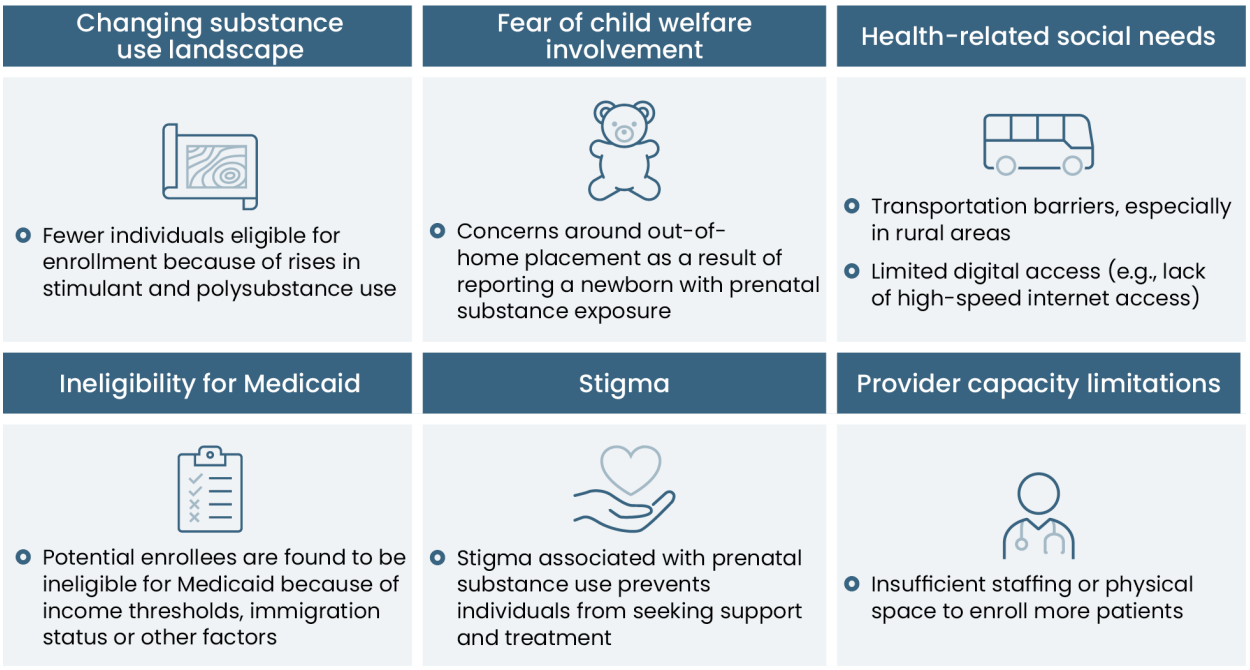
This report relies on data from qualitative case studies and awardee-reported data on patient characteristics. Analyses address awardees' implementation of their MOM Model interventions, common challenges and early successes. In all cases, findings cut across multiple RE-AIM framework domains. Because the Transformed Medicaid Statistical Information System (T-MSIS data) availability lags by about 2 years, the evaluation does not have substantial data addressing the "effectiveness" domain. Future reports will cover effectiveness in more depth.

Enrollment in the MOM Model Is Increasing but Remains Lower Than Expected, Partly as a Result of System-Level Factors

MOM Model enrollment almost doubled in Implementation Year 2, from 593 ever-enrolled patients on June 30, 2022, to 1,173 patients by June 30, 2023. However, enrollment remains below anticipated levels. An analysis of 2021 Medicaid claims and awardee enrollment data indicates that approximately 7% of potentially eligible individuals enrolled in MOM by the end of 2021. Awardees continued to test

diverse strategies to reach potential MOM Model patients throughout their service areas, including developing outreach materials, strengthening partnerships with child protective services and other agencies and engaging trusted community partners.

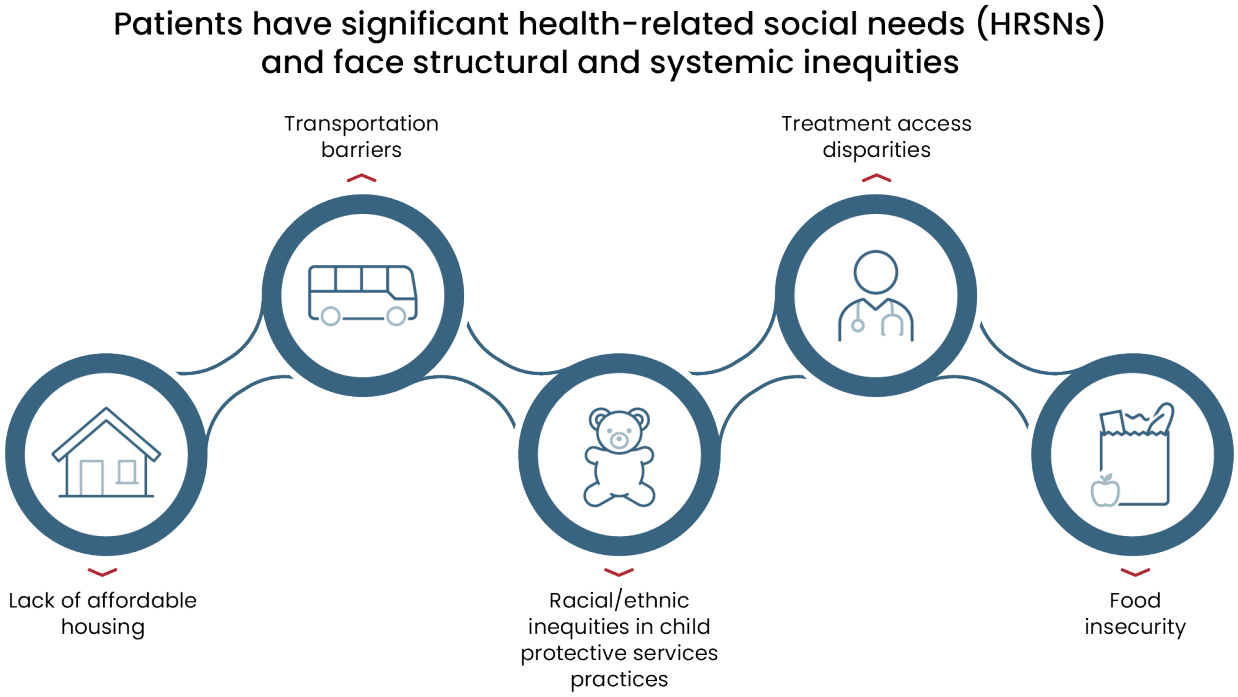
Lower-than-expected enrollment may reflect various factors



Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April 2023–June 2023 and patient-level process data through June 30, 2023

States Experienced Challenges Related to Equity That Affected the Reach and Accessibility of Their Programs

Awardees use a variety of strategies to address equity. These strategies include collaborating with community-based organizations to tackle health-related social needs, providing training to address stigma and health equity and incorporating peer recovery specialists (PRSs) and other staff with lived experience with OUD during pregnancy. However, challenges exist to ensuring equitable reach as a result of limited access to health care facilities, transportation challenges, fear of child welfare involvement and historical mistrust stemming from instances of discrimination or stigma. Notably, while patients frequently reported feeling supported by MOM Model staff, they described stigmatizing attitudes and behavior among care providers less closely involved with MOM Model protocols, such as those in emergency department settings.



99% *Nearly all MOM Model patients with three or more HRSNs reported **at least two** of the following needs: housing, food and/or transportation*

Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April 2023–June 2023 and patient-level process data through June 30, 2023

Peer Recovery Services Are an Emerging Promising Practice

PRSs have demonstrated effectiveness in helping individuals with substance use disorders as they navigate their path to recovery. However, research that explores the role of the PRS services for pregnant and postpartum individuals with OUD in particular is limited. The MOM Model appears to be the first large-scale implementation of PRS services as a part of OUD treatment for pregnant and postpartum people, with all awardees including a PRS component in their design. Awardees were unanimous in their support for the benefits of PRS services in recovery. PRSs provide essential social and emotional support tailored to each patient's needs, and many also assist with care coordination.

The qualifications, experience and background of PRSs vary across awardees. Some PRSs have lived experience with OUD while pregnant, and others do not. Feedback from staff and patients suggests having a nonjudgmental and empathetic approach is more critical than an exact peer match. The inherent emotional intensity of the PRS role and low reimbursement rates appear to contribute to shortages and high turnover among PRSs.

These women have been faced with so much stigma when they're attempting to seek out help and treatment. Oftentimes, it's the peer recovery coach who's the first friendly face and validating external force who says, "Yes, you can do it. Yes, this is going to be hard, but I'm going to be here, and you're not alone." And that might be the first time that person has ever heard that. And then they get engaged with care.

—Peer recovery specialist, Texas

Awardees Take Different Approaches to Care Integration That Have Implications for Case Management and Provider Information Sharing

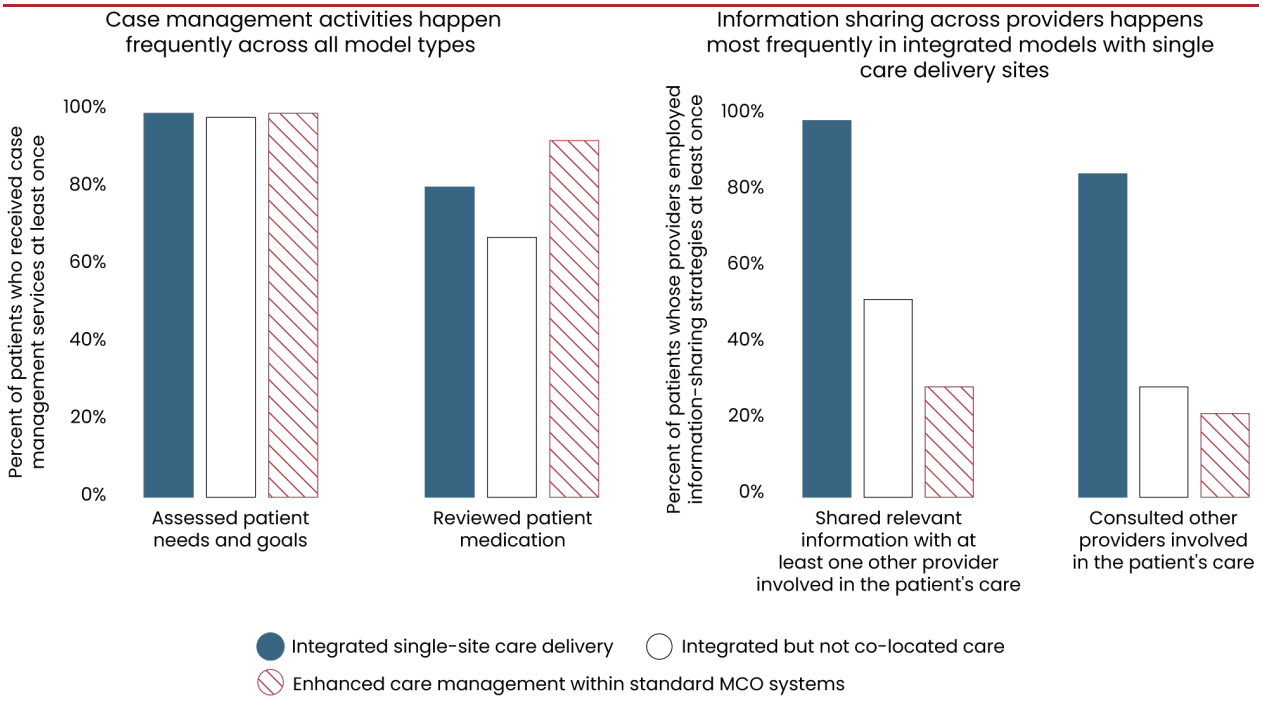
MOM Model awardees are taking different approaches to providing integrated care.[2] Most awardees have established a fully integrated and unified care delivery model that involves collaboration and direct communication among providers from diverse disciplines (for example, obstetrics, maternal-fetal medicine, neonatology or behavioral health). This approach is adopted either within a single site where providers are co-located *(integrated, single-site care delivery)* or across multiple physical locations where collaborative efforts ensure the delivery of comprehensive care *(integrated but not co-located care)*. An alternative model, adopted by one awardee (two initially; one awardee subsequently dropped out of the MOM Model), is to use care coordinators to provide *enhanced care coordination within a standard managed care organization (MCO) system*.[3] Under this approach, care coordinators connect patients with providers working across different managed care entities to ensure access to a comprehensive range of health care professionals and services.

All awardees, regardless of their approach to care integration, conduct case management activities to ensure patients receive timely and appropriate services. However, only the program providing enhanced care coordination consistently conducts case management across the majority of its patients. Conversely, consistent sharing of patient information and regular consultations with other health care professionals occur only in co-located care approaches (see Figure ES-2).

[2] Integrated care, as defined by CMS, is an approach to coordinate health care services to better address an individual's physical, mental, behavioral and social needs through a single delivery system (CMS, 2023b). Care integration aims to unify fragmented services and systems to deliver more patient-centered, continuous and efficient care. Examples of care integration activities include establishing shared care plans that are accessible to all providers involved in a patient's care, implementing interdisciplinary team meetings to discuss patient cases and implementing standardized protocols and pathways to ensure consistency and quality of care across providers.

[3] Care coordination focuses on connecting different elements of care and ensuring that transitions between providers and settings are smooth and well-managed. Care coordination tends to be narrower in scope compared with integrated care, with a focus on meeting the immediate needs of individual patients. Examples of case coordination activities include scheduling and facilitating appointments with multiple health care providers, ensuring follow-up and continuity of care after hospital discharge or specialist visits and monitoring and tracking patient progress and outcomes to ensure care goals are met.

Figure ES-2. Case Management Activities and Provider Information Sharing

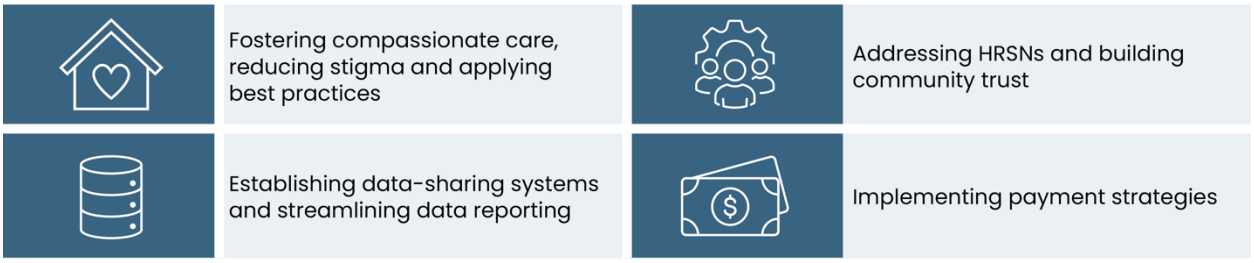


MCO = managed care organization
Source: Insight Policy Research analysis of patient-level process data through June 30, 2023

Care Delivery Partners Are Developing Capacity to Support And Sustain MOM Model Services

All awardees enhanced their MOM Model program's sustainability, notably by forming robust connections with community partners and increasing program visibility and trust within communities. Many awardees are fostering supportive organizational cultures and developing data-sharing and reporting capacity, although challenges remain, particularly around consistent implementation of best clinical practices and the interoperability[4] of data systems. Some awardees have established permanent payment strategies, but most are still in early discussions about financial sustainability with Medicaid leadership and other decision-makers.

Figure ES-3. Icons depicting model activities to develop capacity



HRSNs = health-related social needs
Source: Analysis of qualitative data from MOM Model evaluation April–June 2023

[4] Interoperability refers to the ability of a system to exchange electronic health information with and use electronic health information from other systems without special effort on the part of the user.

C. Looking Ahead

The MOM Model evaluation is the largest study to date to examine care integration for pregnant and postpartum people with OUD enrolled in Medicaid. In the second implementation year, MOM Model awardees continue to make progress with implementing their models despite enrollment challenges. Successes in MOM Model implementation include leveraging trusted PRSs for patient support, strengthening collaborations with partners to address patients' complex and diverse health-related social needs and fostering patient-centered organizational cultures that promote best practices. As awardees move into their third implementation year, the evaluation will focus on examining model impacts and awardees' progress in building capacity to maintain their models after funding ends.

Chapter 1. Overview of the MOM Model and MOM Evaluation

The Maternal Opioid Misuse (MOM) Model is a patient-centered service delivery model that aims to improve the quality of care for pregnant and postpartum people who have an opioid use disorder (OUD) and are enrolled in Medicaid. The Centers for Medicare & Medicaid Services' (CMS) Center for Medicare & Medicaid Innovation is supporting state Medicaid agencies over 5 years to implement the MOM Model with one or more care delivery partners in their communities. The model supports state interventions focused on coordinating clinical maternity and behavioral health care and integrating other services critical for health, well-being and recovery.

A. Purpose of the Evaluation and This Report

The CMS 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. The evaluation uses a flexible mixed-methods design to examine the extent to which an integrated care model for pregnant and postpartum people with OUD improves care quality while reducing costs. The evaluation seeks to answer the following questions:

- To what extent did MOM Model awardees and providers incorporate best practices and guidelines into care for pregnant and postpartum people with OUD and their infants?
- To what extent did access and service capacity for treating pregnant and postpartum people increase?
- How are states preparing to integrate MOM Model services into their Medicaid program to ensure sustainability beyond the funding period?

For additional details on the research questions to be investigated as part of the MOM Model evaluation, see Appendix A. This chapter discusses the background of the MOM Model and summarizes the primary components of the evaluation.

B. MOM Model Background

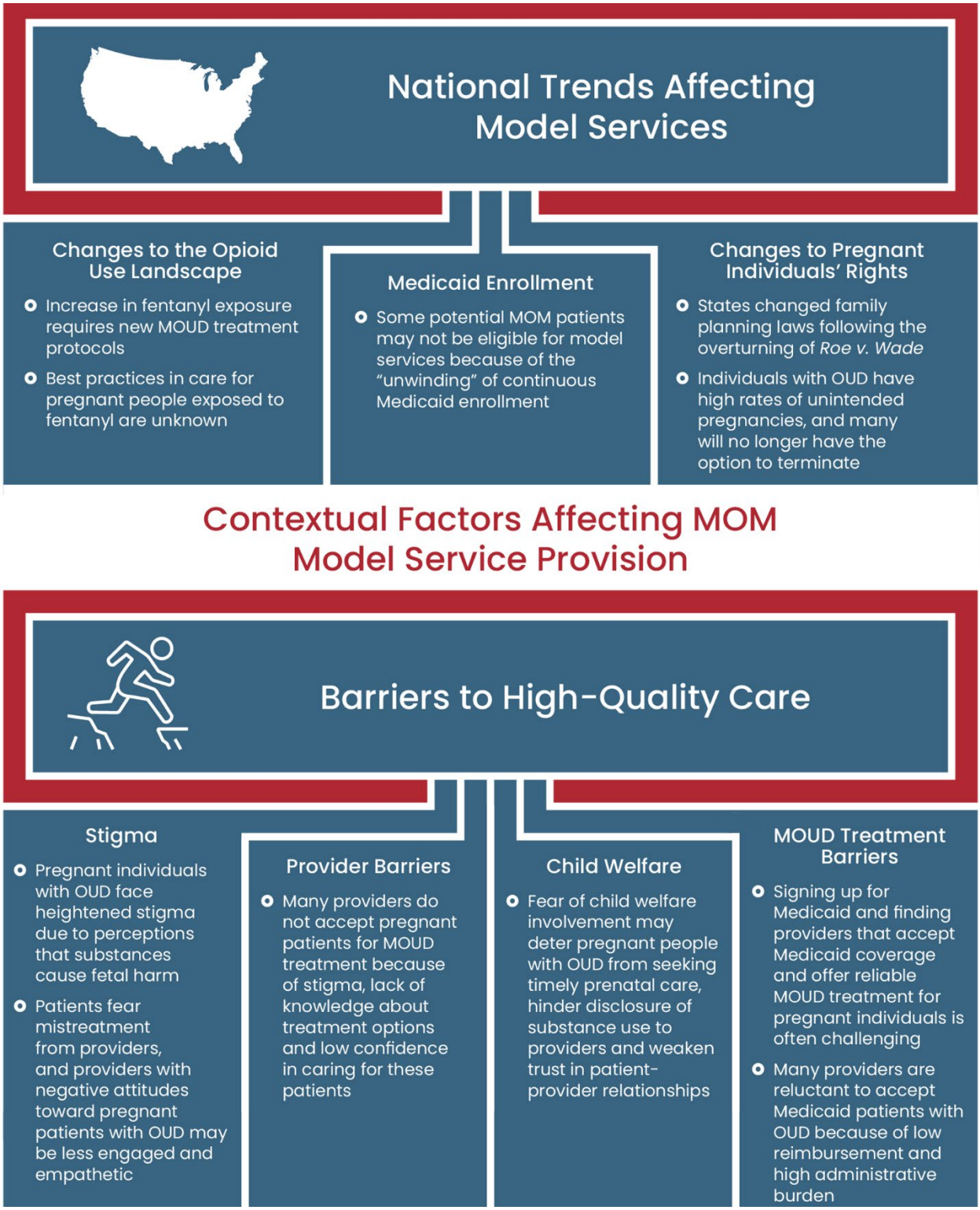
Opioid use during the perinatal period is a significant public health concern in the United States, and overdose is a primary cause of maternal deaths during pregnancy and the year after birth (Bruzelius & Martins, 2022). Opioid use in pregnancy can also lead to neonatal opioid withdrawal syndrome (NOWS), a condition observed among infants that results in opioid dependence at birth and drives neonatal intensive care unit (NICU) use (Tolia et al., 2015) . Hirai and colleagues (2021) note that the number of pregnant individuals with opioid-related diagnoses at the time of delivery rose by 131% between 2010 and 2017. Nationally, most individuals with maternal opioid-related diagnoses are non-Hispanic White Medicaid patients living in metropolitan areas, although rates of opioid-related diagnoses have increased in rural areas in recent years (Hirai et al., 2021).

Untreated OUD is associated with adverse pregnancy outcomes, including maternal overdose, fetal death and preterm birth (ACOG [American College of Obstetricians and Gynecologists], 2012). Among pregnant and postpartum people, overdose mortality increased by approximately 81% between 2017 and 2020, driven in part by synthetic fentanyl (Bruzelius & Martins, 2022).

Multiple contextual factors affect MOM service provision and the MOM Model evaluation (see Figure 1.1). Some social and cultural factors rooted in the health care system, such as stigma and providers'

beliefs about and knowledge of OUD treatment, have evolved but existed before the launch of the MOM Model. Some recent policy changes and trends in the substance use landscape have resulted in more rapid changes affecting service provision.

Figure 1.1. National Trends Affecting MOM Model Services and Barriers to High-Quality Care



MOUD = medications for OUD; OUD = opioid use disorder

Inequitable Access to Care in Underserved Communities

Pregnant people who are Black, Hispanic or living in rural areas experience the greatest inequities when seeking OUD treatment. However, research is lacking on inequitable access to care among pregnant individuals in other underserved communities, including people with disabilities, those who identify as a sexual or gender identity minority, individuals with limited English proficiency and individuals with multiple marginalized identities.

Compared with people who are non-Hispanic White, pregnant people who are Black or Hispanic are less likely to—

- Receive medications for OUD (MOUD) treatment during pregnancy
- Receive consistent MOUD treatment (e.g., receive treatment throughout their second and third trimesters)
- Continue MOUD treatment during first year postpartum
- Be diagnosed with OUD early in pregnancy
- Receive a higher dose of MOUD

Compared with pregnant individuals living in urban areas, individuals living in rural areas are less likely to—

- Receive MOUD treatment during pregnancy
- Live in an area with easy access to a buprenorphine prescriber or methadone clinic
- Live outside an area with a buprenorphine-certified prescriber or an insufficient number of opioid treatment programs
- Live near a hospital with obstetric services

Source: Analysis of MOM process data

C. The MOM Model

The primary goals of the MOM Model are the following:

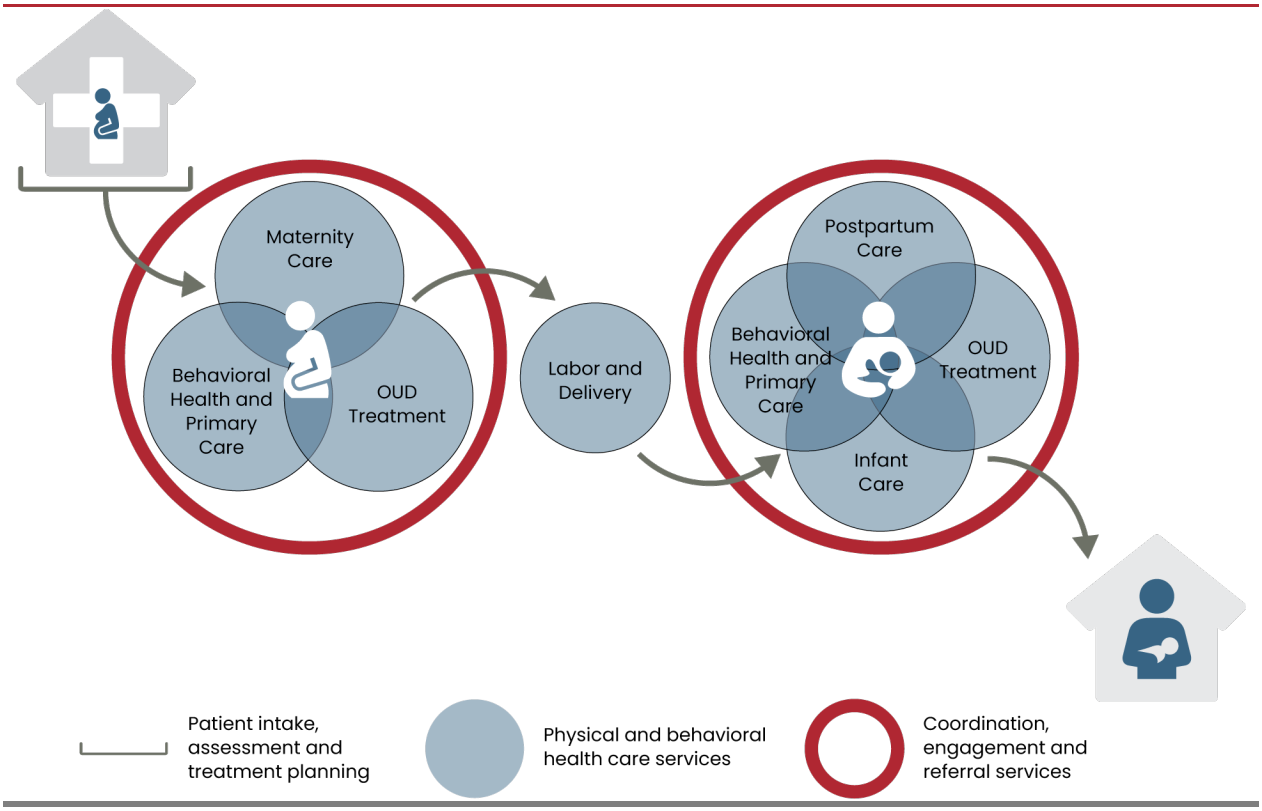
- Improve quality of care and reduce costs for pregnant and postpartum individuals with OUD and their infants.
- Expand access, service delivery capacity and infrastructure based on state-specific needs.
- Create sustainable coverage and payment strategies that support ongoing coordination and integration of care.

The CMS Innovation Center refreshed its strategic plan in 2021, identifying patient-centered care and health equity as a focus for all models (CMS, 2023a). The MOM Model's approach to health equity aligns with the goal of "the attainment of the highest level of health for all people, where everyone has a fair and just opportunity to attain their optimal health regardless of race, ethnicity, disability, sexual orientation, gender identity, socioeconomic status, geography, preferred language, or other factors that affect access to care and health outcomes" (CMS, 2022). This CMS goal is inherent to the MOM Model design and a primary consideration for MOM Model awardees as they attempt to serve individuals in this marginalized population.

MOM Model Design

The MOM Model requires that enrolled patients can access comprehensive physical and behavioral health services and that providers have the capacity to share relevant information with one another. Awardees are also required to integrate care, including referrals for health-related social services; engage MOM Model patients and retain them in care; and build community partnerships to meet the model population's comprehensive needs (see Figure 1.2).

Figure 1.2. MOM Model Design: Integrating Care

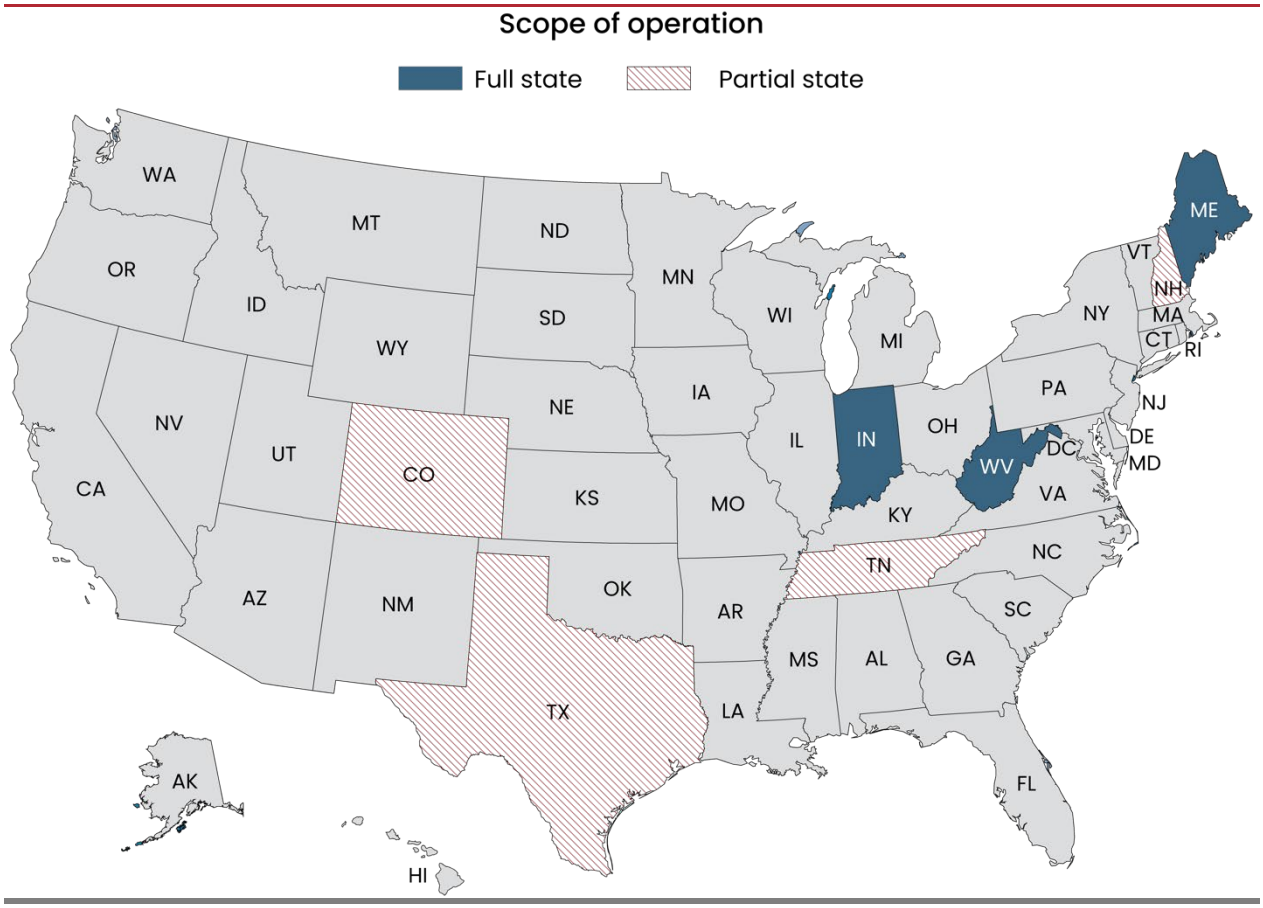


OUD = opioid use disorder
Source: CMS, 2019

Awardees and Care Delivery Partners

The CMS Innovation Center currently funds seven state Medicaid agencies to implement the MOM Model: Colorado, Indiana, Maine, New Hampshire, Tennessee, Texas and West Virginia (see Figure 1.3). Two states, Louisiana and Missouri, ended their participation in the model before implementation, and Maryland withdrew in December 2022 (see Appendix F for more information on factors leading to Maryland's withdrawal).

Figure 1.3. MOM Model States



State Medicaid agencies serve as MOM Model awardees, and each agency is collaborating with care delivery partners to build service delivery capacity, integrate health information systems and implement enhanced care coordination approaches. Care delivery partners may be local providers, health systems or payers (for example, hospital-based health clinics, health homes or Medicaid managed care organizations [MCOs]). Awardees may work with more than one care delivery partner in a local area, multiple regions or counties or their entire state. The design of the MOM Model interventions varies by the awardee, as described in Chapter 2. Individual profiles of awardees' MOM Model interventions appear in Part 2 of this report.

Implementation Timeline and Funding

The MOM Model has operated over three periods: pre-implementation, transition and implementation (see Table 1.1). Awardees are in the third year of implementation (second year of full implementation). During implementation, all awardees are expected to offer their full array of services and cover them without supplemental funds from the CMS Innovation Center, though not all have accomplished the latter. Awardees are eligible for performance payments if they meet program milestones related to maternal OUD treatment, health-related social needs (HRSNs) screening and continuity of pharmacotherapy at the end of pregnancy, among other measures.

Table 1.1. Implementation Timeline

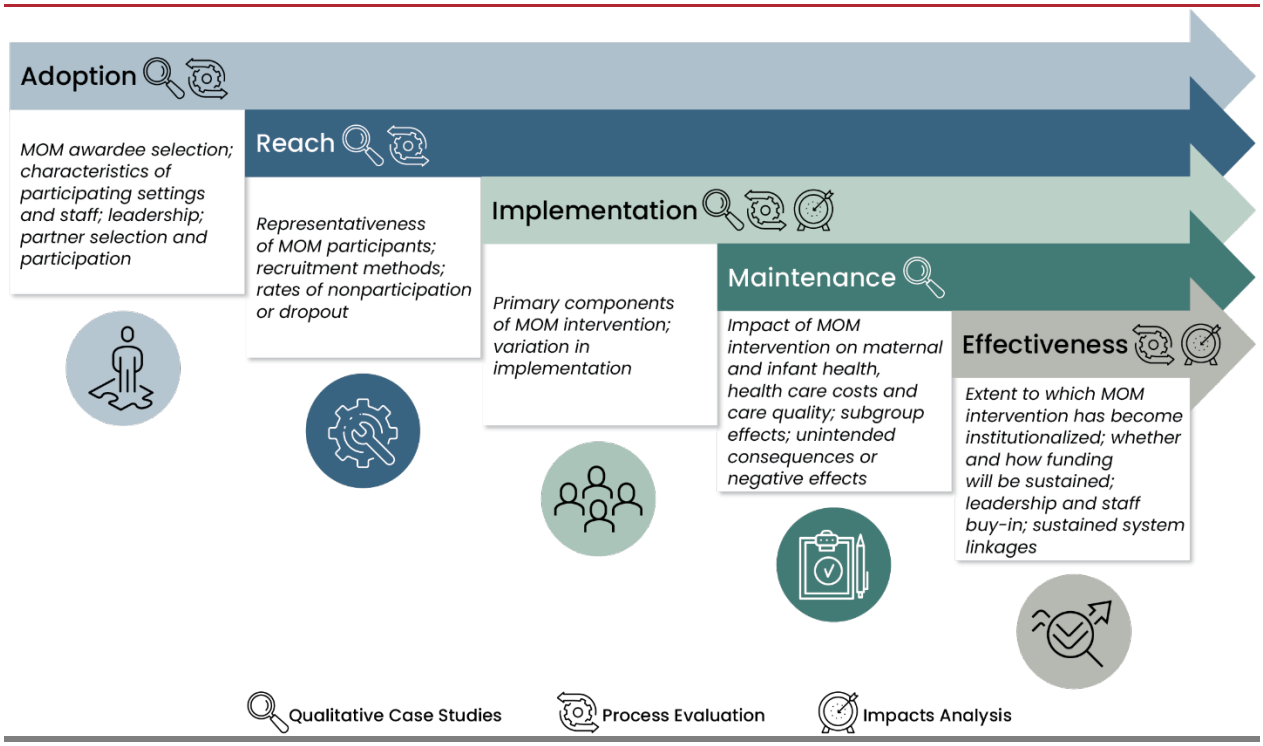
	Pre-Implementation	Transition (Year 1 of Implementation)	Full Implementation
Timeframe	January 1, 2020–June 30, 2021	July 1, 2022–June 30, 2022*	July 1, 2022–December 31, 2024
Description	Awardees designed their MOM Model interventions and strengthened relationships with MOM Model partners	Awardees began delivering care using MOM funding; Medicaid programs finalized coverage and payment strategies to fully fund programs through the state	Awardees implemented model

* Timeframe for most awardees. West Virginia and Colorado received extensions to address state-specific implementation challenges, allowing them to begin implementation January 1, 2022, and April 1, 2022, respectively.

D. Evaluation Design

The MOM Model evaluation uses a flexible, iterative, mixed-methods design through three primary data collection methods: qualitative case studies, participant-level process data and evaluation of program impacts using Medicaid claims from the Transformed Medicaid Statistical Information System (T-MSIS) linked with state vital records. The evaluation is based on the RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) framework (Glasgow et al., 1999; Kwan et al., 2019), selected for its overall adaptability and capacity to address equity. The evaluation team adapted RE-AIM to meet the MOM Model's evaluation needs by reorganizing the order of the domains and reframing their descriptions. Figure 1.4 depicts the modified MOM Model RE-AIM framework, including the types of data used to examine each domain. Appendix A includes specific research questions.

Figure 1.4. MOM Model Modified RE-AIM Framework



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

Because current evaluation information primarily consists of qualitative case studies and process data, this report emphasizes the adoption, reach and implementation domains.

Data Sources and Methods

Annually, the evaluation team conducts qualitative data collection and analysis, analyzes quarterly awardee-reported process data and develops awardee-specific impacts evaluations using T-MSIS data and birth and death certificates from state vital records as they become available.

Qualitative data

Qualitative research methods help the evaluation team understand awardees' MOM Model designs, program alignment with recommended best practices for the treatment of pregnant and postpartum individuals with OUD and the experiences of patients awardees served. Qualitative evaluation methods also enable the evaluation team to assess evolving processes related to enrollment, service provision, patient and staff retention, data collection, data sharing and payment. These methods also provide information to help the evaluation team refine the quantitative analysis.

To inform the qualitative evaluation of the MOM Model, the evaluation team **reviews documents**, such as awardees' quarterly progress reports and publicly available information about MOM Model state and local policies and substance use trends. The evaluation team also conducts **virtual and in-person site visits** to collect data from awardees, care delivery partners and provider partner staff, as well as patients participating in the MOM Model. Data collection methods include focus groups, journey mapping and Photovoice with patients and in-depth interviews and structured observations (for example, virtual tours of office facilities and the surrounding environment) with MOM Model staff and partners.

Participant-level process data from awardees

At the end of each quarter, awardees submit process data to CMS describing the characteristics of MOM Model patients and the services they receive. These data enable the evaluation team to assess how those services map to best practices in caring for pregnant and postpartum individuals with OUD. As implementation progresses, the team will use process data to track interim and longer term outcomes of MOM Model patients. For a complete list of process data elements, see Appendix B.

The process data help the team track outcomes that may not be available through T-MSIS, vital records or other data sources, such as needs related to social determinants of health. Process data also facilitate timely analysis of key variables because information on birth outcomes can be delayed up to a year in vital records data and even longer in claims data.

As of the writing of this report, awardees have submitted eight rounds of participant-level process evaluation data. Data submitted include the following:

MOM Model patient characteristics, including preexisting psychosocial and medical risk factors, mental and physical health, substance use history and social determinants of health

Service use type and frequency, such as information on prenatal care visits, OUD treatment initiation and visits, pharmacological treatments for infants, NICU use, postpartum OUD treatment plans, breastfeeding uptake and family planning, referrals to other services and care coordination

Because current sample sizes are small, only descriptive analysis is possible in this report. Depending on the extent to which enrollment increases, the team will assess the feasibility of incorporating more detailed statistical analyses into future reports.

MOM Model awardee impacts analysis

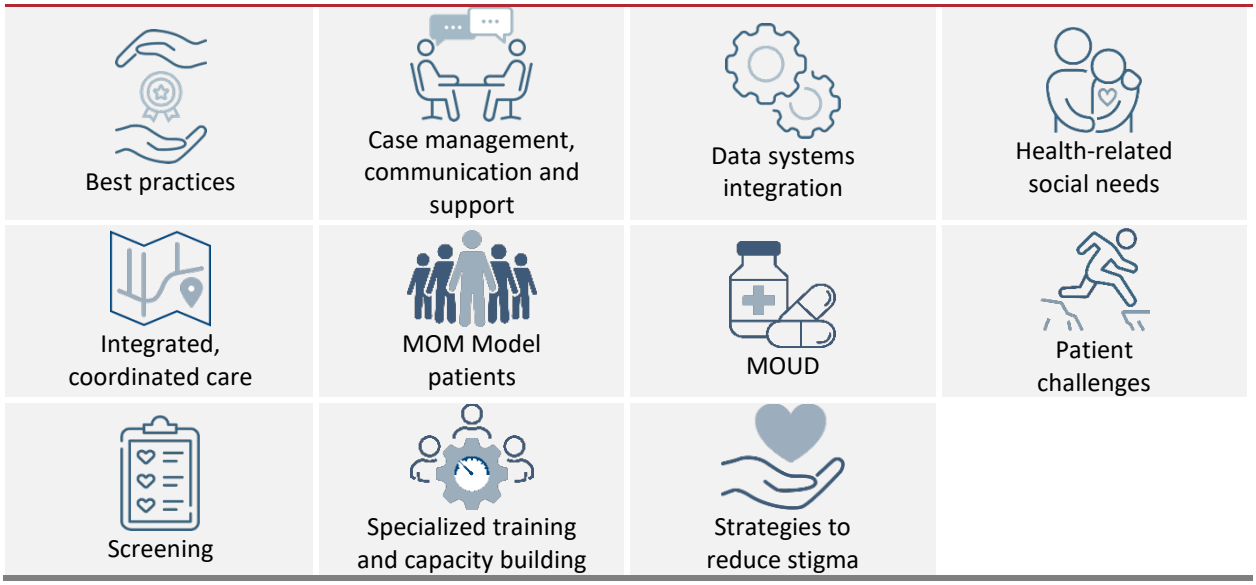
The impacts analysis will compare outcomes for Medicaid patients eligible for participation in the MOM Model and their infants and outcomes for Medicaid patients with similar characteristics in similar areas without access to MOM Model programs. Impacts analyses will use Medicaid eligibility, enrollment, claims and encounter data from T-MSIS, linked with vital statistics data from birth certificates and maternal, infant and fetal death records. To estimate program impacts, the team will (1) consider all individuals eligible for the MOM Model as the treatment group (regardless of whether they participate in the program), (2) identify a similar group of individuals in a different area using Medicaid data in T-MSIS and (3) compare outcomes for both groups. Ultimately, for awardees with a sufficient sample size, the team will compare changes in outcomes for each of these groups between the pre-implementation and implementation periods (also known as a difference-in-differences approach).

Appendix B provides further methodological detail for all approaches.

E. Organization of the Report

Part 1 of this annual evaluation report summarizes cross-cutting observations within the modified RE-AIM framework (see Figure 1.2; Esposito et al., 2021) to assess progress along the MOM Model program implementation trajectory. Observations related to health equity, drawn primarily from key informant interviews with awardees and their partners, appear in callout boxes. Part 2 includes state-specific briefs for each MOM Model awardee. Throughout the report, key themes and cross-cutting findings are noted using icons according to the legend in Figure 1.5. A previous report describes findings from the first year of the program's implementation (Tucker et al., 2023).

Figure 1.5. Report Icons



MOUD = medications for opioid use disorder

Chapter 2. MOM Model Adoption

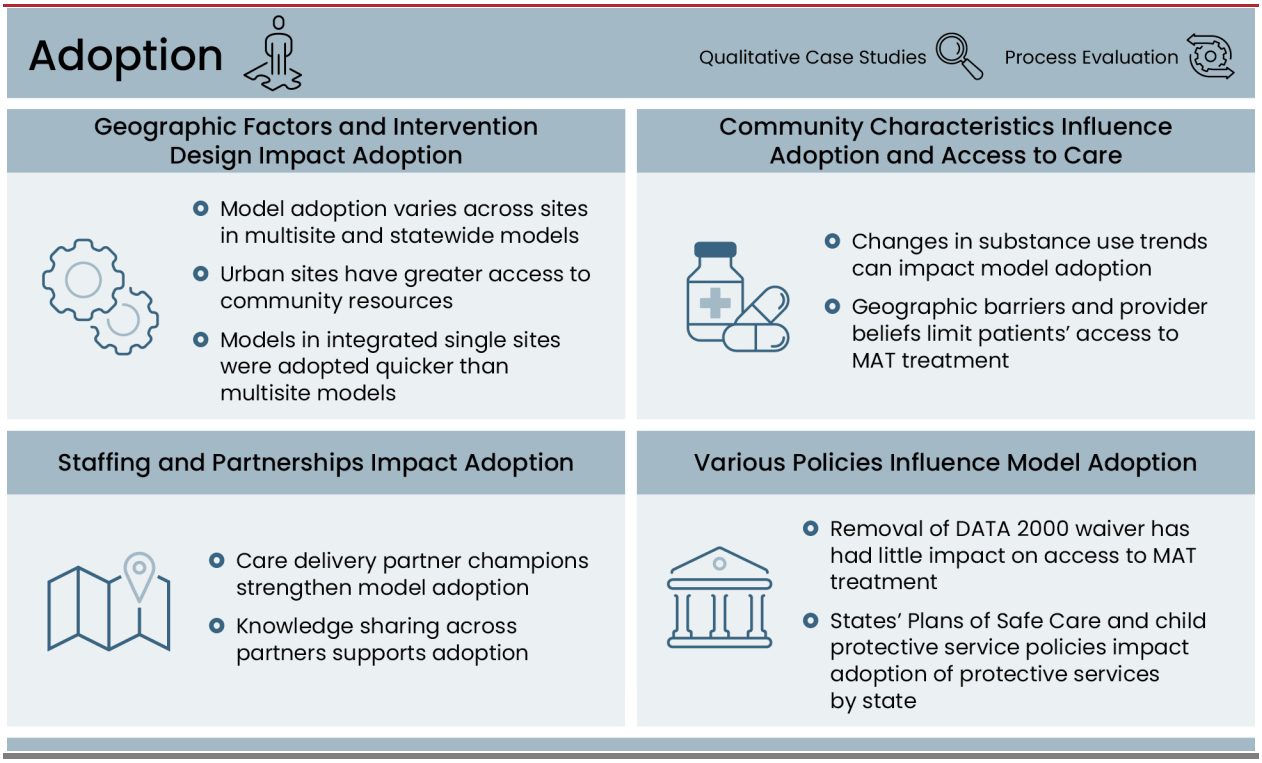
Within the MOM Model context, adoption encompasses factors influencing the uptake of the model, including organizational and community characteristics as well as the broader legal and policy context. Identifying and addressing concerns and barriers to adoption can increase participation in the MOM Model within health care systems, particularly in medically underserved and under-resourced areas.

