HHS Public Access

Author manuscript

J Subst Use Addict Treat. Author manuscript; available in PMC 2024 December 01.

Published in final edited form as:

J Subst Use Addict Treat. 2024 January ; 156: 209208. doi:10.1016/j.josat.2023.209208.

Increasing access to quality care for pregnant and postpartum people with opioid use disorder: Coordination of services, provider awareness and training, extended postpartum coverage, and perinatal quality collaboratives☆

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Supplementary data to this article can be found online at https://doi.org/10.1016/j.josat.2023.209208.

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Abstract

Introduction: Fifteen states participating in the Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative Learning Community (OMNI LC) developed action plan goals and activities to address the rise in opioid use disorder (OUD) among birthing persons. In a separate initiative, Perinatal Quality Collaboratives (PQCs) from 12 states participating in Centers for Disease Control and Prevention (CDC)-supported activities hosted trainings to improve the provision of OUD services and implement protocols for screening and treatment in delivery facilities.

Methods: This descriptive study synthesizes qualitative data extracted from 15 OMNI LC state action plans, excerpts from qualitative interviews conducted with OMNI LC state teams, and quantitative data from quarterly project performance monitoring reports from 12 CDC-funded PQCs implementing quality improvement activities to address clinical service gaps for pregnant and postpartum people with OUD. Qualitative data were deidentified, coded as barriers or facilitators, then aggregated into emergent themes. Count data are presented for quantitative results.

Results: The OMNI LC states identified a lack of coordinated care among providers, stigma toward people with OUD, discontinued insurance coverage, and inconsistencies in screening and treating birthing people with OUD as barriers to accessing quality care. State-identified facilitators for access to quality care included: 1) improving engagement and communication between providers and other partners to integrate medical and behavioral health services post-discharge, and facilitate improved patient care postpartum; 2) training providers to prescribe medications for OUD, and to address bias and reduce patient stigma; 3) extending Medicaid coverage up to one year postpartum to increase access to and continuity of services; and 4) implementing screening, brief intervention, and referral to treatment (SBIRT) in clinical practice. PQCs demonstrated that increased provider trainings to treat OUD, improvements in implementation of standardized protocols, and use of evidence-based tools can facilitate access to and coordination of services in delivery facilities.

Conclusion: State-identified facilitators for increasing access to care include coordinating integrated services, extending postpartum coverage, and provider trainings to improve screening and treatment. PQCs provide a platform for identifying emerging areas for quality improvement initiatives and implementing clinical best practices to provide comprehensive, quality perinatal care for birthing populations.

Keywords

Opioid use disorder; Pregnant and postpartum; Perinatal quality collaboratives; Access to care

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1. Introduction

1.1. Opioid use disorder in pregnant and postpartum people

Pregnancy-related mortality (defined as the death of a women during pregnancy or within one year of the end of pregnancy due to a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy) increased from 7.2 deaths per 100,000 live births in 1987 to 17.6 deaths in 2019 (Pregnancy Mortality Surveillance System, Centers for Disease Control and Prevention, 2023). From 2017 to 2019, the leading cause of pregnancy-related death according to Maternal Mortality Review Committees (MMRCs) at 22.7 % was mental health conditions such as deaths of suicide, overdose/poisoning related to substance use disorder, and other deaths related to a mental health condition including substance use disorder (Trost et al., 2022). The significant increase in pregnancy-related deaths and associated infant health outcomes, has elicited a public health response to address the opioid crisis among pregnant and postpartum people (Patrick & Schiff, 2017; White, Ray-Griffith, & Coker, 2023).

From 2010 to 2017, diagnoses of opioid use disorder (OUD) increased from 3.5 cases to 8.2 cases per 1000 delivery hospitalizations (Hirai, Ko, Owens, Stocks, & Patrick, 2021). A corresponding increase occurred in diagnoses of neonatal abstinence syndrome (NAS) from 4.0 to 7.3 cases per 1000 hospital births during the same period (Hirai et al., 2021). The Comprehensive Addiction and Recovery Act of 2016, S. 524, 114th Cong. (2016) reauthorized the funding of initiatives related to residential treatment and recovery services for pregnant people, and development of plans of safe care for infants and caregivers. Screening, treatment, and provision of evidence-based care can reduce negative outcomes for pregnant and postpartum people with OUD (Ko et al., 2020) and infants with substance use withdrawal resulting in a broad diagnosis of NAS (Finnegan, Kron, Connaughton, & Emich, 1975) or, more specifically, neonatal opioid withdrawal syndrome (NOWS) (Jilani et al., 2021; Patrick, Barfield, & Poindexter, 2020; Picotti et al., 2019).

1.2. Increasing state capacity to address OUD among pregnant and postpartum people

To support states in implementing systems changes to address OUD among pregnant and postpartum people and infants prenatally exposed to substances, in 2018, the Centers for Disease Control and Prevention (CDC) partnered with the Association of State and Territorial Health Officials (ASTHO) to invite state participation in the Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative (OMNI) Learning Community (LC; referred to as the OMNI LC). Fifteen state teams participated in the OMNI LC from October 2018 through August 2021. State teams were composed of state health officials or their designees, state Medicaid medical directors, state maternal and child health directors, state behavioral health or alcohol and drug abuse program directors, and clinical providers. State teams developed action plans with goals to improve capacity to meet the needs of pregnant and postpartum people, infants, and families affected by the opioid crisis (Kroelinger et al., 2019). Though the OMNI LC consisted of six areas of focus described elsewhere (see Kroelinger et al., 2019), the two focus areas most frequently identified among participating states were *access to and coordination of quality services* and *provider awareness and training* (Kroelinger et al., 2019; Kroelinger et al., 2020). *Access to and*

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coordination of quality services was defined as the assessment of eligibility and availability of services to aid in treatment, referral, or recovery efforts, coordination of quality care, and integration of ancillary services (Kroelinger et al., 2019). *Provider awareness and training* included guidance and education for providers on treatment protocols and guidelines to standardize care, screen and refer for treatment, and increase familiarity with clinical or social service resources and relevant state-specific laws and policies (Kroelinger et al., 2019).

