

2021

## Treating a Public Health Crisis for Rural Moms – A Comparative Analysis of Four Rural States Addressing Maternal Opioid Misuse with Medicaid Innovation Models

Jason Semprini

University of Iowa, [jason-semprini@uiowa.edu](mailto:jason-semprini@uiowa.edu)

Follow this and additional works at: <https://newprairiepress.org/ojrrp>



Part of the [Health Law and Policy Commons](#), [Maternal and Child Health Commons](#), and the [Substance Abuse and Addiction Commons](#)



This work is licensed under a [Creative Commons Attribution 4.0 License](#).

---

### Recommended Citation

Semprini, Jason (2021) "Treating a Public Health Crisis for Rural Moms – A Comparative Analysis of Four Rural States Addressing Maternal Opioid Misuse with Medicaid Innovation Models," *Online Journal of Rural Research & Policy*. Vol. 16: Iss. 2. <https://doi.org/10.4148/1936-0487.1109>

This Article is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in *Online Journal of Rural Research & Policy* by an authorized administrator of New Prairie Press. For more information, please contact [cads@k-state.edu](mailto:cads@k-state.edu).

---

# Treating a Public Health Crisis for Rural Moms—A Comparative Analysis of Four Rural States Addressing Maternal Opioid Misuse with Medicaid Innovation Models

---

Jason Semprini  
University of Iowa

## Abstract

**Objective:** As we enter the third decade of the opioid crisis, opioid misuse continues its devastating toll on young women, specifically mothers on Medicaid in rural areas. The evolving Medicaid policy landscape has led to coverage and benefit expansion; yet gaps remain for pregnant women with opioid misuse. Further, the myriad of state specific policy decisions related to maternal eligibility and substance abuse benefits have created a seemingly disjoint policy arena for tackling a specific subgroup's unmet needs. This policy scan aims to investigate the newly implemented 1115 demonstration model for Maternal Opioid Misuse by comparing the approaches of four rural states.

**Methodology:** All documentation for each demonstration model and waiver were reviewed and analyzed for rural specific content. Policy language referencing rurality or rural concepts were then identified, categorized, and codified for comparison across the four sample states. Finally, policy and programmatic approaches which were inherently rural were identified and compared between the four states. This analysis concludes with a brief synthesis of the results, as well as a discussion on what gaps may remain.

**Results:** Of the two states submitting 1115 Waivers, both (IN, MO) expand eligibility to Medicaid for mothers with opioid-use disorder, but only MO expands Medicaid benefits. Of the three states (CO, IN, ME) implementing the demonstration model, two (CO, IN) leverage health insurance payers as partners while ME partners with local health system providers. Three states (CO, MO, ME) add telehealth and peer support services as authorized Medicaid benefits for mothers with an opioid-use disorder. Only ME used the innovation model to authorize Medicaid to reimburse, provider-to-provider telehealth capacity building models.

**Conclusion:** This study highlights and reaffirms the variation in Medicaid policy at the state level. Expanding Medicaid benefits to reimburse necessary telehealth and peer support services may help address service availability gaps in rural regions. Future research should leverage the continual expansion of these MOM models, especially evaluating differences between rural and non-rural outcomes. The excessive morbidity facing these young mothers warrants prompt evaluation and dissemination to promote diffusion across the country until this public health crisis is fully extinguished.

**Keywords:** *opioids, maternal health, pregnancy, Medicaid, innovation*

---

Follow this and additional works at: <https://newprairiepress.org/ojrrp>

 Part of the [Education Commons](#)



This work is licensed under a [Creative Commons Attribution 4.0 License](#).

This Article is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in ORJRP by an authorized administrator of New Prairie Press. For more information, please contact [cads@k-state.edu](mailto:cads@k-state.edu).

## BACKGROUND

As we enter the third decade of the opioid crisis, opioid misuse continues its devastating toll. Between September 2019 and September 2020, the Centers for Disease Control (CDC) estimated that 81,000 adults died from opioid misuse (Ahmad 2021). Yet, as the public health emergency persists, so too does our understanding of

who is affected. Although it was assumed that middle-aged men represented a disproportionate share of those experiencing opioid-related deaths and hospitalizations, women have not been immune to the effects of the crisis (Hollander et al. 2019). But contrary to the experience of men, where the risk of opioid-use disorder (OUD) peaks at middle age, the risk in women peaks during reproductive age (Jumah 2016; Ahrens et al. 2021).



Over the past decade, OUD during pregnancy has risen 400% (Hollander et al. 2019). OUD among pregnant women significantly elevates the risk of maternal mortality, both before discharge and within a year of delivery (Roper and Cox 2017; Weller et al. 2021). Estimated to be 5% nationally, the distribution of opioid misuse during pregnancy varies considerably by geography (Jumah 2016). The prevalence of opioid misuse among pregnant women appears to be highest in states with larger rural populations and has exceeded 10% in certain rural groups, specifically rural Medicaid beneficiaries (Ahrens et al. 2021).