The evaluation team collected qualitative case studies, process data and publicly available resources to address the following adoption-related research questions:

- What are the characteristics of MOM Models and partnerships across awardees?
- What are the community characteristics of MOM Model awardee regions?
- What are the legal and Medicaid policy contexts within which the MOM Models are being implemented?

Key adoption findings appear in Figure 2.1. The analyses show that geographic factors, intervention design, staffing and partnerships, community characteristics and the political context influence adoption.

Figure 2.1. Implementation Year 2 Findings Related to Adoption



DATA 2000 = Drug Addiction Treatment Act of 2000; MAT = medication-assisted treatment
Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April–June 2023

A. MOM Model Characteristics Affect Adoption

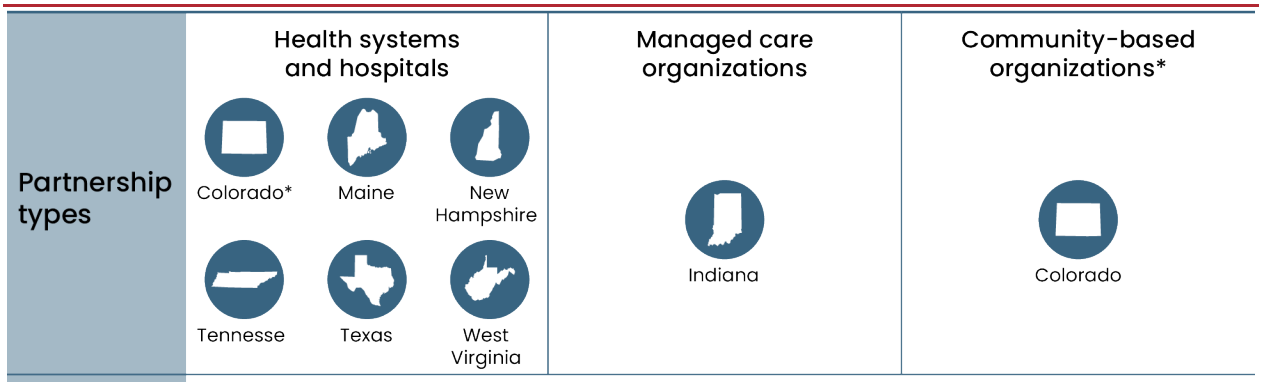
Overview of MOM Model Characteristics

The seven MOM Models implementing at the beginning of July 2022 maintained and refined various program characteristics based on lessons learned since launching their programs. MOM Models made refinements to partnerships, coverage area, intervention design and staffing to ensure they were best serving pregnant and postpartum individuals with OUD in their communities.

Partnerships

Awardees partnered with a variety of care delivery partners and other organizations during the second year of MOM Model implementation, including health systems and hospitals, MCOs and community-based organizations. Care delivery partners provide MOM Model services to patients or coordinate with health care provider partner organizations to provide these services. MOM Model partnerships (see Figure 2.2) remained relatively stable in Implementation Year 2.

Figure 2.2. MOM Model Partnerships



* Colorado is represented twice because it had many subgrantees implementing various MOM Models during Implementation Year 2.
Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April–June 2023

Care delivery partners reported varying levels of experience designing and implementing Medicaid models and maintaining compliance with model requirements. Awardees fostered open, flexible communication avenues and helped partners address model implementation challenges to build and maintain strong relationships with partners. Some awardees implemented learning collaboratives to bring care delivery partners together to learn from one another and address common implementation challenges. All awardees established regular meetings with care delivery partners, responded to ad hoc questions and requests and communicated with CMS to inform implementation questions. Care delivery partners from most states indicated that awardees' capacity to answer implementation questions and advocate for partners with CMS was an important factor that helped them adopt MOM Models reliably.

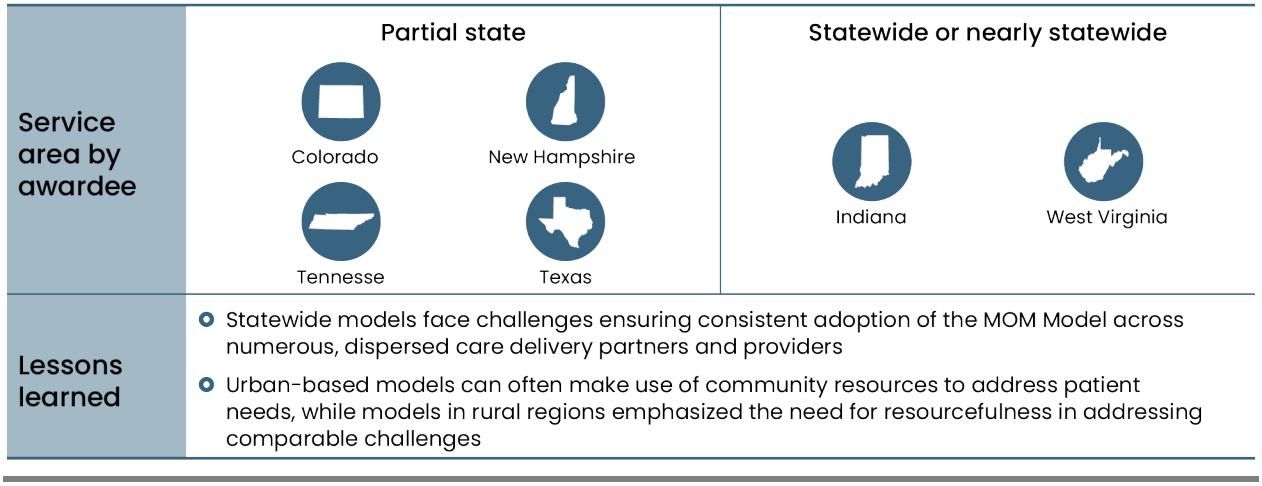
> **We have a learning collaborative that's one of the key features of our model … those meetings are pretty informal. They have a theme or question, and the conversation goes where it goes. I've been copied on emails from one [care delivery partner] to another saying, "Hey, you mentioned this; could you send me the information on that?"**
>
> —Awardee

MOM Model communities

MOM Model communities vary in their levels of access to social support and behavioral and physical health care resources, median household income and other sociodemographic factors, making it more difficult to address patients' needs in some areas. Variation was particularly notable for mental health providers per 10,000 residents (ranging from 11.4 to 47.6), median household income ($45,445 to $89,964), average months on waitlist for subsidized housing (8.7 to 33.2) and total social service providers per 100,000 residents (88.6 to 205.7). Few characteristics were relatively consistent across MOM Model communities, but numbers were generally low for social service providers addressing violence-related needs per 100,000 residents (ranging from 0.3 to 0.0) and the percentage of individuals with no car and limited access to food stores (0.9 to 3.8). The percentage of children in single-parent households was also similar across MOM Model communities (25.6 to 36.1). See Appendix C for further details on community characteristics.

The size and scope of MOM Model communities vary significantly across awardees (see Figure 2.3). Three MOM Models were implemented statewide or nearly statewide during Implementation Year 2, while four served single cities or regions of their state. One model served three designated regions of the state at the beginning of the year but reduced its service area to two regions after a care delivery partner withdrew. Nearly all MOM Models served both urban and rural areas of their state.

Figure 2.3. MOM Model Communities



Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April–June 2023

Statewide and partial-state MOM Models experienced different challenges in encouraging model adoption. Some statewide MOM Models encountered difficulties ensuring consistent adoption of model services and processes across health care providers from different organizations or located in varying statewide locations. This challenge was primarily the result of limited oversight capacity and influence over provider knowledge and skill development. For example, although many states offered training to providers statewide (e.g., in stigma reduction), the training was generally optional, and respondents considered providers with limited knowledge of or interest in the MOM Model to be less likely to attend the training. Statewide MOM Models may also face greater challenges in encouraging model buy-in and participation from providers as a result of limited provider knowledge of the program or limited engagement with care delivery partners.

Care delivery partners in urban areas nearly unanimously reported having greater access to community resources to address patient needs than rural care delivery partners. Some care delivery partners in rural areas implemented strategies to address community resource shortages. For example, a peer recovery specialist (PRS) for at least one model drives patients to attend medical appointments and access community resources in response to the lack of transportation support services in the area.

Approaches to care integration

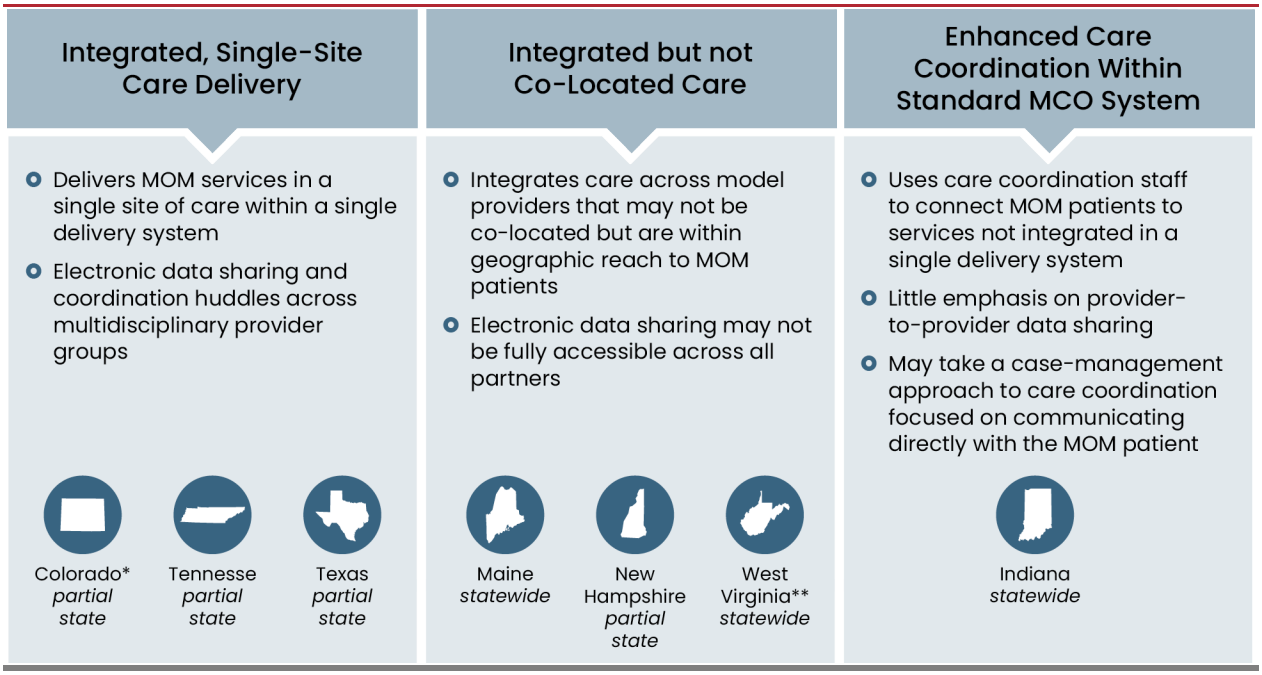
A central goal of the MOM Model is to improve access to integrated care for pregnant and postpartum individuals with OUD. Integrated care is an approach to streamline health care services to better address an individual's physical, mental, behavioral and social needs through a single delivery system (CMS, 2023b). An integrated care approach is more intensive than traditional care coordination, which involves organizing a patient's care across many health care providers. In integrated care, coordination occurs at a systemic level through a unified delivery model, ensuring diverse care providers effectively communicate and stay informed about all aspects of a patient's complex health care needs.

> **We're trying to understand gaps in training and if we need more in-person or virtual training [for providers]. The data show so far it's been pretty consistent in terms of the numbers. Our feeling is that inside of the [care delivery partner], there's good fidelity, but we want to make sure outside of that system and in the rural areas, there's good fidelity. We don't have all their data yet, so that's what we're trying to assess.**
>
> —Awardee

MOM Model awardees are taking different approaches to providing integrated care. The evaluation identified three primary approaches: integrated, single-site care delivery; integrated but not co-located care; and enhanced care coordination within a standard MCO system (see Figure 2.4). Specifically, six awardees designed their models to increase service integration between OUD treatment and maternity care providers through a fully integrated, unified care delivery model, either at a single site or across multiple sites. Two awardees focused their models on enhanced care coordination services, with only one of these models remaining at the start of the third year of implementation after the departure of one awardee. Because only one state uses an enhanced care management approach, it is difficult to make comparisons with fully integrated approaches. However, increased engagement among substance use disorder (SUD) treatment, maternity care and other providers under care integration–focused models likely encourages buy-in from staff and collaboration among providers by increasing engagement across departments and expanding knowledge of the model.

Although care delivery partners from multisite models have been successful in promoting and achieving model adoption, single-site models offer advantages related to adoption. For example, it may be easier to encourage the adoption and institutionalization of single-site models because of easier pathways to communication between leadership and model staff and greater influence over provider training and knowledge of the model.

Figure 2.4. Primary Care Integration Approaches in MOM Models



MCO = managed care organization
* Colorado had two single-site care delivery partners and one multisite care delivery partner during Implementation Year 2.
** Some but not all of West Virginia's care delivery sites provide co-located services.
Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April–June 2023 and patient-level process data through June 30, 2023

Staffing

Two lessons were learned from staffing approaches across MOM Models:

- Staff "champions" strengthen the adoption and institutionalization of MOM Models.
- Staff turnover has hindered the adoption of many models.

MOM Models feature similar types of staff across care delivery partners. Most care delivery partners include program managers, SUD treatment providers, maternity care providers, PRSs, care coordinators and data analysts as part of their model through internal staffing or by partnering with provider organizations. Several models include specialized clinical staff who deliver direct patient services that are less common; these include professionals such as psychiatrists, home visiting nurses and lactation consultants.

> **Each [site] really needs a provider champion—someone that thinks and talks about it every day and keeps it on the forefront of everyone's mind.**
>
> —Care delivery partner

Staffing plays an integral role in supporting or inhibiting the adoption of MOM Models. Awardees and care delivery partners indicated that having a MOM Model "champion" at all levels of the model, including provider sites, helps encourage and solidify buy-in to institutionalize MOM Model processes and practices. However, staff turnover has inhibited adoption for some models. For example, care delivery partners have seen high turnover rates in data analysts and PRSs, resulting in reduced institutional knowledge and staff

morale and high retraining costs for those positions. Filling positions for data analysts and PRSs is particularly challenging because of the experience and knowledge requirements.

Summary of lessons learned

Most awardees have successfully adopted the MOM Model in their state by establishing and maintaining strong partnerships. Awardees have generally been efficient in their communications with partners and leverage opportunities to bring partners together to discuss challenges or lessons learned. This process is especially valuable for care delivery partners with limited experience implementing federal health programs and maintaining compliance with program requirements.

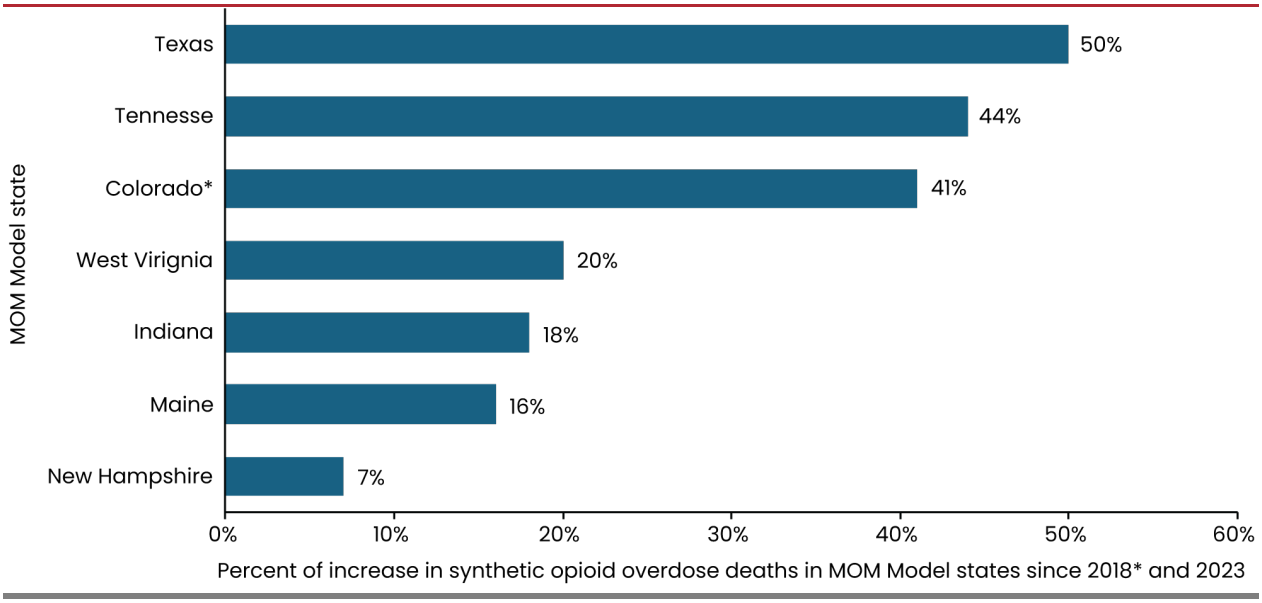
Although most awardees have established strong partnerships, adoption-related challenges remain. For example, awardees with statewide models face challenges ensuring consistent adoption across dispersed providers, especially those less engaged with or knowledgeable about the MOM Model, while other models struggle with staff turnover. Awardees and their partners emphasized the importance of having champion staff at each MOM Model partner organization to help ensure consistent adoption within each organization and address staff turnover by sharing their institutional knowledge and passion for the program with new hires.

B. MOM Model Community Substance Use Trends and Substance Use Treatment Options Influence Adoption

Different aspects of MOM Model communities can influence the adoption of models, including substance use trends and access to substance use treatment in those communities. Substance use trends in MOM Model communities have evolved dramatically since the start of the MOM Model in January 2020. Communities are currently experiencing a rapidly growing prevalence of potent synthetic opioids, including fentanyl, carfentanyl and xylazine. Synthetic opioids have contributed to higher rates of polysubstance use because those sedated by the stronger synthetics turn to stimulants such as methamphetamine to balance drug effects. According to the National Center for Health Statistics, since 2020, overdose deaths involving prescription opioids and heroin have fallen, while those involving methamphetamine and cocaine in combination with synthetic opioids have risen significantly (NIDA [National Institute on Drug Abuse], 2023).

These shifts in the substance use landscape change treatment needs. For example, medication-assisted treatment (MAT) is the gold standard for treating OUD, but no medication equivalent is available for addiction to stimulants, leaving behavioral interventions as the clinical standard for treating SUDs related to stimulant use (Ronsley et al., 2020). Figure 2.5 describes changes in synthetic opioid overdose deaths in MOM Model states between 2018 and 2023.

Figure 2.5. Increase in Synthetic Opioid Overdose Deaths in MOM Model States Compared With Overall Opioid Overdose Deaths Between 2018* and 2023



* Rates of synthetic opioid overdose deaths compared with all opioid overdose deaths in Colorado, Indiana and Texas are from 2020 because of missing 2018 data.
Source: NIDA, 2023

> **Methamphetamine is the number one drug in Indiana … followed by fentanyl. In Indiana, it's almost impossible to get [pure] heroin anymore. … They have had some xylazine confiscated, but it's definitely meth and fentanyl.**
>
> —Care delivery partner

MOM Model care delivery partners confirmed they had observed a rapid change in higher rates of fentanyl use relative to other opioids. For example, one care delivery partner reported at least 80% of the pregnant or postpartum individuals receiving care at their site were using fentanyl, either knowingly or unknowingly through other laced substances. Clinical best practices for initiating MAT with pregnant and postpartum individuals exposed to synthetic opioids are still being established primarily because the rise of synthetic opioid exposure occurred so quickly. Many individuals exposed to synthetic opioids are also unaware they have been exposed, and currently available screening tools do not detect substances like fentanyl. Patients exposed to synthetic opioids are at a greater risk of opioid withdrawal symptoms if they initiate buprenorphine while synthetic opioids are still in their system, requiring a greater washout time to avoid these symptoms (Providers Clinical System Support, 2023). However, clinical best practices also encourage providers to initiate buprenorphine treatment with pregnant patients as soon as possible, creating a challenging clinical environment for providers treating individuals who are unsure if they have synthetic opioids in their system.

Care delivery partners in some areas highlighted that methamphetamine use, including methamphetamine mixed with fentanyl, is more prevalent in their communities than opioid use alone. The evaluation team plans to investigate whether the increased prevalence of methamphetamine in some MOM Model communities has affected leadership buy-in for the model and access to organizational resources.

Access to OUD Treatment

Access to OUD treatment differs across MOM Model communities. Notably, awardees and care delivery partners indicated that pregnant and postpartum individuals with OUD in rural areas often lack access to OUD treatment or have limited choices for OUD treatment modalities. These access issues are the result of factors such as the distance to the nearest methadone clinic, a shortage of providers willing to prescribe buprenorphine or difficult travel routes to clinics. In urban settings, MOM Models typically observe few obstacles for individuals seeking providers that prescribe buprenorphine and accessible methadone clinics. In contrast, those in rural areas may face challenges, requiring up to a 2-hour drive each way to access MAT. Respondents from some MOM Models also indicated that providers in rural areas may be more likely to take an abstinence-only approach to treating OUD, even though this approach does not align with current clinical guidelines.

> **Not all providers, even with the [Food and Drug Administration] change getting rid of the X waiver, are comfortable [prescribing buprenorphine]. I was just at a physician dinner last night … and one of the providers is like, "I'm never going to prescribe [buprenorphine]. No way. I don't care if I can, I'm not going to do it." And I do see the validity in that. He hasn't really been trained. He doesn't have the comfort level, and many of our patients, as we know, have behavioral health issues. So if you have a busy [obstetrician/gynecologist] taking care of everyone, you're not going to have the capacity to spend time to really do care just because you can prescribe buprenorphine.**
>
> —Care delivery partner

Access barriers to OUD treatment modalities can strongly influence the likelihood of a pregnant or postpartum individual with OUD achieving a successful recovery. Care delivery partner staff reported that although buprenorphine-based treatment is clinically considered the best treatment for most pregnant individuals with OUD, methadone is still the preferred treatment option for some individuals who may desire or require daily treatment. However, respondents from at least two MOM Models reported that Medicaid coverage barriers limit pregnant and postpartum individuals with OUD from easily accessing their desired MAT modality. For example, respondents from one MOM Model noted a scarcity of providers in their community that accept Medicaid coverage, resulting in monthly costs ranging from $300 to $500 for patients who access OUD treatment without insurance coverage. Respondents from another model indicated that only two of the 12 methadone clinics in the surrounding area accept Medicaid coverage.

C. Legal and Medicaid Policies Influence Interactions With MOM Partners

The federal and state policy contexts of the MOM Model contribute to adoption in several ways. Understanding this context fosters a more robust evaluation of the facilitators and inhibitors of MOM Model adoption and overall access to care.

COVID-19

Under the terms of the COVID-19 public health emergency (PHE) and the Families First Coronavirus Response Act of 2020, state Medicaid agencies maintained existing health benefits for all Medicaid enrollees. The Consolidated Appropriations Act, passed in December 2022, lifted this requirement, and as a result, Medicaid renewals resumed after March 31, 2023.

During evaluation site visits in April and May 2023, awardees and care delivery partners voiced concerns that eliminating the continuous Medicaid coverage requirement could result in enrollment and retention challenges. Although most states had not yet started the re-enrollment process, interviewees noted that patients whose eligibility qualifications changed during the PHE or who might not complete the renewal process on time could lose Medicaid coverage and therefore lose MOM Model benefits. Staff from some MOM Models aim to use case management support services to mitigate coverage loss by informing patients about the necessity of Medicaid renewals and guiding them through the process.

Removal of DATA 2000 X Waiver

The pool of health care providers eligible to prescribe buprenorphine widened with the removal of the Drug Addiction Treatment Act of 2000 (DATA 2000) waiver, which had required providers seeking to prescribe buprenorphine to apply for and obtain an "X waiver" from the Drug Enforcement Administration and complete multiple training requirements. Removal of the X waiver had been in place for only 3 months at the time of the site visits, so awardees had not had time to identify any resulting changes. One respondent directly stated, "I haven't seen anyone who wasn't prescribing [before] start to prescribe [now]."

Recent research indicates that although the removal of the X waiver makes prescribing buprenorphine more accessible to providers, various challenges still influence a provider's likelihood of prescribing it. These challenges include lack of patient interest, organizational or policy barriers and personal beliefs (Jones et al., 2023). Care delivery partners from multiple MOM Models emphasized similar challenges. They explained that many health care providers still feel inadequately informed and apprehensive about treating pregnant individuals with OUD. Some providers are also unwilling to care for this population because of the extensive support and attention required.

The evaluation team will continue to investigate the effects of the X waiver removal on providers' prescribing behaviors and patients' access to care. Colorado, Indiana, Maine and West Virginia currently maintain state laws requiring training or waiver attestations beyond the original DATA 2000 requirements (Silwal et al., 2023). The evaluation team will monitor whether these requirements remain in place following the federal changes.

Child Welfare at the State Level

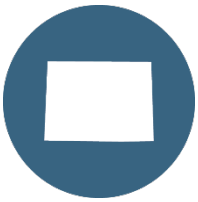
State child welfare agencies influence MOM Model patients and awardees through agency philosophy, policy frameworks and leadership. Relationships between care delivery partner staff and child welfare agencies vary from state to state. Even though states' policies differ from highly punitive to minimally restrictive, respondents from every state indicated that the fear of potential child welfare involvement—and particularly the fear of being separated from their children—is a major barrier to engaging MOM Model patients.

Under the Child Abuse Prevention and Treatment Act and Comprehensive Addiction and Recovery Act, all states require Plans of Safe Care to address the needs of infants affected by neonatal substance exposure and their families. These plans must address basic needs, delivery and hospital discharge plans and postnatal support for parents, but states determine standards for content and implementation. All MOM Models support Plans of Safe Care in some capacity, but state-level policies and needs shape the nature of this work for each awardee. Awardees and care delivery partners feature various arrangements related to the establishment of Plans of Safe Care, including care delivery partner–initiated plans and partnerships with child welfare agencies.

> **I know the director of [child protective services] because she was my caseworker back in the day. That's the wonderful part about being in a rural area. We all know each other … which is actually helpful for this model. They've done a lot of changing in the way that they speak to patients and the way that they offer services … a lot of the caseworkers have gone through trauma-informed care [training] to be able to speak to these moms in a manner that isn't offensive or doesn't feel punitive.**
>
> —Care delivery partner

MOM Model awardees have also taken steps to enhance their partnerships with child welfare agencies. These include providing training sessions aimed at reducing SUD stigma among child welfare agency professionals, employing a hospital liaison to facilitate better communication and coordination between child welfare agencies and care delivery partners and ensuring the active participation of child welfare agency leadership on advisory boards that support MOM Models (see Figure 2.6.).

Figure 2.6. Example Strategies MOM Models Use to Engage Child Welfare Agencies



Staff from one Colorado care delivery partner focus on educating new parents that they should view child welfare caseworkers as a resource rather than a punitive measure. This care delivery partner also conducted in-person training with multiple local CPS agencies to inform them about substance use laws in Colorado and recent developments in treating OUD. Colorado's other care delivery partner supports CPS in its development of Plans of Safe Care and advocates for patients enrolled in the model.

Tennessee staff engage with CPS to discuss MOM Model patients and may support patients during court hearings. A member of CPS leadership sits on Tennessee's advisory board to support ongoing education and communication between the MOM Model and CPS staff. Tennessee also introduced Plans of Safe Care for patients who enroll in the MOM Model with open CPS cases to support patients with referrals and document treatment progress.

CPS = child protective services; OUD = opioid use disorder

D. Current and Future Considerations

Awardees have succeeded in establishing and maintaining MOM Model partnerships through the second year of implementation; however, other aspects of adoption remain challenging for some awardees. Awardees with statewide multisite MOM Models continue to struggle with ensuring consistent adoption across sites, and turnover among data analyst and PRS staff still presents challenges for some MOM Models. As synthetic opioid use and polysubstance use rates rise, the changing substance use landscape poses challenges for MOM Model providers as they adapt OUD treatment practices. Although partnerships are likely stable for most MOM Model awardees at this point in the model, the evaluation team will continue to assess barriers affecting access to care for pregnant and postpartum individuals with OUD and the solutions MOM Models are putting in place to address these challenges. The team will also continue to review updates in legal or Medicaid policy that might influence the adoption of MOM Models.

Chapter 3. MOM Model Reach

Reach refers to the extent to which the MOM Model successfully engages pregnant and postpartum Medicaid patients and their infants. This information can help Medicaid agencies and their partners identify areas where the program is not reaching eligible Medicaid patients, allowing for targeted resource allocation to improve outreach and ensure equitable access to MOM Model services.

The evaluation team triangulated qualitative case study and process data to address the ""following research questions:

- What are MOM Model outreach and enrollment strategies?
- What challenges around outreach and enrollment have awardees experienced, and how are they addressing these challenges?
- What are the characteristics of MOM Model patients?

Key findings appear in Figure 3.1. A total of 1,173 patients across all awardees have ever been enrolled in the MOM Model. These patients are primarily non-Hispanic White, younger than 35 years , report at least one behavioral or mental health condition and were enrolled in Medicaid before pregnancy. The evaluation team also identified several barriers to effective outreach and enrollment, including structural factors (e.g., Medicaid eligibility and child welfare policies), social factors (e.g., lack of reliable transportation) and organizational factors (e.g., staff shortages, space constraints).

Figure 3.1. Findings in Implementation Year 2: Reach Domain

Source: Analysis of qualitative data from MOM Model evaluation April 2023–June 2023 and patient-level process data through June 30, 2023

A. Many Contextual Factors Affect Outreach and Enrollment

During this evaluation year, from July 1, 2021, through June 30, 2022, all awardees made considerable improvements to enrollment—in most cases, doubling or nearly doubling their MOM Model patient populations. With the ending of the pandemic, awardees were able to conduct in-person outreach and service delivery, contributing to growth in the number of patients the model serves. Enrolled patients

felt positive about their introductions to the model and were willing to share their experiences with receiving outreach. Eligible patients who opted not to enroll may have had different views.

Patients Have a Positive Experience Receiving Outreach and Enrolling

Patients reported mixed feelings when they first heard about the MOM Model. Some were apprehensive, feeling that a program completely covered by Medicaid, with supports for pregnancy, postpartum and recovery, had to be too good to be true. Others expressed some fear and mistrust of the health care system.

> *The one thing I was uneasy about was trusting that I wouldn't get in trouble with the law and child agencies. There are laws and requirements around [child protective services]—I didn't want my child taken away. I wanted my child.*

Once they received more information about the model and felt safe engaging with staff and providers, patients reported feeling enthusiastic and optimistic about the possibilities the model might offer.

> *I was nervous and excited to know that there was help for pregnancy and people that have an addiction that they can't get over by themselves because I don't have family that's here to support me. I just have things like this that support me.*

After committing to the MOM Model, most patients found the enrollment process easy and accommodating. Some expressed mixed reactions to the initial screening processes required for enrollment, citing that it can be traumatizing to be asked duplicative questions about their medical and social risks and past experiences with OUD. However, most acknowledged the discomfort was worthwhile given the benefits of the program.

> *It's a little bit tedious, but I'll tell you what: [It] is absolutely nothing compared to dealing with the other end of that if you don't do it; it's totally worth it to go through it.*

All patients spoke about their gratitude for and full satisfaction with the MOM Model, noting that their pregnancies before finding the MOM Model were more complicated, both physically and emotionally. Patients reported that MOM Model staff and providers made them feel comfortable, dispelled fears and minimized stress.

> *This program has had the only people that have been kind to me, have treated me with dignity. Some days I needed a hug, and my doctor gave me a hug, you know, and that was great. And I really appreciate it.*

> *My first pregnancy, there was no support [at a different hospital]. By this time I got pregnant, I came up here to [the MOM Model site], not only did I get [material] support, but these people believed in me. And because these people believed in me is the reason why I got sober. You know, it's a great feeling that these ladies in the NICU who work and do their job, and they make mothers feel like it's going to be okay.*

Barriers to Effective Outreach and Enrollment

Despite increased enrollment, all awardees fell short of the enrollment numbers they projected in response to the CMS Innovation Center's Notice of Funding Opportunity during the application process

(see Table 3.1). Barriers to effective outreach and enrollment have greatly diminished expected enrollment numbers across the MOM Model.

Table 3.1. Actual Versus Anticipated MOM Model Enrollment

Awardee	Geographic Area	Patients Enrolled Through June 30, 2022	Patients Enrolled as of June 30, 2023[a]	Anticipated Annual Number of Patients
Colorado	Greater Delta, Denver and Montrose counties	1	8	700–1,500
Indiana	Statewide	273	543	725
Maine	Statewide	80	164	330–950
New Hampshire	Greater Manchester	24	65	250–300
Tennessee	Middle Tennessee	149	249	300
Texas	Houston	26	50	200
West Virginia[b]	Statewide	18	88	800–1,000

[a] West Virginia's data represent activity through March 31, 2023.
[b] West Virginia's MOM Model population grows when existing Drug Free Moms and Babies sites enroll in Medicaid.
Source: Insight Policy Research analysis of MOM Model enrollment through June 30, 2023

All awardees have encountered challenges enrolling patients in the MOM Model. Several barriers limit the effectiveness of MOM Model outreach activities and enrollment, including pregnant peoples' fear of stigma, fear of interactions with child protective services (CPS), a changing landscape of substance use in MOM Model communities, inadequate staffing and physical location capacity to accommodate more patients, state-specific policies and enrollment process barriers.

Barriers to MOM Model Outreach and Enrollment

Increased polysubstance use and stimulant use	Shifts in substance use patterns reduced the number of potentially eligible enrollees. Many MOM Model communities offer similar programs to the MOM Model with fewer substance use eligibility and data-sharing requirements, leading some patients to engage with care outside the MOM Model.
Insufficient staffing or space	In some cases, space and staffing constraints create delays between patients being referred to the model and the time they first engage with model staff. MOM Models facing space and staffing constraints worked to address these challenges by expanding staff and physical space/location resources.
Distrust of clinical and social welfare systems	Pregnant individuals dealing with OUD often encounter stigma and may feel wary of health care providers and social welfare agencies. This apprehension is heightened among Black and Hispanic individuals and those facing economic challenges, who are more likely to experience discrimination and punitive CPS interventions.

Awardees and their partners have continued to address enrollment barriers through broad and targeted outreach. During the second implementation year, awardees referred patients to MOM Models from a variety of sources, including pre-existing MOM-like models, online platforms encouraging self-referrals and other sources encouraging a no-wrong-door approach. Some models initiated or expanded marketing campaigns during the second implementation year to reach more individuals who may be eligible for the MOM Model.

Implementation Year 2 Outreach Refinements

- Texas expanded outreach to incarcerated pregnant individuals, the Department of Family and Protective Services, the justice system and shelters serving unhoused people. One Texas MOM community partner added an evidence-based, family-focused SUD prevention program for children at risk for SUD and incarceration.
- Maine developed an extensive media campaign and is creating materials to promote the MOM Model to health care providers and their patients, including testimonial videos in which patients describe their recovery and experience with the model. Maine's partner, CradleME, a referral service for all Maine birthing families, also began conducting outreach to local health care providers to share information about the MOM Model. Finally, the state Medicaid agency expanded its media campaign to include and target "New Mainers"—refugees who face particularly intense stigma from their communities (for example, because of beliefs that substance use is a moral failure).

Awardees and their partners also implemented strategies to build trust in their communities to address the impact of stigma and fear of CPS on MOM Model enrollment. These efforts included the following:

- Some care delivery partners engaged with trusted community organizations to build trust in the community, including faith- and minority-based organizations and organizations serving individuals with housing challenges.
- Many care delivery partners across the MOM Model initiated or expanded efforts to strengthen relationships with CPS agencies and justice systems in their states through informal and formal engagements.

B. MOM Model Population Is Homogeneous, With Numerous Health-Related Social Needs

As of June 30, 2023, the MOM Model had 1,173 patients ever enrolled. Most MOM Model patients self-identified as White and non-Hispanic (82%), similar to other population estimates (for example, Roberts et al., 2023). More than three-quarters of MOM Model patients had at least a high school diploma or its equivalent at the time of their enrollment. Seventy percent of MOM patients had Medicaid before becoming pregnant. All but two patients self-identified as female.

Time of Enrollment

Enrolling patients in the MOM Model early in pregnancy is preferred to improve patients' chances of receiving model services. Patient enrollment has been distributed relatively evenly across early, late or ongoing pregnancy or postpartum (see Table 3.2). The evaluation team categorizes patients with active pregnancies as of the end of the most recent data reporting period as having "ongoing pregnancies"

until their pregnancy ends. Within each of these maternity care categories, substantial variation among awardees existed, with postpartum enrollment ranging from 4% in Texas to 59% in Indiana. More than three-quarters of MOM Model patients (77.4%) enrolled before giving birth, while others enrolled during their birth hospitalization or within their first postpartum year.

Table 3.2. Enrollment by Awardee

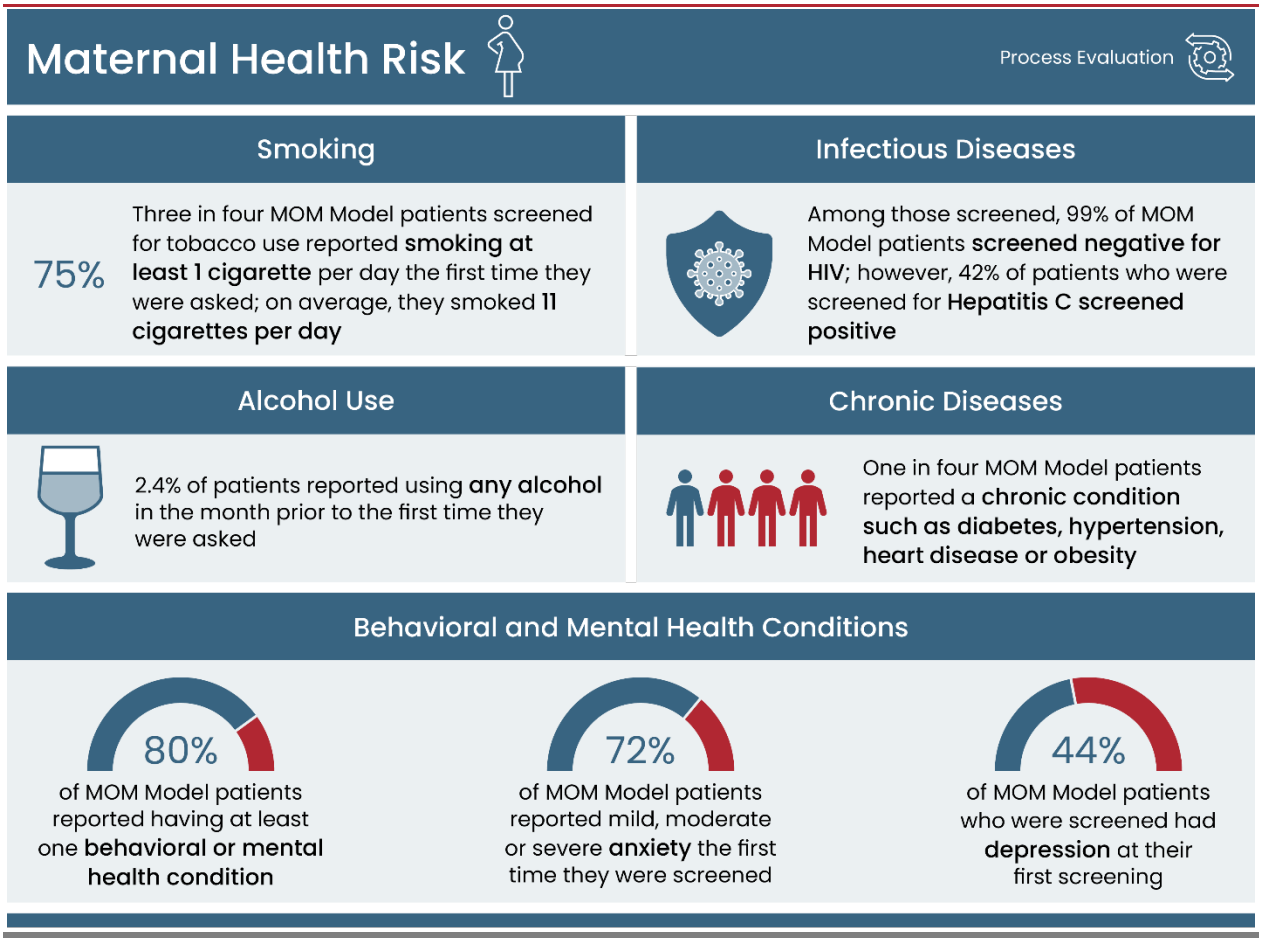
Awardee	Number of Patients Enrolled, June 30, 2023	Percentage (*n*) of Patients Enrolled in Early Pregnancy[a]	Percentage (*n*) of Patients Enrolled in Late Pregnancy[b]	Percentage (*n*) of Patients Enrolled During Pregnancy Who Were Still Pregnant at the Time of Data Collection[c]	Percentage (*n*) of Patients Enrolled Postpartum or at Delivery
Colorado	8	–	–	–	–
Indiana	543	23.0 (125)	22.7 (123)	26.9 (146)	27.4 (149)
Maine	164	31.1 (51)	14.6 (24)	40.2 (66)	14.0 (23)
New Hampshire	65	–	–	–	58.5 (38)
Tennessee	249	30.9 (77)	32.5 (81)	25.3 (63)	11.2 (28)
Texas	50	34.0 (17)	44.0 (22)	–	–
West Virginia	88	26.1 (23)	25.0 (22)	20.5 (18)	28.4 (25)
Total	1,173	25.9 (304)	24.5 (287)	26.9 (316)	22.8 (266)

Note: West Virginia's data were carried over from the first quarter of data reporting for this implementation year and represent activity through March 31, 2023.
– Cells representing fewer than 11 patients are censored to maintain confidentiality.
a Patients enrolled in early pregnancy are defined as those who enrolled before entering their third trimester.
b Patients enrolled in late pregnancy are defined as those who enrolled during their third trimester.
c This column categorizes patients enrolled in the model with current pregnancies as of the end of the most recent data reporting period.
Source: Insight Policy Research analysis of MOM Model enrollment through June 30, 2023

Health Risks

MOM Model awardees screen patients for several health risk factors at or soon after enrollment. Many of these factors, such as smoking, alcohol use, infectious diseases, chronic conditions and behavioral and mental health conditions, can complicate a patient's pregnancy and their OUD recovery. Figure 3.2 summarizes maternal health risk factors among MOM Model patients based on screening data following enrollment.

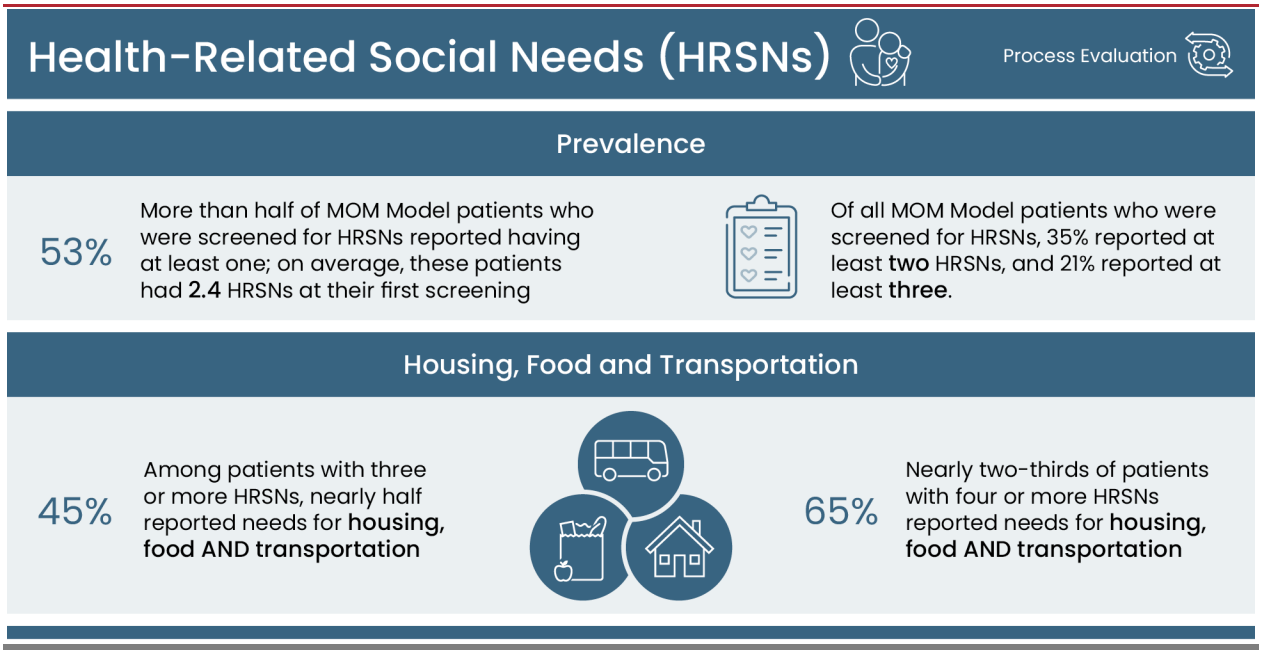
Figure 3.2. Maternal Health Risk Factors Among MOM Model Patients at Enrollment



C. Health-Related Social Needs Influence Model Reach

HRSNs, such as food insecurity, unstable housing or lack of access to reliable transportation, correlate with poor health outcomes. All MOM Model awardees screen each patient for needs related to transportation, housing or living situations, food, family or community support, utilities and interpersonal safety. On average, patients reported at least 2.4 HRSNs, and almost a quarter reported at least three. Among patients reporting three or more HRSNs, the most common unmet needs were related to housing, food and transportation (see Figure 3.3).

Figure 3.3. Health-Related Social Needs Among MOM Model Patients



Providers and care delivery sites described challenges in addressing patients' HRSNs, including limited access to nonemergency medical transportation, affordable housing and nutritious food. Such challenges are part of larger health equity issues that limit access to care and services for people in recovery.