1.3. Treating OUD among pregnant and postpartum people

Prescribing recommended medications for OUD (MOUD), such as methadone or buprenorphine, can support provision of a collaborative care model by providers, delivery hospitals, and health systems when addressing the needs of pregnant and postpartum people (Ecker et al., 2019). Screening, brief intervention, and referral to treatment (SBIRT) is a strategy recommended by clinical organizations to identify OUD, with MOUD offered to improve maternal and infant health outcomes (ACOG, 2017; Ecker et al., 2019). The development of protocols within delivery hospitals can facilitate the identification, referral, and treatment of OUD among birthing people and infants who are prenatally exposed to substances at the time of delivery (Babor et al., 2017). These protocols may also include training and monitoring the clinical provision of MOUD including a thorough history of substance use and a review of the Prescription Drug Monitoring Program with patients prior to prescribing (Babor, Del Boca, & Bray, 2017; ACOG, 2017).

At the time when the OMNI LC was implemented, the current federal regulations required that providers obtain special certification (a “waiver”) to dispense “medication-assisted treatment” (US Food and Drug Administration, Controlled Substances Act, 21 U.S.C. § 823, n.d.). In late 2020, a change in practice guidelines through Federal Register Notice [86 FR 22439] removed the waiver requirement and allowed eligible providers who possess an active Drug Enforcement Administration (DEA) prescriber’s license to prescribe and treat up to 30 patients for OUD (US Department of Health and Human Services [HHS], 2021). In late 2022, Congress enacted the legislation, removing requirements for health care providers to provide a separate DEA waiver to dispense medication for substance use disorder maintenance treatment or detoxification (US Food and Drug Administration, Mainstreaming Addiction Treatment Act of 2021, U.S.C. § 823 amendment S.445, n.d.). Though the amended waiver policy and legislation removed process-related barriers and increased the number of providers eligible who provide MOUD, continued provider trainings for screening, referral, and treatment of pregnant and postpartum people with OUD remain important for supporting the unique needs of this population (ACOG, 2017; Cleary et al., 2021).

1.4. Role of perinatal quality collaboratives (PQCs)

Perinatal Quality Collaboratives (PQCs) are state or multi-state networks of multidisciplinary teams of clinical providers and other public health professionals implementing quality improvement (QI) initiatives statewide in hospitals and other facilities to equitably improve reproductive and infant health care and outcomes (Gupta, Donovan, & Henderson, 2017; Henderson et al., 2018). PQCs are uniquely positioned to identify gaps

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in health care processes and affect change at the facility and state level by reducing clinical practice variation and implementing clinical best practices (Henderson et al., 2018). PQCs also facilitate communication between clinicians and other public health professionals, collaborative learning, and the implementation of QI initiatives to achieve systems-level changes (Gupta et al., 2017; Henderson et al., 2018).

From September 2019 to September 2021, the CDC supported PQCs in 12 states and the National Network of PQCs (The National Institute of Children's Health Quality, n.d.) to address OUD among birthing people and their newborns (Centers for Disease Control and Prevention, n.d.; Centers for Disease Control and Prevention, 2023). With this support, PQCs were required to provide training that increased the number of providers with waivers to prescribe MOUD. However, PQCs had the option to implement additional activities, including: 1) provider trainings on screening for OUD; stigma, bias, and trauma-informed care; or treatment and identification of opioid-exposed newborns; 2) protocol development to standardize care and increase referral plans for local and community support in participating delivery hospitals; or 3) strategies to increase the number of pregnant and postpartum people with OUD receiving recommended screening and linkages to evidence-based care and resources.

1.5. Purpose

The CDC supported multiple activities as part of an overarching strategy to improve outcomes for pregnant and postpartum people with OUD and infants prenatally exposed to substances. This study analyzed data from two sources implemented in the overarching strategy during the same time frame to synthesize separate, yet complimentary efforts across many states. Reported data include summarized barriers and facilitators identified by OMNI LC state teams to increase access to and coordination of quality services and to improve provider awareness and training. Additionally, this study describes complementary QI activities implemented by PQCs. Both the OMNI LC and statewide PQCs worked to address OUD among birthing people at the state level and demonstrate ways in which public health and clinical providers can collaborate to affect change for those at higher risk of OUD. Presenting data from both sources offers a detailed description of activities within a state co-occurring in different systems: statewide in public health programming and clinically at delivery facilities.

2. Material and methods

2.1. Data collection and analysis

An evaluation team consisting of scientists and other public health professionals from the CDC, ASTHO, and the University of Illinois Chicago (UIC) collected and analyzed data. This descriptive study synthesizes: 1) qualitative data extracted from 15 OMNI LC state action plans; 2) excerpts from qualitative interviews conducted with OMNI LC state teams; and 3) quantitative data derived from quarterly project performance monitoring reports (PPMRs) from the 12 CDC-funded PQCs. Analysis of the state action plans was completed by the CDC and ASTHO, interviews were conducted and analyzed by UIC, and PQC reports were collected and analyzed by the CDC. State participation varied by project and states

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participating in the OMNI LC and states with CDC-funded PQCs did not have complete overlap; therefore, the two initiatives were evaluated separately. We deidentified data from each source, analyzed independent of the other sources, and summarized separately, i.e., findings from the OMNI LC are reported separately from findings from the PQCs.