To better respond to the public health crisis of mothers misusing opioids, two policies were enacted to promote targeted innovation within Medicaid programs. The first policy approach stems from 1115 waivers designed to directly target innovation towards treating pregnant women using opioids (KFF 2021). Two states have submitted maternal opioid misuse waivers: Indian and Missouri. Missouri's waiver was adopted April 16, 2021 and will take effect January 1, 2022 (MO 2021). Indiana's maternal opioid misuse waiver was submitted October 20, 2020 but withdrawn June 6, 2021 (MOMII 2021). The other approach to adapt Medicaid programs to better treat maternal opioid misuse came from a CMS call for demonstrations. These demonstrations funded state Medicaid programs developing health system partnerships and designing integrated care systems throughout the pre and post-partum continuum for women using or at risk of misusing opioids (CMS 2019). As of April 30, 2021, nine states have begun implementing the Maternal Opioid Misuse (MOM) model (CMS 2019). By integrating appropriate maternal care and opioid use treatment and expanding the scope and eligibility of Medi-

caid coverage, these innovative Medicaid demonstration models have the potential to lower hospital costs, improve pregnancy outcomes, and reduce maternal mortality. Yet, despite the disproportionate burden of opioid misuse among mothers in rural regions, the extent to which these models directly focus on improving health outcomes in rural settings remains unknown.

## OBJECTIVE

To fill this knowledge gap and inform predictions for the efficacy of these models for reducing hospital costs and maternal mortality, this study aims to conduct a policy scan of states implementing MOM waivers and models. In addition to comparing the approaches of these state models, this analysis will specifically identify approaches within each 1115 waiver or demonstration authority which may impact rural mothers and rural providers. Understanding how states adapt their Medicaid program to reduce rural maternal opioid misuse will inform best-practice policy implementation as the MOM model diffuses across the country and we enter the third decade of the American opioid crisis.

## LITERATURE REVIEW

Before comparing these novel Medicaid policies addressing maternal opioid misuse in rural Medicaid populations, this paper begins by briefly reviewing the history of Medicaid policies impacting maternal health and substance use in America.

### ***Maternal Mortality***

Maternal mortality includes all pregnancy-related deaths within one year of giving birth. In part due to the opioid crisis, as well as other socioeconomic and structural factors, maternal mortality in the United States is the highest among wealthy countries (Roosa 2020). For decades, federal and state agencies in the United States have launched policy initiatives intended to reduce maternal mortality. Outside the healthcare sector, policies such as supplemental nutrition assistance programs, temporary assistance for needy families, and the earned income tax credit were all designed to help lower-income families, especially mothers living in poverty. But within the healthcare system, the major policy reform was Medicaid which, in 1984, began requiring all states to add a categorical designation to cover low-income pregnant women (P.L. 98369 1984). Over the years, Medicaid coverage for pregnant women continued to expand (MACPAC 2021). Today, more than 40% of all U.S. births are financed by Medicaid (CDC 2018).

While these policy reforms increased prenatal care visits and improved delivery outcomes, maternal mortality remained higher in America than peer nations (Roosa 2020). Recently, evidence began to suggest that the difference in maternal mortality between U.S. and other wealthy countries was highest more than one month after delivery (Roosa 2020). Apparently, mothers in the U.S. were at no greater risk of dying during delivery or within thirty days of discharge. However, due to longer term complications and untreated physical and emotional health, U.S. mothers were more likely to die between 31-360 days after delivery.

The recent evidence illuminated a weakness in Medicaid policy. Most low-income women lose their Medicaid coverage 30 days after giving birth, when their risk of maternal mortality is highest. For many elected officials, addressing this gap became a major policy priority. In 2020 alone, ten bills were introduced into the federal Legislature which expanded Medicaid post-partum coverage (KFF 2021). Eventually, the American Rescue Plan (ARP) included the statutory language of these bills' and offered states an option to extend full Medicaid coverage to pregnant women up to one year after delivery (H.R. 1319 2020). While this statute only allows states to grant such extensions through 2026, this Medicaid reform is likely to remain as removing Medicaid benefits from a vulnerable group has not proven to be politically popular, even in states with the least generous Medicaid coverage.

### ***Behavioral Health and Substance Use***

Just as with pregnancies, Medicaid is the largest payer for behavioral health and substance use treatment in the

U.S. (MACPAC 2015). More than one in three non-dually eligible adults on Medicaid reported a mental illness or substance use disorder (MACPAC 2015). However, throughout most of Medicaid's legislative history, the program has been plagued by gaps in coverage, lack of parity, and discoordination (i.e. "same day billing glitch") (P.L. 114-255 2016).