> ***We can do transportation to Medicaid-covered services, but I might not have a transportation provider where they're at. So, while I have the resource, if I don't have it at the time and the place that they needed it. So, that's the hard part when people are like, oh, you all cover transportation? I'm like, sort of. I can pay for it.***
>
> —Care delivery partner

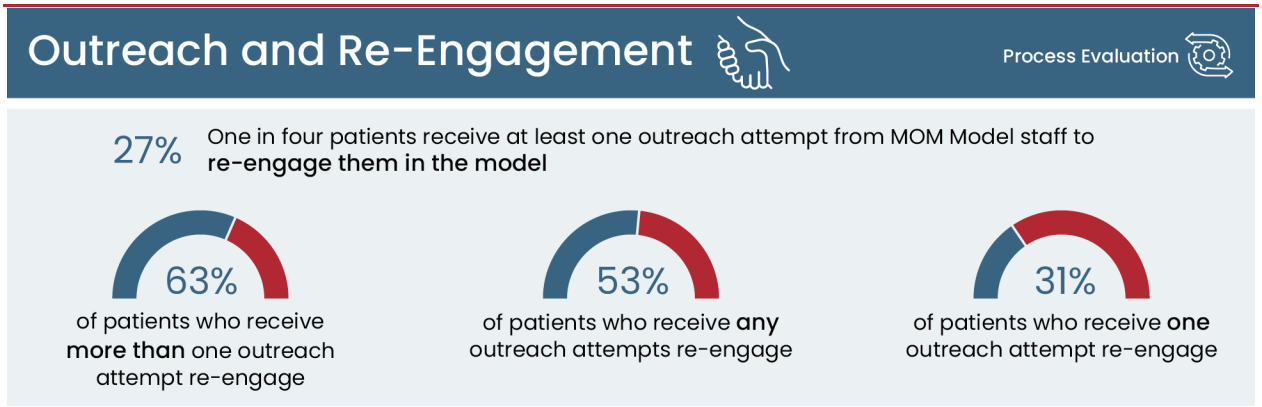
> ***Well, housing is huge. There is no affordable housing here, which means there's over 2 years long waitlists for HUD or Section 8. They just built a brand-new apartment complex, and they're charging ... 1,500 bucks for a 900-square-foot apartment and calling that affordable living. ... That's the biggest problem here, that there's no security in housing.***
>
> —Care delivery partner

> ***So they haven't had a grocery store within the county of Clay for about 3 or 4 years now. But the organization that I used to work with worked with the food bank to set up monthly distributions in the town of Clay. And so we would have up to 3,000 people coming through at 7 a.m. in the morning just to get a random bag of food. They don't even know what they're getting.***
>
> —Care delivery partner

Outreach and Re-Engagement

Patient outreach, retention and re-engagement in the model are critical but also present substantial challenges. The processes of outreach and re-engagement can be resource intensive, and awardees already face substantial challenges in building their MOM Model populations. However, outreach efforts thus far have been effective, and the majority of patients have responded by re-engaging in the model services. Timing of disengagement seems to follow a trend: Staff from care delivery partners in many states indicated MOM Model patients were much more likely to disengage from the model during their postpartum period (see Figure 3.4).

Figure 3.4. Outreach and Re-Engagement in MOM Model



D. Current and Future Considerations

Although MOM Models are still experiencing challenges meeting enrollment goals, many awardees took steps during the second implementation year to improve outreach effectiveness and enrollment by trying new strategies. As a result, models are succeeding in enrolling 77% of patients while pregnant and reaching a high-risk population with many health and psychosocial risks. Consistently across models, the work of staff and community workers with lived experience with SUD and recovery appears to significantly contribute to enhancing patient enrollment and retention.

This evaluation will continue to track which outreach and enrollment efforts are most effective in the coming years. Having identified how fears of CPS involvement, community and provider stigma and access-to-care barriers such as childcare and transportation affect enrollment, the evaluation will continue to track how models address these barriers through partnerships and training.

Chapter 4. MOM Model Implementation

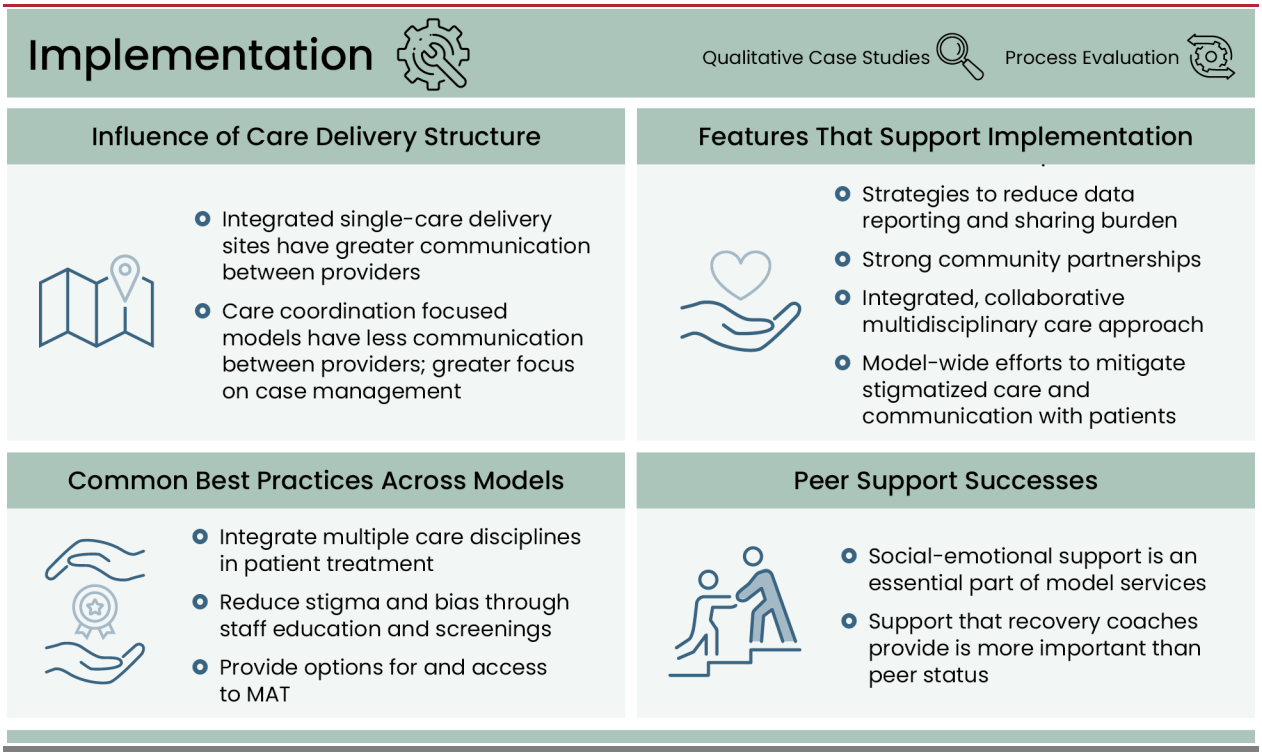
Implementation refers to the process of adopting, adapting and integrating MOM Model services and best practices within care delivery sites. Understanding how the MOM Model is being implemented can help Medicaid agencies and their partners identify areas for improvement and address barriers or challenges that may hinder successful implementation.

The evaluation team triangulated qualitative case study and process data to address the following implementation-related research questions:

- Did MOM Model awardees and providers incorporate best practices and guidelines in care for pregnant and postpartum individuals with OUD and their infants?
- What model features support best practices? Where are the gaps or inconsistent uses of best practices, and are they related to model structure?
- How do awardee approaches to care integration affect implementation?

Figure 4.1 provides an overview of the findings discussed in this chapter. Integrated models support greater communication across providers, while the approach of enhanced care coordination within MCOs promotes consistently high levels of care management activities. Awardees continue to adopt best care practices, facilitated by factors such as strong community partnerships and efforts to reduce stigma. Peer recovery support also emerged as best care practice for Medicaid patients with OUD.

Figure 4.1. Findings in MOM Model Implementation



MAT = medication-assisted treatment
Source: Analysis of qualitative data from MOM Model evaluation April–June 2023

A. Model Approach to Integration Influences Care Activities

MOM Models implement care delivery to model patients using one of three types of care integration approaches: integrated, single-site care delivery; integrated but not co-located care; and enhanced care coordination within standard MCO systems (see Figure 2.4 in Chapter 2, for an expanded description of types of care integration). According to staff at both co-located and statewide integrated systems, integration provides several key benefits:

- **Enhanced communication.** Integrated care teams are more likely to have standardized protocols and systems for communication, such as shared electronic health record (EHR) platforms, regular interdisciplinary meetings and clear guidelines for documentation and data sharing. Co-located professionals also have more frequent opportunities to discuss patient care face to face ("corridor conversations"), which can circumvent some of the more formal lengthy approaches to sharing information.
- **Greater oversight of the use of best practices.** Integrated teams are more likely to have standard care protocols, facilitating consistent application of best practices. Conversely, models that are not integrated can face challenges in ensuring consistent use of best practices because each care provider or organization may follow its own protocols and procedures. Models with established provider relationships are more confident that care providers will generally adhere to best practices because of trust and existing collaborations.
- **Enhanced coordination.** Integrated care approaches facilitate more straightforward and rapid intra-team referrals and reduce duplication of care (e.g., repeating the process of taking medical history from patients). Although care coordinators within a standard MCO facilitate connections to providers within the system, referrals outside the system can be challenging because of incompatible health information exchange systems and EHR systems.

Models that provide all care services within a single system, rather than delivering them in a fragmented manner to the patient, represent the gold standard for care integration. A mental health specialist associated with one model highlighted the strong evidence base supporting the University of Washington's Collaborative Care Model. Similar to several integrated MOM models, this model emphasizes the integration of clinical health care, behavioral health, social work and pharmacological approaches to address mental health and SUD. More than 90 randomized controlled trials and several meta-analyses have shown the Collaborative Care Model approach to be more effective than usual care for patients with behavioral health conditions.[5]

Without a unified delivery system, a coordination-based model serves as a connector but lacks the advantages of a fully integrated structure. Models involving dispersed partners can achieve care integration with consistent oversight and leadership buy-in, but the process is slower because of the time required for partner onboarding.

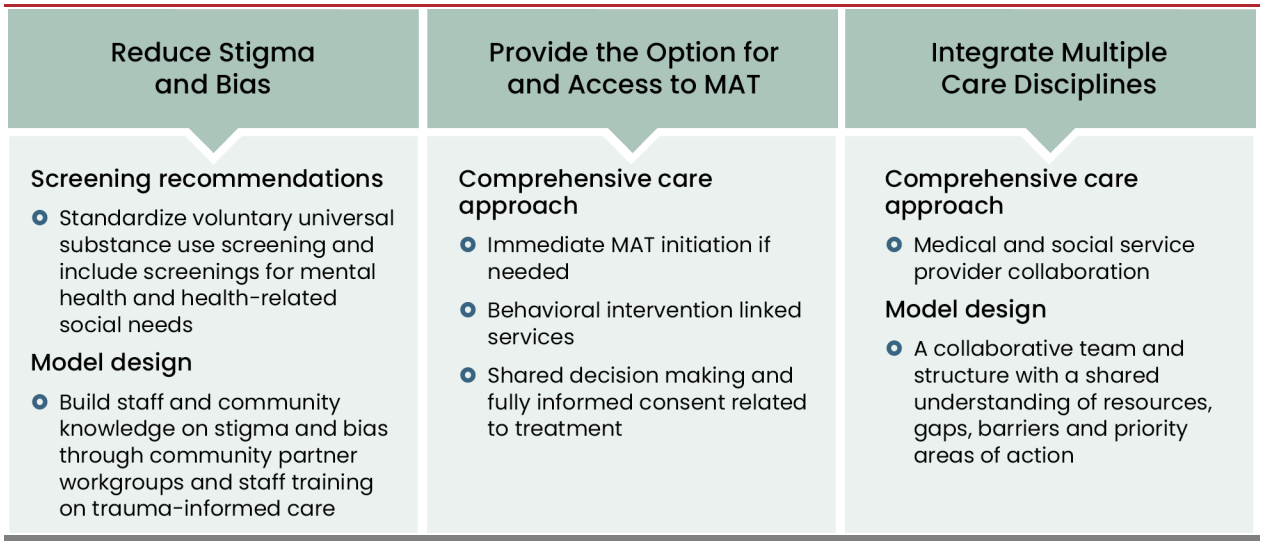
B. Best Practices Shape States' Approaches to Model Implementation

Best practices include health practices, methods, interventions, procedures or techniques based on high-quality evidence that shows improved patient and health outcomes (Makic et al., 2013). Since implementing the MOM Model, most states have not added new clinical services but rather worked to improve the integration and coordination of existing service delivery. Three overarching best practices in

[5] Find a list of the evidence base for the Collaborative Care Model at Evidence Base for Collaborative Care.

care provision emerged as the most foundational approaches to service provision in a model setting (see Figure 4.2). A full list of evidence-based best practices for the treatment of pregnant and postpartum people with OUD appears in Appendix D.

Figure 4.2. Best Practices for Care and Treatment of Pregnant People With Opioid Use Disorder Commonly Implemented in MOM Models



Note: See Appendix D for full list of these best practices.
MAT = medication-assisted treatment
Source: Insight Policy Research analysis of MOM qualitative data in conjunction with best practices for treating pregnant and postpartum people with OUD, April–June 2023

Best Practices: A Focus on Three Common Approaches in MOM Models

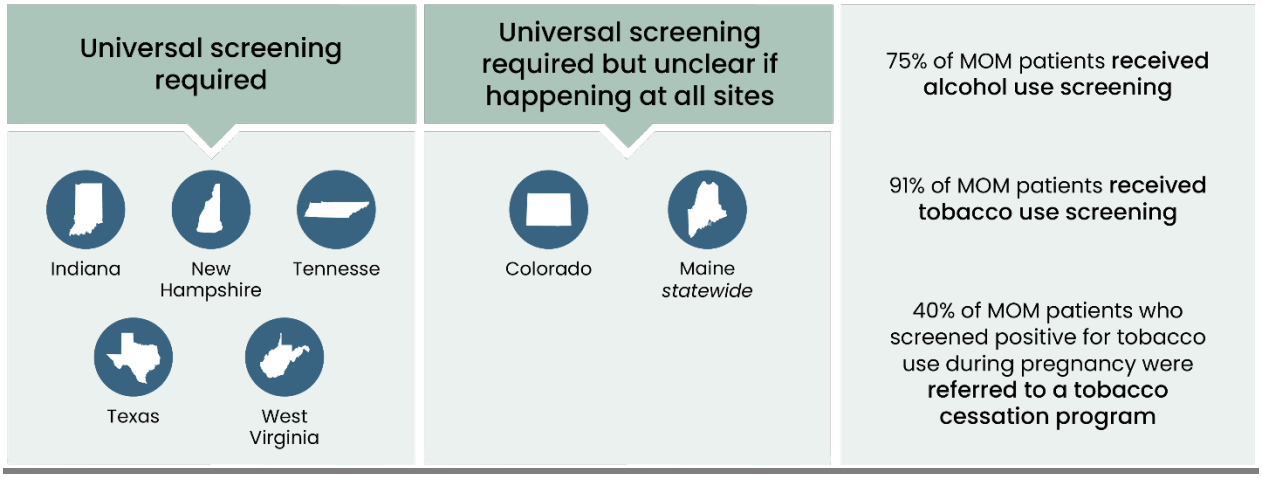
Practices to reduce stigma

> **You can't open up about what you use if you're constantly scared about going to prison.**
>
> —MOM Model participant on the importance of universal screening

Universal screening for substance use is a best practice in obstetric care because relying on provider judgment for screening can lead to missed cases and may add to stereotyping and stigma. Evidence shows that provider discretion leads to heightened screening for people of color (Kunins et al., 2007). When conducted at the start of prenatal care, universal substance use screening provides more time to intervene and mitigate the harm associated with SUD and OUD in pregnancy and stabilize the home environment for newborns (SAMHSA [Substance Abuse and Mental Health Services Administration], 2023). All MOM Model awardees conduct substance use screening, though **only five models adopted consistent use of universal screening for all patients** (see Figure 4.3). In Colorado and Maine, model staff could not confirm that universal screening was happening at all model sites, even though universal screening is a model requirement. One partner site had few records of universal screening and referrals to the MOM Model program resulting from universal screens.

Figure 4.3. Overview of Screening and Best Practices for Universal Screening in MOM Models

MOM Model staff are implementing approaches such as universal screening, peer recovery coaching and behavioral health counseling to support treatment and recovery from substance use during pregnancy while not using stigmatizing behaviors toward those who continue to use substances.



Source: Insight Policy Research analysis of qualitative data from MOM Model evaluation April–June 2023

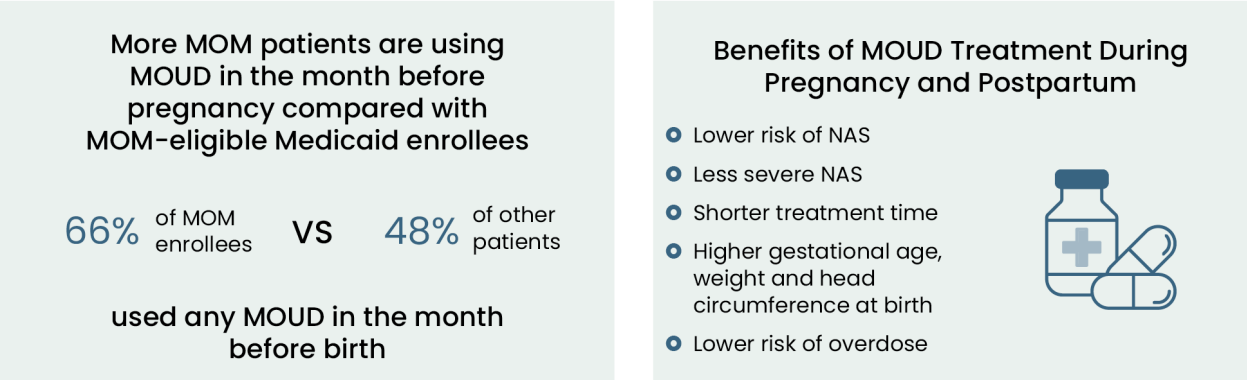
Providing the option for and access to continuous medication-assisted treatment

> **They've seen the results of how better baby does when mother is—if I have to be on methadone to be good, then my baby's going to be good too. And they come to realize that it's not hurting the baby.**
>
> —MOM staff member

Once providers confirm a patient's need for OUD treatment, nearly all model care providers promote the best practice of a shared decision-making process for initiating MAT for patients who are actively using opioids. Outside MOM Model practices, MAT access remains a challenge for MOM Model patients in some areas. Access issues include providers' limited knowledge, comfort level with treating pregnant patients with OUD and beliefs in abstinence-only treatment. However, MOM partners have been working to close that gap through provider education. Overall**, MOM patients receive higher rates of MAT in the month before birth than other Medicaid patients eligible for MOM but not enrolled in the model**[6] (see Figure 4.4).

[6] See Appendix B, Section C.2 for an explanation of how the evaluation identified eligible non-MOM participants as a comparison group.

Figure 4.4. Overview of Medication-Assisted Treatment Use in MOM Models

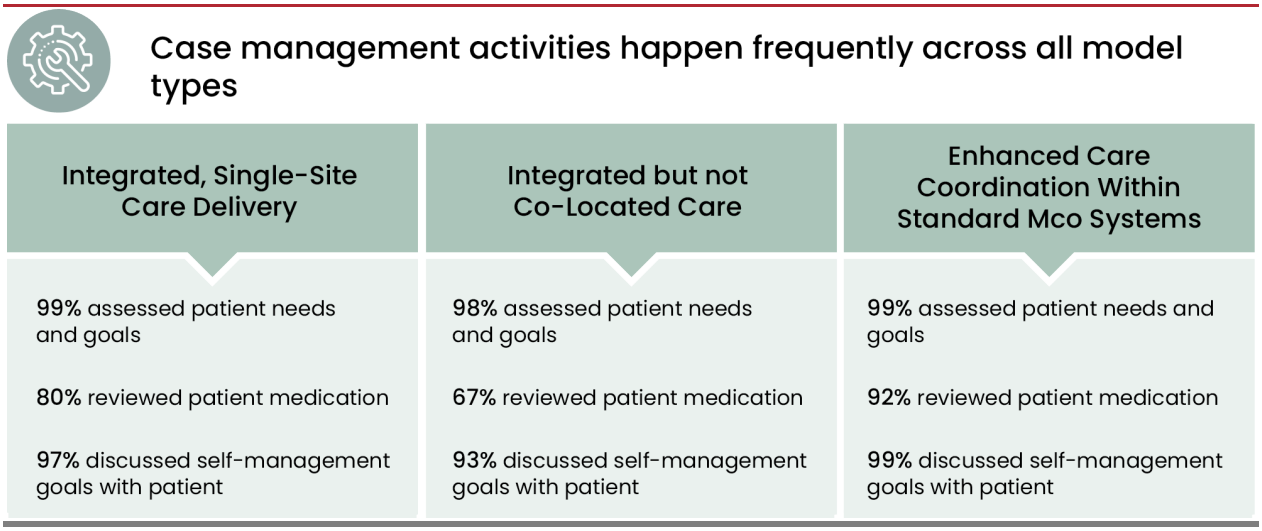


MOUD = medications for opioid use disorder; NAS = neonatal abstinence syndrome
Source: MOUD comparison data, Insight Policy Research analysis of Transformed Medicaid Statistical Information System claims; methods for comparison approach are described in Appendix B, Section C.2. Benefits of MOUD treatment during pregnancy and postpartum treatment (Brogly et al., 2014)

Case management

Data from the first 2 years of program implementation show that all MOM programs provide some level of case management activities, such as calls to most patients to track treatment goals and monitor medication use. However, **programs with a focus on enhanced care coordination within standard MCO systems are most likely to conduct case management consistently across the majority of their patients** (see Figure 4.5).

Figure 4.5. Frequency of Case Management Activities by Model Approach to Care Integration



Note: Percentages represent the share of patients in each model type that received these care coordination activities.
MCO = managed care organization
Source: Insight Policy Research analysis of MOM Model evaluation process data through June 2023

Emerging Promising Practice: Peer Recovery Support During and After Pregnancy

All models have a peer recovery services component in their design. SAMHSA defines peer recovery services as activities led by people with lived experience that help individuals become and stay engaged in the recovery process and reduce the likelihood of relapse (SAMHSA, 2009). The role of a PRS is that of a coach who provides emotional support to patients; in most models, the PRS also assists with care coordination activities or referral to community services for OUD support and whole-person care. In many models, the PRS role extends to activities outside the clinic or during clinic hours. In addition to emotional support, the PRS may provide ad hoc transportation, attend court hearings as a representative of the model or connect MOM Model patients to support services outside the MOM Model, such as community-based wraparound services related to housing, diapering and nutrition support. **To date, peer recovery services have not been identified as a best practice in the treatment of pregnant and postpartum people with OUD. Although emerging evidence supports peer support specific to OUD treatment in this population**, especially to engender trust in the health care system (Fallin-Bennett et al., 2020; Olding et al., 2022), sample sizes in these studies are small, limiting their conclusions. The **role of individualized social support may be the most important component of the PRS role**; staff and model patients point to a common experience of social isolation during this phase of the patient's life. This isolation often results from alienation from the patient's support networks because of the challenges their OUD poses. The patient's treatment journey frequently involves distancing themselves from family members or partners who are not yet ready to abstain from substance use. The isolation many patients experience may make them especially vulnerable to relapse. As a result, the introduction of a dedicated support person who provides emotional support and care coordination cements the connection of support and clinical care. One MOM patient remarked on the peer recovery support program:

> *I think it's the support, the accountability of reaching out to us and keep saying, "Hey, you missed a doctor appointment. Is everything okay?" And they're just keeping up on us and encouraging us to make sure we make our appointments. And then they're asking us, "where are we in life? Do we need any support? Is there anything they could do to help us?" And that's very important because I don't have family out here. And it's just been a struggle, especially feeling you're all alone in the midst of all this. It's very important, and I wish they would have done [peer support] when I was pregnant with my older son.*

The PRS represents a provider distinct from any other provider on the care integration team—a coach who brings lived experience to provide emotional support beyond the clinical team. Models vary on the degree to which they include the PRS into care integration activities. For example, in Tennessee, all PRSs actively engage in the care integration huddles with obstetric staff, MAT providers and the model's social workers. Most of Maine's PRSs intentionally keep themselves separate from all other components of the care team to create a truly private, "sacred" (according to one coach) relationship apart from the clinical treatment team.

These women have been faced with so much stigma when they're attempting to seek out help and treatment. Oftentimes, it's the peer recovery coach who's the first friendly face and validating external force who says, "Yes, you can do it. Yes, this is going to be hard, but I'm going to be here, and you're not alone." And that might be the first time that person has ever heard that. And then they get engaged with care.

—Peer recovery specialist, Texas

The MOM Model may be the first large-scale study of implementation of peer recovery services as a part of OUD treatment for pregnant and postpartum people. Model staff unequivocally attribute patient receipt of peer recovery services as a leading factor in model engagement and better adherence to treatment plans; however, outcomes data are not yet available to verify these statements. Although model staff believe there is little question about the effectiveness of the PRS' in patient engagement, it remains unclear to what extent *lived experience* plays a meaningful role in the success MOM Model staff attribute to PRSs.

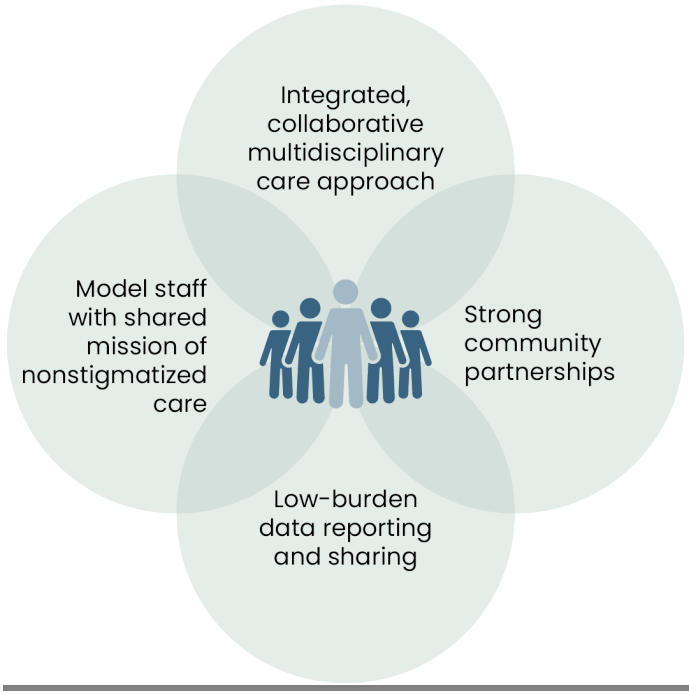
Among states where PRSs have lived experience with OUD, PRSs and patients claim this staffing attribute adds to the trust and nonstigmatizing behavior that makes the PRS-patient relationship valuable. However, two states were unable to fill this position with people with lived experience with OUD, so community health workers serve in this support role. Feedback from team leadership and model patients revealed that in most cases, **staffing the PRS role with someone who matches the published job description of a peer is far less important than filling this role with an individual who is nonjudgmental of model patients and emotionally invested in the patient journey to wellness**. Because every person is different, no PRS is an exact match as a peer for any patient, and in some cases, differences can serve as an advantage. For instance, two models employ men as PRSs for MOM patients, and they have been well-received by patients and staff.

C. MOM Model Implementation Revealed Drivers of Care Relevant to MOM and Future Models

Until Medicaid claims and vital records are available for MOM patients, this evaluation relies on qualitative and process data to define the driving forces of model success. The four factors that intersect and appear to drive seamless, patient-centered care are model staff; strong community partnerships; an integrated, multidisciplinary collaborative care approach; and low burden for data reporting and sharing (see Figure 4.6). These findings may be relevant for stigmatized patient populations beyond the MOM Model, such as patients with SUD or pregnant or parenting people with other stigmatized conditions.

Figure 4.6. MOM Model Approaches to Seamless, Patient-Centered Care for MOM Model Implementation Based on Qualitative Data

Information sharing across providers happens most frequently in integrated, co-located models



"Our approach makes fewer siloes of care for pregnant people. For us, learning how to form a hospital community partnership, learning how to work with Family Protective Services, and understanding patients' barriers has been huge for us to see how to help [patients] better. It's about working with all these folks and for us to be on the same page."

—Care delivery partner, Texas

Source: Qualitative data from MOM Model site visits April–June 2023

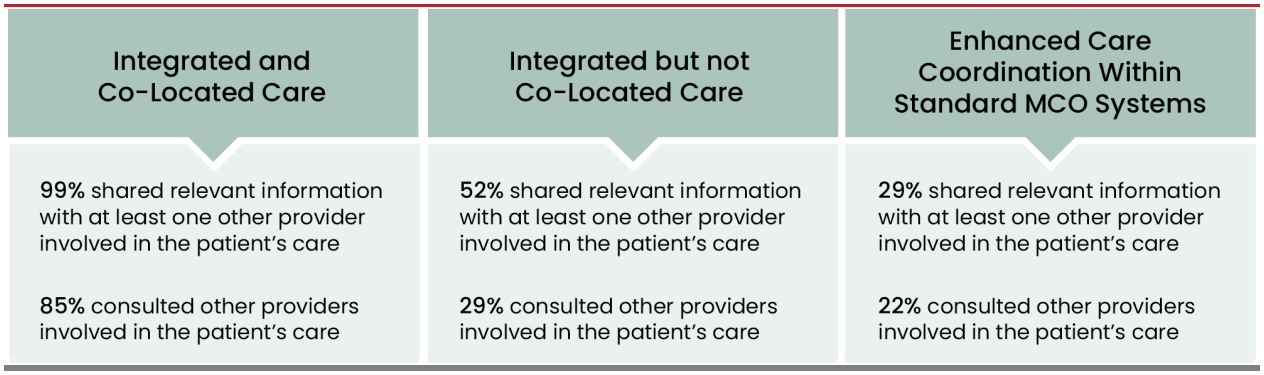
The collaborative spirit is what makes the model what it is. If a collaborative process isn't working, everybody gets in a room, and we hammer it out. It all happens in an environment where I feel as heard as the medical director. The answer is to get the right people in place.

—Peer recovery specialist, Tennessee

Integrated, Collaborative, Multidisciplinary Care Approach

Only integrated, co-located care models show evidence that they consistently share relevant patient information across providers and personally and regularly consult other providers involved in a patient's care (see Figure 4.7). Models in single-site care systems operate under the same EHR system, even when providers practice in different divisions. Shared EHR systems facilitate provider communication and protocol sharing.

Figure 4.7. Care Integration Activities Across Model Approaches



MCO = managed care organization
Source: MOM Model evaluation process data through June 2023; MOM Model evaluation process data percentages represent the share of patients in each model type who received these care coordination activities

Strong Community Partnerships

In all awardee states, the MOM Model links clinical services with vital government agencies for MOM patients. Notably, each model has formal partnerships with state drug courts or includes the department of child services as a partner on model steering committees. These partnerships facilitate communication about state involvement in cases related to patients' OUD and their recovery and provide opportunities for advocacy and education on trauma-informed care.

> **The court systems have a lot of faith in the MOM program. The parents in MOM go before the court, and the MOM staff is there to support their patients. Often, the judge will side with the MOM program advocates.**
>
> —MOM Model partner, Department of Child Services

Low-Burden Data Reporting and Sharing

The model's infrastructure for reporting and sharing patient-level data affects awardees' ability to implement best practices and the evaluation team's ability to assess how well those practices have been adopted. Awardees report quarterly on patient-level process data (Appendix C contains aggregated reports across all state models). Under an optimal data system, providers within each MOM Model can access patient data, such as screening results and service encounters, to develop and monitor integrated care plans. As awardees established their procedures for data collection and reporting, they learned many lessons and embraced opportunities for improvement.

Data Reporting Needs for the MOM Model and Similar Models

Full access to all relevant patient data for lookbacks	Model systems should have access to and incorporate data collected outside the model for "data "lookbacks." A "lookback" allows access to historical patient information (for example, recent depression screening or HIV test results predating MOM enrollment). "Lookbacks" prevent patients from needing duplicative tests and screenings, which can be burdensome and even traumatizing. They also prevent gaps in provider information that can affect care plans and the evaluation's ability to accurately assess the full breadth of patient care and implementation of best practices.
Most MOM Models integrate service and care providers across more than one location or organization, with EHR systems that may not be compatible with one another. To further complicate data sharing and reporting, several awardees do not have personnel with the expertise or time to collate data from multiple providers, organizations or sites into a single, comprehensive file. Difficulty getting all required data in one place diminishes the provision of services and the ability to observe and evaluate the MOM Model outcomes.	**Single, seamless EHR systems**
Standardized template for data submission across all sites	Data reporting efforts during early implementation showed deficits in data infrastructure, which awardees could then investigate and resolve. Where templates did not exist, data submissions failed. Awardees also need to conduct a test data submission before the data are due to prevent submission failures.

Model Staff With Shared Mission of Nonstigmatizing Care

Model leadership and staff feel strongly that a "program fit" for staff predicts how well they adhere to model values and stay engaged in their job. This characteristic is especially important for staff who provide direct care to patients. Program fit for MOM Model staff is the belief in the mission to help MOM patients recover from OUD and live healthy lives and a conviction that OUD is a treatable medical condition that requires compassionate care. When these staff have the added support of community partnerships that assist MOM patients in their recovery journey outside their medical treatment, they enjoy a safety net of nonstigmatizing service providers to streamline recovery.

Health Equity: Staffing to Support Compassionate and Equitable Organizational Cultures

Staff interviewed in Tennessee attributed the success of their MOM Model to the following staff attributes, demonstrated in interactions with MOM Model patients and fellow staff:

- Adoption of a trauma-informed approach, including training in trauma modalities such as meditation, cognitive behavioral training and group processes
- In-depth knowledge of therapeutic systems, especially related to OUD recovery
- Profound respect for the dignity of all individuals, with a compassionate focus on those in recovery
- Approach centered on collaboration and empowerment of patients, prioritizing patient autonomy over simply prescribing behaviors or requirements
- Commitment to honesty and truthfulness, even when conveying challenging or difficult information

D. Current and Future Considerations

Though model leads, providers and staff may continue to tweak how they integrate MOM services, models have established the types of services they offer and their system for service integration. As the MOM Model implementation continues, several factors require further consideration. First, the evaluation team will continue to assess the implementation of evidence-based practices to gauge the extent to which they are followed and are effective, incorporating feedback from patients as appropriate. For example, providers might believe they are adequately connecting patients with community resources, such as referrals to a housing assistance program. However, patients might find the process of navigating these resources overwhelming, leading them to perceive the support as insufficient or ineffective. Second, the evaluation will continue to assess barriers and facilitators to the adoption of best practices based on models' approaches to care integration. For example, how can integrated but not co-located models increase information sharing across providers? Third, the team will continue to explore how the PRSs may support best practices in model implementation. As part of this line of inquiry, the evaluation team will also consider what is needed to effectively incorporate PRSs into care delivery, such as adequate reimbursement, appropriate supervision and ongoing professional development opportunities.

Chapter 5. MOM Model Maintenance

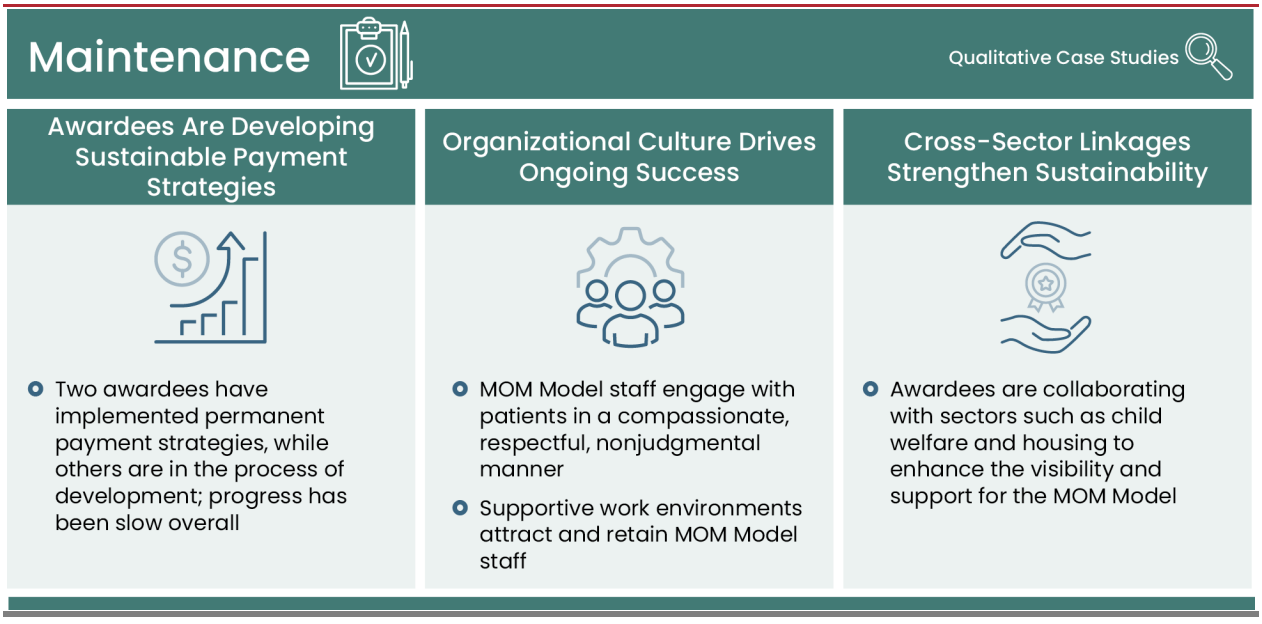
Maintenance involves ongoing efforts to embed the MOM Model into routine practices, policies and the organizational culture to ensure lasting positive outcomes. Establishing the necessary resources and processes to sustain the MOM Model can also assist Medicaid agencies and their partners in maintaining the model's responsiveness to evolving patient needs and shifts in the health care landscape.

Using qualitative case study data, this chapter aims to address the following research questions:

- Did states meet program requirements for self-funding?
- How are awardees developing the capacity to maintain and potentially scale up MOM Model services?

Figure 5.1 presents key findings from Implementation Year 2 maintenance activities. Some awardees are making more progress than others in developing sustainable payment strategies. All awardees have had success in institutionalizing the model by establishing strong connections with partners, fostering supportive organizational cultures and developing data-sharing and reporting capacity.

Figure 5.1. Key Findings Related to MOM Model Maintenance



Source: Analysis of qualitative data from MOM Model evaluation April–June 2023

A. Awardees Are Continuing to Develop Model Funding Strategies

Within the parameters of state Medicaid plans, each awardee had flexibility to develop a coverage and payment strategy tailored to the needs of its population and proposed service area. Required model services, including MAT, obstetric care, relevant primary care services and behavioral health care, are billed to Medicaid, without coverage from MOM funds. MOM Model awardees are expected to develop and implement sustainable funding strategies to cover model features Medicaid does not cover, such as coordination, engagement and referral activities.

Awardees Have Made Varying Degrees of Progress in Establishing Payment Strategies to Sustain the Funding of MOM Model Services

Awardees are progressing slowly in implementing long-term payment strategies for MOM Model services, posing concerns as they approach the final year of implementation. Challenges in financially sustaining the MOM Model beyond the funding period may disrupt MOM Model operations, hindering the model's long-term impact and benefits.

Permanent payment strategy established

Maine and West Virginia, both implementing statewide MOM Models, established permanent payment strategies for MOM Model services via State Plan Amendments (SPAs) (see Figure 5.2.). Maine is introducing a maternal opioid health home model, building on the success of the state's existing Opioid Health Homes program for Medicaid patients.[7] West Virginia[8] secured an SPA that provides Medicaid coverage of Drug Free Moms and Babies (DFMB) program services for patients with OUD.[9] The state has also renegotiated MCO contracts to include the new DFMB benefit. Obtaining an SPA enables the state to transition the DFMB program from its previous dependence on grant funding to a more sustainable financing model via Medicaid. The experiences of Maine and West Virginia highlight the benefits of aligning new programs with existing payment or care delivery structures instead of building them from the ground up.

Despite these successes, Maine and West Virginia faced delays in fully establishing their payment models during the second implementation year. They attribute these setbacks to factors at the CMS or state level that influenced decision making and SPA implementation. These delays emphasize the importance of allocating sufficient time for the development of sustainable payment models in care delivery reform.

Health Equity: Unintended Consequences of Reimbursement Rules

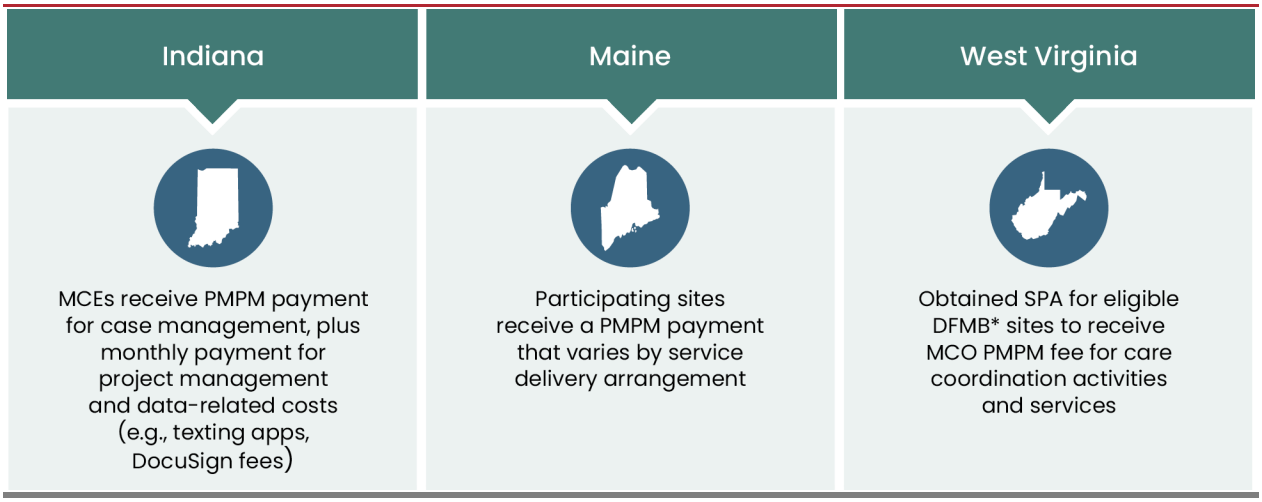
Since the COVID-19 PHE, MOM Model service providers are navigating the challenge of balancing in-person and telehealth care. While payment parity existed during the PHE, providers now receive higher reimbursement for in-person visits, making them preferable from the provider perspective. However, patients facing barriers to in-person care (for example, transportation barriers) express interest in continuing virtual visits.

[7] Maine's Opioid Health Homes program integrates OUD treatment with medical and behavioral health care and social services and supports for Medicaid patients with OUD. The model is based on a multidisciplinary team approach consisting of a clinical team lead, MAT prescriber, nurse care manager, clinical counselor, patient navigator and recovery coach. In May 2022, CMS approved an SPA to establish a tier of services within the Opioid Health Homes program specific to perinatal care teams serving pregnant and postpartum patients.

[8] During the second year of implementation, West Virginia, the state Medicaid agency and its partners expressed concerns about fraudulent MAT providers that were billing for more services than they could deliver in a day. However, initial investigations by the Federal Bureau of Investigation and the Drug Enforcement Administration appear to have effectively deterred such practices.

[9] The DFMB program integrates medical and behavioral health care through a care coordination model that incorporates wraparound recovery support services and social services. Sites have the flexibility to provide services in a way that meets local needs and priorities.

Figure 5.2. Statewide MOM Model Approaches to Funding



DFMB = Drug Free Moms and Babies; MCE = managed care entity; MCO = managed care organization; PMPM = per member per month; SPA = State Plan Amendment

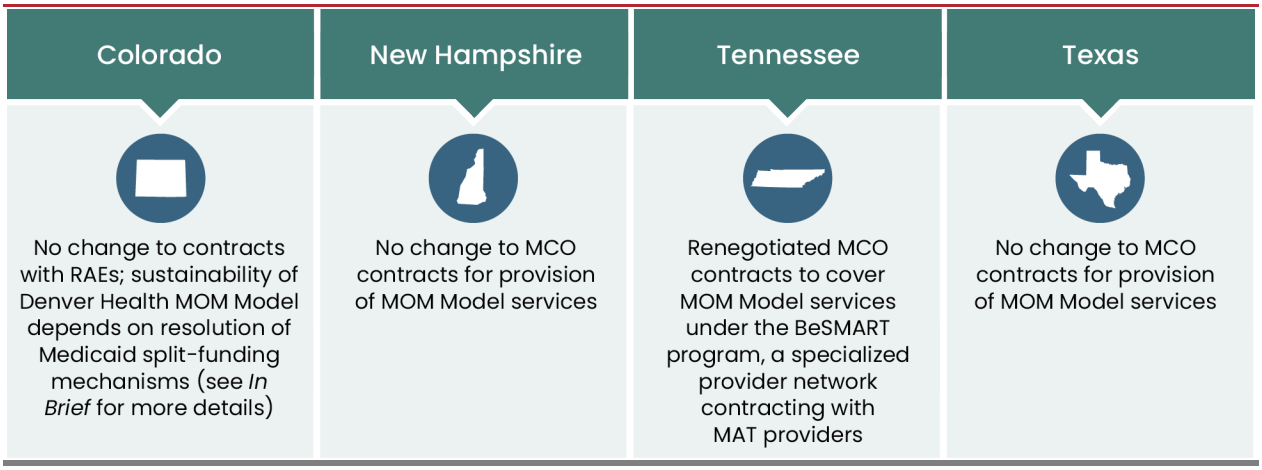
Payment strategy in development

Five awardees—one implementing a statewide model (Indiana; see Figure 5.2) and four with partial-state models (Colorado, New Hampshire, Tennessee, Texas; see Figure 5.3)—continue to be in the early stages of sustainability discussions with Medicaid leadership and other relevant decision-makers such as MCOs. Delays in sustainability planning create the risk that awardees will have insufficient time to identify and implement alternative funding sources, affecting the continuation and accessibility of MOM Model services. In some cases, state leadership and decision-makers plan to use analyses of the potential return on investment to determine whether to extend the MOM Model program beyond the model demonstration period. However, the availability of sufficient data for these analyses is uncertain given the challenges posed by low enrollment.

A further concern is that awardees with partial-state models incorporate elements currently ineligible for reimbursement under their state's Medicaid program. These elements include staff positions (for example, community health workers in New Hampshire), services (for example, lactation consultation in Texas) and other supports (for example, contingency management[10] in Colorado, beneficiary incentives in Tennessee). Currently, these MOM Model components are covered through MOM Model funds or other means, such as grants and fundraising activities, as awardees explore alternative long-term financing mechanisms. The experiences of partial-state awardees underscore the challenges of implementing local changes to payment approaches within the broader context of existing delivery systems, payment models and state policy and program goals.

[10] Contingency management is a therapeutic approach that involves positive reinforcement, typically in the form of incentives or rewards, to encourage behavioral change. In SUD treatment, reinforcers are typically monetary based, such as a voucher for attending OUD treatment.

Figure 5.3. Partial-State Model Approaches to Funding



MAT = medication-assisted treatment; MCO = managed care organization; RAE = Regional Accountable Entities

Awardees Have Made Limited Progress Developing Strategies That Link Payment to Quality and Value

Most MOM Model awardees use a per-member-per-month (PMPM) payment approach. Unlike fee-for-service, where reimbursement is tied to the volume of services rendered, PMPM ensures a fixed payment per patient per month, offering financial predictability and incentivizing cost-effective management of health conditions. However, none of the awardees currently link PMPM payments to predefined performance measures and quality metrics—a hallmark of alternative payment models (APMs).[11]

Some awardees have previously discussed APM options for MOM Model services, but none took steps to implement an APM in the second implementation year. For instance, Maine has put its "pay for performance" component on hold pending SPA rulemaking completion. Although not a requirement of the MOM Model, adopting an APM can be seen as a best practice to enhance care for pregnant and postpartum Medicaid patients with OUD because APMs align financial incentives with the delivery of high-quality, cost-effective care.