This project was determined to be public health practice and did not require Institutional Review Board (IRB) approval from the CDC and was determined exempt from IRB approval by UIC.

2.1.1. State action plans—The OMNI LC included two cohorts of states, 12 participating in 2018 (Year 1), and an additional three participating in 2019 (Year 2), for a total of 15 states. We used content analysis to review the action plans developed by the 15 states participating in Year 2 of the OMNI LC from 2019 to 2020. An initial codebook was created using the OMNI LC definitions for the focus areas of 1) access to and coordination of quality services, and 2) provider training and awareness (Kroelinger et al., 2019). Two coders divided and independently reviewed the state action plans by applying initial codes, performing inductive coding, and then reconciling differences. Once we applied codes to all state action plans, the coders exchanged state plans and concurrently reviewed all codes. The team resolved discrepancies in coding through consensus, then we randomly selected 10 % of codes to assess coding consistency and validity by a third, independent reviewer. Next, each coder coded excerpts and independently categorized them as a barrier or a facilitator and grouped them into categories to identify themes. Again, the excerpts were exchanged among coders, discrepancies resolved through consensus discussion, and 20 % of the categories were randomly selected and validated by the third reviewer. Finally, we aggregated the barriers and facilitators identified, sorted them according to emergent themes, and summarized them.

2.1.2. State team interviews—Qualitative telephone interviews were conducted with the 15 state teams participating in the OMNI LC between December 2019 and March 2020. Between two and five individuals from each state's team participated. The study asked teams open-ended questions about the feasibility of the goals in state action plans and barriers and facilitators affecting both the development and implementation of OMNI LC activities. State-team interviews were audio recorded, transcribed, and entered into Dedoose (SocioCultural Research Consultants, LLC, 2021), a cloud-based data analysis software (released November 2021). The evaluation team coded excerpts, then created a search-word query of the data for coded excerpts identifying how state teams leveraged PQCs to achieve state-developed goals. The queried excerpts were exported from the software, de-identified, and sorted. We selected excerpts to illustrate the emergent themes from state action plans, and to provide context to data reported by the OMNI LC.

2.1.3. Perinatal quality collaboratives project performance monitoring reporting—We derived descriptive statistics (i.e., counts and/or percentages) from the quarterly PPMRs submitted to CDC by CDC-funded PQCs. For this analysis, data counts are presented on the implementation of OUD-specific care protocols for pregnant and postpartum patients and evidence-based, universal self-reported OUD screening tools in participating delivery hospitals at baseline and at the end of the project. PQCs also

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participated in an OUD treatment training course focused on equipping clinicians with the education needed to obtain the waiver to prescribe buprenorphine to treat pregnant and postpartum patients. Data are presented on the type and number of trainings offered by PQCs to participating hospitals and the number of providers that completed training.

3. Results

Analysis of the state action plans revealed several emergent themes related to the OMNI focus areas of *access to and coordination of quality care* and *provider awareness and training*. To provide additional context to the barriers and facilitators identified by the states, interview excerpts accompany each description. The study categorized barriers and facilitators into four broad themes: 1) partner engagement and the coordination of integrated services; 2) provider awareness, training, and service capacity; 3) insurance eligibility, coverage, and reimbursement; and 4) universal screening, treatment, and referral protocols. Data from the PQC PPMRs describe the development and implementation of OUD-specific protocols and trainings to providers participating in quality improvement initiatives.

3.1. Barriers to access to and coordination of quality care

Partner engagement and coordination of integrated services was identified as a barrier to accessing quality care for OUD by state teams; all of which indicated a lack of coordination between clinical providers, delivery hospitals, and other ancillary providers to deliver comprehensive, integrated support services for pregnant and postpartum people, their infants, or their families (Table 1). The next major theme highlighted barriers to provider awareness, training, and service capacity. Examples include insufficient numbers of trained providers actively prescribing MOUD, insufficient numbers of in-patient treatment beds, unsustainable support programs, and provider bias toward persons with OUD. The insurance eligibility, coverage, and reimbursement theme included limited Medicaid eligibility and coverage periods up to 60 days postpartum which impacted continuity of care; and states identified a need for standardized billing codes to support optimal Medicaid and private insurance reimbursement for screening, treatment, and ancillary support services. Lastly, a lack of universal protocols, including those for identifying and screening for OUD, referring to treatment, and reporting to law enforcement or child protective services (CPS) were identified as barriers to accessing coordinated treatment and influenced patient willingness to seek treatment due to fear of negative consequences.

Interviews with key informants from OMNI LC state teams provided additional context for several barriers identified in the state action plans. For example, state team members discussed the need to train more clinicians participating in the statewide PQCs to provide MOUD and to encourage and support previously trained providers who are actively prescribing MOUD.

> "Well, I think one of the things that we've heard… is that it's one thing to be waivered, it's another thing to actually practice. This is a new mode of practice for certain providers. And, also to have the support within your healthcare system. So, we have a lot of providers that might be interested, but they might not have mentorship, or they might not have the ability to talk through cases with someone

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> with an attending or something like that. So, the capacity needs to be built at multiple levels. …And so, we want to help people not only get the waiver, but then provide the resources and supports to help them feel like they can then actually do the counseling and the prescribing. So, there's a couple different hurdles we want to support teams for."

State teams discussed how stigma toward pregnant and postpartum people with OUD impacted access to and coordination of quality care, indicating a need for provider trainings to reduce bias and discrimination. As one state team member said,

> "We hear anecdotal stories about either a physician or a nurse, who struggles with understanding that substance use disorder is not a life choice necessarily. We've heard that it does impact the care, and we also hear from our nurses [and] when we talked to the providers out there, is that they do struggle with understanding addiction, understanding how to respond and react to the women in their care."

Please see Supplemental Table 1 for additional qualitative excerpts supporting study findings.