One gap related to where behavioral health and substance use treatment could be provided. To avoid financing costly state-managed psychiatric hospitals, Medicaid explicitly excluded benefits which covered treatment at "Institutes of Mental Disease" (Macleon et al. 2021). Although, despite the statutory exclusion, states continue to reimburse Medicaid funds to such institutions (GAO 2019). Still the exclusion restriction appears to be impeding appropriate care. Mental health advocates consider the exclusion restriction discriminatory, as well as a potential barrier towards achieving behavioral health integration (MACPAC 2016). As a response, recent legislative efforts have begun to relax the exclusion restriction, starting with new demonstration authority under the Affordable Care Act (P.L. 111-148 2010). Most relevant to the opioid crisis, however, was the SUPPORT Act of 2018, a law which authorized Medicaid to cover behavioral health services for pregnant women who were concurrently receiving opioid-related substance use treatment at an Institute of Mental Disease (P.L. 114-271 2018).

An additional motivation to exclude Institutes of Mental Disease, defined as a large inpatient behavioral health facility with more than sixteen beds, stemmed from Medicaid's objective for providing care in community-based settings. This objective became more achievable in 1981, after Congress passed the Omnibus Budget Reconciliation Act (OBRA), instituting 1915(c) waivers (P.L. 97-35 1981). These newly authorized 1915(c) waivers allowed states to expand Medicaid services to adults with specific clinical diagnoses to avoid institutionalized care. However, while 1915(c) waivers offered greater potential access to services, states varied widely in what clinical categories were covered, how many waivers to grant, and the types of services would be provided. In 2018, only eleven states adopted 1915(c) waivers for mental health, with enrollment ranging from 100 to 6,400 (KFF 2018).

More recently, Medicaid's 1115 Behavioral Health Demonstration Waivers have gained popularity as an approach to fill gaps in Medicaid behavioral services (KFF 2017). As of 2017, 22 states have adapted their Medicaid program by waiving regulations related to financing, service delivery, and eligibility for behavioral health or substance use Medicaid benefits. In addition to waiving the Institutes of Mental Disease exclusion restriction, states have also used these 1115 Behavioral Health Waivers to expand Medicaid eligibility to cover specific, at-risk groups. Other states have extended the scope of their

community-based behavioral health services above the statutory authority derived from 1915(c) waivers. Examples include Medicaid benefits to provide housing or employment support and peer recovery coaching. Seven states have specifically targeted their 1115 Behavioral Health Waivers towards adapting substance use treatment models within their Medicaid program. Inherently designed as demonstrations with a critical evaluation component, the findings from these seven states will illuminate future pathways for integrating substance use treatment across the care continuum, as well as identify if potentially burdensome regulations related to inpatient day limits impact outcomes. As a signal of continued support for innovation, 2017 CMS Guidance required that states adopting 1115 Behavioral Health Waivers begin incorporating demonstration components related to opioid prescribing, opioid antagonists, and opioid misuse care coordination (CMS 2017).

### *Maternal Opioid Misuse Models*

The evolving Medicaid policy landscape has led to coverage and benefit expansion for low-income adults. Yet, gaps remain for pregnant women with opioid misuse. Medicaid eligibility thresholds vary widely between states expanding and non-expanding Medicaid, especially for women of reproductive age. Further, the myriad of state specific policy decisions related to maternal eligibility and substance abuse benefits have created a seemingly disjointed policy arena for addressing unmet needs of a vulnerable group. Finally, despite the growth in behavioral health services and added flexibility for state designed Medicaid models, pregnant women with potential opioid use disorder have not, until recently, been the focus of Medicaid innovation. Instead, care for pregnant women and new mothers using opioids remained fragmented. The outcomes were especially dire in rural contexts, where comprehensive services may be less available due to maternal care and substance use treatment provider shortages (Patrick et al. 2015; ACOG 2017). Whether the newly authorized Medicaid MOM waivers and demonstration models addressed their barriers to care remain unknown.

## **POLICY SCAN METHODOLOGY**

To determine how states adapted their Medicaid program to specifically address rural maternal opioid misuse, this study first identified which states were participating in the newly authorized Center for Medicare and Medicaid Innovation (CMMI) MOM Demonstration. Given the focus on rural mothers, this study used Rural-Urban Continuum Codes to exclude states which did not have any rural designated counties (USDA 2021). Next, each state's Medicaid site was searched for docu-

mentation relevant to the MOM Demonstration. States without publicly available and readily accessible documentation were excluded from the analysis. In addition to obtaining documentation for states implementing CMMI models, the CMS waiver list was scanned to identify which states submitted a MOM 1115 waiver (CMS 2021). All files within a 1115 Waiver submission were then obtained for review.