Awardees Are Addressing Billing and Reimbursement Challenges

Efficient billing procedures are crucial for ensuring MOM Model financial stability and regulatory compliance. Awardees have consistently noted administrative challenges in billing and reimbursement since the model's inception. These challenges include lack of familiarity with certain billing codes (for example, for peer recovery services), complex MCO formatting requirements for billing documentation and the use of different payment systems, with separate coding and billing processes, for behavioral and other medical health. In some cases, these challenges have been resolved, yet others remain. Awardees emphasize the importance of having billing personnel with the necessary technical expertise and dedicated time to effectively address these challenges. Timely resolution is crucial because bureaucratic

[11] APMs are approaches to health care reimbursement that move away from the traditional fee-for-service model, which focuses on paying for volume instead of value for patients and caregivers. APMs reward providers for delivering high-quality, person-centered care that is evidence-based and cost-effective. Examples of APMs include pay-for-performance and shared savings programs.

hurdles and administrative costs linked to billing, including claim denials, may deter health care providers from participating in the MOM Model and Medicaid.

B. Awardees Are Developing Organizational and Operational Capacity to Maintain MOM Model Services

Organizational and operational capacity encompasses the resources, structures and processes that contribute to the ongoing success and integration of the MOM Model within health care and service delivery systems. Three factors appear to be particularly relevant to maintenance: (1) establishing strong connections with partners, (2) fostering supportive organizational cultures and (3) developing data-sharing and reporting capacity. These factors also contribute to effective implementation and are discussed in previous chapters.

Awardees Have Developed Strong Connections With Partners

As discussed in chapters on adoption and implementation, all awardees have established connections with supportive partners from a range of organizations, spanning sectors such as CPS, criminal justice, mental health and housing. These collaborations enable awardees to leverage expertise, resources and community networks to address patient's HRSNs and build trust within the community.

Awardees also underscore the importance of diverse partnerships to establish the MOM Model's presence beyond the health care sphere. Increasing visibility is particularly relevant for establishing connections that could enhance the sustainability of the MOM Model. For example, as a result of connections with the state's Department of Human Services and Office of Behavioral Health, one awardee is currently using state legislature funds allocated for SUD prevention to support specific MOM Model services such as PRSs.

Other opportunities may exist to braid or blend funding from Medicaid with various initiatives. For example, states could use Substance Abuse Prevention and Treatment Block Grants to fill gaps in payment to providers for services that are not covered or have limited coverage under Medicaid (National Academy for State Health Policy, 2022).

Awardees Are Fostering Supportive Organizational Cultures

MOM Model awardees are fostering positive and supportive organizational cultures to ensure the long-term success of their programs. Several awardees specifically seek to recruit individuals who recognize the challenges pregnant and postpartum Medicaid patients with OUD face and are committed to providing compassionate, trauma-informed, nonstigmatizing care. As discussed in the implementation chapter, prioritizing a strong "program fit" among staff promotes cohesion within teams by increasing staff engagement and mitigating staff turnover. Such cohesion is important in maintaining care continuity for patients and preventing the loss of knowledge and momentum needed to embed change at the practice level.

In developing supportive organizational cultures, several awardees pay special attention to the well-being of PRSs, especially those in recovery. PRSs may experience heightened stress because of the emotional demands of their role, which involves building trust and empathetic connections with patients. Inadequate organizational support and low Medicaid reimbursement rates for peer recovery services often exacerbate these challenges, contributing to shortages and high turnover among these vital team members. To address these challenges and promote retention, one awardee offers access to

counseling or therapy, funding for professional development opportunities and hybrid working arrangements. Providing competitive compensation and implementing tangible measures to celebrate successes could further contribute to the overall well-being and job satisfaction of PRSs.

In addition to staffing considerations, several awardees have implemented practices that foster effective communication and a unified, purpose-driven culture. This strategy is particularly apparent among awardees with integrated, single-site care delivery models. In these instances, routine coordination huddles are pivotal in fostering open dialogue among multidisciplinary provider teams, offering a platform to share insights, address challenges and collectively problem-solve. This collaborative approach enhances mutual understanding, trust and respect among team members. As discussed in the implementation chapter, this approach also improves care integration, for example, by reducing the likelihood of miscommunication or misunderstandings that can affect the quality of care.

All awardees provide training related to stigma and equity, as discussed in the chapter on implementation. Such training can contribute to creating a positive organizational culture by promoting cultural competence, raising awareness of biases and stereotypes and enhancing patient experiences. However, the effectiveness of this training is unclear because it is largely voluntary and, in many cases, limited to MOM Model staff rather than all providers caring for MOM Model patients. Mandating this training for all staff would strengthen its impact and contribute to a more widespread shift in an organizational culture valuing diversity, equity and inclusion.

Health Equity: Limitations of Optional Training

In Indiana, respondents reported that Project ECHO (Extension for Community Healthcare Outcomes) training sessions on caring for pregnant people with OUD and their infants tend to attract health care providers passionate about providing respectful and equitable care to pregnant individuals with OUD. One maternity care provider noted, "The people ... you need to reach the most would never join an ECHO [training], that's for sure." This observation suggests training efforts aimed at addressing stigma and fostering more supportive and collaborative cultures may fall short of their potential impact when participation is voluntary.

Awardees Are Developing Data-Sharing and Reporting Capacity

Even in models with co-located care, a patient's care journey takes them across different offices and clinics. Each stop generates a record, such as doctors' notes, test results, discharge summaries or HRSN information, which become part of a patient's EHR in each setting. To realize the MOM Model's full potential, it is imperative that accurate, standardized, accessible and exchangeable health information from all sources accompanies patients every step of the way.

MOM Model care delivery partners have robust health information technology and health information exchange systems and have successfully incorporated additional data collection elements to enhance the care coordination of MOM Model patients within these systems. Awardees have also implemented strategies to facilitate efficient data collection in various settings, such as the use of tablet devices (iPads or Android tablets). One awardee established an online data entry platform equipped with data dashboards and visualizations, enabling real-time and transparent tracking of MOM Model patient enrollment and care.

Health Equity: Leveraging EHR Systems to Build Patient Trust

In Texas, the team's psychologist embeds a care coordination note in each Texas MOM patient's EHR system, positioned at the top of their records. The note includes information such as urine drug screen results, social history, past trauma history, names of partners and children and where other children are living. This feature assists MOM Model staff in establishing rapport with patients and staying mindful of sensitive and potentially triggering topics.

Despite this progress, some awardees have encountered interoperability challenges, as discussed in the chapter on implementation. These challenges arise when care providers share data with external sites that use EHR systems created by different vendors. One awardee lacking a unified EHR system resorts to sharing information via telephone and email. Awardees are actively addressing these challenges by using Health Insurance Portability and Accountability Act–compliant tools accessible to all care delivery partners, such as REDCap and care coordination data platforms. However, the sustainability of these solutions is uncertain, risking obsolescence without a clear plan for ongoing support and development.

C. Current and Future Considerations

All awardees have identified and implemented payment strategies for their MOM Models. Awardees implementing statewide models have established payment approaches that comprehensively or almost entirely cover all MOM Model services. Awardees with partial-state models are progressing at various stages in implementing long-term strategies, such as the use of new managed care contracting requirements. In some cases, awardees must determine whether and how to secure stable, long-term funding sources for essential services and resources not reimbursed by Medicaid.

In future years, the evaluation team will continue to monitor states' payment strategies to sustain program funding and the potential impact of cross-sector and community partnerships on expanding the visibility and resources of MOM Model programs. Recognizing that maintenance is an ongoing process influenced by many factors, the evaluation team will examine how awardees use partnerships and tailor their MOM Models to more closely align with the needs and values of marginalized populations in their communities to promote lasting equitable outcomes. Finally, the evaluation team will closely monitor awardees' endeavors to scale up and scale out their MOM Model programs.

Chapter 6. Effectiveness

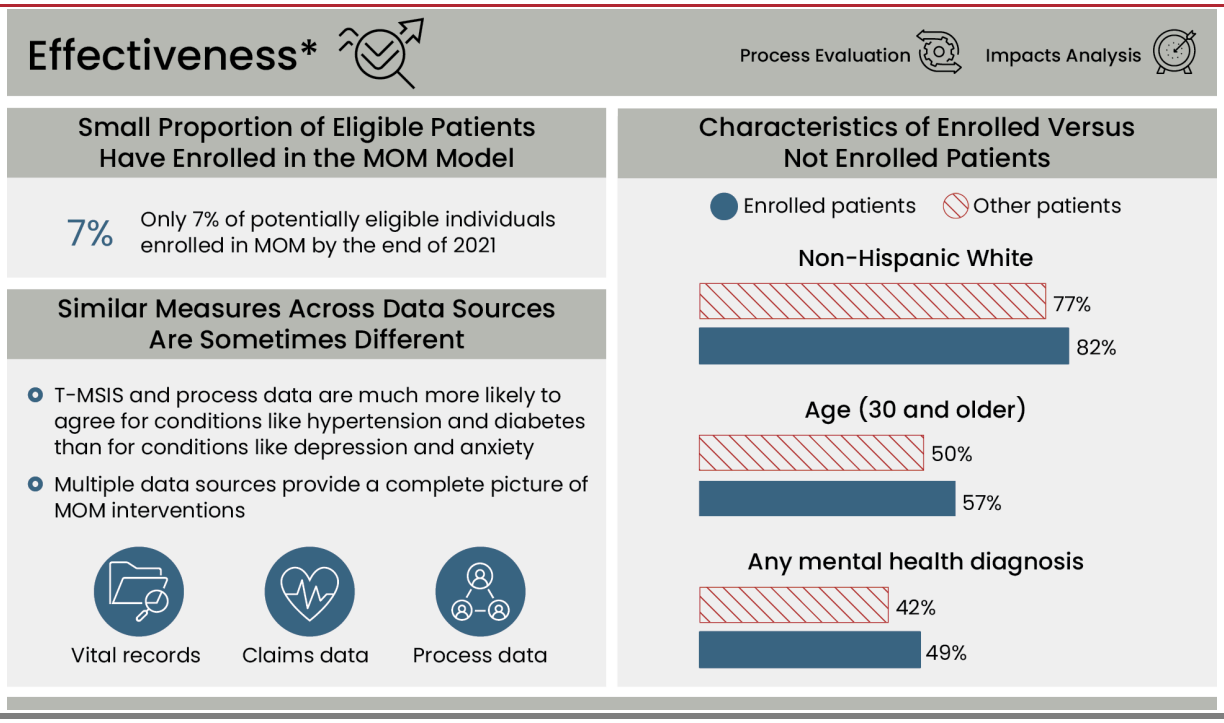
Effectiveness focuses on the impact of MOM Model interventions. Because Medicaid claims data availability lags by about 2 years, the evaluation cannot yet determine if the MOM Model is associated with improved patient outcomes. However, the information currently available does provide context for future impacts analyses. The impacts evaluation focused on the types of patients enrolled compared with the population of eligible individuals in MOM service areas.

The evaluation team used T-MSIS, state vital records and MOM Model process data to examine the following research questions for the effectiveness domain:

- What proportion of pregnant and postpartum people with OUD in the MOM Model service areas enrolled in the model as of the end of 2021?
- In what ways are patients who enroll in the MOM Model similar to or different from eligible individuals who reside in MOM Model service areas but did not enroll?
- How does the prevalence of specific Medicaid patient characteristics identified with T-MSIS data differ from vital records and process data reported on MOM Model patients?

Key findings appear in Figure 6.1. Only a small proportion of potentially eligible patients living in MOM Model service areas were enrolled in the model. MOM Model patients, compared with potentially eligible patients, were more often non-Hispanic White, aged 30 or older and had mental health diagnoses. Variability exists in agreement among different data sources measuring similar constructs, with higher concordance for demographic characteristics and certain physical health conditions and lower agreement for mental health conditions such as depression and anxiety.

Figure 6.1. Key Findings in MOM Model Effectiveness

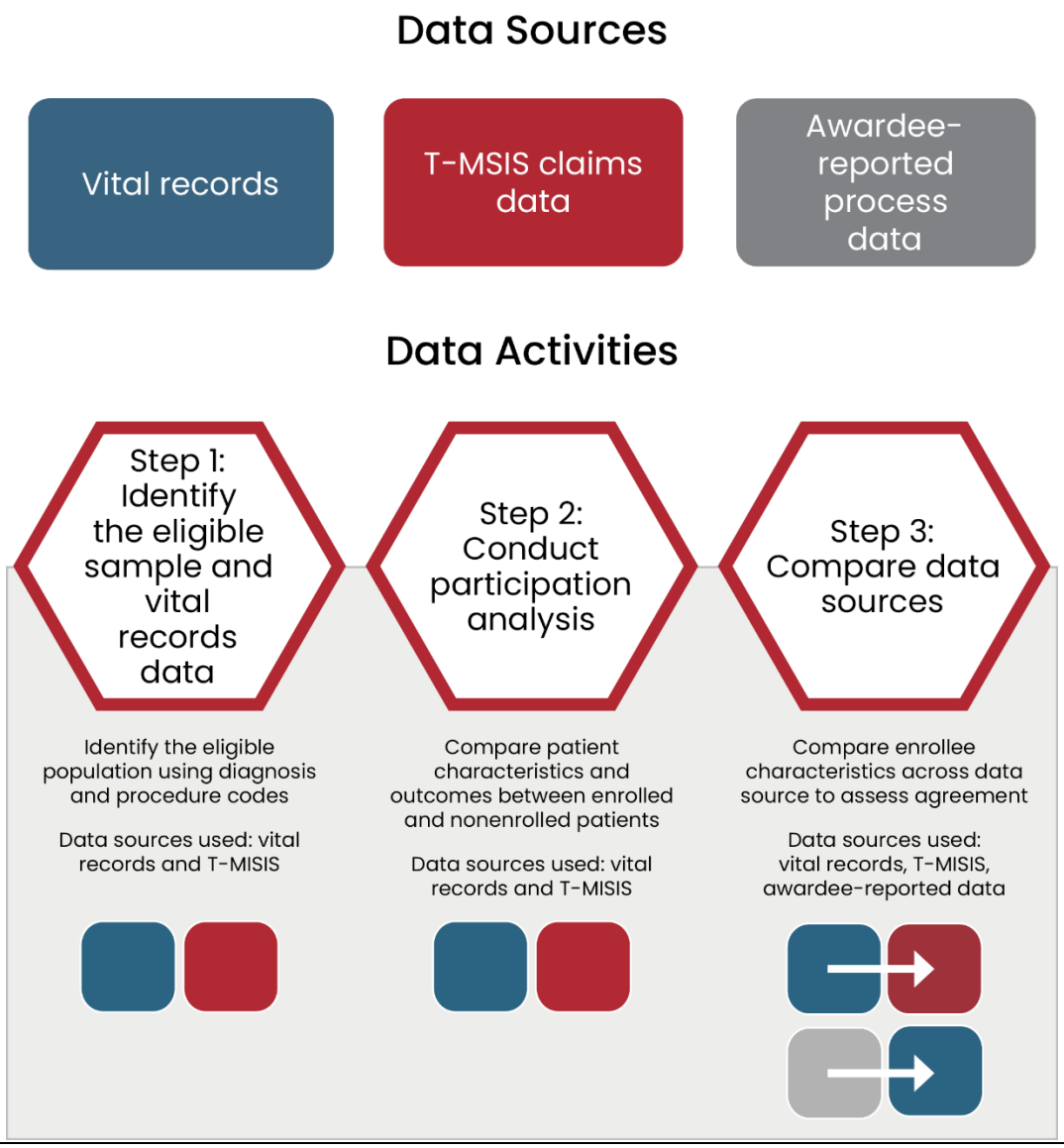


*It is too early to determine findings on awardees' impacts, but data available now provide context for forthcoming reports.
Source: Analysis of T-MSIS data (from calendar year 2021), awardee-reported process data (through June 2023) and State-reported vital records data

A. Data and Methods

This chapter relies on three data sources: T-MSIS, state vital records and MOM Model process data. The evaluation team used T-MSIS and vital records data to create health and health care utilization outcomes and compare them with process data to assess differences and similarities. The team also studied the extent to which potentially eligible patients participated in the MOM Model and examined differences between enrolled patients and potentially eligible (but not enrolled) patients for the first implementation year. Figure 6.2 describes the data and methods used; full details appear in Appendix B.

Figure 6.2. Data and Methods for Effectiveness Analysis



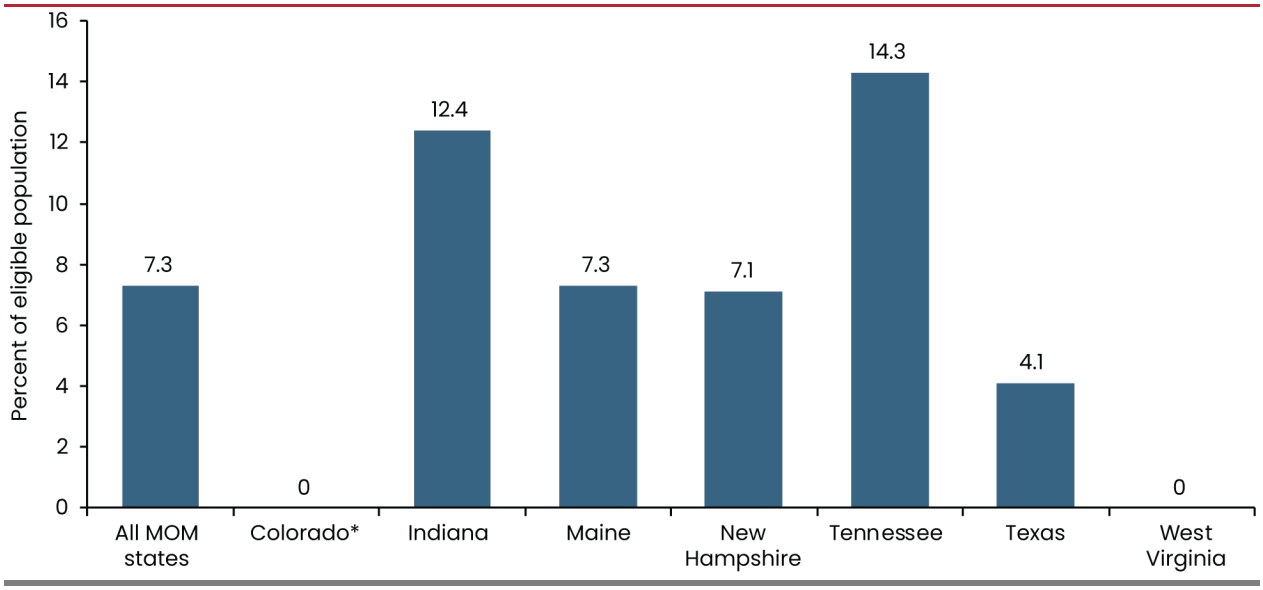
B. MOM Model Patients Represent a Small Proportion of Potentially Eligible Patients and Differ From Nonenrollees in Several Ways

To better understand if the MOM Model improves health care costs and quality of care, the evaluation team examined the extent to which awardees enrolled a large or small proportion of MOM-eligible patients, also known as the *participation rate*. For the "participation analysis," the evaluation team compared enrolled patients and patients not enrolled in MOM to assess the representativeness of MOM Model patients to the population of pregnant and postpartum Medicaid-insured individuals.

Awardees Enrolled Small Proportions of Potentially Eligible Patients Early in the Model

Only a small percentage of potentially eligible patients had enrolled in the MOM Model by the end of 2021, with the overall participation rate standing at 7.3% and ranging from 0% to 14.3% across awardees (see Figure 6.3).[12] Because enrollment increased after the first year for several awardees and the total number of MOM-eligible individuals likely remained stable, participation rates for some awardees may increase when updated 2022 data are available.

Figure 6.3. MOM Model Participation Rates, 2021



Note: The numerator for these rates includes enrollees in 2021, and the denominator includes eligible Medicaid enrollees identified in the 2021 claims; some awardees only reported data for half of the year. Number of MOM Model enrollees (numerator) and number of eligible individuals (denominator): all MOM states = 272/3,731, Colorado = 0/247, Indiana = 150/1,212, Maine = 28/384, New Hampshire =11/155, Tennessee = 77/539, Texas = 6/145, West Virginia = 0/1,049

MOM Model Patients Differ in Several Ways From Potentially Eligible Individuals

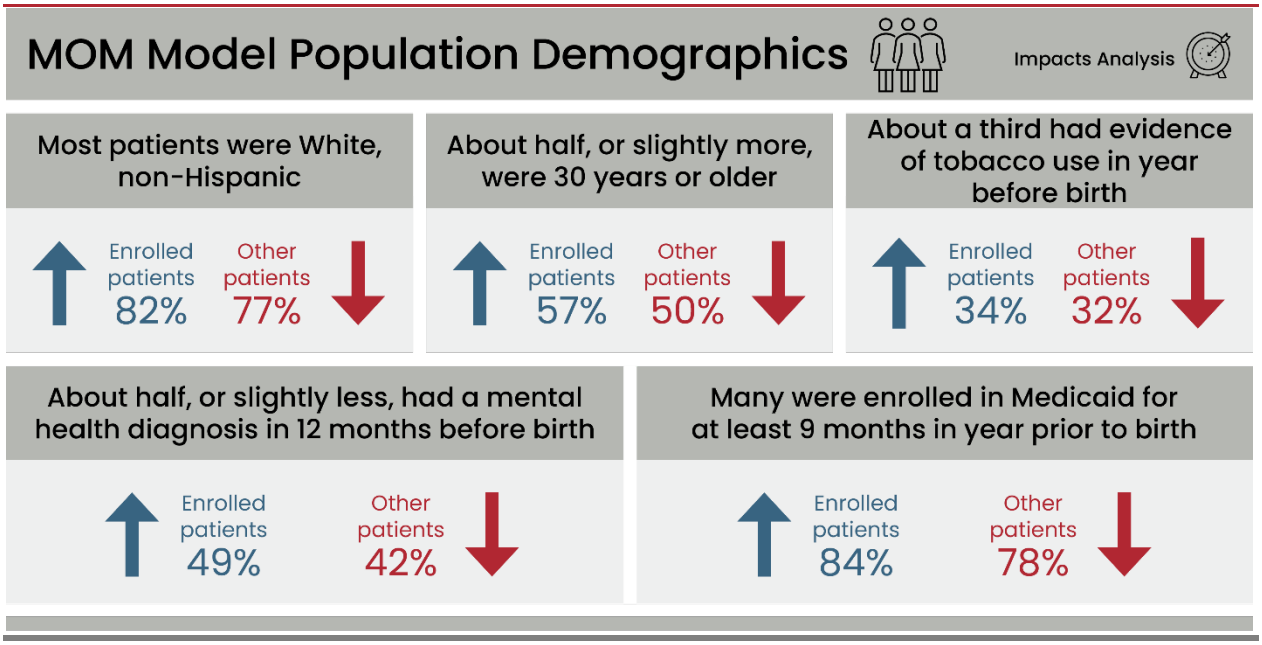
A comparison of characteristics between eligible patients and patients who enroll in the MOM Model helps determine the generalizability of the model. The evaluation team compared demographic and clinical characteristics of 272 MOM Model patients (also referred to as enrollees) with more than 3,700 MOM-eligible Medicaid patients (nonenrollees) to understand the extent to which enrollees are similar to or different from nonenrollees. Because some MOM Model awardees enrolled only a small number of

[12] Complete details on the criteria used to identify the eligible population appear in Appendix B.

individuals by the end of 2021, the analysis combined information for all awardees. **The findings primarily reflect the characteristics of enrollees in Indiana and Tennessee because they had the largest number of enrollees by the end of 2021.**

MOM Model patients differ from nonenrollees in several ways (see Figure 6.4). For instance, MOM patients were more likely to be non-Hispanic White and older than individuals not enrolled. Other differences may indicate that MOM patients might have more needs or be more prepared to participate than nonenrollees. For example, compared with nonenrollees, MOM Model patients were more likely to be enrolled in Medicaid for at least 9 months of the year before they gave birth, suggesting greater experience with the Medicaid program. MOM Model patients also differed on some maternal health risk factors but not others; for instance, enrollees were more likely to have a mental health diagnosis in the 12 months before birth than those not enrolled, indicating MOM Model patients have slightly greater needs for the program. However, enrollees and nonenrollees had approximately the same rates of tobacco use in the 12 months before birth.

Figure 6.4. MOM Model Population Demographics



C. Multiple Data Sources Are Necessary for a Complete Evaluation

The evaluation of complex Medicaid programs poses several challenges, including limitations of existing data sources. T-MSIS's primary limitation is a 2-year delay in the availability of final claims data, making the process data vital to understanding the model's challenges and potential to positively affect outcomes. However, because these data sources will sometimes differ from claims data, it is important to use multiple data sources for a complete evaluation. In particular, the evaluation can use multiple sources of information to enhance accuracy and comprehensiveness, validate and supplement missing elements and enhance analysis of subgroups and disparities.

Different Data Sources Measuring the Same Patient Characteristics Provide Different Answers

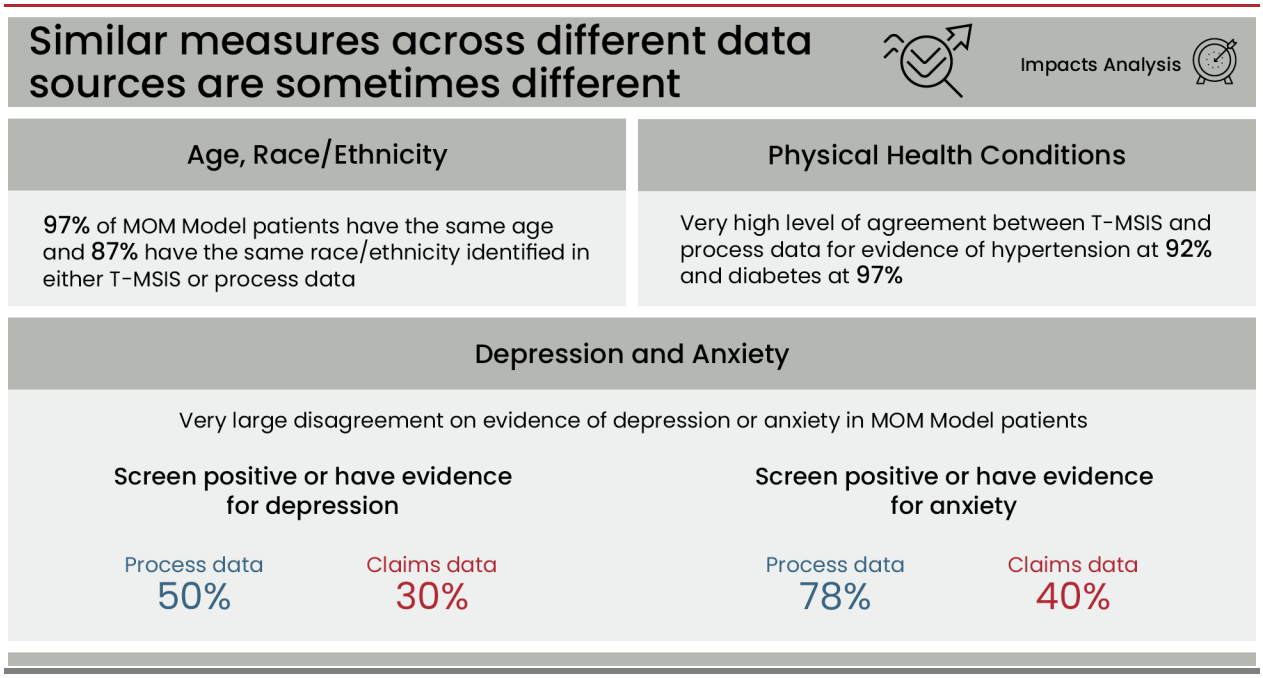
Examining differences between similar measures across different datasets helps provide context for the need to collect multiple types of data to evaluate a program like the MOM Model. One difference is that T-MSIS data typically offer diagnosis codes for treated conditions, whereas process data typically identify health conditions based on self-report or a review of EHRs. Hence, individuals with untreated conditions may appear to have a condition in process data but not in claims data. Likewise, individuals may not self-report a condition or behavior such as tobacco use that claims data might document. Depression reporting and diagnosis offer an example of differences among data sources. A patient may have a diagnosis for depression in claims data because of previous treatment, but the same individual may not have reported depression symptoms during MOM Model screening.

Another difference across data sources relates to timeframes for data collection. Information gathered from T-MSIS data is typically based on evidence of diagnosis codes during a specific amount of time individuals were enrolled in Medicaid. However, process data may estimate the prevalence of a condition ever in a patient's life, ever during the patient's participation in the MOM Model, at enrollment in the MOM Model or at the time of a specific screening.

Comparing information across T-MSIS, participant-level process data and vital records data

T-MSIS and process data show areas of both agreement and disagreement (see Figure 6.5). Notably, they present high agreement for patient characteristics such as age and race/ethnicity and for some physical health conditions such as hypertension and diabetes. The data sources show much lower agreement for mental health conditions such as depression and anxiety.

Figure 6.5. Comparison of T-MSIS and Process Data



D. Current and Future Considerations

The evaluation seeks to assess the extent to which MOM Model awardees improve patient outcomes and reduce costs. Ongoing awardee challenges present barriers to determining these impacts. For example, the planned impacts analysis considers awardees' impacts on all potentially eligible patients in their service areas, but because the number of participating patients is low across MOM Model awardees, it will be difficult to demonstrate an impact on outcomes such as prenatal care or NICU stays. Medicaid data availability also presents a challenge, limiting the evaluation's ability to present timely findings on potential program impacts or areas of promise.

The next report will use 2021 and 2022 data and provide more information on a greater number of MOM and MOM-eligible patients. The next report will also include a preliminary impacts analysis for awardees with the largest number of enrolled individuals in 2021. The evaluation team will conduct these analyses on a small number of outcome measures, recognizing they represent a preliminary look at program impacts. Where possible, the evaluation will also consider person-centered outcomes that matter to MOM patients, such as improvements in mental health and sustained recovery from OUD.

Chapter 7. Conclusion

During the second implementation year, MOM Model awardees and partners ramped up enrollment and identified promising practices to serve eligible Medicaid patients. They also continued to expand the use of best clinical care practices, collaborate with community-based partners to increase enrollment and improve data systems for more integrated care. This section highlights and synthesizes key findings.

A. Mitigating Barriers to Enrollment

Awardees continued to implement diverse strategies to reach potential MOM Model patients throughout their service areas, including developing and disseminating outreach materials and engaging with community partners. As a result of these efforts, enrollment almost doubled in Implementation Year 2. Nonetheless, all awardees enrolled far fewer patients than projected during the pre-implementation period.

Around one-quarter of MOM patients enrolled in the first or second trimester, which is preferable to enrolling later in pregnancy to enhance patients' exposure to MOM Model services. Individuals the model serves are generally in good physical health, but almost all face challenges related to **mental health, substance use and HRSNs.**

Unmet HRSNs are one factor likely contributing to low enrollment (Landis et al., 2024). More than half of all MOM Model patients reported unmet HRSNs, especially housing instability, food insecurity and lack of transportation. Those not enrolled in the model also likely encounter significant HRSNs that make it challenging to prioritize their health. Individuals with HRSNs may encounter stigma from societal attitudes that deters them from seeking assistance because of fears of being labeled lazy or "freeloaders" (Fichtenberg & Fraze, 2023).

To promote enrollment, all awardees have developed strong connections with community-based partners to strengthen and simplify pathways to resources for patients with HRSNs. However, awardees noted limits to the extent they can address HRSNs, particularly in the face of broader structural issues, such as a shortage of affordable housing. Rural care providers encounter particularly daunting obstacles because of the scarcity of social services and resources, especially when compared with their urban counterparts. Further work is needed to understand how efforts to address HRSNs in the target population can be effective, taking into account patients' values and priorities, barriers to supports (e.g., waitlists for subsidized housing) and funding available to community-based organizations and other entities to address HRSNs.

The success of other efforts to address barriers to enrollment in the MOM Model also remains unclear. Pregnant individuals may avoid seeking help or disclosing their OUD because they fear being judged or stigmatized by health care providers. To mitigate this issue, almost all awardees offer provider training to address stigma. However, models often do not have the authority to promote or require training, and several patients described stigmatizing attitudes and behavior among care providers that were less involved with model protocols, particularly in labor and delivery care settings. These findings suggest that provider stigma is still pervasive and may continue to serve as a barrier to enrollment.

Similarly, it remains uncertain how successful MOM Model awardees are in addressing concerns among pregnant individuals who perceive seeking treatment for OUD as risking involvement with CPS. It is

encouraging, however, that several awardees have strengthened relationships with child welfare agencies. This partnership is crucial for health care providers and CPS to distinguish families needing support services from those requiring CPS oversight because of child maltreatment concerns. Future MOM Model evaluations will further consider how relationships with child welfare agencies, including efforts to strengthen these relationships, affect enrollment and the experience of MOM Model participants.

The most common challenges to equity in reach and accessibility are **stigma, lack of transportation, food insecurity and lack of affordable housing.** Other issues include lack of culturally and linguistically appropriate care, racial inequities in child welfare systems and lack of health insurance. **Transportation and treatment access disparities are particularly common in rural regions.**

B. Implementing MOM Model Services

A central goal of the MOM Model is to foster integrated care delivery and ensure access to evidence-based treatment for patients. A notable success of the model is that MOM patients receive higher rates of MAT in the month before birth than other Medicaid patients eligible for MOM but not enrolled in the model. MOM Model awardees are also enhancing their organizational and operational capacity to institutionalize and fully embed MOM Model services and practices into their state health care systems. Nonetheless, only some models have achieved full integration, and not all models and model partners are consistently implementing best practices for the treatment of pregnant and postpartum people with OUD.

Differences in care delivery partly stem from whether models are implemented at a single co-located site or across multiple settings with geographically dispersed providers. Although co-location does not guarantee greater integration of health care, MOM Model awardees offering co-located care face fewer integration barriers. Co-located models prioritize team-based care, information-sharing and fidelity to evidence-based practices within their organizational cultures. However, co-located models are not without their limitations. Models themselves have identified challenges, such as space constraints, that could hinder their ability to expand enrollment.

The type of model used influences implementation and service capacity. All care models, including care coordination models, provide opportunities for **comprehensive case management** to meet the complex needs of MOM Model patients. Integrated models offer additional advantages because they facilitate **consistent implementation of best practices** across all care partners.

Because co-locating care is not always feasible, it is important to consider how to promote integration in models with dispersed providers if the MOM Model proves effective and is implemented more widely. Three MOM awardees offer integrated but not co-located MOM Model services. Among these models, integration and use of best practices have been facilitated by pre-existing relationships with providers, an onboarding period to foster interprofessional collaboration and the alignment on model goals and staff "champions" who strengthen the adoption and institutionalization of MOM Models. To enhance integration further, Medicaid programs should tackle incompatibility challenges that hinder provider information

Several awardees are participating in learning collaboratives and other mechanisms to support knowledge sharing and disseminate information about best care practices.

sharing—for example, by using hospital incentives and MCO contract requirements to increase participation in state, regional or local health information exchange systems.

C. Enhancing Equity

MOM Model enrollment numbers are currently too low to disaggregate process and claims data by race, ethnicity and other characteristics associated with health inequities. However, the analysis of 2021 T-MSIS data indicates that MOM Model patients are less racially and ethnically diverse and generally older than nonenrollees, suggesting disparities in access to the MOM Model. Some awardees are conducting targeted outreach to underserved populations by partnering with community organizations, including faith- and minority-based groups, which have established trust and rapport within their communities. Nonetheless, the evaluation identified widespread challenges to ensuring access is truly equitable. For example, Black non-Hispanic and Hispanic birthing people with OUD are less likely to be diagnosed early in pregnancy, even after adjusting for other maternal comorbid conditions. This finding suggests structural racism may be associated with a lower standard of care and fewer treatment options for birthing people of color (Schiff et al., 2022).

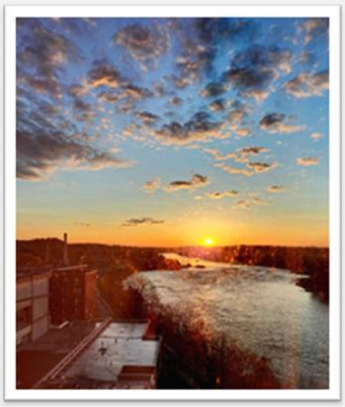
A potential avenue for future research is whether the use of PRSs can promote equity in the care of pregnant and postpartum Medicaid patients with OUD. MOM Models almost universally offer PRS services, albeit with variations in the extent to which PRSs have lived experience of OUD during pregnancy. Patient feedback consistently highlights the positive impact of PRSs in fostering trust, enhancing motivation for change and reducing stigma. Qualitative research methods such as interviews and focus groups may provide insights into patients' perspectives on the impact of PRSs on their care experiences and perceptions of equity. It is important to note that PRSs alone will not reduce inequities in access and treatment. Much broader structural reform is needed to address the legacy of discriminatory policies and deep-rooted explicit or implicit biases. Nonetheless, with adequate funding and support, the inclusion of PRSs within integrated care delivery models may be a key component of fostering more equitable patient experiences and outcomes.

No awardee has taken a systematic approach to addressing equity in the MOM Model. However, in October 2022, the Innovation Center launched an optional Health Equity Project offering eligible MOM Model awardees funding opportunities to study and promote equity within their programs. Colorado and West Virginia received this funding. Colorado developed a comprehensive atlas highlighting the need for more equitable access to care for pregnant and parenting individuals with SUDs across the state. In West Virginia, MOM Model program staff and students are conducting "train-the-trainer" activities to teach staff at current and future implementation sites how to administer naloxone and how to train others to do the same. This training is a part of the onboarding process for new MOM Model patients to make naloxone more widely available, particularly in underserved communities or among marginalized populations. Future evaluations will examine these and other strategies MOM Model awardees adopt in the third implementation year to increase equity.

D. Looking Ahead

This year's evaluation sets the foundation to further explore the model's primary research questions as awardees move into their third implementation year. The evaluation team will continue to monitor the extent to which awardees are adopting best practices and integrating care. Next year's evaluation will place a greater emphasis on examining the impact of the MOM Model on patient outcomes and costs. Analyses of effectiveness will consider the key methodological finding from this evaluation, which showed uneven agreement between T-MSIS and participant-level process data, indicating the need for multiple sources of information to have a complete picture of the MOM Model's impact. The evaluation will also consider person-centered outcomes with an emphasis on those most important to pregnant and postpartum individuals with OUD.

Patients report that supports related to mental health and recovery are important to them. Future reports will identify the types of supports patients use.



"Through my recovery journey I constantly had to tell myself that this too shall pass. The sun will always rise, and tomorrow is a chance to start again."

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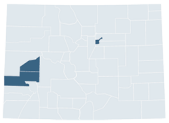
Part 2

Colorado MOM Model: In Brief



Geographic Scope

Greater Delta, Denver and Montrose Counties

Urbanicity

Urban, suburban and rural

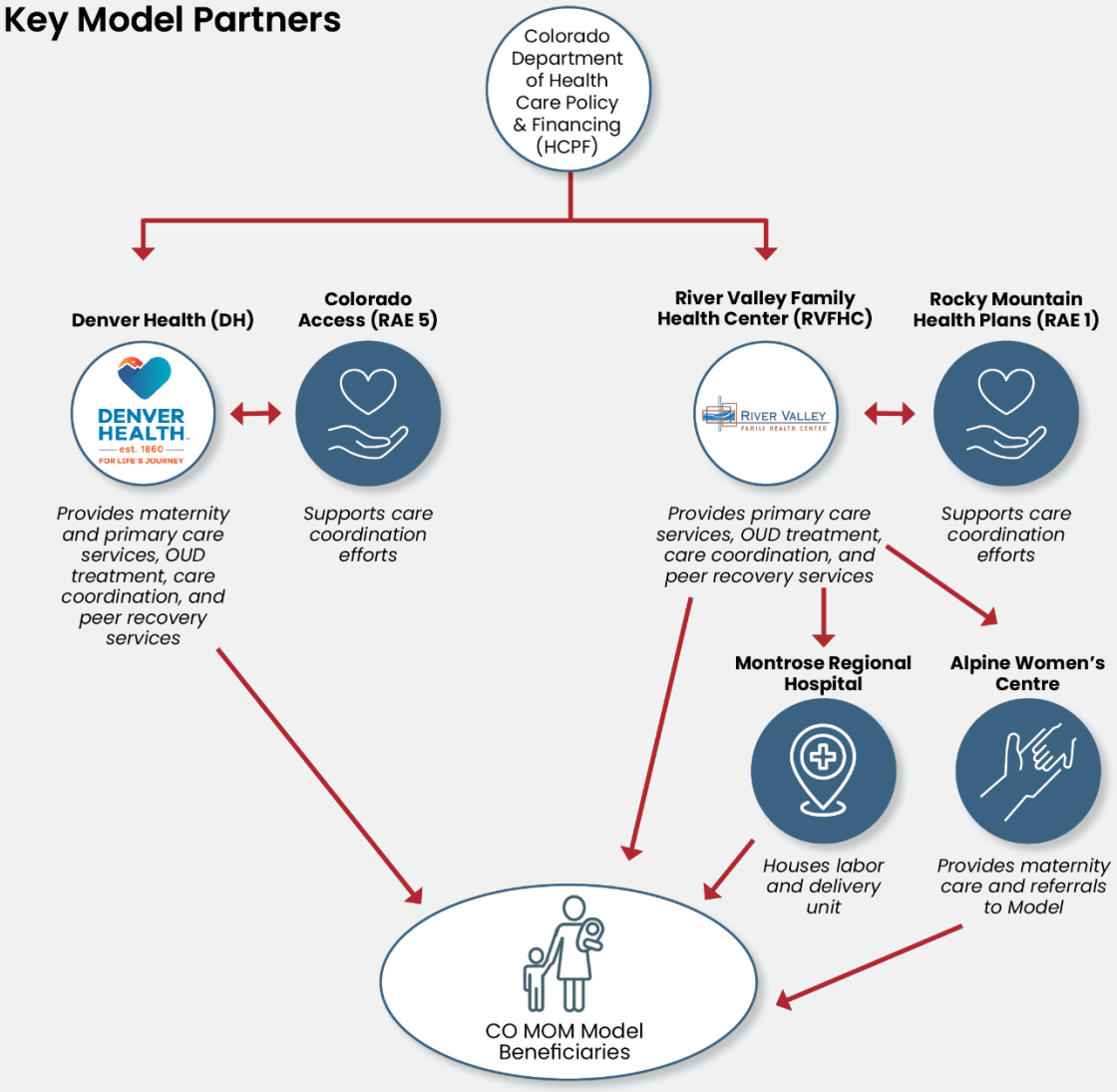
Enrollment

8 patients served in Years 1 and 2 of implementation

State Implementation Summary

The Colorado Department of Health Care Policy & Financing (HCPF) directs the Colorado MOM Model. This model launched with three subgrantees serving as care delivery partners in April 2022: (1) Denver Health, (2) River Valley Family Health Center (RVFHC) and (3) the Southern Colorado Harm Reduction Association (SCHRA). Each of these care delivery partners designed their own unique MOM Models within specific guidelines HCPF provided. The Colorado MOM Model had enrolled eight patients across its three care delivery partners as of the end of the second year of implementation. SCHRA withdrew from the model March 31, 2023. However, Implementation Year 2 saw HCPF work with the two remaining partners, Denver Health and RVFHC, to develop plans for financial sustainability, increased patient outreach and equitable care.

Key Model Partners



Implementation Lessons Learned

Implementation successes. Respondents from Denver Health and RVFHC spoke highly of their relationships with HCPF, describing HCPF as responsive to their concerns and comprehensive in their support. Denver Health's greatest success during the second year of implementation centered on the perinatal navigator and PRS's capacity to foster strong relationships with MOM Model patients, helping them to be comfortable while receiving care. RVFHC successfully conducted many trainings on best practices for caring for pregnant individuals with opioid use disorder (OUD) with local obstetric providers and child protective service case workers.

Implementation challenges. As mentioned, SCHRA, Colorado MOM's subgrantee covering Pueblo, Colorado, withdrew from the MOM Model March 31, 2023, because of challenges meeting the administrative requirements of the model. Colorado enrolled only eight patients as of the end of the second year of implementation. Care delivery partner staff described several challenges to recruitment across the model, including a lack of staffing capacity, geographic barriers, limited patient incentives, growing trends in methamphetamine use supplanting opioid use, stigma and fear of child welfare involvement.

Program Features

Partnership maintenance. Despite losing one subgrantee during the second year of implementation, HCPF has sustained strong partnerships with Denver Health and RVFHC, with staff from both subgrantees praising the agency for its effective communication of model guidelines and procedures. Both organizations continue to participate in monthly virtual learning collaborative meetings with HCPF staff. HCPF has considered adding a new care delivery partner to the model following SCHRA's departure, but their staff indicated it would take between 6 and 8 months for a new care delivery partner to begin implementing the model and enrolling participants.

Enrollment, intake and assessment. Although the model enrolled only eight patients, delivery partners did not begin enrolling patients until late summer 2022 because of contractual issues, putting them more than a year behind care delivery partners from other states. HCPF did not set enrollment goals for the coming year, focusing instead on the goal of providing comprehensive, whole-person care to the patients they are able to enroll.

Patient Perspectives

Although the evaluation team collected data from Colorado's MOM Model patients, this data cannot be reported in this year's annual report due to fewer than 8 enrollees at the time of site visits.

HCPF entrusts each care delivery partner with the design and execution of its own outreach strategy, though the subgrantees continually share knowledge about this and other components of model design through learning collective meetings. Denver Health relies primarily on internal referrals from providers within the Denver Health System, while RVFHC relies on referrals from local labor and delivery departments and providers from their communities. Self-referrals are rare, but HCPF maintains a Colorado MOM website. RVFHC plans to scale up outreach via their community education efforts in the next year.

Colorado's care delivery partners exclusively enroll patients prenatally or during their birth hospitalizations. Model staff respond to provider referrals, engage patients in person or by cell phone

and conduct screenings for anxiety and other behavioral health conditions, substance use and treatment history, social determinants of health, patient engagement, pregnancy and substance use.

MOM Model services. Denver Health and RVFHC have taken different approaches to implementing the MOM Model. Denver Health's model supports MOM Model patients using a hub-and-spoke model with co-located services, with the Center of Addiction Medicine serving as a central hub providing intake, behavioral health and medication-assisted treatment services on one campus. RVFHC's model emphasizes perinatal navigation, wraparound services and contingency management. In the past year, RVFHC faced challenges implementing the contingency management aspect of their model, but HCPF continued to work on a plan with Denver Health and RVFHC to provide gift card incentives to patients for engaging in MOM Model activities. Both care delivery partners have experienced challenges to implementation, particularly stigma and addressing health-related social needs, such as transportation.

Data systems. Colorado's two care delivery partners continue to maintain their own data collection and reporting workflows, with HCPF providing guidance and assistance through learning collaboratives and one-on-one engagements. HCPF indicated SCHRA's departure was, in part, the result of struggles to meet the model's administrative requirements as a non-Medicaid provider, such as clinical data collection and reporting.

Medicaid Context and Sustainability

MOM Model sustainability. HCPF continued to investigate potential avenues for sustaining MOM Model services during the second year of implementation. HCPF anticipates that the costs of all MOM Model services will be absorbed by the regional accountable entities via current per member per month payments, authorized through a 1915b waiver. The state remains confident RVFHC will be able to sustain MOM Model services given its status as a federally qualified health center (FQHC), which brings enhanced Medicaid reimbursement rates. However, various barriers to sustaining MOM Model services at Denver Health include Medicaid split-funding mechanisms, which occur because Denver Health status is both an FQHC and a managed care organization (MCO), and as such receives payments from its regional accountable entity and its MCO structure.