3.2. Facilitators for access to and coordination of quality care

All states listed facilitators for improved access to and coordination of quality care grouped through qualitative analysis into the themes of partner engagement and the coordination of integrated services; provider awareness, training, and service capacity; insurance eligibility, coverage, and reimbursement; and universal screening, treatment, and referral protocols for persons with OUD. Partner engagement and the coordination of integrated services included facilitators such as improving communication between prenatal clinics and birthing hospitals to aid standardized practices; disseminating research, policies, and plans of safe care among clinical providers and other partners; mapping the availability of providers trained to provide MOUD; and implementing policies to integrate behavioral health into medical settings (Table 2). Most states identified approaches to build provider awareness, training, and service capacity including coordinated buprenorphine trainings to increases the number of providers trained to prescribe MOUD, and implicit bias trainings for clinicians and other public health professionals to reduce bias, stigma, and discrimination toward perinatal patients with OUD. Next, states highlighted facilitators for insurance eligibility, coverage, and reimbursement such as standardizing definitions, protocols for insurance coding and billing to optimize reimbursement for SBIRT and expanding Medicaid coverage beyond the 60-day postpartum period. Lastly, states identified facilitators for improving universal screening, treatment, and referral for OUD, such as implementing standard definitions and protocols in birthing hospitals and other clinical settings for evidence-based identification, screening, and treatment referral. Some states developed universal protocols for the notification of CPS and/or the referral to support services or other ancillary programs offered through CPS.

Facilitators for improving access to quality care via the strategies listed above were discussed during state team evaluation interviews. Consistent with data derived from the action plans, analysis of OMNI LC state team qualitative excerpts described facilitators such

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as the coordination of clinical care, particularly following discharge, and the implementation of evidence-based protocols for screening, referral, and treatment.

> "One piece of our [OMNI LC state team] initiative is in partnership with the care team, working with the family and the community pediatrician to create a coordinated discharge plan to ensure that all the warm handoffs are being completed for the dyad by infant discharge and maternal discharge."

OMNI LC state teams discussed implementing protocols to identify, screen, and refer pregnant and postpartum people with OUD to treatment. For example, one team shared how delivery hospitals are implementing OUD-specific protocols as a primary facilitator for the screening of OUD:

> "A lot of hospital sites are moving toward using a validated screening tool to screen pregnant women and when admitted to delivery, women for substance use disorders. That's been a big area that a lot of hospitals are tackling."

Some states expressed how clear and consistent protocols could facilitate appropriate pain management for birthing people with OUD and described collaboration with PQCs to increase the number of delivery hospitals with OUD-specific pain management protocols in place. One state team shared,

> "We've also addressed issues in regard to pain management of women who have substance use disorder and are on medication assisted therapy and/or are not, and are in labor, and trying to make sure that our doctors who are treating the pain are understanding the importance of caring for the women the same way they would care for a woman who does not have a substance use disorder, or who is not prescribed daily medication assisted treatment."

3.3. Project performance progress and monitoring reporting from state-based perinatal quality collaboratives

All 12 CDC-funded PQCs worked statewide to increase the number of providers with waivers to prescribe or dispense buprenorphine to treat pregnant and postpartum people, which included hosting their own waiver trainings or encouraging participation in national OUD treatment training courses. Other types of PQC-hosted trainings were optional, including provider trainings on screening for OUD; stigma, bias, and trauma-informed care; and MOUD and/or behavioral treatment for OUD (Table 3).

All CDC-funded PQCs reported increases in hospital participation in PQC QI initiatives to address OUD from baseline (September 2019) to end of project (September 2021; Table 4). Nine of the 12 PQCs implemented protocols in participating delivery hospitals for pregnant and postpartum people with OUD and opioid exposed newborns. Six PQCs reported on activities to increase the number of hospitals providing recommended screening and OUD treatment resources post-discharge.

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4. Discussion

In their action plans, OMNI LC state teams reported similar barriers and facilitators, such as the integration and coordination of clinical services, provider training, extended insurance coverage and expanded eligibility, and universal screening and treatment for pregnant and postpartum people with OUD. Specifically, teams identified a focus on coordination of patient care during pregnancy, prior to and following delivery; provider awareness and training to reduce OUD stigma; the expansion of coverage to ensure continuity of care; the development of OUD-specific protocols in birthing hospitals for the care and pain management of pregnant and postpartum people; and integrating SBIRT into clinical practice as facilitators for increased quality care access.

Coordination of care following delivery hospital discharge is dependent on the availability of providers in local health care systems, including obstetrical and behavioral health providers; referral patterns and care integration; standardization of care; patient trust; and patient attendance of follow-up visits during the postpartum period (Alexander et al., 2021; Dopp, Zabel Thornton, Kozhimannil, Jones, & Greenfield, 2020; Hodgins, Lang, Malseptic, Melby, & Connolly, 2019; Joshi et al., 2021 & Sutter, Gopman, & Leeman, 2017). Substance use disorder treatment programs integrated with wrap-around and support services offer opportunities to coordinate medical and behavioral recovery services with individualized patient needs (Martin & Parlier-Ahmad, 2021). PQCs can effectively implement clinical toolkits and protocols, improve screening and referral to treatment, and improve care for birthing people with OUD and infants prenatally exposed to substances (Gupta et al., 2017; Henderson et al., 2018; King et al., 2020). In our qualitative analysis of state action plans and interviews, state teams identified improvement in provider communication and integration of medical and behavioral health services post-discharge as facilitators for improved postpartum patient care and described how PQCs were leveraged to support the activities of the OMNI LC.