All documentation was retrieved and analyzed between January 1, 2021 and April 30, 2021. First, the scope and policy approaches of each demonstration were reviewed and categorized. Categories included health system partnerships, coverage or benefit expansion, and Medicaid innovation. The documentation for each demonstration model and waiver was then analyzed for rural specific content by identifying policy language explicitly describing rural populations, providers, and contexts, or policy language implicitly related to concepts for accessing high-quality care in rural provider shortage areas. All policies and approaches were then compared across states. This analysis concludes with a brief synthesis of the results, as well as a discussion on what gaps may remain, for which future MOM models could incorporate to better address the needs of rural moms misusing opioids.

## **RESULTS: POLICY SCAN**

This policy scan identified nine states which either implemented a CMMI MOM Demonstration Model or submitted a 1115 MOM Waiver. Of these nine states, eight have rural populations (CO, IN, ME, MO, NH, TN, TX, WV). Maryland, which has no rural designated county, was excluded from this analysis (USDA 2021). Two states (MO, IN) submitted 1115 Medicaid Waivers to adopt Medicaid service delivery (CMS 2021). Among the remaining seven states implementing a MOM model with rural populations, only two states (CO, ME) had publicly available and readily accessible MOM model documentation (i.e. plans, presentations, committee meeting notes, fact sheets) on their state Medicaid website (CO Medicaid 2021, ME Medicaid 2021). See [figure 1](#) for the inclusion criteria flow chart. See [table 1](#) for a breakdown of state inclusion criteria and sources.

## **RESULTS: DEMONSTRATION APPROACHES (TABLE 2)**

### **Colorado**

The Colorado state Medicaid program was among the eight grantees of the CMMI award (CMS 2021). This state had not submitted a waiver and provided no documentation to indicate such a 1115 waiver for Maternal Opioid Misuse may be forthcoming. The key features

of the Colorado demonstration model relate to the community partners, services available to beneficiaries, and model for delivering services (CO 2021).

The Colorado model identified five community partners under the CMMI MOM model. All five of these partners are health insurance plans, which cover Medicaid beneficiaries across the entire state. Colorado has designed its Medicaid program so an insurance payer facilitates care delivery at a regional level. These five insurance payers cover seven mutually exclusive Colorado regions. All of the community partners include at least one rural county.

Along with focusing on integrating maternal and postpartum care with substance use and behavioral health services for mothers using opioids, the Colorado MOM model expands Medicaid benefits for eligible mothers. Most noteworthy for rural care, Colorado explicitly expands the authorized use of telehealth for a bundle of therapy and rehabilitation services. Further, due to the shortage of qualified providers in rural counties, each of the partners has expanded the scope of peer support services. Finally, while no documentation or evaluation plans were made explicit, the Colorado model defines “expanding rural provider capacity” as a primary goal of the CMMI initiative.

As of April 30, 2021, the Colorado model has yet to design and implement an integrated care program. However, the unique feature of partnering with regional health insurance payers yields a statewide approach to leverage partnerships with smaller providers. To deliver the integrated opioid misuse treatment across the prenatal and postpartum continuum, each Colorado region will be providing subgrantees funds to administer services. Given the large geographic swaths of rural regions in Colorado with fewer and smaller providers, granting funds to the largest providers could have disproportionately excluded clinics with lower capacity. This motivated the regional approach, which allows each health insurance payer to utilize multiple partnerships with smaller clinics and providers to deliver care across the state.

### Indiana

Indiana, like Colorado, also identified four private health insurance payers as the community partners in their MOM model. However, Indiana’s Medicaid system isn’t divided into geographic regions, but rather each of the insurance payers cover non-mutually exclusive segments of the Medicaid market. While this approach may increase competition, the lack of public documentation limits the public’s ability to determine if this MOM model provides assurances that integrated care providers will be available for the entire state.

In addition to participating in the CMMI program to

provide integrated services for pregnant women misusing opioids, Indiana also aimed to expand their Medicaid program by submitting a new 1115 Waiver (MOMII 2021). This waiver expands the eligibility criteria for Medicaid benefits, which includes standard Medicaid prenatal, postpartum, behavioral health, and opioid use benefits. Rather than expand benefits, the waiver expands eligibility and length of coverage for pregnant women and new mothers. Prior to the new waiver, pregnant women up to 213% FPL qualify for Medicaid benefits for 60-days post-partum. With the new waiver, women who 1) maintain continuous income eligibility, 2) sign a CMMI cooperative agreement, and 3) have a diagnosed opioid-use disorder can maintain their Medicaid benefits for up to one-year postpartum.

The 1115 waiver submitted by Indiana did not aim to expand Medicaid benefits or address provider shortage areas in rural contexts. On June 20, 2021, Indiana withdrew their MOM 1115 Waiver application because of the state expanding Medicaid coverage to all pregnant women after implementation of the American Rescue Plan (Indiana 2021).