Medicaid and other state context related to MOM Model. In July 2024, Colorado will transition to Phase III of its Accountable Care Collaborative, a program initiated in 2011 to deliver cost-effective, high-quality health care services to its Colorado Medicaid members. HCPF is currently considering new integrated care models for Phase III, such as short-term behavioral health interventions in primary care settings, including obstetric settings.

Colorado implemented the expansion of postpartum Medicaid coverage from 60 days to 12 months in July 2022 but has not yet seen the impact of this policy on MOM enrollment because of continuous coverage requirements authorized during the COVID-19 public health emergency. With the end of the pandemic, HCPF returned to regular renewal processes in early spring 2023, and some concern is apparent that some MOM patients may lose coverage after spring 2023 if their income has changed and HCPF has not been notified of their pregnancy.

Conclusion

While Colorado MOM was hindered by SCHRA's withdrawal during the second year of implementation, both remaining care delivery partners succeeded in initiating MOM Model enrollment during the past year while continuing to operationalize MOM staffing and care coordination structures. RVFHC continued to develop its community outreach strategy, while Denver Health conducted internal trainings to enrich the provider network and grow the MOM patient base. In the next year, the evaluation team will focus on how Colorado's care delivery partners develop outreach to underserved communities, address transportation challenges and engage with child welfare staff to combat stigma. Other central questions pertain to how HCPF and its care delivery partners will establish long-term funding structures, especially for auxiliary services such as contingency management, and how quickly outreach and enrollment scale up as the model enters the third year of implementation.

Indiana MOM Model: In Brief

Geographic Scope

4 care delivery partners enrolling beneficiaries statewide

Urbanicity

Urban, suburban and rural

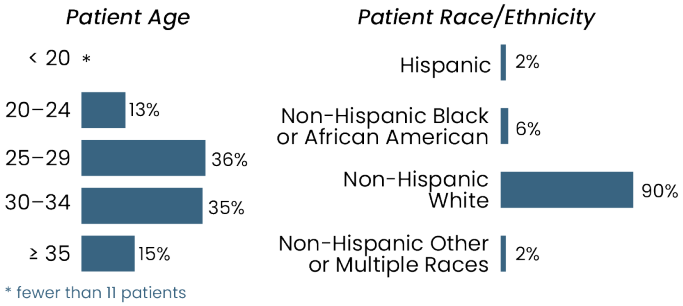
Enrollment

543 patients served in Years 1 and 2 of implementation

73% enrolled in MOM during pregnancy, and **27%** enrolled after birth

85% received Medicaid benefits prior to pregnancy

Patient Characteristics



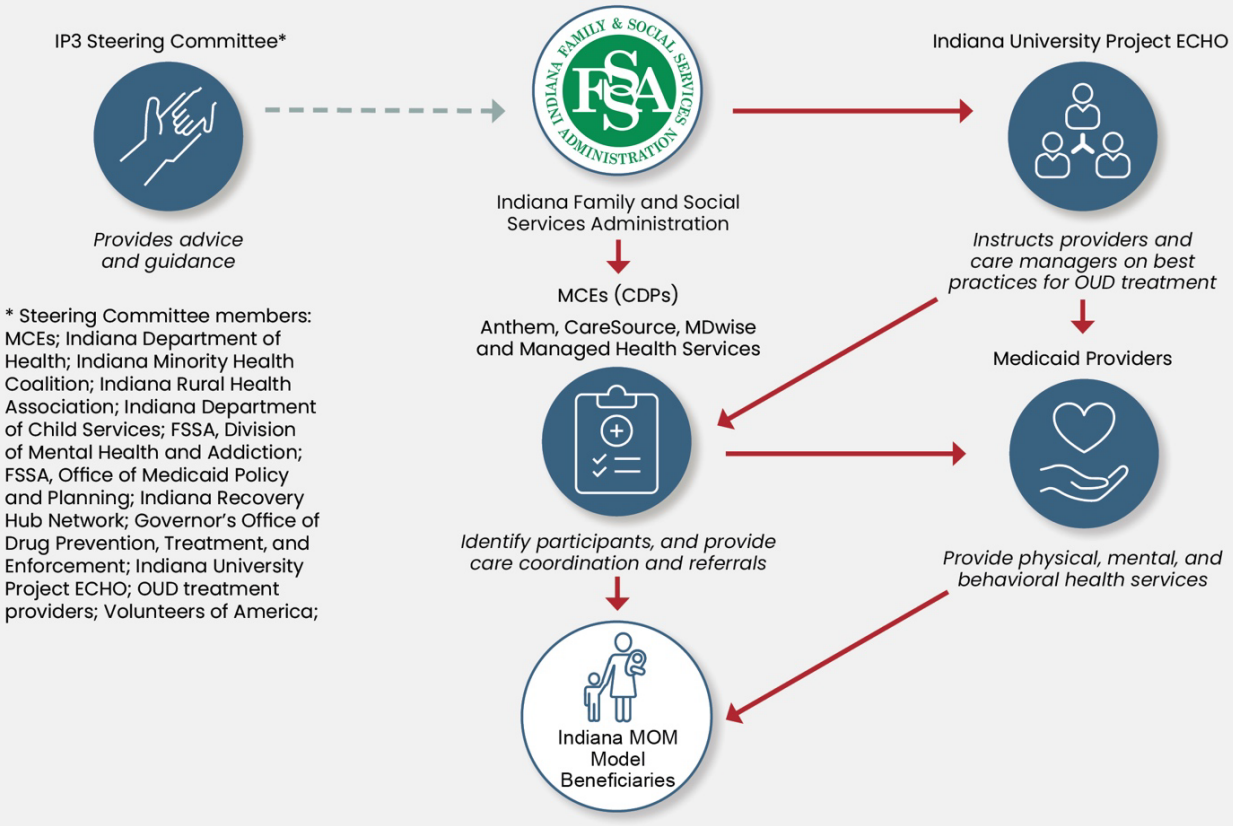
Patient Health-Related Social Needs

49% of patients screened positive for at least one social need

1.1 social needs were identified on average

Housing, food and transport were the top three social needs identified

Key Model Partners



Implementation Lessons Learned

Implementation successes. The Indiana Family and Social Services Administration (FSSA) and its four care delivery partners maintained strong relationships during the second year of implementation. Respondents from the awardee and care delivery partners reported consistent, fruitful collaboration regarding the implementation of the Pregnancy Promise Program. Many interviewees commented on the value of the Pregnancy Promise Program's core case management services, particularly in smoothing the care coordination process and providing a nonjudgmental, supportive system for pregnant and postpartum people with opioid use disorder (OUD). FSSA and its care delivery partners also launched several new campaigns to spread awareness of the Pregnancy Promise Program among patients and providers, including virtual outreach and in-person "road show" education efforts across the state.

Implementation challenges. Enrollment in the Pregnancy Promise Program has lagged consistently behind FSSA's initial enrollment projection as a result of various challenges reducing enrollment, including mistrust of medical institutions among patients from marginalized communities, submission delays in the data that managed care entities (MCEs) use to identify eligible patients and the inherent challenges in following up with the MOM Model eligible patients by phone. Pregnancy Promise Program patients may be seen by any credentialed providers in their MCE network, so patients experience wide variability in the quality of care they receive and whether trauma-informed care strategies are used to reduce patient stigma during treatment. To address this concern, FSSA requires training on best practices in OUD care for all Pregnancy Promise Program case managers and offers extensive optional training through Project Extension for Community Healthcare Outcomes (Project ECHO) for clinical providers, some aimed specifically to combat stigma. Care options are constrained by a shortage of behavioral health providers statewide in Indiana.

Program Features

Partnership maintenance. Indiana's care delivery partners remain the state's four Medicaid MCEs: Anthem, CareSource, MDwise and Managed Health Services, which all operate statewide. MCEs continue to collaborate with one another through regular formal and informal meetings, and FSSA holds monthly meetings with each MCE individually and as a group. FSSA solicited suggestions from the MCEs when initially applying for the MOM Model, which substantively informed the Pregnancy Promise Program design and may have helped sustain these strong relationships. FSSA does not partner directly with clinical providers under the Pregnancy Promise Program.

Beneficiary Perspectives

- Easy to enroll and sign up consents
- Positive, supportive relationship with case managers
- Inconsistent provider experiences, with stigmatizing treatment at all provider levels
- Case manager did not provide education on self-advocacy in the hospital

The Indiana Housing and Community Development Authority recently joined the Pregnancy Promise Program Steering Committee, which continues to meet quarterly. FSSA also recently partnered with Rethink Tobacco Indiana, which now provides intensive tobacco treatment training and certification to Pregnancy Promise Program case managers.

Enrollment, intake and assessment. Pregnancy Promise Program staff conduct outreach, including direct calls to eligible patients, direct outreach to community partners, social media campaigns, physical marketing materials, a public website dedicated to self-referrals and other referrals, professional

conference presentations and multilingual outreach campaigns targeted at disadvantaged communities. MCEs also use claims data to identify eligible patients, and while case managers cited the 90-day turnaround for these data as a challenge to rapid outreach, it also accounts for a large proportion of enrollment, with one MCE estimating that 80% of eligible patients were identified through either claims data or notification of pregnancy forms.

MCE case managers must initiate outreach within 2 days of when a patient is identified as eligible, and once a patient answers an outreach call, they complete the Pregnancy Promise Program consent form and start the intake and assessment processes with the patient. Case managers receive extensive training on best practices for care coordination for pregnant patients with OUD, and they use screening tools such as the Patient Activation Measure, 5Ps, Edinburgh Depression Scale, Fagerstrom Test for Nicotine Dependence, GAD-7 (General Anxiety Disorder-7) and Accountable Health Communities HRSN. Patients remain enrolled in the model until they ask to be disenrolled, and disengaged patients receive monthly outreach calls through 90 days postpartum.

At the end of the second year of implementation, 543 total patients had enrolled in the Pregnancy Promise Program, falling short of the initially anticipated 725 per year. While case managers cited several logistical challenges to enrollment such as difficulties reaching patients by phone and attrition during the pre-enrollment screening process, FSSA did not link low enrollment to outreach challenges and suggested that shifts in statewide substance use trends may have reduced the pool of eligible patients in Indiana. FSSA has identified more than 3,000 potentially eligible participants but does not have specific long-term enrollment targets.

MOM Model services. The Pregnancy Promise Program provides enhanced case management. Patients receive regular phone calls from an MCE case manager and referrals as needed to health care and social services providers throughout pregnancy and up to 12 months postpartum. Case managers connect with patients once every 2 weeks at minimum and weekly as the patient's due date approaches. Case managers interact with patients primarily by phone but may use video calls, text messages and in-person visits.

Medication-assisted treatment (MAT)

77% received any type of care for OUD during this pregnancy before model enrollment

69% of patients ever initiated MAT

48% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

Some MCEs have recruited community health workers to perform a "boots on the ground" outreach role for hard-to-reach patients. They serve as a liaison between the patients and case managers, who are available to speak with the patient in real time using the community health worker's cell phone.

Data systems. Case managers at the four MCEs are responsible for documenting all encounters with Pregnancy Promise Program patients and prospective program participants using a software called JIVA; they also use a parallel state-level system for FSSA. Case managers receive continuous training and support on data reporting and are expected to document at least 800 encounters per month, including any patient interaction or attempted patient interaction.

Case managers are prohibited from sharing patient information with the patient's physical health, mental health or substance use disorder (SUD) treatment providers unless the patient signs and returns

by mail a written release form. Unfortunately, most patients do not return this release, which often limits the scope of care coordination activities.

Medicaid Context and Sustainability

MOM Model sustainability. MCEs receive a per member per month case management payment from FSSA for each Medicaid patient the plan covers. MCEs bill FSSA for reimbursement, and each receives an additional monthly payment covering project management and data-related costs.

The MCEs are currently applying MOM Model funds to offset program staffing and data reporting costs for the Pregnancy Promise Program. FSSA continues to gather and analyze data on Pregnancy Promise Program costs and patient outcomes to eventually calculate the program's return on investment. As of the second year of implementation, FSSA had developed and shared data visualizations on implementation and outcome indicators with MCEs, but it had yet to begin conversations about financial sustainability of the Pregnancy Promise Program with MCEs.

Medicaid and other state context related to the MOM Model. Some rural counties in Indiana have limited numbers of Medicaid providers specializing in maternity care or SUD treatment, and respondents also noted a statewide shortage of behavioral health providers. OUD care is limited by state-level scope of practice laws barring nurse practitioners from prescribing MAT without approval from a supervising physician.

The Centers for Medicare & Medicaid Services approved Indiana's Medicaid State Plan Amendment (SPA) to extend Medicaid eligibility to 12 months postpartum on September 8, 2022. The SPA replaced a withdrawn waiver that would have extended eligibility only for postpartum people with OUD. Recent legislation allowed Indiana Medicaid to cover doula services, but while a statewide reimbursement advisory board was created in August 2022, no funds have yet been allocated for doula services.

One Indiana MCE, CareSource, offers a parallel program aimed at mothers at risk for housing insecurity and a life services team that can facilitate long-term housing or career opportunities. Both initiatives are available to MOM enrollees and nonenrollees alike. Another MCE, MDwise, previously piloted an analogous case management model through a program with Community Mental Health Centers but failed to achieve high engagement. MCE attributed this program's struggles to inconsistent engagement across their network and praised the work of FSSA in promoting the Pregnancy Promise Program more widely across the state.

Conclusion

While Pregnancy Promise Program enrollment still lags well behind FSSA's initial projections, the second year of implementation saw FSSA and the MCEs solidify the case management workflow and significantly upscale their outreach efforts, particularly vital outreach to clinical providers. The Pregnancy Promise Program also initiated in-person community health worker outreach to retain patients during the second year of implementation, but these efforts were limited at the time of our site visit. The Pregnancy Promise Program's limited oversight of clinical providers remains a challenge to ensuring quality of care and the incorporation of best practices, but as one maternity care provider described, Pregnancy Promise Program case managers can provide the "cement in between the bricks that will help women [with a] substance use disorder get the help they need."

In the upcoming year, the evaluation team will investigate whether FSSA is able to engage MCEs to develop sustainable funding plans and the extent to which MCEs will continue to offer Pregnancy Promise Program case management services after the MOM Model comes to a close. Next year will also provide an opportunity to gauge whether outreach efforts rolled out in the second year of implementation will help expand enrollment and awareness of the program, whether any MCEs incorporate in-house peer recovery services and whether FSSA's optional trainings for clinical providers lead to increased adoption of clinical best practices across Indiana.

Maine MOM Model: In Brief

Geographic Scope

18 sites statewide

Urbanicity

Rural, suburban and urban

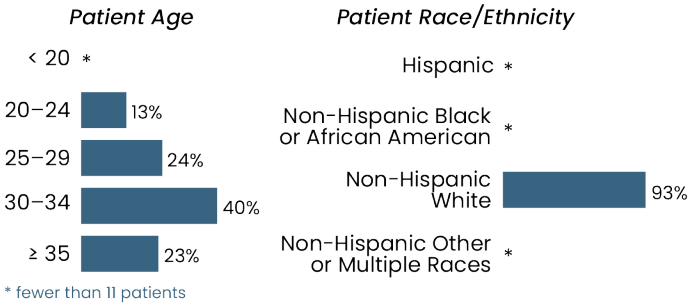
Enrollment

164 patients served in Years 1 and 2 of implementation

86% enrolled in MOM during pregnancy, and **14%** enrolled after birth

23% received Medicaid benefits prior to pregnancy

Patient Characteristics



* fewer than 11 patients

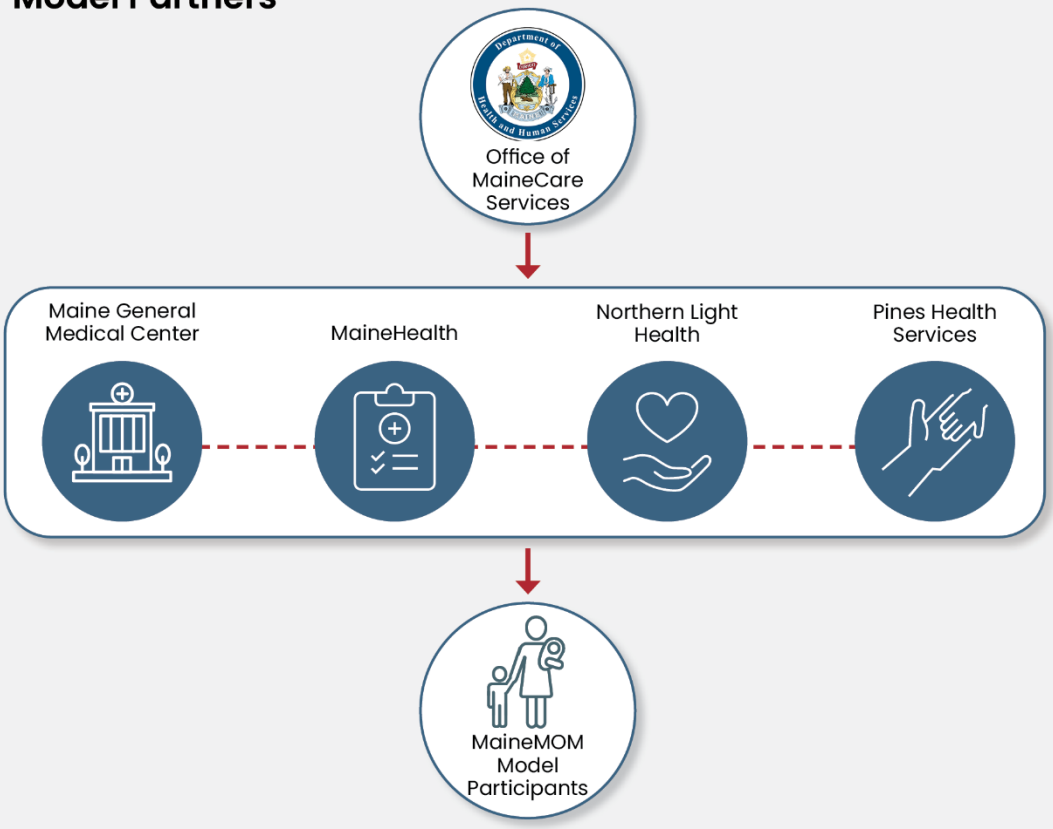
Patient Health-Related Social Needs

76% of patients screened positive for at least one social need

0.9 social needs were identified on average

Food, transport and housing were the top three social needs identified

Key Model Partners



State Model Summary

Maine's MOM Model (MaineMOM) provides a suite of clinical services and care coordination to patients across the state through delivery sites operated by its four care delivery partners. Eighteen clinical sites have actively enrolled patients through the second year of implementation. Enrollment numbers continue to lag below initial projections despite Maine's multifaceted marketing and education campaigns around the state to raise awareness of maternal opioid use disorder and increase enrollment. MaineMOM navigated a transition in leadership during the second year of implementation, but the staff continued to maintain strong partnerships and made progress in securing a Medicaid State Plan Amendment to sustain MOM Model services.

Implementation Lessons Learned

Implementation successes. MaineMOM continues to strengthen the formal infrastructure it has created to deliver comprehensive, integrated care for pregnant and postpartum people with opioid use disorder. MaineMOM staff highlighted how the model's Extension for Community Healthcare Outcomes (ECHO) series and clinical office hours facilitated a rapid spread in best practice adoption by providers across the state. MaineMOM and its care delivery partners also continued to develop new outreach materials and conduct direct outreach to providers to spread awareness of MaineMOM throughout the state. The partial implementation of MaineMOM's State Plan Amendment in 2023 was a major step toward establishing sustainable funding for MaineMOM services.

Implementation challenges. Care delivery partners and sites continue to face difficulties funding and staffing MOM Model positions, stretching the capacity of staff. Across all sites, staff noted lower than desired enrollment, especially in the first two trimesters of pregnancy. Care delivery partners continue to struggle reporting high-quality data to the Centers for Innovation. MaineMOM worked to balance in-person and virtual services in the second year of implementation as the COVID-19 public health emergency ended.

Program Features

Partnership maintenance. MaineMOM continues to partner with four care delivery partners: MaineHealth, MaineGeneral Health, Northern Light Health and Pines Health Services. Each care delivery partner meets monthly with core staff at the Office of MaineCare Services and quarterly as a larger group. MOM Model staff maintained partnerships with providers and community organizations, with no major additions or departures in the second year of implementation. Throughout the transition in MaineMOM leadership, state officials and site-level staff reported positive, collaborative relationships with all implementation partners.

Beneficiary Perspectives

I wouldn't have my baby if it wasn't for you and this program.
—MaineMOM patient

Having someone who understands the complicated parts of being enrolled in government programs is the most helpful thing.
—MaineMOM patient

Enrollment, intake and assessment. MaineMOM reported that most enrollees are prior patients of clinical providers, and other enrollees are reached primarily through word of mouth. A small proportion of patients enroll in the program via the CradleME referral system that links birthing families to a broad range of supportive services. MaineMOM recently established a dedicated staff position to follow up on

all CradleME referrals, and they continue to support the digital and physical communications campaign launched in 2021. Stakeholders felt this campaign increased public awareness of MaineMOM and reduced the stigma felt by pregnant and postpartum individuals with OUD. However, respondents indicated that the campaign did not lead to a significant increase in enrollment. All sites are required to use validated substance use disorder screening tools, with most using the 4Ps screener. MOM Model staff indicated that consistency of health-related social needs screening at MaineMOM sites improved during the second year of implementation.

At the end of the second year of implementation, MaineMOM had enrolled 164 patients in services. Leaders acknowledged this was lower than their original projection of 450 patients enrolled by July 2023 but indicated enrollment numbers may not reflect the full reach of the program: Some patients may be benefiting from MaineMOM's integrated maternity care services without being formally enrolled in the model. State and site-level staff identified a variety of factors preventing more robust MaineMOM enrollment, including ongoing difficulties resolving duplicate services; inconsistent identification of eligible patients by obstetric providers; patients' fear of child protective services involvement; and inconsistent patient access to transportation, housing and cell phone service.

MOM Model services. MaineMOM did not add any new Medicaid services during its second year. Primary model components remain: same-day access to "medication-first" care, care coordination with referrals, home visiting when appropriate, increased focus on pain management during delivery, adherence to Eat-Sleep-Console methods to enhance mother-infant bonding postdelivery, ongoing group and individual therapy through 12 months postpartum and peer recovery support.

Equity Concerns

Providers and officials named stigma as their primary concern, especially for the growing "New Mainer" community of immigrants and refugees. Transportation and access to care are also urgent barriers in the primarily rural state. MaineMOM continues its antistigma marketing and education efforts, and some sites provide hybrid care for remote patients.

MaineMOM continues to offer a series of ECHO trainings to address stigma related to OUD treatment and to promote best practices for care among providers around the state. MaineMOM allocated additional funding this year for its clinical lead to be on call and work one-one-one with individual providers to improve their capacity to care for pregnant individuals with OUD. While best practice adoption for obstetric providers has yet to be fully implemented statewide, all MaineMOM provider hospitals have implemented rooming-in and the Eat-Sleep-Console evaluation. All care delivery partners employ peer recovery coaches, with 14 peer recovery coach positioned planned, although not all positions are filled at this time.

Medication-assisted treatment (MAT)

40% received any type of care for OUD during this pregnancy before model enrollment

87% of patients ever initiated MAT

63% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

Data systems. MaineMOM care delivery partners continue to find it challenging to fulfill MaineMOM's data collection requirements. High levels of missing data have been noted in quarterly milestone and patient-level data reports. Partners with well-established models of care that existed prior to MaineMOM face challenges incorporating newly required tools such as the Patient Activation Measure and HRSN screening. One site-level staff member explained she finds reporting on "over 200 measures"

to be a confusing and tedious process that often leaves measures untracked. State officials have thus far allowed care delivery partners to report measures in a manner best suited to their existing protocols and then worked after the fact to standardize those data for submission to the Innovation Center. To address these challenges, MaineMOM recently hired a new full-time data manager who will work with care delivery partners to create a more sustainable data submission process that focuses on more uniform and consistent data collection and reporting.

Medicaid Context and Sustainability

MOM Model sustainability. In July 2022, Maine launched its Medicaid State Plan Amendment (SPA) adding coverage of Maternity Opioid Health Home services for any eligible Medicaid beneficiary (not just MaineMOM enrollees). This marked the culmination of a multiyear planning process to build on its experience operating an opioid health home program to create a new maternity care version of the benefit that could provide long-term financing for the priority population of pregnant and parenting people with OUD. This model incorporates three "bundles" of care services, each with its own per member per month rate.

Many factors have delayed the full implementation of the SPA, with state officials hoping to fully codify the system in fall 2023. In the meantime, MaineMOM providers have been claiming reimbursement for health home services and care coordination, as well as fee-for-service payments for other maternity care, OUD treatment and related services.

Medicaid and other state context related to MOM Model. Maine received federal approval of a SPA to extend postpartum coverage of birthing Medicaid patients to 12 months in early 2022, and the expansion took effect August 1, 2022. State officials and providers remarked that this policy improved MaineMOM's ability to maintain patient engagement and retention for a full year postpartum and helps patients in their journeys to recovery.

The challenge of "duplicative services" remains vexing for MaineMOM program staff. If a patient is already receiving a service the state considers duplicative with MaineMOM (for example, opioid health homes, behavioral health homes, targeted case management, community integration support, private nonmedical institutional services, medication and counseling for OUD), they cannot be simultaneously enrolled in MaineMOM. State officials described their case-by-case resolution process as time intensive, involving extensive back-and-forth between the MaineMOM provider and the patient and with Kepro, the state's electronic MaineCare enrollment system, further complicated by protected health information issues. In each case, patients are asked to choose which service they wish to receive and many ultimately decide to maintain existing services rather than enroll in new MaineMOM care. MaineMOM staff were working with Kepro to allow MaineMOM providers access to a report on the duplicative services (in lieu of a live phone call) that they could discuss with the patient.

Conclusion

Stigma, lower than expected enrollment and data reporting continue to pose challenges for MaineMOM. However, the model made several positive steps during the second year of implementation, including progress on establishing a Medicaid State Plan Amendment, expanded marketing and education efforts and expanded access to peer recovery support services. In the coming year, the evaluation team will closely monitor how CradleME outreach efforts are able to educate patients and drive referrals, any developments in how in-person and virtual services are offered to patients in remote areas, progress in creating a Plan of Safe Care workflow and the status of the legislature's rulemaking process for the State Plan Amendment.

New Hampshire MOM Model: In Brief

Geographic Scope

Greater Manchester

Urbanicity

Mixed urban and rural

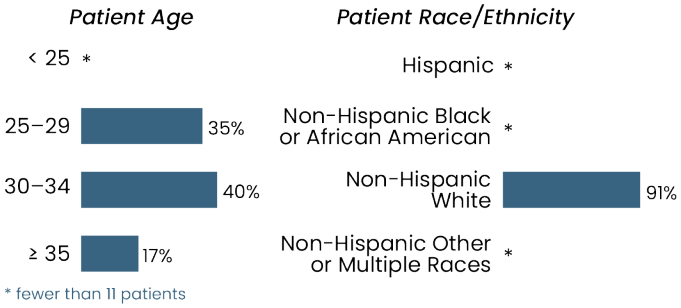
Enrollment

65 patients served in Years 1 and 2 of implementation

42% enrolled in MOM during pregnancy, and **58%** enrolled after birth

89% received Medicaid benefits prior to pregnancy

Patient Characteristics



* fewer than 11 patients

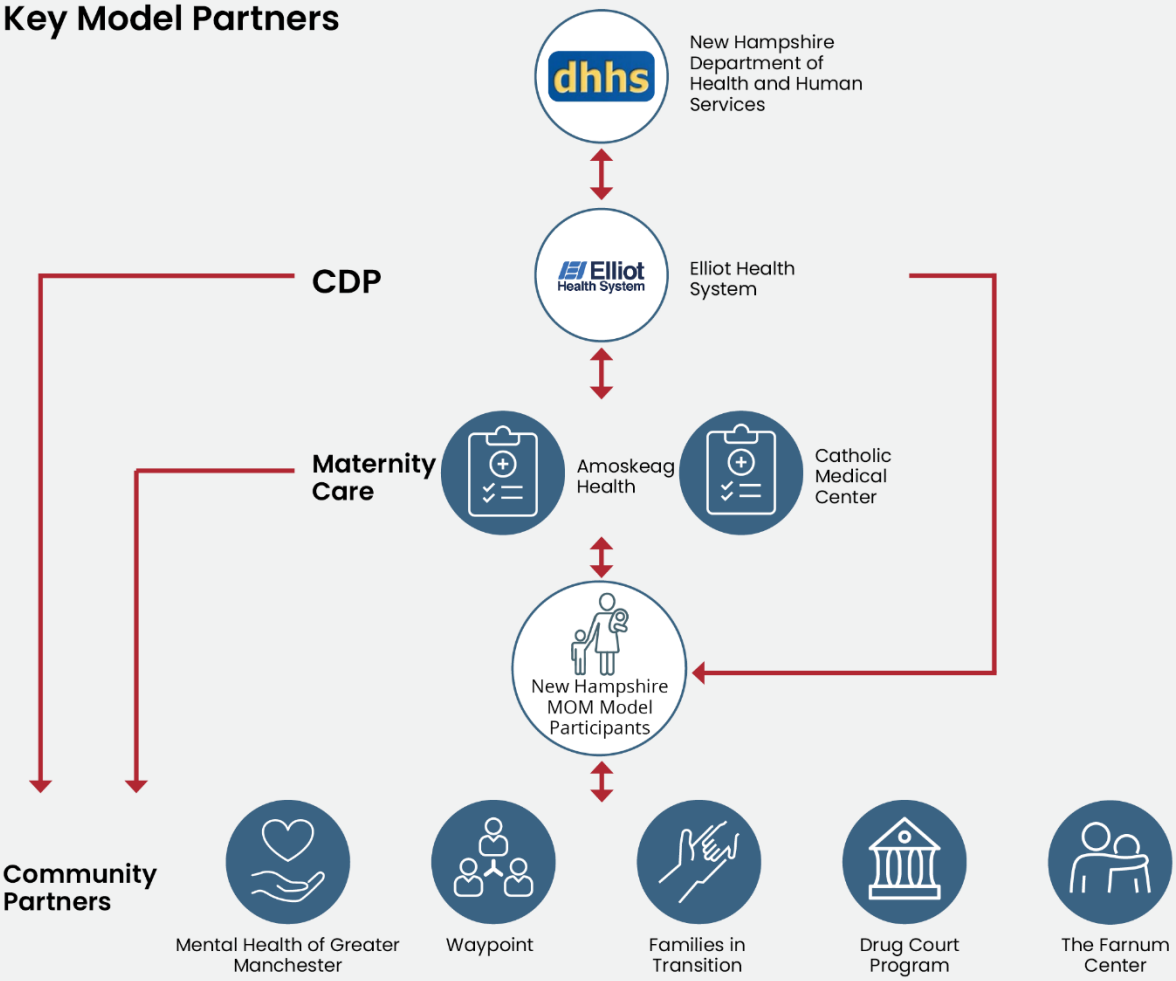
Patient Health-Related Social Needs

94% of patients screened positive for at least one social need

3.1 social needs were identified on average

Transport, housing and food were the top three social needs identified

Key Model Partners



State Model Summary

New Hampshire's MOM Model continues to operate with one care delivery partner, two maternity care providers and several community-based partner agencies serving the Greater Manchester area to address patients' housing, mental health and substance use disorder (SUD) support needs. Core services, including care coordination and support services, remain largely unchanged from the first year of implementation. The pace of enrollment increased during the second year of implementation. While enrollment still fell short of New Hampshire's initial projections, key informants indicated that outreach efforts were successful in increasing enrollment this year.

Implementation Lessons Learned

Implementation successes. New Hampshire's care delivery partner, Elliot Hospital, completed the establishment of its integrated "backbone" information technology (IT) system in February 2023, enabling its team to identify patients eligible for the MOM Model within the Elliot Health System, Southern New Hampshire Health system and other adjacent primary and specialty care offices within the care network. New Hampshire's community health worker with lived experience with OUD who was hired midway through the first year of implementation was described as instrumental in increasing enrollment and maintaining connection with MOM Model patients.

Implementation challenges. New Hampshire's original application projected an annual enrollment of 250–300 patients, which is higher than the current enrollment of 65. Respondents acknowledged that the original projection may not have been valid and noted that COVID-19 hindered direct outreach to Medicaid patients and fostered hesitancy among the patient population to engage with in-person services. New Hampshire also faces geographic challenges because resources are concentrated in the Greater Manchester area. Staff turnover, transitions, shortages and a reported lack of community resources to respond to social needs continue to pose challenges to MOM Model implementation in New Hampshire.

Program Features

Partnership maintenance. New Hampshire's care delivery partner, Elliot Hospital, employs two full-time MOM staff: a program manager and a community health worker. These staff meet weekly with the New Hampshire Department of Health and Human Services to discuss MOM Model implementation. New Hampshire continues to partner with two provider sites, Amoskeag Health and Roots for Recovery, at St. Mary's Bank Pregnancy Center at Catholic Medical Center and five community partner organizations. No changes to partnerships or leadership occurred during Year 2.

Enrollment, intake and assessment. New Hampshire continues to have a no-wrong-door approach to enrollment for its MOM Model. Maternity care providers at Amoskeag and Catholic Medical Center and staff at partner organizations can refer patients to the model. Elliot has the goal of "enrolling as many

Patient Perspectives

I'm not from here. I don't have any friends that I can go to and talk to or anything. Having [the community health worker] has been like a Godsend.

—New Hampshire MOM patient

Navigating normal life [without NH MOM] …would have been a lot harder. I would have been able to find some of the ways to do it, but it would have been a million times harder.

—New Hampshire MOM patient

people as they can reach" this year, with no explicit target number. Elliot staff indicated enrollment increases during the second year of implementation were, in part, the result of completing Elliot's new IT system in February 2023. This system flags any patients in or adjacent to the Southern New Hampshire Health System with a reported diagnosis of OUD while pregnant or postpartum, enabling Elliot to increase outreach and receive direct referrals from primary care providers.

Elliot Hospital and Amoskeag Health maintain parallel screening infrastructures for drug misuse, depression and health-related social needs. Perhaps the most significant event that contributed to New Hampshire's enrollment process was the hiring of a community health worker. She was hired and onboarded during the second half of the first year of implementation and serves as a primary care coordinator for MOM Model patients, prepares a Plan of Safe Care during each patient's initial intake visit and meets with patients at least every 2 weeks. The community health worker draws from her lived experience with addiction to build personal relationships with patients and community organizations to support outreach and retention.

Medication-assisted treatment (MAT)

75% received any type of care for OUD during this pregnancy before model enrollment

68% of patients ever initiated MAT

100% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

MOM Model services. New Hampshire's MOM Model progressed as expected in the second year of implementation, including benefiting from increased recognition of the model in the community and stable staffing. New Hampshire's MOM Model did not add any new Medicaid services. Rather, care coordination remains the central tenet of New Hampshire's MOM Model, with expanded communication and warm handoffs facilitated through Elliot's new IT system and community health worker. In addition to biweekly one-on-one meetings between the community health worker and MOM Model patients, Elliot holds monthly care coordination meetings with community partners.

Equity Concerns

New Hampshire MOM is working to add child care benefits to its beneficiary incentive plan to improve access to care for parents. Transportation to appointments continues to be a barrier, and many MOM Model patients struggle to access reliable housing. Stigma related to OUD is persistent in the state, and Elliot offers trainings on stigma reduction to providers.

In some cases, MOM Model care coordination services duplicate services already being provided to patients by other hospital departments or partner organizations. In these cases, the MOM Model staff ask patients to sign a release of information form so they may contact their providers directly to streamline care coordination services. While the New Hampshire MOM Model does not currently include a formal PRS position, the Elliot team underlined the benefits of the community health worker's lived experience and stated that lived experience would be an important consideration for any future hires of community health workers.

Data systems. Elliot's flagship IT system became active and expanded outreach capabilities the second year of implementation, and Elliot hired Nordic Consulting to implement a new referral program. Elliot staff and community partners continue to enter patients' encounter data into the REDCap system that MOM staff use to report beneficiary data to the Center for Innovation. Elliot used MOM Model funding to purchase tablets for partners to ease the data entry process during the second year of implementation. MOM

Model staff members also provide direct training to partner organizations on patient data collection and REDCap.

Medicaid Context and Sustainability

MOM Model sustainability. New Hampshire intentionally did not add new Medicaid-covered services or populations as part of its MOM Model. This approach aimed to ensure the program would be sustainable beyond the funding period. As a result, the state does not have plans to submit a State Plan Amendment, apply for a Section 1115 waiver or alter contracts of managed care organizations. However, Elliot's community health worker and beneficiary incentive program are funded by MOM Model funds, and New Hampshire Medicaid and Elliot are in conversation about how to maintain these services after the model ends. Elliot aims to develop a sustainability plan over the next 6 months that can support a MOM-like program, with one proposed solution being to build MOM-like services into existing managed care organization contracts. New Hampshire Medicaid has already requested and been approved by CMS' MOM Model program team to use carryover funding to hire an additional part-time or full-time community health worker.

Medicaid and other state context related to MOM Model. In April 2023, New Hampshire's House of Representatives passed legislation extending postpartum Medicaid coverage to 12 months. The legislation is now pending in the state's Senate. Prior to the end of the COVID-19 public health emergency in May 2023, the New Hampshire MOM team began checking on eligibility redeterminations to track how many MOM patients would be affected by the end of the continuing coverage requirement. When last contacted, the MOM team confirmed that only one or two patients had been impacted, and team members had worked with them to complete their redetermination paperwork.

Conclusion

New Hampshire's concentrated care coordination and integration strategy was bolstered by the addition of the Elliot community health worker, who was hired midway through year 1 of implementation. New Hampshire's enrollment increased after the completion of the new Elliot IT system and its inherent expansion of Elliot's referral network. However, enrollment still lags behind initial projections, and plans to sustain MOM Model services after funding expires are still in early stages. In the next year, the evaluation team will focus on whether the pace of enrollment continues to rise; whether additional community health worker staff are hired to expand the MOM team's care coordination capacity; whether plans are in place advance to build sustainable funding strategies (including negotiations with managed care organizations); and how New Hampshire's Department of Health and Human Services and Elliot work to provide more equitable care by addressing patient struggles with child care, transportation and housing.

Tennessee MOM Model: In Brief

Geographic Scope

2 sites for counties directly surrounding VUMC

Urbanicity

Urban, suburban and rural

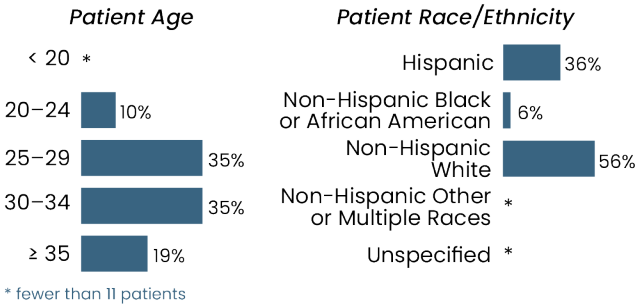
Enrollment

249 patients served in Years 1 and 2 of implementation

89% enrolled in MOM during pregnancy, and **11%** enrolled after birth

63% received Medicaid benefits

Patient Characteristics



* fewer than 11 patients

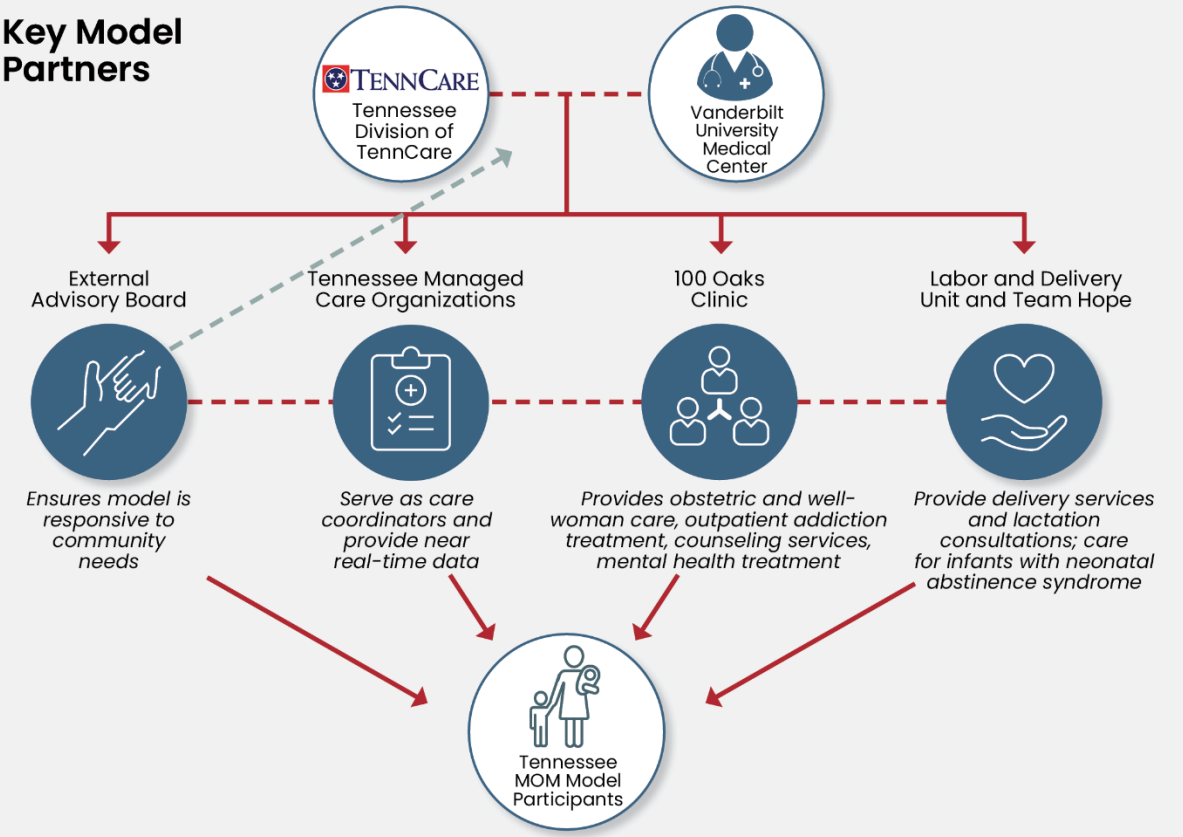
Patient Health-Related Social Needs

62% of patients screened positive for at least one social need

1.3 social needs were identified on average

Transport, food and housing were the top three social needs identified

Key Model Partners



State Model Summary

Firefly, Tennessee's MOM Model, has enrolled 249 patients since its inception in July 2021. The model continues to operate as a system of integrated clinical and behavioral care services for pregnant people with opioid use disorder (OUD) in two Vanderbilt University Medical Center (VUMC) locations around Nashville. VUMC contracts with TennCare managed care organizations to sustain MOM Model services for enrolled patients, but model leadership continues to look for additional funds to sustain administrative positions that support model coordination and for the financial incentives that assist in patient engagement.

Implementation Lessons Learned

Implementation successes. Both providers and peer recovery staff pointed to the full integration of peer recovery staff into regular clinic procedures as a key to their model's success. Many respondents cited how daily interactions between peer recovery staff and medical providers increased providers' understanding of patients' lived experiences, which in turn, improves the care patients receive and providers' sense of fulfillment in caring for Firefly patients. Peer recovery coaches reported feeling valued by leadership and motivated to continue working under Firefly because VUMC gave them access to counseling services and funded training opportunities to improve subject matter knowledge.

Implementation challenges. Staff turnover and space constraints at One Hundred Oaks Clinic continue to challenge model implementation. Firefly leadership noted that VUMC prohibited posting model-specific positions early in implementation because of concern about the profitability of the model structure; these concerns extend to model leadership's ability to expand staff capacity and physical space until more financial data are available to support the need to expand within VUMC. Further complicating this challenge, key informants indicated the model's current enrollment number may not be profitable without allowing in more patients.

Program Features

Partnership maintenance. The VUMC Center for Child Health Policy remains the care delivery partner for Firefly. The leadership team continues to meet regularly with providers at VUMC's One Hundred Oaks clinic and labor and delivery unit, the two provider sites that support inpatient and outpatient care under Firefly, in addition to building and maintaining relationships with community partner organizations.

Patient Perspectives

The worst part is the judgment that you feel in other places. I genuinely believe, even if you came to the Firefly program and had drugs in your system when you gave birth, it would be more of a concern. It wouldn't be a judgment, it would be, "We can help. Take the help."

—Firefly patient

Firefly continues to receive guidance from two advisory boards: the stakeholder advisory board (previously known as the external advisory board) of municipal and community partner organizations and the internal advisory board of health care providers from relevant departments across VUMC. No major changes occurred to the membership of these boards in the second year of implementation, but Firefly recently invited its PRSs to attend the stakeholder board for the first time.

Enrollment, intake and assessment. Firefly has a well-coordinated system of outreach within Vanderbilt and in the community. It enrolls eligible patients and uses defined screening tools to assess and address the needs of patients. Because Firefly serves patients in the One Hundred Oaks clinic and at VUMC labor and delivery unit, most of the pathways to enrollment were in place prior to the launch of Firefly. Patients can follow multiple referral pathways to Firefly. Enrollment begins with provider referrals internal and external to VUMC, including local obstetricians and primary care physicians, VUMC's emergency room and psychiatric hospital, external psychiatric hospitals, methadone clinics and recovery treatment centers.

Firefly initially projected enrolling 200 individuals annually. As of the end of June 2023, Tennessee MOM had enrolled 249 patients since program inception. The One Hundred Oaks clinic has an estimated capacity of 88 patients per week, 76 of which are Firefly patients, lower than the current demand for the Firefly program. Respondents cite space and staffing capacity as the primary reason for Firefly's lower than expected enrollment numbers. While some patients expressed concern that enrolling in the MOM Model may lead to child protective services becoming involved in their pregnancy, staff agree that many concerned patients decide to enroll after speaking with Firefly staff about the supports the program provides to patients with open child protective services cases.

MOM Model services. Firefly continues to deliver a comprehensive array of services within a single clinical group of providers at two sites. Firefly staff in VUMC's labor and delivery unit closely integrate and monitor labor, delivery and immediate postpartum care. Patients receive onsite integrated care to address physical, mental, behavioral and social needs at VUMC's One Hundred Oaks clinic. Staff personalize care plans based on the patient's needs and stage of their recovery, and a model-specific incentive plan gives patients "points" for attending appointments on time. Patients may redeem these points for personal care items for themselves or their baby. A central component of Firefly patients' experience is their relationship with the dedicated Firefly nurse/lactation consultant, and Firefly employs four PRSs.

Equity Concerns

Respondents indicated that race, history of substance use and socioeconomic status influence how regional staff provide patient care and whether care providers or social workers are involved in a patient's case. Firefly staff receive training on trauma-informed care, health equity's role in the treatment of OUD and substance use disorder and nonstigmatizing language.

The Firefly program pursues—and generates through VUMC's academic activities—evidence-based approaches to integrating OUD care with pregnancy and postpartum care. The model has adopted principles of collaborative care based on research from the University of Washington. In 2023, the Firefly team hired two new PRSs. They also reinstated the clinic's Intensive Outpatient Program, which paused in 2022 because of staffing shortages. VUMC secured a 3-year accreditation that qualified the Intensive Outpatient Program for referrals from Tennessee's Department of Children's Services (child protective services) and recovery courts. Firefly recruited an admissions coordinator to provide dedicated follow-up to patients at risk of disengaging from MOM Model services after missing many appointments or known barriers to model participation.