States participating in the OMNI LC identified the need for more providers trained and willing to provide MOUD with training to decrease stigma and bias toward birthing people with OUD and support comprehensive, coordinated care. While previous studies have highlighted provider awareness and training as a separate area of focus identified by the OMNI LC (Kroelinger et al., 2019; Kroelinger et al., 2020), this study examined provider training as a component of overall access to and coordination of quality services. Provider awareness and training included guidance and education for providers on treatment protocols and guidelines to standardize care, screen and refer for treatment, and increase familiarity with additional clinical or social service resources and relevant state-specific laws and policies (Kroelinger et al., 2019).

Recent research suggests that despite being waivered or trained, providers may not prescribe or treat pregnant people with OUD (Howard & Freeman, 2020, Tiako, Culhane, South, Srinivas, & Meisel, 2020; Patrick, Martin, Scott, Michael Richards, & Cooper, 2018). Barriers to patients' receipt of MOUD include provider level of comfort with prescribing for this population, geographic availability (with more resources offered in urban settings), and fewer prescribing providers with hospital privileges (Howard & Freeman, 2020; Tiako

et al., 2020; Patrick et al., 2018). For example, Shadowen, Wheeler, and Terplan (2021) found that regardless of overall level of knowledge about OUD, clinical providers held negative perceptions toward birthing people with OUD who are pregnant or seek to become pregnant. Further, providers may offer varying treatment options for OUD by race and age (Rosenthal et al., 2021). Patient distrust of providers and concerns about law enforcement, including the involvement of CPS, impacts care-seeking behaviors during the prenatal period, labor, and delivery (Martin, Almeida, Thakkar, & Kimbrough, 2021). In addition to waiver trainings, PQCs facilitated provider trainings on topics to improve equitable care among this population, such as screening for OUD, and stigma, bias, and trauma-informed care, suggesting PQCs are a mechanism through which stigma-related barriers may be addressed. Additionally, PQCs implement quality improvement initiatives focused on best clinical practices such as respectful and equitable care.

Respectful and equitable maternity care, which is free from mistreatment and supports patient autonomy, dignity, accountability, and informed consent, has emerged in clinical practice guidelines (Association of Women's Health, Obstetric and Neonatal Nurses, 2022) and recent summaries of substance use treatment models for women and infants (Ford et al., 2021; Joshi et al., 2021). To promote respectful care, studies suggest multi-disciplinary, family-centered, and recovery-oriented care be provided free of stigma or discrimination to pregnant and postpartum people with OUD (Ford et al., 2021; Joshi et al., 2021; Martin et al., 2021 & Sutter et al., 2017). Provider trainings, such as those hosted by PQCs, may reduce bias, stigma, and discrimination related to substance use disorders and increase understanding of treatment and evidence-based interventions.

OMNI LC state teams recognized that extending Medicaid coverage beyond 60 days postpartum may increase access to and continuity of services for pregnant and postpartum people with OUD. A provision of the American Rescue Plan Act of 2021, H.R. 1319, 117th Cong. (2021) offers an option for states to extend Medicaid coverage of postpartum care up to one year through state plan amendments. More than two in five births in the U.S. are financed by Medicaid (Medicaid and CHIP Payment and Access Commission, 2020), and extending care for Medicaid recipients up to 365 days postpartum provides coverage for a substantial proportion of people of reproductive age and could impact provision of care for mental and behavioral health services, offer access to continued treatment options for chronic conditions and addiction, and ultimately, prevent pregnancy-related deaths (Eckert, 2020; Farrell & Evans, 2020; Gordon, Hoagland, Admon, & Daw, 2022; Luther, Johnson, Joynt Maddox, & Lindley, 2021; Moore, McLemore, Glenn, & Zivin, 2021). In 2018, ACOG revised guidance for optimizing the postpartum visit, recommending care expand beyond the initial six-week visit to include comprehensive well-woman care during the 'fourth trimester,' facilitated by supportive reimbursement policies (ACOG, 2018). As of November 2023, 39 states and the District of Columbia have extended Medicaid coverage (KFF, 2023).

Participating OMNI LC state teams highlighted SBIRT as a facilitator for coordinating care among pregnant and postpartum people with OUD. SBIRT has shown utility as an intervention for recognizing substance use disorder in clinics (Moberg & Paltzer, 2021), and more recently, has been used to refer tobacco and illicit drug using women of reproductive

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age to treatment (Forray et al., 2019) and in prenatal care settings (Hostage, Brock, Craig, & Sepulveda, 2020; Ulrich, Memmo, Cruz, Heinz, & Iverson, 2021). Resource tools in delivery facilities, such as care bundles focused on patient safety and optimal care, offer guidance for implementing universal screening protocols with quality improvement methods (Krans et al., 2019; Alliance for Innovation on Maternal Health [AIM], 2020). The Alliance for Innovation on Maternal Health (AIM) substance use disorder care bundle, for example, recommends the use of SBIRT during labor and delivery to screen, counsel, and refer to treatment prior to hospital discharge (AIM, 2020). PQCs are the infrastructure to implement AIM care bundles (Henderson et al., 2018) and our findings indicate PQCs were able to increase the number of delivery hospitals with protocols for the care of pregnant and postpartum people with OUD, OUD-specific pain management and opioid prescribing, and availability of OUD treatment resources post-discharge.

Our findings are consistent with previous qualitative studies highlighting patient perspectives and conclude the use of coordinated, team-based care and integrated services serve as facilitators of care while provider bias, lack of insurance coverage, and lack of awareness of treatment options remain barriers for pregnant and postpartum people with substance use disorders (Barnett, Knight, Herman, Amarakaran, & Jankowski, 2021). Our findings add to the literature as the results are focused on OUD and include provider and public health professional perspectives, synthesizing data from 15 participating states and 12 PQCs across the nation. Additionally, our study highlights the role of provider training to increase and improve screening, referral, and treatment – including providing MOUD - to impact maternal outcomes for pregnant and postpartum people with OUD.