### Missouri

Contrary to Indiana’s 1115 Waiver, not only does Missouri expand the eligibility of their Medicaid program, but Missouri also expands the set of benefits for the newly eligible population (MO 2021). Under the new Missouri waiver, women with a diagnosed opioid-use disorder with incomes under 196% of FPL can qualify for Medicaid benefits for twelve months postpartum. The waiver also extends a range of new behavioral health and opioid use treatment benefits to this population, covering extensive and comprehensive options for therapy and rehabilitation services. Most noteworthy for rural populations, however, is the expanded scope of practice for peer support specialists. This scope of practice authority was only authorized for postpartum mothers with an opioid-use diagnosis.

### Maine

The final state in this analysis implemented their MOM model through the CMMI initiative. While staying true to the goals of the MOM model, Maine took considerably different approaches than the other states. Maine differentiates themselves from Colorado and Indiana by partnering with healthcare system providers instead of health insurance payers (CMS 2019). Additionally, not only did Maine offer the greatest transparency in the design and implementation process (by publishing committee meetings, program implementation files, and Medicaid reports), but may also be implementing the most robust MOM program for rural states (ME 2021). Un-

like the other states, all MOM model services are reimbursed on a capitated, per member per month rate. Finally, documentation from the most recent MOM Model committee meeting indicate that Maine will be submitting a State Plan Amendment (SPA) to their Medicaid program to further expand the scope and breadth of the MOM model.

Maine partnered with five large health systems, which include providers across the state and cover integrated care services in or near rural areas. By partnering with providers, Maine aimed to ensure adequate availability of covered services but also designed programs to navigate beneficiaries to appropriate services at different providers. To accomplish this goal, Maine is adopting a “No Wrong Door” approach, where at all entry points of the care continuum (prenatal, delivery, postpartum) women are screened and identified for opioid misuse, then navigated (with a peer support specialist) towards appropriate substance use and behavioral health treatment.

In addition to this “No Wrong Door” approach to delivering integrated care, Maine has also begun to implement two additional programs. The first is a public outreach and education campaign designed to increase awareness of the MOM model, but more importantly address issues related to stigma surrounding maternal opioid misuse. No other states explicitly detailed any such education program in their CMMI initiative. Maine also includes a workforce component, which includes navigating eligible beneficiaries to employment opportunities but also navigating healthcare workers who may have lost their jobs due to COVID-19 to new employment in the MOM model.

From a rural standpoint, the most promising component of the Maine MOM model is the integration of MaineECHO (Expanding Collaborative Healthcare Opportunities). MaineECHO builds off the ECHO model to utilize telehealth to bring together providers in rural areas with specialists at larger, academic hospitals. MainECHO’s goal is to expand rural provider capacity, and is now being integrated into maternal opioid misuse for the first time. This provider-to-provider telehealth training model has been shown to be successful across a range of treatments and specialties, and despite being underutilized, has been especially effective as a Medicaid program (Semprini 2020). By adding ECHO to Maine’s MOM model, rural beneficiaries gain access to specialized services without undergoing the burden of travel or out-of-network barriers. Additionally, rural providers gain necessary capacity to continue providing necessary and appropriate services without loss of revenue or loss of connection with their rural patients.

## CONCLUSION

This policy scan identified approaches where states adapted their Medicaid programs to address the maternal opioid misuse public health crisis. While both the states submitting 1115 Waivers expanded Medicaid eligibility to postpartum mothers, the income range differed between IN and MO. It remains unknown whether the differences in eligibility were due to contextual factors influencing maternal poverty in each state, or if ideological and political factors are driving these eligibility criteria. Further, only Missouri expanded the set of Medicaid benefits for the newly eligible postpartum beneficiaries with OUD. As the demonstration waivers proceed and eventually conclude, such benefit variation could inform future policymaking by identifying the most important and effective benefits for treating maternal opioid misuse. Regarding rural issues, however, neither of the 1115 waivers specifically addressed rural barriers or the need to adapt Medicaid policy to accommodate rural contexts. Given the shortage of providers in rural areas, states could not only expand the use of telehealth and peer support specialists, but relax network adequacy constraints, ban disenrollment for rural beneficiaries, and incentivize rural Medicaid provider participation. Finally, while Indiana withdrew their MOM 1115 waiver to expand Medicaid coverage after the passage of the American Rescue Plan, the state may need to revisit after the American Rescue Plan authority ends in 2026.

Most of the variation in state decisions came from within the CMMI MOM models. While Colorado and Indiana utilized health insurance payers as partners, Maine included health system providers. Again, only at the conclusion of the demonstration will we be able to evaluate which approach may be most effective. Future research should also investigate whether the decision to include payer or providers was driven by the needs of the beneficiaries, or if state market factors or political ideology were driving such decisions. However, that none of the states made evaluation plans publicly available may hinder the public’s ability to evaluate demonstration models. CMMI and state Medicaid programs should all strive for greater transparency going forward.