Medication-assisted treatment (MAT)

78% received any type of care for OUD during this pregnancy before model enrollment

87% of patients ever initiated MAT

98% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

Data systems. The Firefly program continues to refine data-sharing practices and infrastructure, which are particularly important and useful between teams that are not co-located. Tennessee MOM employs a dedicated data manager, and its patient-level process for data has been largely complete and timely. The evaluation team is currently working with the Firefly team to modify the reporting of referrals data, which has been hampered because the services Firefly patients need are largely provided and received within the MOM Model.

Tennessee is working through a substantial conflict around its vital records data, which are necessary for a robust impacts evaluation. Those data are maintained by Tennessee's Department of Human Services, and the data use agreements in place for the MOM Model do not include terms that give the Vanderbilt team access.

Medicaid Context and Sustainability

MOM Model sustainability. Implementation funds are still covering between 10 and 100% of full-time equivalent of several staff members' salaries—staff who are not care providers reimbursable by Medicaid but are critical to the program's function, such as the program manager, clinical director, and data manager. Model funds also do not cover the collaborative care time VUMC psychiatrists provide. Ongoing conversations between the program and their Innovation Center's Project Officer focus on identifying and applying for additional grant opportunities. The program has also raised funds through an annual gala event and silent auction.

After challenges securing reimbursements for Firefly services arose based on payor understandings of medical services and behavioral health services as separate streams, Firefly administrators opted to integrate the program's medical and behavioral health offerings under the existing behavioral health contracts VUMC has with three TennCare managed care organizations. Through Tennessee's BESMART (Buprenorphine Enhanced and Supportive Medication Assisted Recovery and Treatment) initiative, providers who are medical doctors can be reimbursed for the OUD care they offer. Work is ongoing to secure reimbursement for Firefly's Nurse Practitioners under BESMART.

Medicaid and other state context related to MOM Model. Tennessee's MOM Model expands the service capacity of the previously established VMARP program, which integrated perinatal and recovery care for pregnant people with OUD. Despite great improvements in reimbursement rates and the scope of services and providers that can be covered, the Firefly program can only serve the number of patients its current physical spaces allow. In late 2022, program staff began meeting with VUMC financial analysts to develop a pro forma summary of what the Firefly program brings to the larger institution, leading to an eventual proposal for the acquisition or construction of an external space to accommodate more patients. While this could potentially be part of the sustainability solution, it will take much time and does not provide immediate resources.

Conclusion

Firefly continues to have a significant impact on patients through thoughtful care coordination and a broad spectrum of co-located care services. However, restrictions on space available for clinical care create limitations for MOM Model enrollment growth, and work is ongoing to restructure payment for model services under the newly modified BESMART managed care organization contracts. In the year ahead, the evaluation team will examine how this financial infrastructure evolves, whether

administrators are able to expand services in the face of space limitations and a high rate of staff turnover, and how the MOM Model continues to build referral structures and integrate itself within the larger VUMC medical ecosystem.

Texas MOM Model: In Brief

Geographic Scope

1 site in Houston

Urbanicity

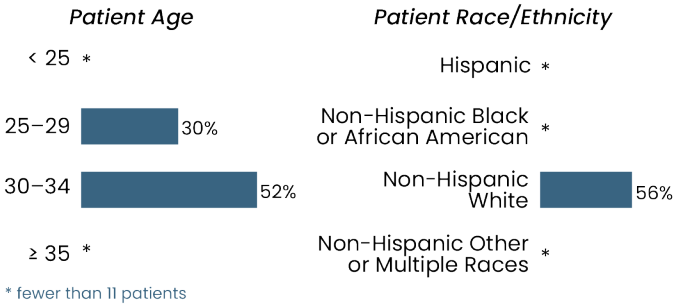
Urban

Enrollment

50 patients served in Years 1 and 2 of implementation

96% enrolled in MOM during pregnancy

Patient Characteristics



* fewer than 11 patients

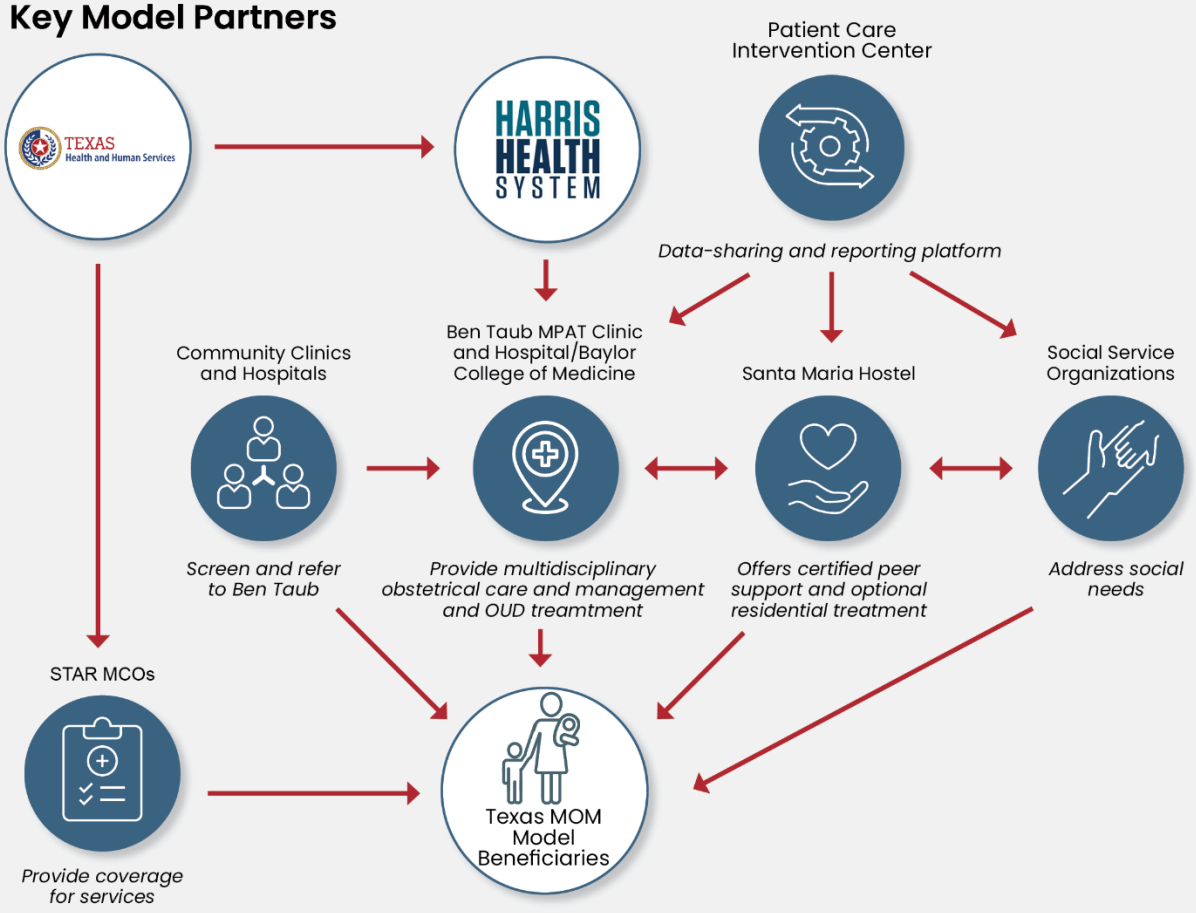
Patient Health-Related Social Needs

86% of patients screened positive for at least one social need

2.2 social needs were identified on average

Transport, family and food were the top three social needs identified

Key Model Partners



State Model Summary

The Texas MOM Model provides services at a single care delivery site. Ben Taub Hospital provides prenatal care, mental health, and medication-assisted treatment services. A community partner, Santa Maria Hostel, provides residential substance use treatment and recovery support services, peer counseling, and connections to social services. Medicaid financing occurs primarily through contracts with five of Texas's managed care organizations (MCOs.)

Implementation Lessons Learned

Implementation successes. Key informants continued to note that delivering responsive care that meets the complex needs of Texas MOM patients while strengthening community partnerships was key to successful implementation in Year 2. They described integrated and responsive care experiences and highlighted the importance of the Texas MOM program manager and Santa Maria Hostel's PRSs as central to identifying and meeting patient needs. The Texas MOM team also used Implementation Year 2 to further disseminate best practices for care outside their care delivery sites through collaborative education provided to a drug court and in-hospital coaching at another Houston hospital.

Implementation challenges. Texas MOM staff encountered difficulties meeting screening and reporting timelines required of MOM Models. They also described challenges dealing with inconsistent decision making within the Texas child welfare system that weighed disproportionately on patients from marginalized racial groups and discouraged patients from presenting for model services. Though enrollment in Texas MOM grew during the second year of implementation, it continues to lag behind initial projections and is restricted by limited clinic space and provider availability.

Program Features

Partnership maintenance. Texas MOM maintained partnerships with its care delivery partner, Harris Health, its care provider site, Ben Taub Hospital, and its primary community partner, Santa Maria Hostel. Partner relationships remain strong, and no major shifts in responsibilities occurred in Implementation Year 2. Harris Health strengthened its relationship with Texas's Department of Family and Protective Services (DFPS), securing approval for DFPS to use MOM Model Milestone Funding to hire a hospital liaison who can facilitate communication and coordination between the two teams.

Beneficiary Perspective

There's a lot of support here and it's like a family. They treat you like family. My counselor, I feel like I can talk to her about anything. Like they make me feel really comfortable here.

—Texas MOM patient

Enrollment, intake, and assessment. Patients can follow multiple referral pathways to Texas MOM. Within Ben Taub, the outpatient obstetrics clinics, detoxification unit and the emergency rooms identify pregnant patients with opioid use disorder (OUD) who may be eligible to enroll in Texas MOM. Referral sources outside Ben Taub include Santa Maria Hostel, the justice system, opioid treatment programs in Houston and, most recently, several obstetric practices that operate outside Harris Health. Texas MOM has also developed numerous parallel outreach strategies, including direct outreach throughout the hospital and within the criminal and family protection systems by the MOM program manager, fliers in English and Spanish featuring patients of color focused on recruiting racial and ethnic minority communities, and a dedicated website with referral capabilities. Texas MOM patients are screened for substance use, depression, patient activation, and health-related social needs and referred to community partners accordingly.

Texas MOM had enrolled 50 patients by the end of Implementation Year 2. After initially projecting an enrollment of 200 individuals annually, the Texas MOM team does not expect this count to rise significantly over the next year. This is in part because of physical space constraints, with the Texas MOM clinic having the capacity to serve only about 40 patients each week. Staff also named provider availability at the maternal perinatal addiction treatment clinic (MPAT), ineligibility because of use of substances other than opioids or citizenship concerns, fear of DFPS involvement, and the extensive requirements for intake assessments as potential barriers to expanded enrollment.

MOM Model services. Texas MOM patients receive dedicated care coordination support from the MOM team in addition to Santa Maria Hostel's peer recovery and, in some cases, residential recovery treatment and the full suite of co-located prenatal and perinatal clinical services available to all Ben Taub MPAT clinic patients. Harris Health adopted a suite of best practices for perinatal OUD care in early 2021 during the preparation to launch Texas MOM, and no major changes to these methods occurred during the second year of implementation.

Health Equity Implications

MOM patients deal with limited access to private transportation and an insufficient public transit network in Houston. Patients who are incarcerated struggle to obtain medication, and patients of color have disproportionate interactions with DFPS. Outreach is ongoing within DFPS and the prison system as Texas MOM attempts to establish specific support structures for these groups.

During Implementation Year 2, Texas MOM recruited a community health worker and an obstetric nurse navigator to the core MOM team, and hiring is ongoing for a MOM-funded hospital liaison position at DFPS. A newly hired licensed clinical social worker care coordinator now serves as a link between the MOM team and outside partners including other Harris Health social workers, jail coordinators, Santa Maria's peer recovery team, and Ben Taub's delivery team.

Medication-assisted treatment (MAT)

66% received any type of care for OUD during this pregnancy before model enrollment

92% of patients ever initiated MAT

87% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

Data systems. Texas MOM continues to rely on its partner organization, The Patient Care Intervention Center (PCIC), to conduct all data collection and reporting for the MOM Model. The data integration team, composed of staff from PCIC, Texas Health and Human Services Commission (HHSC) and Harris Health, meet frequently to coordinate the submission of data to the CMS Innovation Center.

Data collection and reporting continues to be a challenge. The data integration team described challenges with getting access to OUD encounter data from opioid treatment clinics because the data are housed in separate clinical care systems, and the awardee does not have access to this behavioral health data. To address this challenge, the data integration team used claims data to look at billing codes and found the billing codes might be more generic and thus helpful for obtaining the required data elements. They altered their approach to querying the data and how they organized inclusion and exclusion criteria and realized they had a rich source of treatment data.

Medicaid Context and Sustainability

MOM Model sustainability. As originally designed, HHSC does not need a State Plan Amendment or waiver to implement Texas MOM because model services are already covered by Medicaid. After some initial challenges with reimbursement for PRSs, the awardee educated MCOs about paying for these services, and reimbursement for services provided directly to patients is flowing smoothly. However, Medicaid does not cover all activities providers conduct. For example, Medicaid reimburses PRSs only for time spent directly with a client, not for time spent working on behalf of a client.

HHSC has not started conversations with Medicaid MCOs about payments specific to Texas MOM but is beginning to assess possible payment options that could be available to MCOs that wish to support Texas MOM services. HHSC has transferred administration of the Texas MOM Model award from the Office of Program Policy to the office for Quality and Program Improvement, Delivery System Quality & Innovation, where expertise in Medicaid MCO payment options resides. In the meantime, HHSC is planning two broader updates to MCO contracts: one contract to require MCOs to identify the specific providers in their networks who can diagnose and treat maternal mental health conditions, and another to update service coordination requirements for pregnant people as part of recompeting contracts for its Medicaid and Children's Health Insurance Plan MCOs.

Medicaid and other state context related to MOM Model. In 2021, Texas enacted legislation to extend full Medicaid coverage from 2 months to 6 months postpartum through an 1115 waiver. HHSC submitted a waiver request to the Centers for Medicare & Medicaid Services (CMS) on May 25, 2022, to extend coverage to 6 months postpartum for people who "deliver or experience an involuntary miscarriage." That request remains under review at CMS. In spring 2023, the Texas House and Senate passed legislation (HB 12) that would extend postpartum coverage to 12 months under a State Plan Amendment. The Governor signed the bill into law June 18, 2023. Because the bill includes a 6-month extension that does not apply if someone has an abortion and a 12-month extension that does not make that distinction, HHSC will need to phrase their State Plan Amendment accordingly.

HHSC began the process of redetermining Medicaid eligibility status for members on April 1, 2023, following the end of the COVID-19 public health emergency. All individuals must be given at least 30 days to respond to requests for information, and all redeterminations must be completed by May 2024.

Conclusion

During Implementation Year 2, Texas MOM continued to deliver high-quality care coordination services and a broad spectrum of co-located care to patients of the Ben Taub MPAT clinic. While the scale of implementation remains restricted by limited clinic space and provider availability, the Texas MOM team has continued to maintain multiple streams of outreach efforts and made several hires to improve partner relationships and patient experiences. HHSC designed the model to be sustained without a State Plan Amendment but faces several hurdles to secure coverage for the full range of model services. In the year ahead, the evaluation team will closely observe the progress of internal and external provider education efforts, the status of financing conversations with Texas MCOs, the implementation of technical assistance to Santa Maria hostel, and HHSC's response to data reporting challenges.

West Virginia MOM Model: In Brief

Geographic Scope

19 sites (in 17 towns) statewide

Urbanicity

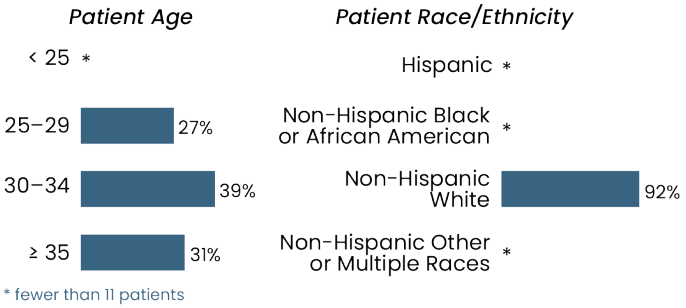
Rural, suburban and urban

Enrollment

72% enrolled in MOM during pregnancy, and **27%** enrolled after birth

100% received Medicaid benefits prior to pregnancy

Patient Characteristics



* fewer than 11 patients

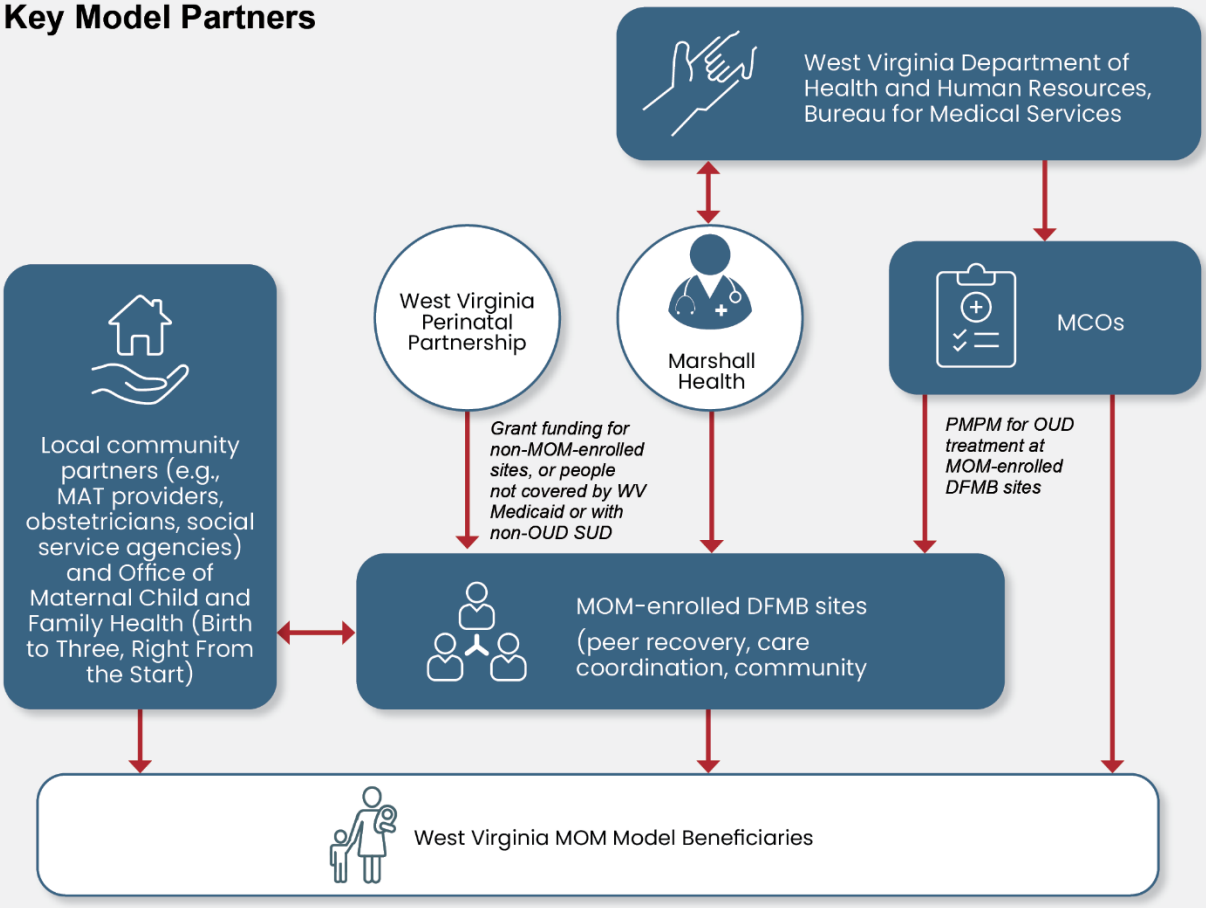
Patient Health-Related Social Needs

46% of patients screened positive for at least one social need

1.1 social needs were identified on average

Transport, food and housing were the top three social needs identified

Key Model Partners



State Model Summary

The Bureau of Medical Services (BMS), West Virginia's Medicaid agency, is the MOM Model awardee, and Marshall Health is the care delivery partner. BMS and Marshall Health work closely with the West Virginia Perinatal Partnership, a statewide coalition focused on improving outcomes for pregnant people and their infants. The Perinatal Partnership developed and oversees the Drug Free Moms and Babies (DFMB) program, which the West Virginia MOM Model is built on. DFMB is a care coordination model that has improved the outcomes of pregnant and postpartum patients with substance use disorder (SUD) by providing recovery support services and community support services. West Virginia's goal has been consistent over the course of the MOM Model: transition the pre-existing grant-funded DFMB program to more sustainable Medicaid funding. Of the 19 DFMB sites, 7 have enrolled in the MOM Model, and 2 more are actively engaged in the enrollment process.

Implementation Lessons Learned

Implementation successes. BMS enrolled five additional DFMB sites in the MOM Model during Implementation Year 2, including three sites new to DFMB. The expansion of the DFMB Model into MOM has had a slow but steady impact on the adoption of various best practices for care, including aiding at least one provider in the transition from strict abstinence to medication-assisted treatment. Key informants also indicated that MOM Model meetings that bring together staff in similar roles across the state to share knowledge and integrate care across sites have been valuable.

Implementation challenges. Challenges to implementation are largely related to site Medicaid enrollment. These challenges include obtaining a site-specific national provider identifier number, statewide staffing shortages, understanding MOM service delivery elements and billing requirements, and sites resisting transitioning from grant funding to Medicaid reimbursement. Medicaid-enrolled sites worked to effectively integrate new staff, often in the context of high staff turnover, and had trouble effectively submitting claims to receive their PMPM. West Virginia Medicaid patients can change MCOs each month, complicating provider billing, and some MCOs appeared unclear on DFMB requirements. The MOM team continues to offer support on payment matters wherever possible.

Program Features

Partnership maintenance. BMS and the care delivery partner, Marshall Health, continue to have a close working relationship. The West Virginia Perinatal Partnership remains a key partner and continues to oversee the DFMB program. MCOs' role increased over the past year as MCOs began processing claims and worked to develop relationships between their high-risk pregnancy case managers and DFMB staff.

Patient Perspectives

Through the program and through the peer support, they have taught me I don't need to live in my past. Like, I'm here now, it's okay. What I did was what I did and that I'm not that person anymore.

—MOM Model patient

Enrollment, intake, and assessment. Marshall Health staff conduct outreach to DFMB sites to enroll them in the Medicaid. They also conduct outreach to care providers of pregnant patients with opioid use disorder (OUD) and encourage them to enroll in both DFMB and Medicaid. Few sites conduct direct outreach to patients because of limited staffing capacity; instead, they largely rely on provider and self-referrals. As new

DFMB sites enroll in Medicaid, they enroll their patients with OUD and Medicaid coverage in the MOM Model.

Enrollment numbers remain low for various reasons, including increases in the use of methamphetamine rather than opioids in West Virginia, which makes them ineligible for the MOM Model. DFMB Medicaid enrollment has been slower than anticipated and the process is lengthy for those sites that decide to join the MOM Model. Sites can only receive Medicaid reimbursement for the subset of their DFMB patients with OUD, and staffing shortages persist statewide. Sites continue to identify patient health-related social needs and self-efficacy levels using the Accountable Health Communities Health-Related Social Needs screening tool and the Patient Activation Measure tool, respectively. Community health workers or PRSs actively collaborate with patients to complete referrals and ensure they meet the needs of each patient.

MOM Model services. The MOM Model provides recovery support services and social services to pregnant and postpartum patients with OUD, as the DFMB program does for those with SUD broadly. The BMS DFMB Provider Manual standards, which support Medicaid reimbursement, remain unchanged. Medicaid-enrolled DFMB sites must offer an onsite PRS, a community health worker, and access to medication-assisted treatment and obstetric care. Medicaid-enrolled DFMB site staff, often the care coordinator or community health worker, are newly coordinating with MCO case managers, but confusion is apparent about the role of each in patient care. MCOs providing case management to members with high-risk pregnancies predates the MOM Model, but requiring coordination between the MCO care coordinator and the DFMB staff is specific to the MOM Model.

Health Equity Concerns

While the DFMB program reflects West Virginia's overall population, MOM Model patients are almost entirely White, possibly because of broader trends in opioid use across races. DFMB site staff undergo required training on trauma-informed and family-centered care. Transportation remains a major barrier to care in rural West Virginia.

The MOM Model implements best practices within its scope of services but has limited ability to influence clinical care among providers. BMS requires DFMB staff to engage with patients at least monthly, though most sites engage with patients more frequently. The care coordinator or a designated staff member usually contacts patients, develops and implements care plans and collects and reports necessary documentation as required. While each site has a designated care coordinator role, peer recovery support specialists and community health workers all support care coordination activities. As of October 2022, BMS requires peer recovery support specialists to complete a more stringent certification process that now requires demonstrating content knowledge. This requirement decreased the supply of certified PRSs and led to increased turnover at DFMB sites.

Medication-assisted treatment (MAT)

67% received any type of care for OUD during this pregnancy before model enrollment

73% of patients ever initiated MAT

98% of patients who initiated MAT did so prior to or on their MOM Model enrollment date

Data systems. West Virginia continues to use two separate REDCap databases. One collects data for the MOM Model and the other for DFMB, with limited overlap in their data requirements. The MOM Model project director pulls the MOM-required data from the REDCap system, cleans it, and uploads it to the

CMS system. The care delivery partner has contracted with a data analyst to support the work of consolidating and streamlining the databases.

Key informants unanimously perceived data collection as burdensome. Completing all the required assessments and data collection can take a significant amount of time—often more time than a patient has for a single encounter. Sites are collecting this information over several encounters, and it can take over a month to complete the data collection requirements. One DFMB site combined data collection requirements for both MOM and DFMB into a single intake form and has tasked an administrative assistant to enter the data into the two REDCap systems.

Medicaid Context and Sustainability

MOM Model sustainability. West Virginia's DFMB State Plan Amendment (SPA) is in place, and Medicaid-enrolled DFMB sites are eligible to receive $257.18 per member per month to support care coordination. Prior to the SPA's formal approval, which was delayed approximately 6 months past the MOM team's expectations, BMS supported the PMPM payments using state funds, which BMS estimates cost them approximately $400,000. In 2024, at the conclusion of the MOM Model, the state intends to revise the DFMB SPA to reflect SUD more broadly, rather than just OUD. For sites with limited volume, the per member per month rate may not be enough to support the staff the program requires. The low volume experienced by smaller rural sites in particular presents sustainability challenges.

The awardee is interested in value-based payment and is currently developing Certified Community Behavioral Health Clinics, which may use incentive payments. Some DFMB sites may become Certified Community Behavioral Health Clinics, and it is unclear whether or how the existing DFMB payment structure would intersect with the new payment structure for these clinics.

Medicaid and other state context related to MOM Model. Key informants supported the removal of the federal X waiver requirement as normalizing MAT, but it has made it more difficult for the state to track prescribers. State officials did not express concern about a resurgence in fraudulent MAT providers. West Virginia's rurality continues to pose challenges, including limited access to maternity care and birthing services, often requiring patients to travel long distances for care. Given its significant and long-standing challenges with OUD and SUD, West Virginia has several related initiatives, including harm reduction services, job placement programs, tobacco cessation for pregnant individuals, and care management programs.

Conclusion

Although the expansion of MOM funding to incorporate all existing DFMB sites has progressed more slowly than originally projected, adoption grew across the state in Implementation Year 2, including improvements in best practices and the patient experience. However, maintaining data collection and navigating MCO contract structures remained taxing for MOM Model staff and providers at DFMB sites, and logistical challenges, including high staff turnover and remote geography, continue to pose barriers to growing the reach of West Virginia MOM Model services. During Implementation Year 3, evaluators will focus on how MCOs and provider sites are able to establish clear roles and procedures, how sites attempt to stabilize staffing and increase capacity, whether all remaining DFMB sites can transition to the MOM Model infrastructure, and broadly how the awardee works to develop a viable sustainability structure.

Although enrolling existing DFMB sites in Medicaid (thereby enabling their patients to enroll in MOM) has progressed more slowly than originally projected, adoption grew across the state in the second year of implementation, with seven DFMB sites Medicaid-enrolled at the time of the case study. However, maintaining data collection and receiving reimbursement for DFMB services remained taxing for Medicaid-enrolled DFMB sites, and logistical challenges persisted, such as high rates of staff turnover as barriers to enrolling more DFMB sites in Medicaid. During Implementation Year 3, evaluators will focus on how MCOs and provider sites are able to establish clear roles and procedures, how sites attempt to stabilize staffing and increase capacity, and whether all remaining DFMB sites can complete Medicaid enrollment.

Appendices

Appendix A. Implementation Period Research Questions

The evaluation team pursued a variety of implementation-related research questions during the first year of implementation, including the following:

Did Maternal Opioid Misuse (MOM) Model awardees and providers incorporate best practices and guidelines in care for pregnant and parenting mothers with opioid use disorder (OUD) and their infants? How did health equity concerns influence implementation?

Were maternal outcomes improved (e.g., retention in treatment, lower emergency department use, reduced birth complications)? Were improvements experienced equitably across all patients?

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?

Did maternal and infant health care costs decrease or remain stable (e.g., maternal ambulatory-sensitive inpatient, emergency department, and residential care use; NICU admission/use)?

Did MOM Model awardees adopt care coordination and care integration best practices (e.g., Substance Abuse and Mental Health Services Administration's "Collaborative Approach" framework)?

Did pregnant/postpartum patients 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?

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?

Were family outcomes improved (e.g., fewer infants placed in state custody)?

Did states meet their program goals for self-funding their program moving forward? If not, what were the barriers to achieving milestones?

Did states establish sustainable coverage/funding via Section 1115 waivers, SPAs, and/or other mechanisms?

Appendix B. Evaluation Data Components

The Maternal Opioid Misuse (MOM) Model evaluation relies on a flexible, mixed-methods design that integrates many data sources, including qualitative case studies, participant-level process data and program impact data. This appendix provides details on these activities.

A. Qualitative Case Studies

The qualitative component of the evaluation examines how MOM Model states designed and have implemented their models of care. Qualitative data collection has documented best practices and lessons learned during the first year of model implementation, including, where possible, MOM Model beneficiaries' experiences. Qualitative case studies have also examined how each MOM Model awardee's program has evolved from the pre-implementation period to the implementation period. The case studies organize data collection and analysis to align with each theme in the RE-AIM framework:

1. **Model adoption:** characteristics of model setting and staff, leadership, partner selection, participation and the evolution of those relationships
2. **Model reach:** recruitment methods, model enrollment and the representativeness of MOM Model patients
3. **Model implementation:** primary components of the model and variation in model implementation
4. **Model maintenance/sustainability:** the extent to which the model has become institutionalized and whether or how funding will be sustained
5. **Model effectiveness:** the extent to which key informants feel the model improves health outcomes

1. Data Collection

Qualitative data collection activities consisted of—

Key informant interviews with MOM Model awardees, providers and community partners

Focus groups, Photovoice sessions and one-on-one interviews with MOM Model patients

Structured observations at provider sites serving patients who are pregnant and postpartum and have opioid use disorder (OUD) with Medicaid coverage[13]

The evaluation team developed all qualitative data collection instruments. Because of the sensitive nature of data collection with people who have lived experience with OUD and our sensitivity to the use of potentially stigmatizing or triggering language, we invited four peer recovery coaches from the model to a workshop to review and provide input on the questions and language used in the focus group protocol for MOM patients and the interview protocol for MOM PRS. This collaborative workshop took place in February 2023, and we incorporated feedback from the review process in the final protocols.

[13] Provider sites observed in the second implementation year were not observed during the pre-implementation period or the first implementation year.

To limit evaluation burden on MOM Model provider sites, the evaluation team asked provider site staff to support either focus group and interview recruitment or Photovoice recruitment.

Data collection activities occurred between April and July 2023. All site visits took place in person, except in Indiana, where case managers work from remote offices and MOM patients are statewide; these interviews and focus groups took place virtually using the virtual teleconferencing platform Zoom. Facilitators obtained participants' informed consent and permission to audiorecord data collection activities before starting the discussion or observation. Table B.1 lists the type and number of data collection activities that occurred.

Table B.1. Type of Data Collection Activity per MOM Model Awardee

Data Collection Activity	Colorado	Indiana	Maine	New Hampshire	Tennessee	Texas	West Virginia
Key informant interviews interviewed	14	32	19	18	19	28	28
Patient focus group participants	-	8	7	3	-	9	10
Photovoice participants	-	-	4	-	-	-	-
Patient interviews	4	-	-	-	2	-	-
Structured observations	1	2	3	-	-	2	1

Source: Insight Policy Research analysis of MOM Model site visit data, April–July 2023

Key informant interviews with Project Officers, program managers, health care providers and community partners provided detailed information on the implementation status to date and how beneficiaries experienced the model in the first implementation year. Project Officers assisted the evaluation team in recruiting key informants involved in implementing the MOM Model by sharing their contact information with the team. Interviews ranged from 60 to 90 minutes; topics discussed are listed by key informant type in Table B.2. The team discussed health equity approaches and concerns with all key informants and asked specific follow-up questions identified in pre-implementation case study reports.

The evaluation team held **focus groups and one-on-one interviews** with beneficiaries to identify how they learned about the program and how they experienced the services and care they received through the MOM Model. Two focus groups and seven individual one-on-one interviews were held across all awardees.

Patients in MOM programs in all states except Colorado and Tennessee participated in a focus group in their respective state. Focus groups took place in person, except in Indiana, where two focus groups with four participants each took place virtually over the Zoom video conferencing platform. All focus groups lasted approximately 90 minutes. We asked questions in an individual interview format using the same topics from the focus group protocol with patients in Colorado and Tennessee, where the number of patients willing to participate in data collection at the same time was not adequate to conduct focus groups. The team discussed a range of topics with participants, such as a normal day in their life, including positive and negative issues that can affect their day; their impressions of the MOM Model; experience receiving opioid use treatment during pregnancy and/or postpartum; and interactions with MOM Model providers. The evaluation team collected data from patients in Colorado and Tennessee through individual interviews.

Photovoice, a community-based participatory research method, supplemented information gathered through focus groups and interviews with beneficiaries. Because of privacy concerns with low enrollment numbers in some states, the evaluation team conducted Photovoice only in Maine. Two Photovoice activities took place over a week through the Zoom platform. A 30-minute virtual training preceded a 60-minute Photovoice session. Beneficiaries shared pictures they took that represent what makes it easier or more difficult for them to receive care for themselves and their infant. After beneficiaries shared and described their photos, the group engaged in a facilitated discussion.

For the three patient-focused data collection activities (focus groups, interviews, Photovoice), the evaluation team shared recruitment materials, such as site-specific flyers and recruitment scripts, with provider staff to highlight the purpose of the activity. These materials also noted that participation was voluntary and discussions with the evaluation team were confidential.

Provider staff obtained beneficiaries' consent to share their contact information with the evaluation team. Once the team received beneficiaries' consent to contact, team members contacted beneficiaries, screened them for eligibility and shared meeting days and times with eligible and interested beneficiaries. As a thank-you to beneficiaries for their participation in focus groups, interviews and Photovoice sessions, each received a gift card for $50.

We conducted structured observations in Colorado, Indiana, Maine, Texas and West Virginia to provide further insight into the environment where services are delivered to pregnant and parenting Medicaid beneficiaries with OUD and their infants. These observations were structured as 60-minute in-person tours of the clinic space and the surrounding built environment. The team used an observation guide that included a set of items to ask about or observe in the environment, including housing, public transportation, community services (such as grocery stores, pharmacies and schools/daycares) and other neighborhood characteristics (such as signs of gentrification, physical damage or criminal or drug-related activity). Inside the clinic space, the evaluation team observed and asked semistructured questions about the waiting room area and examination rooms (such as educational materials, artwork or way-finding signage). Participants were also asked to describe a typical visit with a pregnant or postpartum client. We also observed two telephone case management conversations in Indiana to better understand the environment in which obstetric and OUD care is discussed and integrated in their MOM Model.

Table B.2. Qualitative Case Study Topics Explored by Key Informant Type

Project Officer	Awardee	Care Delivery Partner	Program Manager	Maternity Care Provider	SUD Provider	Community Partner
▪ Status of model implementation activities ▪ Efforts to develop sustainable funding ▪ Lessons learned	▪ Model structure and partnerships ▪ Model sites ▪ Enrollment, intake and assessments ▪ Retention ▪ Model intervention and service delivery ▪ Medicaid/CHIP program features and state context ▪ Anticipated program outcomes ▪ Lessons learned	▪ Model enrollment, intake and assessments ▪ Model intervention and service delivery ▪ Anticipated program outcomes ▪ Lessons learned	▪ Enrollment, intake and assessments ▪ Retention ▪ Changes to model intervention ▪ Services provided to beneficiaries ▪ Care coordination ▪ Peer recovery services ▪ Relationship with child protective services ▪ Anticipated program outcomes ▪ Lessons learned	▪ Patient characteristics ▪ Screenings and assessments ▪ Prenatal and postpartum care ▪ Hospital management procedures and protocols for pregnant patients with OUD and opioid-exposed newborns ▪ Clinical best practices ▪ Special education, training and team collaboration for patients' treatment	▪ Patient characteristics ▪ Screenings and assessments ▪ Tailored care for patients with OUD ▪ Clinical best practices ▪ Medicaid claims data and maternal medication for OUD rates ▪ Special education, training and team collaboration for patients' treatment	▪ Patient characteristics ▪ Awardee and community partner(s) relationship ▪ Enrollment, intake and assessments ▪ Role in model and services delivered ▪ Relationship with child protective services ▪ Anticipated program outcomes ▪ Lessons learned

Note: CHIP = Children's Health Insurance Program; OUD = opioid use disorder; SUD = substance use disorder
Source: Insight Policy Research MOM Model evaluation data collection protocols, January 2023

2. Data Analysis

Prior to data collection, the team updated a standard outline and template for the case study report for all qualitative team members to use This outline ensured reporting was consistent across states, information reported for each awardee addressed all research questions, and information reported aligned with the five domains of the RE-AIM framework. The outline also captured the analysis of activities that promote health equity or barriers that awardees currently face to achieving health equity in model implementation.

Throughout data collection, members from each case study team reported findings biweekly. These conversations helped teams identify potential gaps in data collection and analysis while site visits were still ongoing. During data collection, case study teams cleaned all notes in preparation for analysis. The analysis was an iterative process of reviewing notes from discussions with various providers, care managers, community partners, focus groups, Photovoice and interviews with MOM Model patients to identify themes that emerged based on data collected or during team discussions. Analysts involved in data collection coded notes in Dedoose software following a flexible coding scheme that aligns with the RE-AIM framework and domains that crosswalk with the evaluation research questions. The team used Dedoose software to query the coded qualitative data in the database for similar types of information based on key research questions and sources of data (for example, key informant types, focus groups, Photovoice).

Insight trained all coders on the study coding scheme and reviewed double-coded sets of samples of notes with each coding team (one per organizational partner) to resolve any discrepancies. The coding scheme enabled the team to incorporate emergent themes during data collection and analysis. During analysis, the team noted consistency and divergence in those themes and used them to build detailed suboutlines for each section of the case study report template.

B. Participant-Level Process Data Evaluation

Process data provide information on the characteristics of MOM Model beneficiaries and the services they receive. These data are used to describe the population, track interim and longer term outcomes of MOM Model beneficiaries and interpret findings from the impact and qualitative components of the evaluation. In addition to providing timely information for quarterly and annual reports, these data are used to help refine impacts analysis design, contextualize findings and assist in the development of qualitative protocols.

1. Data Collection

MOM Model awardees have flexibility in how they collect patient-level data. For example, guidance documents indicate they may use any data source that contains the necessary information for a process data element and is available in time for the reporting deadline. Awardees are permitted to add or revise process data for up to 1 year after submission. Awardees are expected to use the same data collection method among all care delivery partners and providers within the state to ensure consistency in reporting. Once collected, awardee staff and/or care delivery partner staff are responsible for preparing and submitting data files. The MOM Model Implementation & Monitoring (I&M) and Learning System contractors have developed training materials and webinars to provide technical assistance and support to awardees as they undertake the data collection and reporting process. The evaluation team supports these efforts in coordination with the other contractors by contributing to training materials and guidance documents and participating in webinars and one-on-one technical assistance calls with awardees.

Several awardees are currently using or plan to use claims data to fulfill certain process data elements. The evaluation team anticipates the use of claims data will result in delays in submission of complete data, at least into the year awardees are permitted to add and revise data. The extent to which the use of claims data may compromise the quality of process data varies by what is being measured. For example, if a patient's prior births are being reported through claims data, only prior births covered by Medicaid will appear in the data. Similarly, OUD treatment a patient might have received prior to enrollment in the MOM Model and not covered by Medicaid will not appear in the data. The process evaluation team is aware of how awardees will use claims data and will consider potential issues of data completeness or quality.

2. Data Components

The patient-level process data include two types of data elements awardees collect: reporting requirement data elements and evaluation data elements. Awardees collect and submit data to meet MOM Model reporting requirements as specified in the original funding opportunity announcement and as a condition of the award. These data address MOM Model requirements, support monitoring of the intervention, enable calculation of performance milestones and payments and are included in the MOM Model evaluation. Awardees are required to report these data elements for all MOM Model beneficiaries for successful data submission, including the following:

- Enrollee 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
- Pregnancy outcomes, including birth outcomes, length of hospitalization for mother and infant, infant opioid screening and nonmedical out-of-home placements

Awardees also collect data elements beyond those required to calculate performance milestones and payment to support the MOM Model evaluation. These evaluation-specific data elements are critical to the model's evaluation, but awardees are not required to report them for a successful data submission (Table B.3). The distinction between reporting requirement data elements and evaluation data elements has implications for data quality, as discussed below. The evaluation team analyzed both types of data elements as part of the process evaluation.

3. Data Quality

The process data included in this annual report are limited in depth and scope by the amount and quality of data the evaluation team receives. The data submissions MOM Model awardees are required to submit to meet the MOM Model milestones are complete. However, awardees continue to encounter challenges with their data collection efforts, and therefore some measures have high rates of missing data. Several elements designed to support a robust evaluation are missing data for at least a quarter of enrolled patients. For instance, anxiety screening data are missing for 31% of patients, and data on current alcohol use are missing for 30% of patients. HIV and hepatitis C screening data are missing for 43% and 41% of patients, respectively. Data about the presence of any risk factors related to a prior birth—a strong predictor of subsequent birth outcomes—are missing for 38% of multiparous patients. Percentages

reported in the text of this report are among patients with nonmissing data for a given measure; appendix tables and footnotes provide details about the universe and the quality of the data presented, including the rate of missing data for each element.

To protect the confidentiality of MOM Model patients, particularly among awardees with few people enrolled in their model, the data in the body of this report are presented in aggregate across the six reporting awardees. As data volume and quality improve over time, future reports may include more detailed descriptions and analyses. For example, it will be possible to present characteristics of patients who enrolled before and after their birth event separately when greater numbers of people are enrolled in the MOM Model over longer periods.[14]

The evaluation team developed protocols to assess the quality of process data for each awardee submission (described in detail in Appendix D.2). These protocols go beyond the initial quality checks built into the data collection process, such as file failures if required information is missing, and they are distinct from the data quality check protocols the I&M contractor developed and used, which the evaluation team reviewed during the development of data quality protocols. Broadly, most data quality checks are designed to identify illogical or improbable data values. Illogical data values are most likely to occur in multiselection categorical variables (for example, when a patient has several options for types of care coordination received, but one selection was "None of the above"). Improbable data values are most likely to occur when dates are out of range. For instance, if a patient has an encounter measure listed on a date prior to their enrollment in the program, it would be an improbable value. In addition to the data quality checks, rates of item nonresponse are reported for each data element. Item nonresponse occurs when patient information is available for some but not all data elements.

4. Data Analysis

The evaluation team conducted several steps to analyze process data. First, we mapped process data elements to RE-AIM domains and MOM Model research questions, as described in Table B.4. Second, after assessing data quality, we produced awardee-level estimates for each data element. For some elements, this process required defining the universe for the analysis. For example, the analysis of prior birth experiences is limited to patients who report a prior birth. The team reported most estimates as categorical percentages that sum to 100%. For data elements that allowed for more than one response per patient, categorical percentages sum to more than 100%. Mean, median, minimum and maximum values are reported for noncategorical data elements, such as the number of cigarettes smoked and number of encounters (see Appendix D). The team suppressed estimates based on fewer than 11 beneficiaries in the numerator to protect confidentiality of MOM Model patients.

The body of the report includes selected estimates for each RE-AIM domain. These estimates were highlighted based on data quality, relevance to the early implementation of the MOM Model and contribution of new information. For example, much of the process data in this annual report describe the characteristics of MOM Model patients because this information is of high quality, is not available elsewhere and provides important insight into the unique needs of MOM Model patients. Future annual reports will include more information on prenatal care, service use and birth outcomes as MOM Model patients progress through their pregnancy to delivery and the postpartum period.

[14] Process data are cumulative; the data included in this report will also appear in subsequent reports. Awardees are permitted to add or revise their data for 1 year after the data have been submitted. Data presented in this report will be updated and amended.

Table B.3. Evaluation-Specific Data Elements

Data Element Name	Description
HEALTH_INS_PREPREG	Health insurance before patient became pregnant
ABUSE_EXPERIENCE	Types of abuse ever experienced by patient (sexual abuse, physical abuse, emotional abuse, transactional sex)
PRIOR_CHILD_PLACED	Indicator for whether patient's prior children have ever been placed outside of home
RELATIONSHIP_STATUS	Patient's current relationship status
HIGH_SCHOOL_OR_GED	Indicator for whether patient obtained high school diploma or GED
SUBSTANCE_USE_RECENT	Indicator for whether patient used following substances in last year: alcohol, cigarettes or other tobacco, vaping, cannabis, amphetamines or benzodiazepine
YOUNG_ONSET_SUBSTANCE_USE	Indicator for whether patient first used following substances before age 18: alcohol, cigarettes or other tobacco, vaping, cannabis, opioids, amphetamines or benzodiazepine
PRIOR_BIRTH_DATE	Date of most recent prior birth
PRIOR_BIRTH_EXPERIENCE	Outcomes from prior pregnancies (premature birth, low birth weight, stillbirth, NOWS, other)
PRIOR_PREG_RISK	Pregnancy risk factors during prior pregnancies (preeclampsia, gestational diabetes, gestational hypertension, HELLP syndrome, hemorrhage, other)
OUDTREATMENT_TYPE_POSTPARTUM	Pharmacotherapy type during patient's postpartum period (none, buprenorphine, naltrexone, methadone, other)
LABOR_PAIN_MANAGEMENT	Pain management during labor (epidural, IV narcotics, other, none)
DELIVERY_METHOD	Patient's delivery method (vaginal, induced, augmented, VBAC, emergency cesarean birth, planned cesarean birth)
POSTPARTUM_CONTRACEPTION	Contraception plan during postpartum period (none, natural family planning, pull-out method, barrier or spermicide, hormonal, injectable, LARC, tubal ligation, other)
PRIOR_BIRTH	Indicator for whether patient had prior birth
INFANT_PHARMA_TREATMENT	Infant pharmacotherapy treatment (for NOWS)
INFANT_FEEDING	Infant feeding method postpartum (breastfeeding, pumping, both breastfeeding and pumping, supplementing with formula, formula only)
ALCOHOL_USE	Number of alcoholic drinks patient consumed in average week during last month (14+, 8–13, 4–7, 1–3, < 1, did not drink)
CIGARETTES_NUM	Number of cigarettes patient 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)

GED = General Educational Development test; HELLP = hemolysis, elevated liver enzymes, low platelet count; IV = intravenous; LARC = long-acting reversible contraception; NOWS = neonatal opioid withdrawal syndrome; VBAC = vaginal birth after cesarean
Source: Insight Policy Research MOM Model evaluation required data elements, 2022

Table B.4. Process Evaluation Constructs and RE-AIM Domains, Data Elements and Research Questions

Construct and RE-AIM Domain	Data Elements	Research Question
Demographics/ Reach	▪ Age ▪ Self-identified gender ▪ Self-identified race and ethnicity ▪ Relationship status ▪ Educational attainment ▪ Health insurance before pregnancy	▪ What are the characteristics of MOM Model participants?
Mental Health/ Reach	▪ Depression screening result ▪ Depression screen follow-up plan ▪ Anxiety screening result ▪ Other mental or behavioral health diagnoses ▪ Patient history of abuse and transactional sex ▪ Dementia or cognitive impairment	▪ Did pregnant/postpartum patients 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs and/or conditions equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?
Physical Health/ Reach	▪ Chronic conditions ▪ HIV indicator ▪ Hepatitis C indicator	▪ Did pregnant/postpartum patients 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs and/or conditions equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?
Substance Use/Reach, Adoption, Implementation	▪ Tobacco use ▪ Tobacco intervention ▪ Number of cigarettes ▪ Change in number of cigarettes ▪ Alcohol use ▪ Substance use past year ▪ Substance use prior to age 18	▪ What are the characteristics of MOM Model participants? ▪ Did pregnant/postpartum patients 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs and/or conditions equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?