4.1. Limitations

This study had several limitations. First, the data collected, and findings presented were from two different sources. While some states provided data for both sources, not all state teams participated in the OMNI LC or in the CDC-supported PQC opioid QI initiatives or activities. The findings provided by both projects are complementary and overlap, addressing state-identified barriers to patient access to services. Second, findings are limited to participating states and the results are not generalizable to all states in the U.S. However, these findings can inform other states in the planning of programmatic activities for pregnant and postpartum people with OUD and their infants. Third, data collected through interviews or self-reporting may have been affected by response bias as state teams were interviewed in groups rather than individually. Fourth, state action plans varied in level of detail and required some interpretation; though the qualitative analysis protocol employed included consensus-based decision-making to limit over-interpretation. Fifth, not every PQC was required to implement all OUD initiative activities in participating hospitals. The study had no specific requirements for identifying which participating hospital submitted reported data on each metric, potentially introducing reporting bias. Last, the pandemic restricted travel and in-person gatherings, which impacted the OMNI LC in-person meetings, delivery of the provider trainings, and resource commitments by participating states for clinical and non-clinical activities. While the shift to virtual formats may have allowed more people to participate in meetings and trainings because of the lack of travel necessity, the pandemic also required shifts in staffing or funding resources, and activities may have been paused

or scaled down to support response activities. PQCs reported challenges with hospital participation, staffing, and data reporting due to the pandemic.

5. Conclusions

Facilitators for providing comprehensive care to pregnant and postpartum people with OUD such as coordinating integrated services, provider trainings to improve screening and treatment, and extending postpartum coverage, were identified by state teams participating in the OMNI LC. PQCs are one mechanism through which states can improve patient access to quality care and services for pregnant and postpartum people with OUD and their families. Evaluating the continued efforts of states to coordinate care and services, provide equitable, evidence-based care through provider training and support, extend postpartum Medicaid coverage, and implement universal screening and referral protocols (e.g., SBIRT) may identify additional barriers and facilitators affecting these efforts and ultimately, patient outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgements

The authors acknowledge the support of the Opioid Response Coordinating Unit (ORCU) located within the National Center for Injury Prevention and Control (NCIPC) at the CDC, the Association of State and Territorial Health Officials (ASTHO), and the University of Illinois at Chicago. The authors recognize all members of participating OMNI LC state teams and providers in facilities participating in statewide PQCs.

Funding

Partial funding of this activity was provided by CDC-RFA-OT18-1802 and CDC-RFA-OT18-1804.

References

Alexander K, Short V, Gannon M, Goyal N, Naegle M, & Abatemarco DJ (2021). Identified gaps and opportunities in perinatal healthcare delivery for women in treatment for opioid use disorder. Substance Abuse, 42(4), 552–558. 10.1080/08897077.2020.1803178 [PubMed: 32814008]

Alliance for Innovation on Maternal Health. (2020). Retrieved February 4, 2022 from https://safehealthcareforeverywoman.org//wp-content/uploads/FINAL_AIM_Bundle_CPPPSUD-EID-1.pdf.

American College of Obstetricians and Gynecologists. (2017). Opioid use and opioid use disorder in pregnancy. Committee Opinion No. 711. Obstetrics & Gynecology, 130(2), e81–e94. 10.1097/AOG.0000000000002235 [PubMed: 28742676]

American College of Obstetricians and Gynecologists. (2018). ACOG Committee opinion no. 736: Optimizing postpartum care. Obstetrics & Gynecology, 131(5), e140–e150. 10.1097/AOG.0000000000002633 [PubMed: 29683911]

American Rescue Plan Act of 2021. H.R. 1319. (2021). PLN 117–2. Section 9812. Text - H.R.1319 – 117th Congress (2021–2022). https://www.congress.gov/bill/117th-congress/house-bill/1319/text.

Association of Women"s Health, Obstetric and Neonatal Nurses. (2022). Respectful maternity care framework and evidence-based clinical practice guideline. Journal of Obstetric, Gynecologic, and Neonatal Nursing, S0884–2175(22), 00001–00006. Advance online publication. 10.1016/j.jogn.2022.01.001

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Babor TF, Del Boca F, & Bray JW (2017). Screening, brief intervention and referral to treatment: Implications of SAMHSA's SBIRT initiative for substance abuse policy and practice. Addiction, 112, 110–117. 10.1111/add.13675 [PubMed: 28074569]

Barnett ER, Knight E, Herman RJ, Amarakaran K, & Jankowski MK (2021). Difficult binds: A systematic review of facilitators and barriers to treatment among mothers with substance use disorders. Journal of Substance Abuse Treatment, 126, Article 108341. 10.1016/j.jsat.2021.108341 [PubMed: 34116826]

Centers for Disease Control and Prevention. About CDC's Work on Opioid Use During Pregnancy: Division of Reproductive Health. Retrieved November 6, 2023 from https://www.cdc.gov/pregnancy/opioid/about.html.

Centers for Disease Control and Prevention. (2023). Perinatal Quality Collaboratives. Retrieved November 6, 2023 from https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc.htm.

Cleary EM, Smid MC, Charles JE, Jones KM, Costantine MM, Saade G, & Rood KM (2021). Buprenorphine X-waiver exemption–beyond the basics for the obstetrical provider. American Journal of Obstetrics & Gynecology MFM, 3(6), Article 100451. 10.1016/j.ajogmf.2021.100451 [PubMed: 34320429]

Comprehensive Addiction and Recovery Act of 2016. H.R. 953. PLN 114–198. 114th Cong. (2016). https://www.congress.gov/bill/117th-congress/house-bill/1319/text. Accessed January 18, 2023.