And while Missouri, Colorado, and Maine included telehealth and peer support specialist benefits to accommodate rural beneficiaries, only Maine adopted a highly modern model of telehealth: the ECHO model of provider-to-provider capacity building. This ECHO model continues to show its flexibility for different contexts, states, diseases, and populations. With the potential to revolutionize rural care delivery while minimizing specialty-care costs and patient burden, by including provider-to-provider telehealth models in demonstration projects we can continue to monitor and evaluate the efficacy of such novelty. Future research should lever-

age the continual expansion of these models, especially for this specific population. If rural mothers with opioid use disorder struggle to access available services in rural areas, the Maine ECHO MOM model provides a clear scenario for which to rigorously investigate. The excessive morbidity facing these young mothers warrants prompt evaluation and dissemination to promote diffusion across the country until this public health crisis is fully extinguished.



Jason Semprini is an NIH Research Fellow at the University of Iowa, College of Public Health. Prior to beginning his PhD in Health Services & Policy, he earned his Master's in Public Policy at the University of Chicago as a Susan G. Komen Cancer Disparities Scholar. His research on Medicaid and Rural Health has been published in peer reviewed journals and presented at national conferences. A lifelong Iowan, Jason lives in Iowa City with his wife and two daughters.

## REFERENCES

- ACOG. (2017). Opioid Use and Opioid Use Disorder in Pregnancy. ACOG Committee Opinion, 711, 14.
- Ahmad FB, Rossen LM, Sutton P. (2021) Provisional drug overdose death counts. National Center for Health Statistics.
- Ahrens, K. A., McBride, C. A., O'Connor, A., & Meyer, M. C. (2021). Medication for Addiction Treatment and Postpartum Health Care Utilization Among Pregnant Persons With Opioid Use Disorder. *Journal of Addiction Medicine*, Publish Ahead of Print. <https://doi.org/10.1097/ADM.0000000000000827>
- CDC. (2018). Births: Final Data for 2016. National Vital Statistics Reports, Volume 67(1), 55.
- CMS (2017). Strategies to Address the Opioid Epidemic. Federal Policy Guidance. <https://www.medicaid.gov/federal-policy-guidance/downloads/smd17003.pdf>
- CMS (2019). Maternal Opioid Misuse Models (MOM) CMS Innovation. <https://innovation.cms.gov/innovation-models/maternal-opioid-misuse-model>
- CMS (2021). Medicaid Waiver List.
- Colorado Medicaid (2021). Maternal Opioid Misuse Model. <https://hcpf.colorado.gov/maternal-opioid-misuse-model>
- GAO. (2019). Report to Congress on Oversight of Institutions for Mental Diseases. MACPAC. <https://www.macpac.gov/publication/report-to-congress-on-oversight-of-institutions-for-mental-diseases/>
- H.R. 1319 / Public Law 117-2. American Rescue Plan Act of 2021
- Hollander, M. A. G., Jarlenski, M. P., Donohue, J. M., Cole, E. S., Kelley, D., & Krans, E. E. (2019). Medical specialty of buprenorphine prescribers for pregnant women with opioid use disorder. *American Journal of Obstetrics & Gynecology*, 220(5), 502-503. <https://doi.org/10.1016/j.ajog.2019.01.226>
- Jumah, N. A. (2016). Rural, Pregnant, and Opioid Dependent: A Systematic Review. *Substance Abuse: Research and Treatment*, 10s1, SART.S34547. <https://doi.org/10.4137/SART.S34547>
- Indiana (2021). Letter to CMS from Indiana Medicaid Director. <https://www.medicaid.gov/medicaid/section-1115-demonstrations/downloads/indiana-momii-withdrawal-ltr-06032021.pdf>
- KFF. (2017, November 10). Key Themes in Medicaid Section 1115 Behavioral Health Waivers— Issue Brief. KFF. <https://www.kff.org/report-section/key-themes-in-medicaid-section-1115-behavioral-health-waivers-issue-brief-9118/>
- KFF. (2018). Medicaid Section 1915(c) Home and Community-Based Services Waivers Participants, by Type of Waiver. KFF. <https://www.kff.org/health-reform/state-indicator/participants-by-hcbs-waiver-type/>
- Macleane, J. C., Wen, H., Simon, K. I., & Saloner, B. (2021). Institutions For Mental Diseases Medicaid Waivers: Impact On Payments For Substance Use Treatment Facilities. *Health Affairs*, 40(2), 326-333. <https://doi.org/10.1377/hlthaff.2020.00404>
- MACPAC. (2015). Behavioral Health in the Medicaid Program—People, Use, and Expenditures. MACPAC. <https://www.macpac.gov/publication/behavioral-health-in-the-medicaid-program\OT1\textemdashpeople-use-and-expenditures/>
- MACPAC. (2016). Integration of Behavioral and Physical Health Services in Medicaid. MACPAC. <https://www.macpac.gov/publication/integration-of-behavioral-and-physical-health-services-in-medicaid/>
- MACPAC. (2021). Legislative Milestones in Medicaid and CHIP Coverage of Pregnant Women. MACPAC. <https://www.macpac.gov/legislative-milestones-in-medicaid-and-chip-coverage-of-pregnant-women/>
- Maine Medicaid (2021). Maine MOM. <https://www.maine.gov/dhhs/oms/about-us/projects-initiatives/mainemom>
- Missouri (2021). Missouri Targeted Benefits for Postpartum Women Section 1115 Waiver. <https://www.medicaid.gov/medicaid/section-1115->