Construct and RE-AIM Domain	Data Elements	Research Question
Social Determinants of Health/Reach	▪ Housing needs ▪ Food security ▪ Transportation needs ▪ Utilities ▪ Family ▪ Safety	▪ 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?
Service Use/ Adoption, Implementation	▪ Prenatal encounters ▪ Postpartum encounters ▪ Prenatal hospital admissions ▪ Postpartum hospital admissions ▪ OUD encounters ▪ Prenatal provider type ▪ Postpartum visit indicator ▪ Postpartum visit practitioner type ▪ Visits with other providers ▪ Referral receipt ▪ Referral status ▪ Referral type ▪ Referral completed ▪ Referral completed type ▪ Receipt of care coordination activities ▪ Frequency of care coordination activities ▪ PAM score ▪ Family planning indicator ▪ Postpartum contraception ▪ Engagement outreach (for lost to follow-up)	▪ 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 participants? ▪ Did MOM Model awardees adopt care coordination and care integration best practices (e.g., SAMHSA's "Collaborative Approach" framework)? ▪ Did pregnant/postpartum patients 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs and/or conditions equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?
OUD Treatment/ Adoption, Implementation	▪ Prior OUD treatment during current pregnancy ▪ Prior inpatient OUD treatment (ever) ▪ Pharmacotherapy initiation ▪ Pharmacotherapy type at initiation ▪ Pharmacotherapy type at delivery ▪ Pharmacotherapy type postpartum ▪ Relapse indicator ▪ OUD encounter types received ▪ OUD treatment service types received ▪ Treatment plan at model exit	▪ Did pregnant/postpartum patients 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 participants? ▪ Were participants of different racial and ethnic groups screened for needs and/or conditions equitably? Were the full array of medical, behavioral and mental health services and opioid agonist treatment services provided equitably? Did participants of different racial and ethnic groups receive needed care and support services equitably?

Construct and RE-AIM Domain	Data Elements	Research Question
Pregnancy Conditions/Reach	▪ Prior birth ▪ Prior birth experiences ▪ Prior pregnancy health risk factors ▪ Prior out-of-home placement ▪ Multifetal gestation ▪ Prenatal condition types	▪ Were maternal outcomes improved (e.g., retention in treatment, lower emergency department use, reduced birth complications)? ▪ Did participants of different racial and ethnic groups experience different rates of pregnancy conditions?
Maternal Outcomes/ Effectiveness	▪ Pregnancy outcome ▪ MOM Model participant death ▪ Maternal LOS (delivery) ▪ Labor pain management ▪ Delivery method	▪ Were maternal outcomes improved (e.g., retention in treatment, lower emergency department use, reduced birth complications)? ▪ Were family outcomes improved (e.g., fewer infants placed in state custody)? ▪ Did maternal outcomes vary across participants of different racial and ethnic groups? Were observed changes in outcomes equitable across groups?
Infant Outcomes/ Effectiveness	▪ Hospital LOS (delivery) ▪ NICU at delivery ▪ NICU LOS at delivery ▪ Estimated gestational age ▪ Birth weight ▪ Positive opioid screen ▪ NOWS indicator ▪ Infant pharmacotherapy treatment for NOWS ▪ Out-of-home placement ▪ Infant feeding	▪ Were infant outcomes during birth hospitalization improved (e.g., shorter length of birth hospital stay; lower NICU admission; reduced rates of preterm birth, low birth weight, fetal or neonatal death)? ▪ Were family outcomes improved (e.g., fewer infants placed in state custody)? ▪ Did infant and family outcomes vary across participants of different racial and ethnic groups? Were observed changes in outcomes equitable across groups?

Note: HIV = human immunodeficiency virus; LOS = length of stay; NICU = neonatal intensive care unit; NOWS = neonatal opioid withdrawal syndrome; OUD = opioid use disorder; PAM = patient activation measure; RE-AIM = reach, effectiveness, adoption, implementation, maintenance; SAMHSA = Substance Abuse and Mental Health Services Administration
Source: Insight Policy Research MOM Model evaluation design, October 2021

C. Impacts Evaluation

The goal of the evaluation impacts analysis is to assess whether MOM Model awardees improve quality of care and health outcomes and reduce expenditures for pregnant and postpartum individuals with OUD and their infants. The evaluation uses administrative data sources in the assessment of MOM Model population characteristics and program impact evaluation, including Centers for Medicare & Medicaid Services (CMS) Transformed Medicaid Statistical Information System (T-MSIS) data and vital records.

1. Data Sources

The evaluation team obtained most core measures of health outcomes and health care use, quality and costs from state Medicaid program data reported in T-MSIS. These data are organized into several files and include annual, monthly and encounter- and claim-level files for individuals covered by Medicaid, affording a wide range of insights into MOM Model impacts. The most recent T-MSIS data available at the time of this report (fall 2023) was the interim (preliminary) data for calendar year 2021. Final T-MSIS files may include some changes, but interim files can be used to conduct preliminary analyses because the data are largely accurate.

The evaluation team obtained process and enrollment data from MOM Model awardees. These data include identifiers for each MOM Model patient (or enrollee), enabling a linking process to T-MSIS data for each enrollee. Process data include information on enrollee characteristics and some outcomes related to those observed in the T-MSIS files, such as mental and physical health conditions and birth information.

The evaluation team linked vital records data to T-MSIS claims data via patient identification numbers obtained from states. Currently, complete vital records data are available to the evaluation team for Colorado, Maine, New Hampshire and Texas. Each state establishes its methods for identifying Medicaid beneficiaries in their vital records. For example, Maine created 12 different linkage scenarios, each with an assigned weight (lower weights indicate more confidence in linkage). The state then selected the lowest weight/most reliable linkage that was successful. Maine used a similar approach for the infant linkage process but with different linkage scenarios because available identifying information differed between women and infants. The states also provide crosswalk files to link Medicaid ID numbers to scrambled identification number, which facilitates linking to link the vital records data with the deidentified T-MSIS data. Medicaid enrollee characteristics and some outcomes are recorded in vital records data, and the evaluation team used these data to supplement the T-MSIS data to identify the eligible sample and construct analytic measures, described in detail below.

2. Sample Identification

The team identified the sample of Medicaid enrollees eligible for the MOM Model primarily with T-MSIS data. The team also used vital records (where available) and awardee-reported enrollment data to supplement information in the T-MSIS claims. Eligibility criteria for identification in the T-MSIS claims data include evidence of having given birth and having OUD in the 12 months prior to birth or after the birth. The following describes the specific criteria used to identify birthing individuals and those with OUD.

Identifying the obstetric population

The evaluation team used several criteria to identify eligible birthing individuals, including diagnosis, procedure and place of service codes in the inpatient and other services T-MSIS data files. Initially, the team used a broad range of codes to identify the birthing sample, including those corresponding to prenatal care, birth events and postpartum care. The team then conducted iterative assessments of these codes to enhance detection of true birthing individuals while minimizing detection of cases unlikely to have had a recent birth. For example, several codes related to prenatal care resulted in the identification of too many cases that did not appear to have subsequently had a birth, so those codes were ultimately excluded. Other codes sometimes related to birth events could also be associated with other (for example, gynecologic) conditions unrelated to a recent birth and therefore were excluded to avoid erroneous identification of potential patients. As a result, the birthing algorithm codes focus on detecting evidence of births rather than births and prenatal or postpartum care.

To identify evidence of births in the T-MSIS data, the evaluation team had to use many types of codes because not all birth events are captured by diagnosis codes that clearly indicate the outcome. Therefore, the evaluation team's birthing algorithm to detect the birthing sample includes ICD-10 codes for live births and births with an unknown outcome. Based on analysis of T-MSIS data matched to vital records data (including people flagged as mothers in T-MSIS who did not match to vital records), we assumed births with unknown outcomes were live births if they were not accompanied by codes for infant or fetal death (including abortion) and if the mother had an inpatient stay at the time of the record. We also included a small number of individuals recorded with a diagnosis code for full-term pregnancy during an inpatient stay

because these events tended to match births in vital records. To identify instances of fetal death, we searched for codes related to spontaneous fetal death after 20 weeks including miscarriage and stillbirth (excluding abortion).

The focus of the team's algorithm on identifying evidence of birth events in the claims (and not prenatal or postpartum care) to determine eligibility presents a limitation with the use of interim/lagged data. There is an approximate lag of 18 months to obtain final T-MSIS files. Currently, 2022 data are not yet available to the evaluation team. As a result, we could not identify with our algorithm individuals who gave birth in 2022 but were pregnant and eligible for the MOM Model in 2021 in the most recent data available (2021 interim data files). Another limitation is that Medicaid identifiers in the interim T-MSIS data are not the same as in final T-MSIS files. Some methods of linkage between prior years' final files and interim data for another year are available, though not for all Medicaid enrollees. As a result, we could not identify some individuals who gave birth in 2020 but enrolled in the MOM Model during their postpartum period in 2021. However, these limitations are temporary, and the evaluation team will be able to identify all eligible individuals when final T-MSIS files for all MOM Model years are available.

Identifying the population with OUD

The evaluation team also required that a patient have evidence of OUD to be included in the MOM Model-eligible sample. The timeframe for sample eligibility included either a diagnosis or treatment that indicates maternal OUD in the 12 months prior to birth or within 12 months after birth based on T-MSIS data. To determine evidence of OUD in T-MSIS data, the team used the Behavioral Health Services Algorithm (BHSA) (Lynch et al., 2021). The BHSA uses diagnosis, procedure, drug, place of service and revenue codes to identify use disorders with alcohol, cocaine, marijuana, opioids (OUD), psychostimulants (generally methamphetamines), tobacco and other specified and unspecified use disorders.

The developer of the algorithm created and validated this code list from peer-review and grey literature review; validation sources included definitions CMS uses, among other sources. For most analyses, we use an expansive definition of OUD that requires at least one service record indicating OUD, including overdose and OUD in remission. The evaluation team currently does not have access to consistent death records for all awardees, but upon obtaining this information in the future, we will use cause of death information as an additional source for identifying individuals with OUD who may not have documented diagnoses or medications in T-MSIS data. Given the previously noted limitations of interim data and the T-MSIS data lag, OUD use based on the claims is currently somewhat undercounted. However, this will be resolved once final T-MSIS files for all years are available.

Additional details on sample identification

After applying the birthing and OUD criteria to identify eligible individuals with T-MSIS and vital records data, the evaluation team also made several manual additions. For instance, the team could not identify 34 patients who enrolled in the MOM Model in 2021 using our identification algorithm as a result of the previously described data limitations. To include these cases in participation analyses, we manually added the individuals. In the future, when we obtain final T-MSIS data for all years of the MOM Model, we expect to identify these and other similar eligible individuals with our algorithm and will not require manual addition.

While the evaluation team also identified infant birth records in claims data, linking infant and maternal records requires vital records data, which are currently only available for select awardees. Therefore, when linkage is not possible, we cannot determine which infant matches to which mother, so analysis of MOM

Model enrollees' infant outcomes is restricted to those from states that provided dyad matching data. The sample is restricted to mother-infant dyads for which the mothers gave birth to a single infant, had identified birth claims and had been enrolled in full-benefit Medicaid for at least 1 month in the year before and after birth during the MOM Model evaluation period.

3. Measure Specifications

The evaluation team constructed individual characteristics and health and health care utilization outcomes from T-MSIS claims and vital records data. Data sources used to define these measures appear in Table B.5, including the specific T-MSIS files referenced.

Table B.5. Effectiveness Analysis Measures and Data Sources

Measure	Data Source(s)
Obstetric patient	T-MSIS (IP, OT, DE)/VR/Awardee Reported Enrollment Data
Evidence of OUD (diagnoses and medications)	T-MSIS (IP, OT, LT, RX)/Awardee Reported Enrollment Data
Gestational age	T-MSIS (IP, OT)/VR
Prenatal visits	T-MSIS (OT)/VR
Age	T-MSIS (DE)
Race/ethnicity	T-MSIS (DE)
Rurality	T-MSIS (DE)
County of residence	T-MSIS (DE)
Medicaid eligibility	T-MSIS (DE)
Chronic health conditions	T-MSIS (OT)
Disability status	T-MSIS (DE)
Cigarette exposure prior to pregnancy	T-MSIS (IP, OT)
Maternal cost of care	T-MSIS (IP, OT, LT, RX)
Postpartum checkups	T-MSIS (IP, OT)
Cesarean birth	T-MSIS (IP, OT)
Severe maternal morbidity	T-MSIS (IP, OT)
ED visits	T-MSIS (OT)
Stillbirth	T-MSIS (IP, OT)
Birth date	T-MSIS (IP, OT)/VR
NICU stay	T-MSIS (IP)
Birth weight	T-MSIS (IP, OT)
Maternal and infant cost of care	T-MSIS (IP, OT, LT, RX)
Inpatient days in birth month	T-MSIS (IP)

Note: OUD = opioid use disorder; IP = inpatient file, OT = other services file, DE = demographics and eligibility file, LT = long-term care file, RX = pharmacy file

Data hierarchy

For some measures, both T-MSIS and vital records offer information, but vital records data are known to be of higher quality. Three variables used in participation analyses this year were available with sufficient information in both T-MSIS and vital records data, including gestational age, prenatal visits and birth date. Additional measures were common to both data sources, but significant missingness in the vital records

data resulted in use of only T-MSIS data for that information. The evaluation team constructed gestational age and prenatal visit information from vital records when available; otherwise, we used T-MSIS data. When a birth date was available in the vital records and was within 30 days of the birth date recorded in the T-MSIS data, the evaluation team used the vital records birth date; however, when the vital records date was either unavailable or beyond 30 days from the date found in the T-MSIS data, the team used the birth date from T-MSIS.

Measure-Specific Methodological Details

Severe maternal morbidity (birth complications)

The evaluation team used a comorbidity measure to summarize the burden of illness in the MOM Model-eligible population and to adjust for risk in the estimation of program impacts. The team used an established grouping system for diagnoses to summarize co-occurring conditions. The single-level Clinical Classification Software from the Agency for Healthcare Research and Quality contains 285 categories that can be further collapsed. These diagnoses are used to construct scores based on the Obstetric Comorbidity Scoring System for Predicting Severe Maternal Morbidity developed by the California Maternal Quality Care Collaborative (Leonard et al., 2020).

This score accounts for 26 comorbidities and characteristics weighted by the strength of their association with severe maternal morbidity. Some of the most heavily weighted comorbidities include placenta accrete, pulmonary hypertension and chronic renal disease, whereas the lowest weighted factors are maternal age greater than 35 years and gestational diabetes mellitus. The team constructed two versions of the score, one based on the outcome of all severe maternal morbidity and one excluding blood transfusions. Transfusions are the only indicator of severe morbidity in roughly half of cases, some of which may be less severe forms of severe maternal morbidity (Leonard et al., 2020). As a result, the importance of some comorbidities in predicting severe morbidity differs slightly depending on the inclusion of transfusions, so the evaluation team considered both scores.

Expenditures

To derive Medicaid expenditure totals, the evaluation team summed Medicaid paid amounts from records flagged as fee for service (CLM_TYPE_CD inclusive of 1, A, U), managed care encounter (CLM_TYPE_CD inclusive of 3, C, W) and supplemental payments (CLM_TYPE_CD inclusive of 5, E, Y). Medicaid paid amounts include diagnostic-related groups outlier amounts but do not include enrollee copayments or third-party payments. We also do not attempt to include kick payments for birth because those are intended to compensate managed care companies for the costs of paying clinical providers, and they cannot be reliably distinguished from capitated payments.

We expect that only some supplemental payments to cover facility and clinical provider costs for birth and prenatal care are flagged as supplemental payments and included in our derived totals. We also expect states may vary in whether they record certain supplemental payments as "supplemental payments" attributable to specific individuals versus "service tracking" claims that are bulk payments made on behalf of a group of enrollees. Bulk payments intended to cover the costs of birth, including Medicaid Disproportionate Share Hospital payments (made to cover hospitals' uncompensated care costs) and Upper Payment Limit lump-sum payments (made to clinical providers to compensate for low Medicaid reimbursement), cannot be counted in expenditure totals because they cannot be linked to individual enrollees. In sum, we cannot be certain that expenditure totals validly and consistently represent true

Medicaid spending, and variation in billing practices across regions, facilities and states warrants caution when interpreting combined averages.

4. Statistical Analysis

Participation analysis

The evaluation team calculated participation rates as the proportion of the full eligible population that enrolled in the MOM Model. The denominator includes all eligible individuals identified in the T-MSIS data, vital records or awardee-reported enrollment data, and the numerator includes those who enrolled in the MOM Model in 2021. The team conducted participation analyses and examined descriptive differences in characteristics and outcomes for the first implementation year of the MOM Model. The team conducted chi-square and Fisher's exact tests of difference when sufficient data were available to compare MOM Model enrollees with eligible individuals not enrolled in the MOM Model.

Data concordance

The evaluation team compared T-MSIS data with process data and vital records data to assess concordance (or agreement) of information on common variables across data sources. When comparing T-MSIS data with process mental health data, mental health variables do not reflect the same measures. In the process data, mental health data reflect screenings, whereas the T-MSIS data reflect diagnosed and often treated conditions. While we do not expect rates of positive screenings to perfectly match the rate of diagnoses in the claims, we compared prevalence rates to provide context across data sources.

For depression, the team considered data sources concordant if an individual had no depression diagnosis or treatment in T-MSIS data and screened negative in the process measure, or if they had a depression diagnosis or treatment in T-MSIS and screened positive in the process measure. For anxiety, we considered data sources concordant if an individual had no anxiety diagnosis or treatment in T-MSIS data and screened negative in the process measure, or if they had an anxiety diagnosis or treatment in T-MSIS and screened positive in the process measure (either mild, moderate or severe anxiety). We determined concordance on other measures if an individual's age group, race/ethnicity, tobacco use prior to birth (any versus none), prenatal care (any versus none), gestational age group at birth or physical health conditions were the same across data sources.

Evaluation challenges and limitations

The planned impacts analysis will consider awardees' impacts on all potentially eligible patients in their service areas. However, the smaller the proportion of eligible patients enrolled, the more difficult it is for an awardee to demonstrate an impact on outcomes such as prenatal care or NICU stays. The number of participating patients is low across MOM Model awardees. While some evaluations might compare outcomes of enrolled patients to those not enrolled, those who enroll likely have different motivations to enroll than those who do not and might be more likely to change their behavior. At the same time, while some awardees may achieve higher participation rates, if enrolled patients are not consistently engaged, it may still be difficult to demonstrate impacts.

Medicaid data availability also presents a challenge, limiting the evaluation's ability to present timely findings on potential program impacts or areas of promise. Final T-MSIS data lag by almost 2 years, meaning final 2022 data will not be ready until late 2024. Although preliminary files are available, only finalized T-MSIS data files include the necessary information to link data across years. Some T-MSIS data

may not be as accurate as process data or vital records data, making the use of numerous information sources necessary. For instance, for some states, the quality of race or ethnicity data in T-MSIS is very low, making an analysis of racial disparities impossible. Claims data limitations highlight the importance of collecting patient-level data from awardees to identify programs' progress as early as possible, collect data unavailable elsewhere and vet the quality of claims data elements.

The data used for the evaluation can offer benefits. Vital records data, for example, provide details not reliably available elsewhere, such as exact gestational age and birth weight. These data also help the evaluation team verify mother-infant pairs. T-MSIS data can also help the evaluation identify patient groups that might not be served by MOM awardees.

Impacts evaluation next steps

This report's participation analysis was limited because early MOM Model enrollment was low and the latest T-MSIS data available were from 2021. The next report will use 2021 and 2022 data and include information on a greater number of MOM and MOM-eligible patients. Additional data will provide a better picture of how MOM Model patients are similar to or different from eligible patients in MOM service areas. Any differences may help CMS better understand the type of reach awardees have had in their communities. We may find increased participation rates for awardees that increased the number of patients enrolled in 2022. Large increases in participation rates would improve the chances of finding program impacts. In the next evaluation report, we will also be better able to tie awardees' enrollment approaches to the participation rates.

The next report will include a preliminary impacts analysis for awardees with the largest number of enrolled individuals in 2021. We will conduct these analyses on a small number of outcome measures, recognizing they represent a preliminary look at program impacts.

The evaluation will also consider person-centered outcomes that matter to MOM Model patients, with an emphasis on outcomes most important to pregnant and postpartum individuals with OUD. Examples of outcomes we will monitor and assess include prenatal treatment for OUD, cesarean birth and smoking cessation treatment. For example, among about 750 MOM Model patients who have given birth, about 23.6% had a planned cesarean birth, and another 15% had an emergency cesarean birth. However, cesarean birth is often followed by treatment with medications that may not be appropriate for MOM patients. Given the challenges these patients face, understanding whether cesarean birth is the appropriate choice for this population is important.

Similarly, ongoing maternal tobacco use is well known to have negative outcomes for newborns. Across approximately 800 MOM Model patients for whom tobacco use interventions were discussed with a provider, only about 40% were referred to a tobacco cessation program, and about 21% received no intervention. Although not all patients who smoke cigarettes may require a cessation program, it still bears assessing whether patients are receiving the support they need.

Appendix C. Community Characteristics of MOM Model Awardees

Communities implementing MOM Models have varying levels of resources to address patients' social- and health-related needs. Table C.1 presents details on socioeconomic factors affecting communities within MOM Model states, derived from public health datasets, to provide context of community characteristics. Unless indicated, these data represent per capita characteristics for the specific service areas MOM Models cover in each state and are not limited to pregnant and parenting people with OUD in these service areas.

Wide variation is apparent among important community characteristics across MOM Model service areas, including mental health providers per 10,000 individuals, median household income and social deprivation index. Other community characteristics are relatively similar across MOM Model service areas, including percentage reporting **severe housing problems**, percentage with **no car and limited access to food stores** and number of **social service providers** for violence-related needs per 100,000 individuals.

Table C.1. Community Characteristics in MOM Model Communities

Community Characteristic	Statewide Models				Region-Specific/Substate Models			
	Indiana	Maine	West Virginia	Colorado	Maryland	New Hampshire	Tennessee	Texas
Mental health providers/10,000[a]	16.1	47.6	13.0	53.3	11.4	29.8	19.3	11.8
Median household income[b]	57,966	56,606	45,445	63,239	89,964	83,233	66,248	60,241
Percentage of children in single-parent households[c]	34.1	31.4	33.5	34.8	25.6	25.9	32.2	36.1
Social deprivation index[d]	44.0	25.6	42.8	73.6	9.0	9.8	47.0	82.0
Total social service providers: all categories/100,000[e]	122.1	196.4	127.9	205.7	100.3	170.9	126.2	88.6
Average months on waiting list for subsidized housing[f]	21.4	23.6	8.7	13.6	31.0	33.2	16.7	41.0
Percentage reporting severe housing problems[g]	13.2	15.0	11.4	18.8	11.8	14.5	14.5	20.1
Percentage with no car and limited access to food store[h]	2.3	2.8	4.3	1.3	3.8	1.9	1.6	0.9
Number of social service providers for violence-related needs/100,000[i]	0.0	0.3	0.2	0.4	0.0	0.2	0.3	0.0

Note: Community characteristic statistics for each state are weighted averages of county-level statistics and represent per capita characteristics unless otherwise indicated. For example, for statewide MOM 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% by definition. In Texas and Maryland, which have only one county in the MOM Model, this table presents data

for the participating county. 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] Ratio of the county population to the number of mental health providers Health Resources & Services Administration (2017)

[b] Income where half of households in a county earn more and half of households earn less (U.S. Census Bureau, 2014–2017)

[c] Percentage of children in family households where the household is headed by a single parent (U.S. Census Bureau, 2014–2017)

[d] 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 reliable transportation and housing and availability of support services for families with low incomes, including housing, car ownership and employment, with the index scale from 0 to 100, with higher numbers indicating greater deprivation (U.S. Census Bureau, 2014–2017)

[e] A measure of the number of social service providers in the county, adjusted for county size (U.S. Census Bureau, 2009–2011)

[f] Average months on waiting list for a housing subsidy using the "date entered waiting list" and the new admission date; excludes programs that do not report waiting list dates (Urban Institute, National Center for Charitable Statistics [NCCS core PC file], 2017)

[g] Percentage of households with at least one or more of the following housing problems: (1) housing unit lacks complete kitchen facilities; (2) housing unit lacks complete plumbing facilities; (3) household is severely overcrowded; or (4) household is severely cost burdened. Severe overcrowding is defined as more than 1.5 persons per room. Severe cost burden is defined as monthly housing costs (including utilities) that exceed 50% of monthly income (Office of Policy Development and Research, 2017)

[h] Percentage of housing units in a county without a car and more than 1 mile from a supermarket, supercenter or large grocery store (U.S. Department of Agriculture, Economic Research Service, 2021)

[i] A measure of the number of tax-exempt social service providers in the county (identified by the North American Industry Classification System code) that focus on health-related issues, adjusted for county population (Urban Institute, National Center for Charitable Statistics [NCCS core PC file], 2017)

Source: Insight Policy Research November 2022 analysis of the Community Characteristics Database compiled by Abt Associates for the CMS Innovation Center's Accountable Health Communities evaluation

Appendix D. Best Practices and Treatment Strategies

A growing body of literature documenting improvements in the quality and cost of perinatal and postpartum care for individuals with opioid use disorder (OUD) and opioid-exposed infants has resulted in a comprehensive continuum of best practices and treatment strategies to improve outcomes for the mother, infant and mother-infant dyad. These best practices and treatment strategies are described below.

Best-practice screening recommendations for perinatal care for individuals with OUD

- Standardized, voluntary screenings for maternal use of tobacco, alcohol and other drugs and history of substance use disorder (SUD) or SUD treatment, which "should be performed only with the patient's consent and in compliance with state laws"[15] (SAMHSA, 2018; Hudak & Tan, 2012; Wexelblatt et al., 2015; Association of State and Territorial Health Officials, 2014; ACOG & ASAM, 2017)
- Screenings for mental health disorders, including depression and anxiety (SAMHSA, 2018; NNEPQIN, 2018; Krans et al., 2015)
- Screenings for trauma or violence (SAMHSA, 2018)
- Screenings for infectious disease (NNEPQIN, 2018)
- Screenings for food and housing security and safe and supportive living environments (NNEPQIN, 2018; Krans et al., 2015)

Comprehensive care for pregnant and postpartum individuals with OUD

- Standardized SUD screening that is universal and voluntary (ACOG, 2017; ACOG & ASAM, 2017)
- Opioid agonist therapy for pregnant individuals (methadone and buprenorphine) (ACOG, 2017); opioid agonist therapy started as soon as treatment need is established (for example, before or during pregnancy) and continued through labor and birth, during postpartum care and beyond (SAMHSA, 2018; SAMHSA, 2016; NNEPQIN, 2018; Krans et al., 2015)
- Behavioral interventions for maximum support of long-term recovery (SAMHSA, 2018)
- Patient-centered, shared decision making, including the patient's fully informed consent related to any course of treatment, after review of the risks and benefits (SAMHSA, 2018)
- Ongoing care; referrals and linkages to supports and services (ACOG, 2017)
- More frequent visits for patients with OUD than the standard prenatal visit schedule (Johnson, 2019)
- No "opioid detoxification" or medically managed withdrawal for patients with OUD because there is lack of support in the clinical literature for these interventions (Terplan et al., 2018)

[15] Best practice guidelines recommend universal screening using validated screening tools for substance use as part of comprehensive obstetric care (ACOG & ASAM, 2017; U.S. Preventive Services Task Force, 2020). Yet although universal screening for substance use during prenatal care can increase the receipt of treatment, persistent racial disparities in reporting substance-exposed newborns to child protective services suggest the need for a more holistic approach to screening (Roberts & Nuru-Jeter, 2012).

- Obstetric care for individuals with OUD that includes recommended national obstetric care "safety bundles," such as recommendation for prevention of primary cesarean birth (Main & Markow, 2018)
- Training of clinical staff in screening, assessment and treatment of OUD and other substance use disorders in pregnant and parenting patients, developing procedures for sharing of testing results and treatment compliance, educating staff on patient-centered and flexible care for patients in treatment and educating staff about state reporting of positive test results, on best practices for NOWS care (SAMHSA, 2018)

Best practices for hospital management of pregnant women with OUD and their infants

- Protocols that cover screening for maternal substance use, substance use disorder and treatment initiation, including immediately initiating opioid agonist therapy as needed (ACOG & ASAM, 2017)
- Special considerations for pain management during labor, delivery and postpartum periods for patients with OUD (Klaman et al., 2017)
- Consideration of the pain management needs of individuals undergoing methadone or buprenorphine treatment. These individuals have been found to experience more pain after vaginal and cesarean delivery and may require higher levels of opioid analgesia after cesarean delivery than individuals not in methadone or buprenorphine treatment (Reddy et al., 2017)
- For pain management of women with OUD after cesarean delivery, early epidural and spinal epidural or combined spinal-epidural for intrapartum pain management and patient-controlled analgesia for postoperative pain management after cesarean (Reddy et al., 2017); the analgesic needs of women on methadone or buprenorphine treatment may increase by 40 to 70% after cesarean delivery, and recommended postpartum pain management typically includes continuation of methadone or buprenorphine treatment with additional therapies to treat acute birth-related pain (Krans et al. 2019)
- Breastfeeding support, including the provision of resources on safe breastfeeding practices for mothers with a history of substance use other than MAT and coaching on bonding with and consoling the infant (Grossman et al., 2017; National Institutes of Health, 2020)
- Contraceptive counseling (Hudak & Tan, 2012) and services, particularly the option to receive a long-acting reversible contraceptive before discharge from the hospital (SAMHSA, 2018; NNEPQIN, 2018; Terplan et al., 2015)
- Naloxone education and prescription on discharge (to reverse opioid overdose) (ACOG & ASAM, 2017)

Best hospital management practices for opioid-exposed newborns

- Training of clinical staff, including nurses, for screening and assessment of NOWS (McQueen and Murphy-Oikonen, 2016; Timpson et al., 2018) and education on best practices for NOWS care (Patrick et al., 2020)
- Written protocols for hospital care of infants with NOWS to facilitate decreased use of pharmacologic treatment and decreased length of birth hospitalizations (Hall et al., 2015; Friedman et al., 2018)

- Infant physiologic measures (for example, Eat Sleep Console or other measures as potential replacement for Finnegan assessment) to assess NOWS have been developed and are being tested as potential replacements or supplements to the traditional assessment (the Finnegan scoring) (Wachman et al., 2018) and have been associated with reductions in length of hospital stay (Grossman et al., 2018)
- Maternal-infant dyad bonding interventions such as breastfeeding (Pritham et al., 2012; Short et al., 2016), "rooming-in" (keeping the mother and infant together during the birth hospitalization) (MacMillan et al., 2018) and decreased use of NICU (Lembeck et al., 2019) to reduce lengths of hospital stay or cost (Grossman et al., 2017; Holmes et al., 2016)
- Caregiver training on care for infants with NOWS, including soothing techniques such as swaddling, holding the infant "skin to skin," and rocking (Mohamed, 2018)
- Recommendations to improve outcomes among infants with NOWS through improvements to treatment access, antenatal counseling and screening, and observation, diagnosis, treatment and discharge strategies (Patrick et al., 2020)

Best practices in models of care for the treatment of pregnant women with OUD

These best practices include practice and policy considerations outlined in SAMHSA's guidance for a collaborative model (SAMHSA, 2016).

- Clinical and nonclinical staff education on SUD including OUD is recommended, emphasizing that these are chronic medical conditions that can be treated; training on stigma, bias and discrimination that negatively impact pregnant women with OUD and their care and training in provision of trauma-informed care is also recommended (ACOG, 2017b; SAMHSA, 2018)
- Team collaboration among medical care providers and other social service providers (SAMHSA, 2016)
- Development of a collaborative team and structure with a shared understanding of baseline resources, gaps, barriers and priority areas of action (SAMHSA, 2016)
- Key stakeholder engagement; establishment of workgroups that identify organizations' roles and contributions to the care model and assessment of who is missing from the workgroups; definition of shared model goals (SAMHSA, 2016)
- Identification of workplans, action steps and strategies, including plans to measure and monitor outcomes (SAMHSA, 2016)

Appendix E. Part 1

Process Evaluation Data Submitted Through June 30, 2023

Each quarter, MOM Model awardees submit self-reported and provider-collected data on all MOM Model patients. These data supplement administrative data collected through Medicaid claims and vital records, filling in gaps with patient information not available elsewhere and serving as a check on administrative data quality and consistency.

The data presented here represent patient-level process evaluation data submitted by eight MOM Model awardees during the first 2 years of implementation. Data reflect the period from July 1, 2021, through June 30, 2023. Tables include data for Maryland only through December 2022—when the state withdrew from the MOM Model. Data from Colorado and West Virginia are limited because implementation in those states was delayed.

This appendix describes the characteristics of patients enrolled in the program and highlights the services they received.

These data are detailed but also limited in depth and scope by the amount and quality of the data the evaluation team has received. Although the data MOM Model awardees are required to submit to meet the MOM Model milestones are mostly complete, awardees continue to encounter challenges with data collection efforts. As a result, some measures have high rates of missing data, including anxiety screening data, which are missing for 24.9% of patients, and data on postpartum contraceptive method, which are missing for more than 30.5% of patients who have an end-of-pregnancy date. In general, however, awardees have improved the quality and completeness of submitted data over time.

The data in this report include aggregated data across the eight reporting awardees (Colorado, *n* = 8; Indiana, *n* = 543; Maine, *n* = 164; Maryland, *n* = 6; New Hampshire, *n* = 65; Tennessee, *n* = 249; Texas, *n* = 50; West Virginia, *n* = 88). We have suppressed all cells with fewer than 11 entries. Because data volume and quality improve in subsequent quarters of implementation, future reports will include more detailed descriptions and analyses.

Percentages reported in the text of this report include patients with nonmissing data for a given measure, and footnotes for each table or figure provide details about the universe and quality of the data presented. We report full information, including missing rates for each element, in the tables.

A. Summary of MOM Model Process Data for Patients Enrolled Through June 2023

Enrollment

As of June 30, 2023, 1,173 patients had been enrolled in the MOM program, nearly a 100% increase from 1 year prior.

More patients are enrolling during their pregnancy; as of June 30, 2023, fewer than one-quarter of enrollees (22.5%) had entered the MOM program postpartum.

Demographics

Most MOM Model patients (82.1%) self-identify as non-Hispanic White, 10.3% identify as Hispanic, and 5.7% identify as non-Hispanic Black.

Most patients (69.7%) are aged 25 to 34.

Most patients (76.2%) report being in a relationship (including being married, living with a partner, or being in a relationship but not living together).

Prenatal Health and Risk Factors

Most patients enrolled in MOM (77.2%) reported having previously given birth—a slightly higher rate of multiparity than Medicaid-covered births nationally (MACPAC, 2020).

One-quarter of patients with a prior birth had experienced delivering a premature infant (24.9%)—much higher than the rate of prior preterm birth among Medicaid-covered births nationally (6.0%) (MACPAC, 2020).

Rates of preeclampsia and pregnancy-induced hypertension among MOM patients during their current pregnancy were 5.7% among those with an end-of-pregnancy date, consistent with other reported Medicaid-covered patients (Marschner et. al, 2022).

Most (72.8%) MOM Model patients reported having had health coverage prior to becoming pregnant; many (70.1%) were covered by Medicaid. Awardee states that have not expanded Medicaid under the Affordable Care Act account for most patients who were uninsured prior to pregnancy.

Mental and Behavioral Health

Most patients (74.4%) were receiving opioid use disorder (OUD) treatment during their current pregnancy before enrolling in the MOM Model.

Buprenorphine is the dominant pharmacotherapy treatment MOM patients receive (78.9%); 18.9% of patients are receiving methadone treatment.

Nearly three-quarters (74.5%) of MOM patients screened positive for tobacco use at enrollment into the MOM Model.

A small proportion (4.0% of MOM patients who received multiple tobacco screenings had both a negative and positive result. The average number of cigarettes smoked by those who screened positive hovers around 11 per day.

Most tobacco users received brief counseling (75%), and 38% were referred to tobacco cessation programs.

A substantial share of MOM patients reported polysubstance use in the last year; 37.8% reported having used cannabis, and 27.8% reported having used amphetamines.

Social Determinants of Health

More than half (58.9%) of MOM Model patients reported experiencing at least one health related social need (HRSN) among the six domains considered: food security, transportation, housing, family/community support, safety, and utilities.

The most commonly reported needs include transportation (32.2%), food (31.5%) and housing (29.5%)—highlighting the need for supports beyond medical care for this population.

When comparing HRSNs and related referrals, 29.2% of patients who screened positive for a transportation need were referred to a transportation-related service, 32.6% of patients who screened positive for a food need were referred to a food-related service, and 47.3% of patients who screened positive for a housing need were referred to a housing-related service.

Encounters

The median number of prenatal care encounters documented for MOM Model patients overall is 5, with wide variation across patients ranging from a minimum of 1 prenatal care encounter to a maximum of 96 prenatal care encounters. When limited to patients who enrolled prenatally, the median increases to six prenatal care visits. This number is higher for patients who enrolled prior to their third trimester (eight visits) than for those who enrolled any time in their third trimester (four visits).

Information on postpartum encounters is missing for 40.6% of patients who are at least 6 weeks postpartum. Among those with nonmissing data, the median number of postpartum encounters is two.

MOM Model patients received a median of 11 OUD encounters. This rate increases for those who enrolled earlier in their pregnancies—nearly doubling (with a median of 20 encounters) for those who enrolled prior to their third trimester.

Maternal and Infant Outcomes

Nearly all MOM Model patients whose pregnancies ended prior to June 2023 had a live birth (96.1%); the rate of live birth is even higher (99.0%) for those who enrolled prior to their third trimester.

Only 12.4% of MOM Model patients with a live birth had a hospital length of stay that was 5 days or longer; this rate is slightly lower for those who enrolled prior to their third trimester (11.9%).

Many (38.6%) MOM Model patients had a C-section. This rate, which is higher than the national rate for C-section deliveries (Martin, Hamilton, & Osterman, 2022), is similar when measured only among patients who enrolled earlier in their pregnancy.

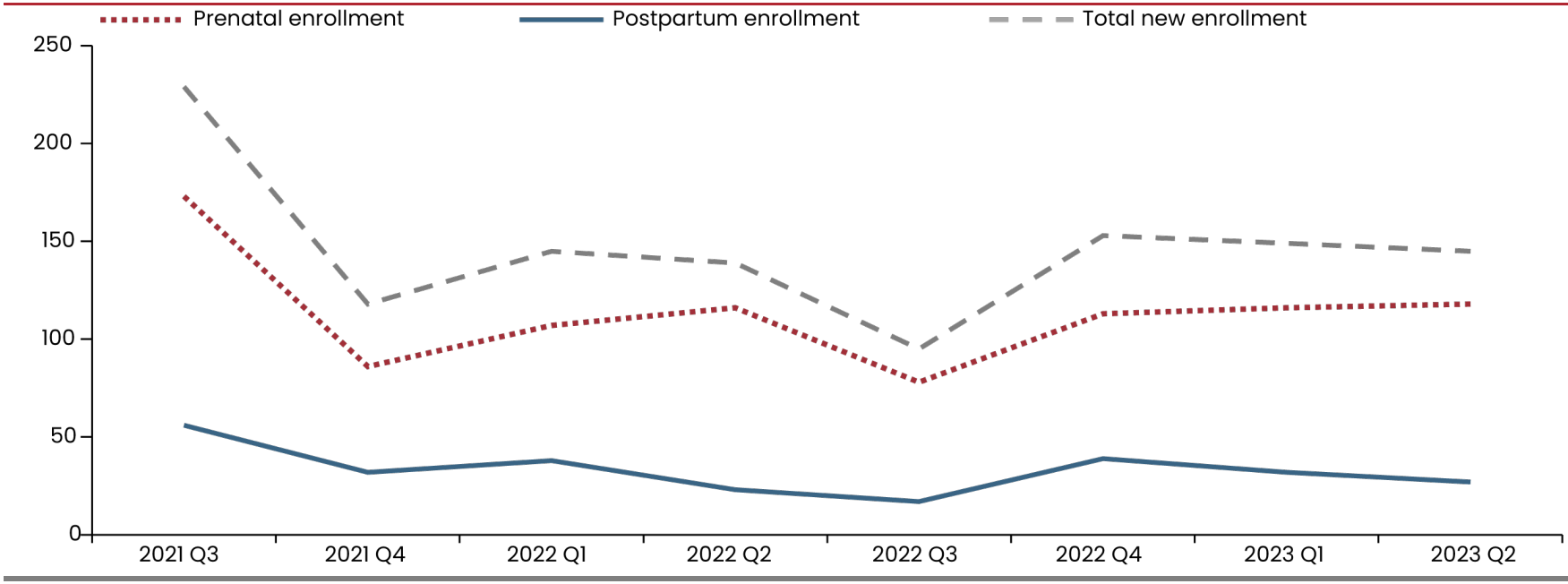
Just over a third (34.9%) of infants were admitted to the NICU (29.2% of those born to mothers who enrolled earlier in pregnancy), and more than half of all infants delivered by MOM Model patients spent 5 or more days in the hospital (47.8% of those whose mothers enrolled earlier in pregnancy).

Among patients with a prior birth, 20% of MOM Model patients who previously had their child placed out of the home had an out-of-home placement with their MOM Model birth compared with 8.2% of patients with a prior birth who had no prior experience with an out-of-home placement.

B. Analysis of Patient-Level Process Data

Two years into implementation (July 2021 through June 2023), MOM Model awardees enrolled 1,173 patients (Figure E-1). Of those, 77.5% were pregnant at the time of their enrollment. Cumulative enrollment in the MOM Model during this reporting period continues to be lower than all awardees projected in their applications. It remains unclear whether this difference relates primarily to awardees overestimating the potential population or challenges with outreach and enrollment.

Figure E.1. Enrollment of MOM Model Awardees by Quarter



Q = quarter

MOM Model patients enter the model with a diversity of mental, behavioral, and physical health histories that shape their needs and influence their outcomes. In this appendix, we highlight select MOM Model patient characteristics and early outcomes emerging in the data. Complete tables of all the data elements being collected on MOM Model patients are also included for reference.

Physical, Mental, and Behavioral Health Context Among MOM Model Patients

More than three-quarters (77.2%) of patients enrolled in the MOM Model reporting having had a prior birth. Though we do not know if they had opioid use disorder during their previous pregnancies, we do have information that many experienced adverse maternal and infant outcomes. About one-quarter of MOM Model patients with a prior birth had a premature infant (24.9%), nearly 5% experienced stillbirth (4.9%), and 9.5% experienced preeclampsia or pregnancy-induced hypertension. The reported incidence of these events is considerably higher than is found in the literature on pregnant women, including when limited to Medicaid-covered patients (Marschner et. al, 2022). This observation is meaningful because it indicates that many patients enrolling in the MOM Model have preexisting maternal care experiences that put them at greater risk for reoccurrence of adverse health conditions and birth outcomes (Yang et al., 2017).

Chronic health conditions such as diabetes and hypertension can also complicate pregnancy. Among all MOM Model patients, 2.0% reported having diabetes that is not pregnancy-related, and 7.4 reported having hypertension. Fewer than 1% have a body mass index greater than 40 (0.77%), and about 16% report an unspecified chronic condition. Three-quarters of MOM Model patients either have no chronic condition or are missing from these data. Few chronic health conditions are expected given the age of the population enrolled in the MOM Model.

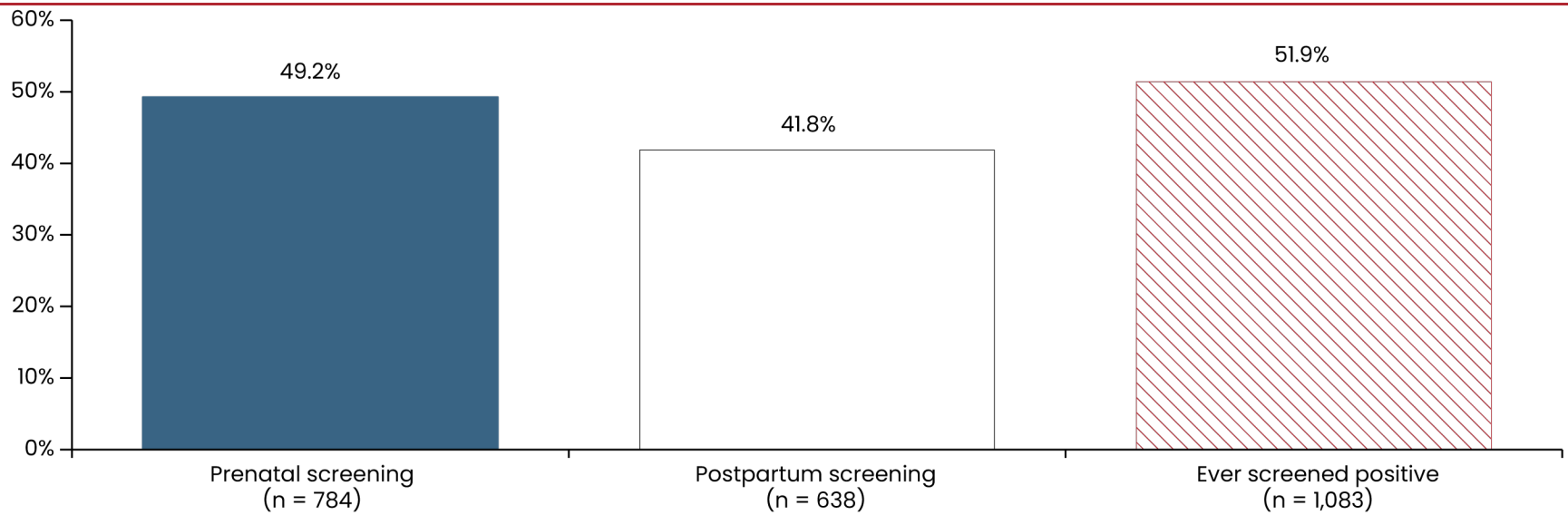
Many patients reported having health coverage prior to becoming pregnant most recently (72.8%). This finding suggests that many had at least some access to health care prior to enrolling in the model, though coverage does not always lead to access and utilization.