Dopp A, Zabel Thornton M, Kozhimannil K, Jones CW, & Greenfield B (2020). Hospital care for opioid use disorder in pregnancy: Challenges and opportunities identified from a Minnesota survey. Women's Health, 16, Article 1745506520952006. 10.1177/1745506520952006

Ecker J, Abuhamad A, Hill W, Bailit J, Bateman BT, Berghella V, … Yonkers KA (2019). Substance use disorders in pregnancy: Clinical, ethical, and research imperatives of the opioid epidemic: A report of a joint workshop of the Society for Maternal-Fetal Medicine, American College of Obstetricians and Gynecologists, and American Society of Addiction Medicine. American Journal of Obstetrics and Gynecology, 221(1), B5–B28. 10.1016/j.ajog.2019.03.022

Eckert E (2020). Preserving the momentum to extend postpartum Medicaid coverage. Women's Health Issues, 30(6), 401–404. 10.1016/j.whi.2020.07.006 [PubMed: 32917466]

Farrell ME, & Evans ML (2020). Leaving half the population behind - the continued fight to cover America's mothers: A call to action. American Journal of Obstetrics and Gynecology, 223(3), 379–e1. 10.1016/j.ajog.2020.05.034

Finnegan LP, Kron RE, Connaughton JF, & Emich JP (1975). Assessment and treatment of abstinence in the infant of the drug-dependent mother. International Journal of Clinical Pharmacology and Biopharmacy, 12(1–2), 19–32. [PubMed: 1100537]

Ford S, Clarke L, Walsh MC, Kuhnell P, Macaluso M, Crowley M, … Kaplan HC (2021). Quality improvement initiative to improve healthcare providers' attitudes towards mothers with opioid use disorder. Pediatric Quality & Safety, 6(5). https://0.1097/pq9.0000000000000453.

Forray A, Martino S, Gilstad-Hayden K, Kershaw T, Ondersma S, Olmstead T, & Yonkers KA (2019). Assessment of an electronic and clinician-delivered brief intervention on cigarette, alcohol, and illicit drug use among women in a reproductive healthcare clinic. Addictive Behaviors, 96, 156–163. 10.1016/j.addbeh.2019.05.007 [PubMed: 31100713]

Gordon SH, Hoagland A, Admon LK, & Daw JR (2022). Extended postpartum Medicaid eligibility is associated with improved continuity of coverage in the postpartum year. Health Affairs, 41(1), 69–78. 10.1377/hlthaff.2021.00730 [PubMed: 34982627]

Gupta M, Donovan EF, & Henderson Z (2017). State-based perinatal quality collaboratives: Pursuing improvements in perinatal health outcomes for all mothers and newborns. Seminars in Perinatology, 41(3), 195–203. 10.1053/j.semperi.2017.03.009 [PubMed: 28646987]

Henderson ZT, Ernst K, Simpson KR, Berns S, Suchdev DB, Main E, & Olson CK (2018). The National Network of state perinatal quality collaboratives: A growing movement to improve maternal and infant health. Journal of Women's Health, 27(3), 221–226. 10.1089/jwh.2018.6941

Hirai AH, Ko JY, Owens PL, Stocks C, & Patrick SW (2021). Neonatal abstinence syndrome and maternal opioid-related diagnoses in the US, 2010–2017. JAMA, 325(2), 146–155. 10.1001/jama.2020.24991 [PubMed: 33433576]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Hodgins FE, Lang JM, Malseptic GG, Melby LH, & Connolly KA (2019). Coordinating outpatient care for pregnant and postpartum women with opioid use disorder: Implications from the COACHH program. Maternal and Child Health Journal, 23(5), 585–591. 10.1007/s10995-018-2683-y [PubMed: 30604105]

Hostage JC, Brock J, Craig W, & Sepulveda D (2020). Integrating screening, brief intervention and referral to treatment (SBIRT) for substance use into prenatal care. Maternal and Child Health Journal, 24(4), 412–418. 10.1007/s10995-020-02892-9 [PubMed: 32026324]

Howard HG, & Freeman K (2020). US survey of factors associated with adherence to standard of care in treating pregnant women with opioid use disorder. Journal of Psychosomatic Obstetrics and Gynecology, 41(1), 74–81. 10.1080/0167482X.2019.1634048 [PubMed: 31244358]

Jilani SM, Jones HE, Grossman M, Jansson LM, Terplan M, Faherty LJ, … Davis JM (2021). Standardizing the clinical definition of opioid withdrawal in the neonate. Pediatrics, 243, 33–39. 10.1016/j.jpeds.2021.12.021

Joshi C, Skeer MR, Chui K, Neupane G, Koirala R, & Stopka TJ (2021). Women-centered drug treatment models for pregnant women with opioid use disorder: A scoping review. Drug and Alcohol Dependence, 226, Article 108855. 10.1016/j.drugalcdep.2021.108855 [PubMed: 34198134]

Kaiser Family Foundation [KFF]. (2023). Medicaid Postpartum Coverage Extension Tracker. Retrieved November 7, 2023 from https://www.kff.org/medicaid/issue-brief/medicaid-postpartum-coverage-extension-tracker.