- demo/demonstration-and-waiver-list/82361  
 MOMII (2021). Maternal Opioid Misuse Indiana Initiative. <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/103641>
- Patrick, S. W., Davis, M. M., Lehmann, C. U., Lehman, C. U., & Cooper, W. O. (2015). Increasing incidence and geographic distribution of neonatal abstinence syndrome: United States 2009 to 2012. *Journal of Perinatology: Official Journal of the California Perinatal Association*, 35(8), 650-655. <https://doi.org/10.1038/jp.2015.36>
- Public Law 97-35, Approved August 13, 1981 (95 Stat. 483). Omnibus Budget Reconciliation Act Of 1981.
- Public Law 98-369, Approved July 18, 1984 (98 Stat. 494). Deficit Reduction Act Of 1984.
- Public Law 111-148, as amended. Approved March 23, 2010). Patient Protection and Affordable Care Act.
- Public Law 114-255, Approved December 13, 2016. 21st Century Cures Act
- Public Law 115-271, Approved October 24, 2018. (132 Stat. 3894). Substance Use-Disorder Prevention That Promotes Opioid Recovery and Treatment for Patients and Communities Act.
- Ranji, U., Gomez, I., & 2021. (2021, March 9). Expanding Postpartum Medicaid Coverage. KFF. <https://www.kff.org/womens-health-policy/issue-brief/expanding-postpartum-medicaid-coverage/>
- Roosa Tikkanen et al. (2020) Maternal Mortality and Maternity Care in the United States Compared to 10 Other Developed Countries Commonwealth Fund. <https://doi.org/10.26099/411v-9255>
- Roper, V., & Cox, K. J. (2017). Opioid Use Disorder in Pregnancy. *Journal of Midwifery & Women's Health*, 62(3), 329-340. <https://doi.org/10.1111/jmwh.12619>
- Semprini, J. (2020). Expanding the Capacity of Rural Cancer Care With Teleoncology. *Online Journal of Rural Research & Policy*, 15(2). <https://doi.org/10.4148/1936-0487.1101>
- USDA (2021): Economics Research Services Rural Urban Continuum Codes. <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>
- Weller, A. E., Crist, R. C., Reiner, B. C., Doyle, G. A., & Berrettini, W. H. (2021). Neonatal Opioid Withdrawal Syndrome (NOWS): A Transgenerational Echo of the Opioid Crisis. *Cold Spring Harbor Perspectives in Medicine*, 11(3), a039669. <https://doi.org/10.1101/cshperspect.a039669>

APPENDIX

Table 1. State Inclusion Criteria

	Decision	Reason	Model/Waiver
Colorado	Included	State has rural designated areas and published MOM model documentation.	Model <sup>1</sup>
Indiana	Included	State has rural designated areas & CMS published 1115 Waiver documentation.	Waiver <sup>2</sup>
Missouri	Included	State has rural designated areas and CMS published 1115 Waiver documentation.	Waiver <sup>3</sup>
Maine	Included	State has rural designated areas and published MOM model documentation.	Model <sup>4</sup>
Texas	Excluded	MOM Model documentation not publicly available <sup>6</sup>	Model <sup>5</sup>
Tennessee	Excluded	MOM Model documentation not publicly available <sup>6</sup>	Model <sup>5</sup>
West Virginia	Excluded	MOM Model documentation not publicly available <sup>6</sup>	Model <sup>5</sup>
Maryland	Excluded	No rural designated counties <sup>7</sup>	Model <sup>6</sup>

Sources:

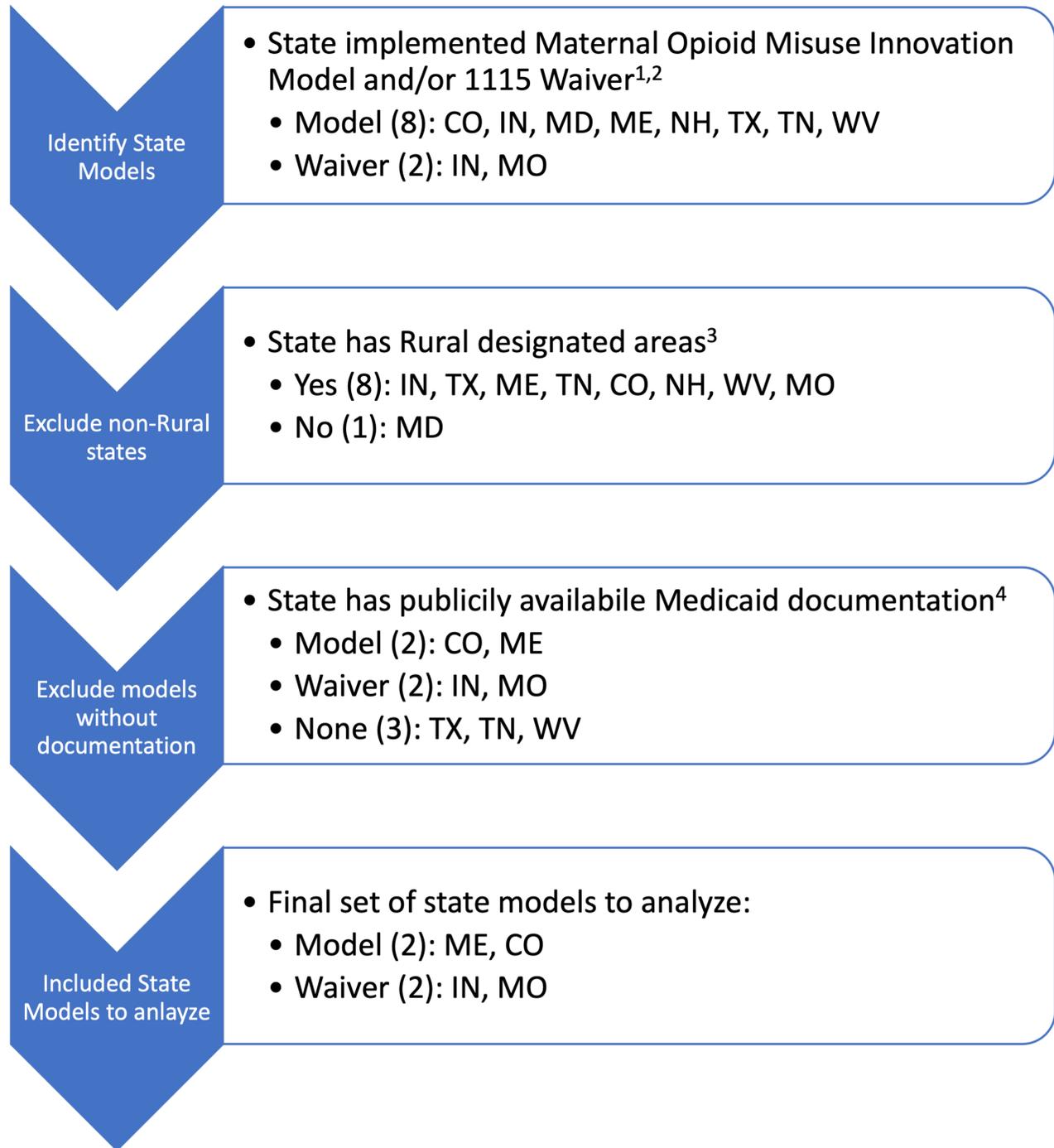
1. <https://hcpf.colorado.gov/maternal-opioid-misuse-model>
2. <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/103641>
3. <https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/82361>
4. <https://www.maine.gov/dhhs/oms/about-us/projects-initiatives/mainemom>
5. <https://innovation.cms.gov/innovation-models/map#model=maternal-opioid-misuse-mom-model>
6. <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>

**Table 2.** Synthesizing State Approaches to Addressing Maternal Opioid Misuse through Medicaid

	Colorado	Indiana	Missouri	Maine
<i>MOM Model State Activity</i>				
Submitted 1115 Waiver				
Implemented 1115 Waiver				
Implemented CMMI Demonstration Model				
<i>MOM Model Demonstration Approaches</i>				
Insurance Payer Partner				
Health System Provider Partner				
Integrated Care				
Expand Medicaid Coverage				
Expand Medicaid Benefits				
Include Telehealth in Medicaid MOM Model				
Include Peer Support in Medicaid MOM Model				
Include ECHO in Medicaid Mom Model				
<i>MOM Model Evaluation</i>				
Publicly Available Evaluation Protocol/Plan				
Explicit Goal to Improve Rural Health				

*Note:* Shaded cells indicate the state adopted the provision in their respective 1115 Waiver or Demonstration.

Figure 1. Inclusion Flowchart



Notes:

1. CMS 202: Maternal Opioid Misuse (MOM) Innovation Model

<https://innovation.cms.gov/innovation-models/map#model=maternal-opioid-misuse-mom-model>

2. CMS 2021: Medicaid Waiver List

<https://www.medicaid.gov/medicaid/section-1115-demo/demonstration-and-waiver-list/index.html>

3. USDA ERS: Rural Urban Continuum Codes <https://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx>

4. At the time of analysis (4/30/2021) IN, TX, TN, and WV did not make Medicaid Innovation MOM Model documentation publicly available.