Mental health

Many MOM Model patients struggle with their mental health. Nearly all MOM Model patients (92.3%) were screened at least once for depression during their enrollment (Appendix E Part 2, Table 3b). Among those, just over half (51.9%) screened positive at any point during their MOM Model enrollment. Among those who had multiple screenings, we observe variation in the results. The rate of patients who screened only positive is 29.0%, 47.8% consistently screened negative for depression, and 23.1% had both a negative and a positive screen during their enrollment.

Though we have not yet calculated the direction of changes in depression screening results (that is, did a patient go from screening positive to negative or vice versa), we can observe changes over time. When we look at the timing of screening (Figure E.2), we observe that positive screens are more common during the prenatal period (49.2% of the 784 patients who were screened prenatally) than during the postpartum period (41.8% of the 638 who were screened postpartum). These data, however, should be interpreted with caution because patients who enrolled postpartum may be systematically different from those who enrolled prenatally, and others may not be included in the postpartum period estimates if they recently delivered and have not yet had the chance to be screened postpartum. The data may indicate improvement in depression over time, a hypothesis we will be able to test with additional data to track changes in depression screening results over time at the individual level.

Figure E.2. Rate of Positive Depression Screen Among MOM Patients



Note: Positive ratios are presented among patients who received approved screenings for depression.

Nearly four of five MOM Model patients (79.9%) who ever screened positive for depression received a follow-up intervention at least once. The most common interventions received were a referral to a practitioner qualified to diagnose and treat depression (received by 41.7% of patients with a positive depression screen) and an additional evaluation for depression (received by 39.1% of patients with a positive depression screen). Patients with positive depression screens may have received more than one intervention and may have received interventions at more than one point in time.

Data on anxiety screening are less complete; 75.1% of MOM Model patients were screened for anxiety, but among those who were screened, rates of anxiety are similarly high. Of MOM Model patients, 48.0% screened positive for moderate or severe anxiety. We also observe a pattern similar to that observed for depression screening: Prenatal screenings were more likely to yield a result in moderate to severe anxiety (49.7%) compared with screenings completed postpartum (39.4%). These rates could reflect patterns concerning which patients are included in the data at different points in time. The rates could also result from patients having received services that have improved their anxiety, or the data could simply indicate pregnancy is a more anxious time for patients, and anxiety dissipates postpartum.

Substance use and treatment

Polysubstance use is common among MOM Model patients. A total of 91.8% of MOM patients reported polysubstance use in the last year, including 37.8% who reported having used cannabis, 27.8% who reported having used amphetamines, and 11.9% who reported having used benzodiazepines.

Consistent with case study findings, we observe that nearly three-quarters of MOM patients are using tobacco products. At the time of enrollment, 74.5% screened positive for tobacco use. About 4% of those who received multiple tobacco screenings had both a negative and a positive result, and postpartum positive tobacco screening rates are 71.0%. This suggests that tobacco use remains fairly constant during MOM Model enrollment, with only a small number of smokers quitting despite provider efforts to intervene. Many tobacco users received brief counseling (70.9%), and 39.9% were referred to tobacco cessation programs.

The average number of cigarettes smoked by MOM patients who screened positive hovers around 11 per day, with 10 as the median number of cigarettes smoked and a wide range stretching from a maximum of 90 cigarettes per day to 1 cigarette per day. These numbers are consistent when we look separately at the prenatal and postpartum periods, suggesting that patients are not changing their smoking behaviors after delivery.

Most patients (74.4%) report receiving OUD treatment during their current pregnancy before enrolling in the MOM Model, but we do not have detail on what that treatment entailed. We do know that just over half either newly began pharmacotherapy treatment when they enrolled in MOM or were already in treatment at the time of enrollment (53.6%). About one-quarter (24.0%) are not receiving pharmacotherapy. The reason could be that they are not interested in pharmacotherapy, their provider does not offer it, or they are in long-term recovery and no longer need pharmacotherapeutic support. More than half of patients who enrolled postpartum (57.5%), for instance, initiated pharmacotherapy either prior to or at model enrollment, which could mean they were already receiving pharmacotherapy during their pregnancy outside the MOM Model.

Among those who are receiving pharmacotherapy, buprenorphine remains the dominant treatment being provided to MOM patients (78.9%); 18.8% are receiving methadone, and a small share report receiving naltrexone or other types of pharmacotherapy.

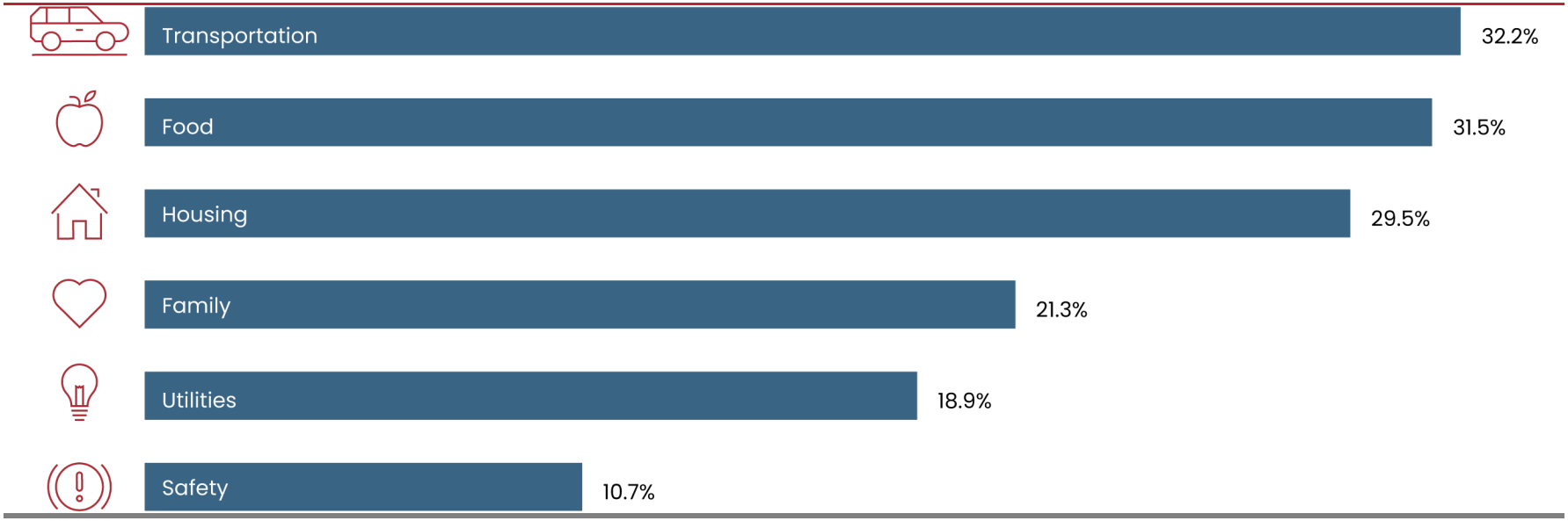
Material hardship and social needs

More than half (58.9%) of MOM Model patients reported experiencing at least one HRSN. The most commonly reported needs include transportation (32.2%), food (31.5%), and housing (29.5%), highlighting the need for supports beyond medical care for this population (Figure E.3).

MOM Model awardees are addressing these needs with referrals to community-based services and connections to supports offered within their program. When comparing HRSN needs and related referrals, however, we observe possible inconsistencies. For instance, 29.2% of patients who screened positive for a transportation need were referred to a transportation-related service. For food needs, the referral rate was slightly higher at 32.6%. For housing needs, the referral rate climbed to 47.3%. While we might hope that everyone with a need receives a referral to an associated

service, the availability of community supports may not be adequate to meet that need. Additionally, these data may not fully capture the MOM Model social supports that are provided without a documented referral.

Figure E.3. Health-Related Social Needs Screening Results (Number Screened Varies by Area of Need)



Note: Food, *n* = 1066; transportation, *n* = 1058; utilities, *n* = 1050; housing, *n* = 1058; family, *n* = 1042; safety, *n* = 1059. "Family" refers to family and community support.

C. Service Use Among MOM Patients

MOM Model awardees are able to support their patients through prenatal, postpartum, and OUD encounters. An explicit model goal is also to coordinate care for patients, removing some of the siloes between these service providers.

MOM Model awardees are employing different approaches to their encounter data reporting, but, overall, patients who enrolled prenatally are receiving a wide range of prenatal care encounters, with a minimum of 1 prenatal care encounter and a maximum of 96 prenatal care encounters. The median number of prenatal care encounters documented for MOM Model patients is six. The number of prenatal care encounters is higher for those who enrolled prior to their third trimester (eight) than for those who enrolled any time in their third trimester (four). Postpartum encounter data are missing for 40% of patients, but among those with nonmissing data who are at least 6 weeks postpartum, a median of two postpartum encounters was reported.

Most patients saw a physician at least once during their prenatal care (92.4%). A small share (11.2%) had at least one prenatal care visit with a midwife.

MOM Model patients received more OUD encounters than prenatal encounters, with a median of 11 OUD encounters overall. This number increases for those who enrolled earlier in their pregnancies, nearly doubling (with a median of 20 encounters) for those who enrolled prior to their third trimester.

Nearly all patients received some form of care coordination, with 1.0% of MOM Model patients having no documented care coordination activities. Care coordination activities most commonly included "assessing patient needs and goals," with nearly all patients receiving that service at some point during their MOM Model enrollment. Discussions of self-management goals were also common (94.1% of patients received this level of care coordination), as was consultation with other providers involved in patients' care. Most of these activities likely took place during routine prenatal or OUD care because only 16.0% of MOM Model patients met with a care coordination specialist.

D. Maternal and Infant Outcomes

Maternal and infant outcomes associated with the MOM Model are most relevant to patients who enrolled during pregnancy, ideally prior to the third trimester of pregnancy. As noted earlier in the Enrollment section, while about three-quarters of patients had enrolled during pregnancy, a sizable share (24.6%) had enrolled during their third trimester or at delivery.

Nearly all MOM Model patients who have an end-of-pregnancy date had a live birth (96.1%); the rate of live birth is even higher (99.0%) for those who enrolled prior to their third trimester. A large share of deliveries (40%) were by C-section. This rate is higher than the national rates for C-section delivery, which was 32.2% in 2022 (Hamilton et al., 2023). Longer hospital stays are sometimes indicated for individuals who have a C-section. Though 55.8% of patients are missing in the data on maternal length of stay in the hospital, the patterns among those with nonmissing data are consistent with what might be expected: Seventy-five percent of patients had stays of 3 days or fewer. The remaining one-quarter of patients were in the hospital for 4 or more days after giving birth.

Just over a third (34.9%) of infants were admitted to the NICU; a smaller share of infants born to mothers who enrolled earlier in pregnancy (29.2%) were admitted to the NICU. Though about one-third of infants were admitted to the NICU, nearly half of all infants delivered by MOM Model patients spent 5 or more days in the hospital (47.8% of those whose mothers enrolled earlier in pregnancy).

A key outcome of interest for the MOM Model is family preservation. We observe at this point in implementation that patients with a history of out-of-home placement are less likely to have their infants removed after their MOM Model pregnancy. Specifically, 20% of patients who previously had their child placed out of the home had a subsequent out-of-home placement with their MOM Model infant. This rate is still higher than those with no prior out-of-home placement (8.2% of patients).

E. Conclusion

As these data become more complete and we are able to look at patients with more experience in the program (enrolled prior to their third trimester), we can begin telling a more nuanced story of who is enrolling in the MOM program, the services patients are receiving, and patients' associated outcomes. With increased time, additional associations can be made between MOM Model participation and outcomes for the enrolled patients and the infants they deliver.

Appendix E. Part 2

MOM Model Evaluation Patient-Level Process Data
July 1, 2021–June 30, 2023

This document presents a full set of tables based on the patient-level process evaluation data submitted by eight MOM Model awardees (Colorado, *n* = 8; Indiana, *n* = 543; Maine, *n* = 164; Maryland, *n* = 6; New Hampshire, *n* = 65; Tennessee, *n* = 249; Texas, *n* = 50; West Virginia, *n* = 88) during the first 2 years of implementation. Data reflect the period from July 1, 2021, through June 30, 2023, with the exceptions of awardees in Maryland, which submitted data through December 2022 before withdrawing from the MOM Model; West Virginia, which collected data from January 1, 2022 through March 1, 2023, because of a 6-month delay in MOM Model implementation and data limitations during the second quarter of 2023; and Colorado, which began enrolling patients in its MOM Model in September 2022.

We report percentages among patients with nonmissing data for a given measure and the rate of missing data for each measure. Table titles and notes provide details about the universe we used to calculate these descriptive findings and other methodological decisions that may be relevant for interpretation. Awardees may add to and revise data for 1 year following initial submission; therefore, while these tables represent data submitted through June 30, 2023, they are subject to change. We have suppressed all cells that represent data for fewer than 11 patients.

Table E.1. MOM Model Patient Enrollment

Table 1a. Total MOM Model Enrollment

Data Elements	Total
Cumulative count by awardee	1173

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.1b. Timing of MOM Model Enrollment

Data Elements	Total (All Awardees)
Data type	**%** (#)
Missing data	–
Patients with nonmissing data	100.0 (1173)
3rd trimester or at delivery	24.6 (289)
Before 3rd trimester	25.9 (304)
Postpartum	22.5 (264)
Pregnancy ongoing or pregnancy stage at enrollment unknown	26.9 (316)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2. Demographics of MOM Model Patients

Table E.2a. Patient's Age

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
Younger than 18	
18–19	
20–24	11.1 (130)
25–29	32.7 (384)
30–34	37.0 (434)
Older than 35	18.2 (214)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2b. Patient's Self-Identified Gender

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
Female	99.8 (1171)
Male	
Other or nonbinary	

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2c. Patient's Self-Identified Race and Ethnicity

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
Hispanic	10.2 (120)
Non-Hispanic Black or African American	5.7 (67)
Non-Hispanic White	82.1 (963)
Non-Hispanic Other or Multiple Races	1.4 (16)
Unspecified	

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2d. Patient's Self-Identified Detailed Race

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
White	89.3 (1047)
Black or African American	6.6 (77)
American Indian or Alaska Native	
Asian	
Native Pacific Islander	
Multiple Races	1.3 (15)
Unspecified	2.6 (31)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2e. Patient's Self-Identified Detailed Ethnicity

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
Not of Latino/a or Spanish origin	88.9 (1043)
Mexican, Mexican American, Chicano/a	
Puerto Rican	
Cuban	0.0 (0)
Another Latino/a or Spanish origin	1.2 (14)
Other, Unknown, or Multiple Hispanic ethnicities	8.6 (101)
Ethnicity unspecified	

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2f. Patient's Relationship Status

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.2 (108)
Patients with nonmissing data	90.8 (1065)
Married, living with spouse	13.4 (143)
Married, not living with spouse	2.4 (26)
Living with a partner	40.1 (427)
In a relationship, not living together	20.2 (215)
Not in a relationship right now	23.8 (254)

Note: This item does not include a "none of the above" response.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2g. Patient's Educational Attainment

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	13.6 (160)
Patients with nonmissing data	86.4 (1013)
High school diploma or GED	77.5 (785)
No high school diploma or GED	22.5 (228)

Note: This item does not include a "none of the above" response. Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.2h. Patient Health Insurance Before Pregnancy

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	2.6 (30)
Patients with nonmissing data	97.4 (1143)
Medicaid	70.1 (801)
Private insurance	2.2 (25)
Other insurance	
Uninsured	8.4 (96)
Unknown	18.8 (215)

Note: This item does not include a "none of the above" response.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.3. Mental Health of MOM Patients

Table E.3a. Other Mental or Behavioral Health Diagnoses

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data[a]	20.2 (237)
Patients with nonmissing data	79.8 (936)
Anxiety- and fear-related disorders	67.8 (635)
Bipolar and related disorders	22.3 (209)
Depressive disorders	62.7 (587)
Personality disorders	6.3 (59)
Schizophrenia spectrum and other psychotic disorders	3.8 (36)
Trauma- and stress-related disorders	31.4 (294)
Other mood disorders	17.8 (167)
Other mental and behavioral disorders/conditions	24.3 (227)
Alcohol-related disorders	8.3 (78)
Tobacco-related disorders	41.1 (385)
Other substance-related disorders	52.5 (491)

[a] This question has no "none of the above" response option; missing data may represent either no other behavioral health diagnoses or item nonresponse.
Patients can report more than one other mental or behavioral health diagnosis.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.3b. Depression Screening Result

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	7.7 (90)
Patients with nonmissing data	92.3 (1083)
Positive[a]	51.9 (562)
Exclusion/patient refused	1.0 (11)
Negative	47.1 (510)

Note: This data element is linked to a performance milestone measure.
[a] Some patients had multiple depression screen results reported. If a patient ever screened positive for depression, they are represented here, with priority given to any positive screen result over the other response options.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.3c. Depression Screen Follow-Up Plan Among Patients with a Positive Depression Screening

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (611)
Missing data	0.9 (5)
Patients with nonmissing data	99.1 (557)
Additional evaluation for depression	39.1 (218)
Suicide risk assessment	13.1 (73)
Referral to a practitioner who is qualified to diagnose and treat depression	41.7 (232)
Pharmacological interventions	17.8 (99)
Other interventions or follow-up for the diagnosis or treatment of depression	34.8 (194)
No follow-up plan at this time[a]	20.1 (112)

Note: This data element is linked to a performance milestone measure. N=557
Patients can receive more than one follow-up plan at a single encounter and patients may have received different follow-up plans (or no follow-up plan) at each encounter. These tables reflect the receipt of each listed follow-up plan at least one time during the reporting period.
[a] If "no follow-up plan at this time" was the only response ever reported for a patient (the patient never received a depression follow-up plan), that is indicated here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.3d. Anxiety Screening Result

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	24.9 (292)
Patients with nonmissing data	75.1 (881)
No anxiety	16.7 (147)
Mild anxiety	28.5 (251)
Moderate anxiety	26.2 (231)
Severe anxiety	21.8 (192)
Unknown	6.8 (60)

Note: Patients may receive multiple anxiety screening results. This table displays the most severe result for each awardee.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.3e. Patient History of Abuse and Transactional Sex

Data Elements	Total (All Awardees)
Data type	**% (*N*)**
Missing data	15.9 (186)
Patients with nonmissing data	84.1 (987)
Sexual abuse	29.3 (289)
Physical abuse	47.9 (473)
Emotional abuse	46.6 (460)
Transactional sex	5.1 (50)
None of the above	39.3 (388)

Note: Patients can report more than one type of abuse or transactional sex.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.4. Physical Health of MOM Model Patients

Table E.4a. Chronic Conditions

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data[a]	75.5 (886)
Patients with nonmissing data	24.5 (287)
Diabetes	8.4 (24)
Hypertension	30.3 (87)
Heart disease	4.5 (13)
Class 3 obesity (BMI > 40)	
Other	67.2 (193)

BMI = body mass index

[a] This question has no "none of the above" response option; missing data may represent either no chronic conditions or item nonresponse. Patients can report more than one chronic condition. Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.4b. HIV Indicator

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	39.5 (463)
Patients with nonmissing data	60.5 (710)
Positive	
Negative	84.1 (597)
Patient declined	0.0 (0)
Not assessed	15.1 (107)

HIV = human immunodeficiency virus

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.4c. Hepatitis C Indicator

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	38.3 (449)
Patients with nonmissing data	61.7 (724)
Positive	37.3 (270)
Negative	50.8 (368)
Patient declined	
Not assessed	11.3 (82)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5. Substance Use Among MOM Model Patients

Table E.5a. Tobacco Screening Result

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.0 (105)
Patients with nonmissing data	91.0 (1068)
Positive	74.5 (796)
Negative	25.0 (267)
Exclusion criteria met[a]	

[a] Patients who declined to be screened for tobacco use or were not screened because of medical reasons meet exclusion criteria.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5b. Tobacco Intervention Among Patients with a Positive Tobacco Screen

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (377)
Missing data	–
Patients with nonmissing data	100.0 (796)
Brief counseling provided	70.9 (564)
Medication offered and refused	11.6 (92)
Medication offered and accepted	8.4 (67)
Referred to tobacco cessation program	39.9 (318)
Other intervention provided	4.9 (39)
No intervention provided during this visit[a]	21.1 (168)

Note: Patients can receive more than one intervention at a single encounter and patients may have received different interventions (or no intervention) at each encounter. These tables reflect the receipt of each listed intervention at least one time during the reporting period.
[a] If "no intervention provided during this visit" was the only response ever reported for a patient (the patient never received a tobacco intervention), that is indicated here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5c. Average Number of Cigarettes Smoked per Day Among Tobacco Users Who Smoke Cigarettes

Data Elements	Total (All Awardees)
Patients with nonmissing data[a]	574
Mean	11.0
Median	10
Minimum	1
Maximum	90

[a] Among tobacco users who smoke cigarettes and reported at least one cigarette count; if multiple cigarette counts were reported for a patient, the single largest or smallest value was used to determine the maximum and minimum statistic and an average value was computed for each patient's contribution to the mean and median statistics.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5d. Alcohol Use

Data Elements	Total (All Awardees)
Data type	% (#)
Missing data	24.6 (288)
Patients with nonmissing data	75.4 (885)
14 drinks or more a week	
8–13 drinks per week	
4–7 drinks per week	
1–3 drinks per week	
Less than 1 drink per week	1.8 (16)
I didn't drink in the last month	92.9 (822)
Did not answer/unknown	3.4 (30)

Note: One patient may give multiple responses on separate screenings. This table displays the highest consumption value for each patient.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5e. Substance Use in Past Year

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	13.3 (156)
Patients with nonmissing data	86.7 (1017)
Alcohol	16.5 (168)
Cigarettes/other tobacco	73.9 (752)
Vaping/electronic nicotine delivery system	21.3 (217)
Cannabis	37.8 (384)
Amphetamines	27.8 (283)
Benzodiazepine	11.9 (121)
None	8.2 (83)

Note: Patients can report more than one type of substance use in the past year.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.5f. Substance Use Before Age 18

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	18.1 (212)
Patients with nonmissing data	81.9 (961)
Alcohol	53.3 (512)
Cigarettes/other tobacco	66.4 (638)
Vaping/electronic nicotine delivery system	8.6 (83)
Cannabis	61.7 (593)
Opioids	50.4 (484)
Amphetamines	22.5 (216)
Benzodiazepine	13.6 (131)
None	12.9 (124)

Note: Patients can report more than one type of substance use before the age of 18.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6. Social Determinants of Health Among MOM Model Patients

Table E.6a. HRSN Screening Result

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	8.8 (103)
Patients with nonmissing data	91.2 (1070)
Positive[a]	58.9 (630)
Negative	41.1 (440)

Note: Social determinants of health are measured with a screening tool that considers up to six health-related social needs (HRSNs): food, transportation, utilities, safety, housing, family support).
Note: This data element is linked to a performance milestone measure.
[a] This measure indicates screening positive for any of the six dimensions of health-related social needs. Positive screens are indexed at the patient level, so patients with any number of positive screens are only counted once.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6b. HRSN Food Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.1 (107)
Patients with nonmissing data	90.9 (1066)
Positive	31.5 (336)
Negative	68.5 (730)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported a need for food.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6c. HRSN Transportation Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.8 (115)
Patients with nonmissing data	90.2 (1058)
Positive	32.2 (341)
Negative	67.8 (717)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported a need for transportation.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6d. HRSN Utilities Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	10.5 (123)
Patients with nonmissing data	89.5 (1050)
Positive	18.9 (198)
Negative	81.1 (852)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported a need for utilities (e.g., electricity, water).
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6e. HRSN Safety Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.7 (114)
Patients with nonmissing data	90.3 (1059)
Positive	10.7 (113)
Negative	89.3 (946)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported feeling unsafe.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6f. HRSN Housing Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.8 (115)
Patients with nonmissing data	90.2 (1058)
Positive	29.5 (312)
Negative	70.5 (746)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported a need for housing.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.6g. HRSN Family/Community Support Need

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	11.2 (131)
Patients with nonmissing data	88.8 (1042)
Positive	21.3 (222)
Negative	78.7 (820)

Note: This data element is linked to a performance milestone measure. A positive screen means the patient reported a need for family or community support.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7. Service Use Among MOM Model Patients

Table E.7a. Number of Prenatal Encounters

Data Elements	Total (All Awardees)
Missing data[a]	417
Patients with nonmissing data	756
Mean	7.2
Median	5
Minimum	1
Maximum	96

[a] We count prenatal encounters among all patients who received at least one prenatal encounter, regardless of when in their pregnancies they enrolled in the MOM Model. The number of prenatal encounters may not reflect the true number of encounters patients received, only those that were received during enrollment in the MOM Model and reported by the awardee.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table 7b. Number of Postpartum Encounters

Data Elements	Total (All Awardees)
Missing data[a]	664
Patients with nonmissing data	509
Mean	6.1
Median	2
Minimum	1
Maximum	66

[a] We count postpartum encounters among all patients who received at least one postpartum encounter, regardless of how much time elapsed since the patients end of pregnancy date and the end of the reporting period. The number of postpartum encounters may not reflect the true number of postpartum encounters patients received, only those that were received during enrollment in the MOM Model and reported by the awardee.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7c. Number of OUD Encounters

Data Elements	Total (All Awardees)
Missing data[a]	224
Patients with nonmissing data	949
Mean	21.2
Median	11
Minimum	1
Maximum	434

[a] We count OUD encounters among all patients who received at least one OUD encounter during the reporting period. The number of OUD encounters may not reflect the true intensity of OUD care received, only encounters that were received during enrollment in the MOM Model and reported by the awardee.
OUD = opioid use disorder
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7d. Prenatal Care Provider Type Among Patients with at Least One Prenatal Visit

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (417)
Missing data	2.4 (18)
Patients with nonmissing data	97.6 (738)
Physician	92.4 (682)
Physician assistant	
Nurse	21.0 (155)
Nurse practitioner	15.9 (117)
Midwife	11.2 (83)
Other	16.0 (118)

[a] We show prenatal care provider types for patients who received at least one prenatal care encounter. A patient could have received prenatal care from more than one provider type.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7e. Postpartum Visit Practitioner Type Among Patients with at Least One Postpartum Visit

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (664)
Patients with nonmissing data	100.0 (509)
OB/GYN practitioner	71.9 (366)
Midwife	8.1 (41)
Family practitioner	9.8 (50)
Other primary care provider	38.1 (194)
None of the above	14.3 (73)

Note: This data element is linked to a performance milestone measure.
[a] We show postpartum visit practitioner types for patients who received at least one postpartum encounter. A patient could have received postpartum care from more than one provider type.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7f. Visits with Other Providers

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	49.9 (585)
Patients with nonmissing data	50.1 (588)
Care coordination specialist	16.0 (94)
OUD treatment specialist	2.4 (14)
Lactation consultant	
Psychologist	
Social worker	7.8 (46)
Other	83.0 (488)

OUD = opioid use disorder
Note: A patient could have had a visit with more than one provider type.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7g. Patient Received Referral (Medical or Non-Medical)

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	25.1 (295)
Patients with nonmissing data	74.9 (878)
Yes	73.6 (646)
No	26.4 (232)

Note: Only one referral value is included for each patient. If a patient received a referral during one encounter and no referral during another, the positive result is listed here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7h. Referral Status

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	25.1 (295)
Patients with nonmissing data	74.9 (878)
Referral was needed and made	73.6 (646)
Referral was needed and not made	6.4 (56)
Referral was not needed	67.1 (589)
Did not assess the need for a referral during this encounter	23.7 (208)

Note: Referral status is reported by encounter and patients may have experienced different referral statuses at each encounter. These tables reflect the experience of each listed referral status at least one time during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7i. Referral Type Among Patients Who Received at Least One Referral

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (527)
Missing data	–
Patients with nonmissing data	100.0 (646)
Opioid treatment	19.3 (125)
Housing/living situation	35.4 (229)
Food/nutrition	25.5 (165)
Transportation	20.3 (131)
Utilities	10.4 (67)
Safety	8.8 (57)
Family and community support	29.1 (188)
Behavioral health, non-OUD	30.0 (194)
Other medical	29.4 (190)
Other	38.1 (246)

OUD = opioid use disorder

Note: Patients can receive more than one referral type at a single encounter and patients may have received different referral types at each encounter. These tables reflect the receipt of each listed referral type at least one time during the reporting period.

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7j. Referral Completed Among Patients Who Received at Least One Referral

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (527)
Patients with nonmissing data	100.0 (646)
Yes	47.4 (306)
No	52.6 (340)

Note: All patients who completed at least one referral are assigned "yes" values in this table, regardless of their total number of referrals.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7k. Referral Completed Type Among Patients Who Received at Least One Referral

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (527)
Missing data	52.6 (340)
Patients with nonmissing data	47.4 (306)
Opioid treatment	29.7 (91)
Housing/living situation	46.4 (142)
Food/Nutrition	38.9 (119)
Transportation	30.1 (92)
Utilities	17.0 (52)
Safety	8.8 (27)
Family and community support	42.8 (131)
Behavioral health, non-OUD	23.2 (71)
Other medical	25.8 (79)
Other	34.3 (105)

OUD = opioid use disorder
Note: Patients can complete more than one referral type at a single encounter and patients may have received different completed referral types at each encounter. These tables reflect the completion of each listed referral type at least one time during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7l. Receipt of Care Coordination Activities

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	0.7 (8)
Patients with nonmissing data	99.3 (1165)
Shared relevant information with at least one other provider involved in the patient's care	53.6 (625)
Assessed patient needs and goals	99.0 (1153)
Discussed self-management goals with patient	94.1 (1096)
Reviewed patient's medications	81.3 (947)
Consulted other providers involved in the patient's care	40.3 (469)
Other care coordination activity	40.8 (475)
None of the above[a]	1.0 (12)

Note: Patients can receive more than one care coordination activity at a single encounter and patients may have received different care coordination activities (or no care coordination activity) at each encounter. These tables reflect the receipt of each listed care coordination activity at least one time during the reporting period.
[a] If "none of the above" was the only response ever reported for a patient (the patient never received a care coordination activity), that is indicated here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7m. Average Number of Care Coordination Activities Received per Patient Among Patients Who Received Them at Least Once

Data Elements	All Awardees
Shared relevant information with at least one other provider involved in the patient's care	10.7
Assessed patient needs and goals	14.7
Discussed self-management goals with patient	13.2
Reviewed patient's medications	14.5
Consulted other providers involved in the patient's care	5.7
Other care coordination activity	4.4
None of the above	1.0

Note: This table presents mean frequencies of each care coordination activity among those who received it at least one time.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7n. Qualifying Postpartum Encounter Indicator Among Patients Who Are at Least 6 Weeks Postpartum

Data Elements	Total (All Awardees)
Data type	% (#)
Not in universe[a]	– (344)
Missing data	39.4 (327)
Patients with nonmissing data	60.6 (502)
Yes	91.4 (459)
No	8.6 (43)

Note: This data element is linked to a performance milestone measure.
[a] The universe for qualifying postpartum care is limited to patients who gave birth at least 6 weeks before the end of the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7o. Family Planning Indicator Among Patients Who Are at Least 6 Weeks Postpartum

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (344)
Missing data	14.1 (117)
Patients with nonmissing data	85.9 (712)
Current method of contraception	48.5 (345)
Discussion of contraceptive options	52.4 (373)
Provision of contraception	16.9 (120)
Pregnancy testing and counseling	8.8 (63)
Discussion of reproductive goals with life planning	27.7 (197)
None[b]	22.6 (161)

Note: This data element is linked to a performance milestone measure.
Note: Patients can receive more than one family planning activity at a single encounter and patients may have received different family planning activities (or no family planning activity) at each encounter. These tables reflect the receipt of each listed family planning activity at least one time during the reporting period.
[a] The universe for family planning is limited to patients who gave birth at least 6 weeks before the end of the reporting period.
[b] If "none" was the only response ever reported for a patient (the patient never received a family planning activity), that is indicated here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.7p. Postpartum Contraception Among Patients Who Are at Least 6 Weeks Postpartum

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (344)
Missing data	30.5 (253)
Patients with nonmissing data	69.5 (576)
None	15.1 (87)
Natural family planning	
Pullout method	
Barrier or spermicide	
Hormonal[b]	15.8 (91)
Injectable	6.4 (37)
LARC	17.7 (102)
Tubal ligation	18.6 (107)
Other	5.2 (30)
Unknown	20.0 (115)

LARC = long-acting reversible contraceptives

[a] The universe for postpartum contraception is limited to patients who gave birth at least 6 weeks before the end of the reporting period.

[b] Refers to non-LARC hormonal methods

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8. OUD Treatment Among MOM Patients

Table E.8a. Prior OUD Treatment During Current Pregnancy

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	10.8 (127)
Patients with nonmissing data	89.2 (1046)
Yes	74.4 (778)
No	25.6 (268)

OUD = opioid use disorder
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8b. Any Prior OUD Inpatient Treatment

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	17.5 (205)
Patients with nonmissing data	82.5 (968)
Yes	54.8 (530)
No	45.2 (438)

OUD = opioid use disorder
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8c. Timing of Pharmacotherapy Initiation

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (1173)
Never initiated pharmacotherapy	23.3 (273)
By timing relative to MOM Model enrollment	
At or before model enrollment	54.3 (637)
After model enrollment	22.4 (263)
By timing relative to end of pregnancy	
Before end of pregnancy date	55.6 (652)
After end of pregnancy date	21.1 (248)

Note: Timing of pharmacotherapy initiation is presented relative to both model enrollment and end of pregnancy. All patients who initiated pharmacotherapy are represented twice; those who never initiated pharmacotherapy are shown only in the "Never initiated pharmacotherapy" row.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8d. Pharmacotherapy Type at Initiation Among Patients Who Received Pharmacotherapy

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (281)
Missing data	–
Patients with nonmissing data	100.0 (900)
Buprenorphine	78.9 (710)
Methadone	19.0 (171)
Naltrexone	
None	0.0 (0)
Other	1.7 (15)

Note: This data element is linked to a performance milestone measure.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8e. Pharmacotherapy Type at Delivery

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (316)
Missing data[a]	24.5 (210)
Patients with nonmissing data	75.5 (647)
Buprenorphine	76.0 (492)
Methadone	20.2 (131)
Naltrexone	
Other	2.8 (18)

[a] This question has no "none" response option; missing data may represent either no receipt of pharmacotherapy at delivery or item nonresponse.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8f. Pharmacotherapy Type Postpartum Among Patients with an End of Pregnancy Date

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (316)
Missing data	31.5 (270)
Patients with nonmissing data	68.5 (587)
Buprenorphine	50.8 (298)
Methadone	18.2 (107)
Naltrexone	
Other	2.0 (12)
None	27.8 (163)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8g. Experienced Relapse During MOM Model Participation

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	26.9 (316)
Patients with nonmissing data	73.1 (857)
Yes	30.7 (263)
No	69.3 (594)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8h. OUD Encounter Types Received Among Patients Who Received an OUD Encounter

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (224)
Missing data	–
Patients with nonmissing data	100.0 (949)
Inpatient	3.7 (35)
Outpatient encounter	98.8 (938)
Intensive outpatient encounter	1.3 (12)
Partial hospitalization	
Telehealth encounter	16.1 (153)
Residential treatment service	2.5 (24)

OUD = opioid use disorder
Note: This data element is linked to a performance milestone measure.
[a] Patients with no OUD encounters in the data are excluded from the universe for this data element.
Note: Patients can receive more than one OUD encounter type. These tables reflect the receipt of each listed OUD encounter type at least one time during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8i. OUD Treatment Service Types Received Among Patients Who Received an OUD Encounter

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (224)
Missing data	–
Patients with nonmissing data	100.0 (949)
Pharmacotherapy	82.9 (787)
Behavioral health counseling or therapy	53.8 (511)
Health and behavior interventions for OUD	70.9 (673)
Psychotherapy: Individual and group	39.5 (375)
Social work services related to OUD treatment	41.2 (391)
Community support services related to OUD	40.7 (386)
Training, educational services, and skills development related to OUD treatment	38.1 (362)
Crisis intervention	5.8 (55)
Recreational therapy related to OUD	11.4 (108)
Psychosocial rehabilitation services	2.8 (27)
Community psychiatric supportive treatment	6.3 (60)

OUD = opioid use disorder
Note: This data element is linked to a performance milestone measure.
Note: Patients can receive more than one OUD treatment service type at a single encounter and patients may have received different OUD treatment service types (or no OUD treatment service type) at each encounter. These tables reflect the receipt of each listed OUD treatment service type at least one time during the reporting period.
[a] If "none" was the only response ever reported for a patient (the patient never received an OUD treatment service type), that is indicated here.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.8j. Treatment Plan at Model Exit Among Patients with a Model Exit Date

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe[a]	– (612)
Missing data	4.5 (25)
Patients with nonmissing data	95.5 (536)
Pharmacotherapy	42.9 (230)
Behavioral health counseling or therapy	17.4 (93)
Health and behavior interventions for OUD	23.3 (125)
Psychotherapy: Individual and group	10.3 (55)
Social work services related to OUD treatment	4.7 (25)
Community support services related to OUD	12.3 (66)
Training, educational services, and skills development related to OUD treatment	3.4 (18)
Crisis intervention	
Recreational therapy related to OUD	
Psychosocial rehabilitation services	
Community psychiatric supportive treatment	
None	43.1 (231)

OUD = opioid use disorder

[a] This universe is limited to patients who have exited the model.

Note: Patients can report more than one treatment plan.

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9. Prior and Current Pregnancy Conditions and Risk Factors Among MOM Model Patients

Table E.9a. Prior Birth

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	12.4 (146)
Patients with nonmissing data	87.6 (1027)
Yes	77.2 (793)
No	22.8 (234)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9b. Prior Infant Outcomes Among Patients with a Prior Birth

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (380)
Missing data	7.2 (57)
Patients with nonmissing data	92.8 (736)
Premature (< 37 weeks)	24.9 (183)
Low birthweight (< 2,500 g)	10.6 (78)
Stillborn infant	4.9 (36)
Infant diagnosed with NAS	8.2 (60)
Unknown	20.9 (154)
None	41.2 (303)
Not applicable	1.6 (12)

NAS = neonatal abstinence syndrome
Note: Patients can report more than one prior infant outcome.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9c. Prior Pregnancy Maternal Outcomes and Health Risk Factors Among Patients with a Prior Pregnancy

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (380)
Missing data	8.7 (69)
Patients with nonmissing data	91.3 (724)
Preeclampsia or pregnancy-induced hypertension	9.5 (69)
Gestational diabetes	3.7 (27)
Gestational hypertension	4.1 (30)
HELLP syndrome	
Hemorrhage	3.3 (24)
Other	5.8 (42)
Unknown	27.2 (197)
None	50.1 (363)
Not applicable	

HELLP = hemolysis, elevated liver enzymes, and low platelets
Note: Patients can report more than one prior maternal outcome.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9d. Prior Child Out-of-Home Placement Among Patients with a Prior Birth

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (380)
Missing data	6.2 (49)
Patients with nonmissing data	93.8 (744)
Yes	54.2 (403)
No	38.4 (286)
Not known	5.4 (40)
Not applicable	2.0 (15)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9e. Multifetal Gestation

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	2.7 (32)
Patients with nonmissing data	97.3 (1141)
Yes	2.2 (25)
No	91.1 (1040)
Unknown	6.7 (76)

Note: This data element is linked to a performance milestone measure.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.9f. Prenatal Condition Type during MOM Model Pregnancy

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	81.6 (957)
Patients with nonmissing data	18.4 (216)
Preeclampsia	36.6 (79)
Gestational diabetes	15.7 (34)
Gestational hypertension	29.2 (63)
HELLP syndrome	
Hemorrhage	7.9 (17)
Other	32.9 (71)

Note: This question has "none of the above" response option; missing data may represent either no prenatal conditions or item nonresponse.
HELLP = hemolysis, elevated liver enzymes, and low platelets
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.10. Maternal Outcomes Among MOM Model Patients

Table E.10a. Pregnancy Outcomes Among Patients with an End of Pregnancy Date

Data Elements	Total (All Awardees)
Data type	% (#)
Not in universe	– (316)
Missing data	–
Patients with nonmissing data	100.0 (857)
Spontaneous abortion before 20 weeks (miscarriage)	3.2 (27)
Fetal death at 20 weeks and onward	
Therapeutic abortion	
Live birth	96.1 (824)
Multiple non-live birth outcomes	0.0 (0)

Note: This data element is linked to a performance milestone measure.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.10b. Maternal Hospital Length of Stay for Delivery Among Patients with a Live Birth

Data Elements	Total (All Awardees)
Data type	% (#)
Not in universe	– (349)
Missing data	55.8 (460)
Patients with nonmissing data	44.2 (364)
1 day	
2 days	37.1 (135)
3 days	35.7 (130)
4 days	12.4 (45)
5 or more days	12.4 (45)
No hospitalization for delivery	

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.10c. Labor Pain Management Among Patients with a Live Birth

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (349)
Missing data	16.5 (136)
Patients with nonmissing data	83.5 (688)
Epidural	81.8 (563)
Intravenous narcotics	7.1 (49)
Other	9.6 (66)
No/None	8.9 (61)

Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.10d. Delivery Method Among Patients with a Live Birth

Data Elements	Total (All Awardees)
Data type	**% (#)**
Not in universe	– (349)
Missing data	9.6 (79)
Patients with nonmissing data	90.4 (745)
Vaginal	36.0 (268)
Vaginal, induced, or augmented	24.3 (181)
Vaginal, VBAC	
Emergency C-section	15.0 (112)
Planned C-section	23.6 (176)

VBAC = vaginal birth after caesarean
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11. Outcomes Among Infants Born to MOM Model Patients

Table E.11a. Infant Hospital Length of Stay at Delivery

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
1 day	4.2 (35)
2 days	14.6 (122)
3 days	8.7 (73)
4 days	16.7 (140)
5 or more days	53.1 (444)
No hospitalization for delivery	2.6 (22)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 6 sets of twins) born to 824 patients during the reporting period.
Infant hospital length of stay includes non-NICU and NICU stays. Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11b. NICU at Delivery

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
Yes	34.9 (292)
No	65.1 (544)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Note: NICU classification, such as the classification of extended hospital stays in mother-baby suites, may vary by awardee.
NICU = neonatal intensive care unit
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11c. NICU Length of Stay at Delivery

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
1 day	3.9 (33)
2 days	2.8 (23)
3 days	2.3 (19)
4 days	1.8 (15)
5 or more days	24.2 (202)
No NICU stay	65.1 (544)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Note: NICU stay definition, such as the classification of extended hospital stays in mother-baby suites, may vary by awardee.
NICU = neonatal intensive care unit
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11d. Estimated Gestational Age in Weeks

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	0.6 (5)
Patients with nonmissing data	99.4 (831)
Very preterm (20 < = EGA < = 34)	4.5 (37)
Preterm (34 < = EGA < 37)	13.0 (108)
Term (37 < = EGA < 42)	82.2 (683)
Post-term (> = 42)	

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
EGA = estimated gestational age
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11e. Birth Weight

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	1.9 (16)
Patients with nonmissing data	98.1 (820)
Very low birthweight (< 1,500 g)	1.7 (14)
Low birthweight (> = 1,500 g < 2,500 g)	16.1 (132)
Normal birthweight (> = 2,500 g < 4,000 g)	78.2 (641)
Macrosomic birthweight (> = 4,000 g)	4.0 (33)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11f. Positive Opioid Screen

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
Yes	50.4 (421)
No	49.6 (415)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11g. Neonatal Abstinence Syndrome Indicator

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
Positive	28.2 (236)
Negative	71.8 (600)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11h. Infant Pharmacotherapy Treatment for Neonatal Abstinence Syndrome

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	9.6 (80)
Patients with nonmissing data	90.4 (756)
Yes	15.7 (119)
No	76.7 (580)
Not known	7.5 (57)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11i. Out-of-Home Placement

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	–
Patients with nonmissing data	100.0 (836)
Yes	12.8 (107)
No	87.2 (729)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Table E.11j. Infant Feeding Type

Data Elements	Total (All Awardees)
Data type	**% (#)**
Missing data	7.8 (65)
Patients with nonmissing data	92.2 (771)
Breastfeeding	18.7 (144)
Pumping breastmilk for bottle or catheter feeding	4.2 (32)
Both breastfeeding and pumping breastmilk for bottle or catheter feeding	7.8 (60)
Breastfeeding or pumping and supplementing breastmilk with formula	20.9 (161)
Formula feeding only	43.1 (332)
Unknown	5.4 (42)

Note: For all elements presented in Table E.11, the total population = 836 infants (including 12 sets of twins) born to 824 patients during the reporting period.
Source: Insight Policy Research analysis of patient-level data reported by MOM Model awardees through June 2023 to the Centers for Medicare & Medicaid Services Innovation Center Gateway, August 2023

Appendix F. Factors Leading to Maryland's Withdrawal From the MOM Model

The Maryland Department of Health (Maryland) withdrew from the MOM Model effective December 31, 2022. The evaluation team conducted interviews with Maryland and two of its managed care organization (MCO) care delivery partners to discuss factors that influenced their decision to withdraw from the MOM Model. Because we only collected data from two of Maryland's nine care delivery partners, the perspectives within may not represent the opinions of all care delivery partners. This appendix briefly summarizes key findings from these interviews.

A. Key Factors Leading to Withdrawal

Maryland and its care delivery partners cited multiple factors that led to its withdrawal from the MOM Model. Maryland identified beneficiary-level data reporting requirements as the primary reason for withdrawing from the model, while MCO respondents highlighted challenges identifying MOM-eligible patients as a factor that also influenced Maryland's withdrawal.

Data reporting burden

Maryland was unable to extract beneficiary-level data from provider electronic health records without establishing data use agreements with each provider serving MOM Model patients, thereby limiting the state's capacity to easily report data to CMS.

To address this challenge, CMS offered flexibility to allow Maryland to report beneficiary-level data using Medicaid claims. However, the care delivery partners informed Maryland that the process of transferring Medicaid claims data into the MOM Model Data Submission Gateway template was time-intensive and burdensome for only the few patients enrolled in the model.

Maryland and the care delivery partners recognized that hiring staff with MOM Model funding to focus on patient-level data reporting would have addressed these challenges, but Maryland felt such hirings would have been more feasible during the pre-implementation period.

Difficulty identifying patients eligible for the MOM Model

Maryland's Medicaid Agency implemented a behavioral health carve-out in 1997 that removed specialized behavioral health services from MCO contracts. Data associated with behavioral health services, such as SUD treatment, are held by a third-party vendor and inaccessible to MCO staff unless patients have a release of information form on file. This barrier limits MCO's capacity to identify eligible patients in Medicaid claims, as few patients have release forms on file.

To address this challenge, Maryland worked with a third-party contractor to develop a list of potentially MOM-eligible patients with a release of information on file and indications of recent pregnancy and SUD treatment claims to be distributed to each MCO monthly. However, much of the information included in these lists was outdated or highlighted SUD treatment claims for substances other than opioids. Care delivery partner respondents indicated that if this list was offered earlier into MOM Model implementation and refined over time, it may have helped Maryland remain in model.