King PAL, Henderson ZT, & Borders AEB (2020). Advances in maternal fetal medicine: Perinatal quality collaboratives working together to improve maternal outcomes. Clinics in Perinatology, 47(4), 779–797. 10.1016/j.clp.2020.08.009 [PubMed: 33153662]

Ko JY, D'Angelo DV, Haight SC, Morrow B, Cox S, von Essen BS, & Barfield WD (2020). Vital signs: Prescription opioid pain reliever use during pregnancy—34 US jurisdictions, 2019. Morbidity and Mortality Weekly Report, 69 (28), 897. 10.15585/mmwr.mm6928a1 [PubMed: 32673301]

Krans EE, Campopiano M, Cleveland LM, Goodman D, Kilday D, Kendig S, & Terplan M (2019). National partnership for maternal safety: Consensus bundle on obstetric care for women with opioid use disorder. Obstetrics & Gynecology, 134(2), 365–375. 10.1097/AOG.0000000000003381 [PubMed: 31306323]

Kroelinger CD, Addison D, Rodriguez M, Rice ME, Frey MT, Hickner HR, … Barfield WD (2020). Implementing a learning collaborative framework for states working to improve outcomes for vulnerable populations: The opioid use disorder, maternal outcomes, and neonatal abstinence syndrome initiative learning community. Journal of Women's Health, 29(4), 475–486. 10.1089/jwh.2020.8303

Kroelinger CD, Rice ME, Cox S, Hickner HR, Weber MK, Romero L, … Barfield WD (2019). State strategies to address opioid use disorder among pregnant and postpartum women and infants prenatally exposed to substances, including infants with neonatal abstinence syndrome. Morbidity and Mortality Weekly Report, 68(36), 777. 10.15585/mmwr.mm6836a1 [PubMed: 31513558]

Luther JP, Johnson DY, Joynt Maddox KE, & Lindley KJ (2021). Reducing cardiovascular maternal mortality by extending Medicaid for postpartum women. Journal of the American Heart Association, 10(15), Article e022040. 10.1161/JAHA.121.022040 [PubMed: 34323114]

Martin CE, Almeida T, Thakkar B, & Kimbrough T (2021). Postpartum and addiction recovery of women in opioid use disorder treatment: A qualitative study. Substance Abuse, 1–8. 10.1080/08897077.2021.1944954

Martin CE, & Parlier-Ahmad AB (2021). Addiction treatment in the postpartum period: An opportunity for evidence-based personalized medicine. International Review of Psychiatry, 33(6), 579–590. 10.1080/09540261.2021.1898349 [PubMed: 34238101]

Medicaid and CHIP Payment and Access Commission. (2020). Medicaid's Role in Financing Maternity Care Fact Sheet. Retrieved November 6, 2023 from: https://www.macpac.gov/wp-content/uploads/2020/01/Medicaid's-Role-in-Financing-Maternity-Care.pdf.

Moberg DP, & Paltzer J (2021). Clinical recognition of substance use disorders in Medicaid primary care associated with universal screening, brief intervention, and referral to treatment (SBIRT).

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Journal of Studies on Alcohol and Drugs, 82(6), 700–709. 10.15288/jsad.2021.82.700 [PubMed: 34762029]

Moore JE, McLemore MR, Glenn N, & Zivin K (2021). Policy opportunities to improve prevention, diagnosis, and treatment of perinatal mental health conditions. Health Affairs, 40(10), 1534–1542. 10.1377/hlthaff.2021.00779 [PubMed: 34606359]

Patrick SW, Barfield WD, & Poindexter BB (2020). Committee on fetus and newborn, committee on substance use and prevention: Neonatal opioid withdrawal syndrome. Pediatrics, 146(2020029074), 10–1542. 10.1542/peds.2020-029074

Patrick SW, Martin PR, Scott TA, Michael Richards MD, & Cooper WO (2018). Barriers to accessing treatment for pregnant women with opioid use disorder in Appalachian states. Substance Abuse, 40(3), 356–362. 10.1080/08897077.2018.1488336 [PubMed: 29949454]

Patrick SW, & Schiff DM (2017). Committee on substance use and prevention: A pubic health response to opioid use in pregnancy. Pediatrics, 139(3), Article e20164070. 10.1542/peds.2016-4070 [PubMed: 28219965]

Piccotti L, Voigtman B, Vongsa R, Nellhaus EM, Rodriguez KJ, Davies TH, & Quirk S (2019). Neonatal opioid withdrawal syndrome: A developmental care approach. Neonatal Network, 38(3), 160–169. 10.1891/0730-0832.38.3.160 [PubMed: 31470383]

Pregnancy MortalitySurveillanceSystem. (2023). Centers for Disease Control and Prevention. Retrieved August 2 from Pregnancy Mortality Surveillance System | Maternal and Infant Health | CDC.

Rosenthal EW, Short VL, Cruz Y, Barber C, Baxter JK, Abatemarco DJ, … Hand DJ (2021). Racial inequity in methadone dose at delivery in pregnant women with opioid use disorder. Journal of Substance Abuse Treatment, 131, Article 108454. 10.1016/j.jsat.2021.108454 [PubMed: 34098304]

Shadowen C, Wheeler R, & Terplan M (2021). Patient and provider knowledge of and attitudes toward medical conditions and medication during pregnancy. Addiction Science & Clinical Practice, 16(1), 1–8. 10.1186/s13722-021-00228-8 [PubMed: 33397480]

SocioCultural Research Consultants, LLC. (2021). Dedoose Version 9.0.62, web application for managing, analyzing, and presenting qualitative and mixed method research data. Los Angeles, CA www.dedoose.com.

Sutter MB, Gopman S, & Leeman L (2017). Patient-centered care to address barriers for pregnant women with opioid dependence. Obstetrics and Gynecology Clinics, 44 (1), 95–107. 10.1016/j.ogc.2016.11.004 [PubMed: 28160896]

The National Institute of Children's Health Quality. National Network of Perinatal Quality Collaboratives. Retrieved on November 6, 2023 from: https://nnpqc.org.

Tiako MJN, Culhane J, South E, Srinivas SK, & Meisel ZF (2020). Prevalence and geographic distribution of obstetrician-gynecologists who treat Medicaid enrollees and are trained to prescribe buprenorphine. JAMA Network Open, 3(12), e2029043. 10.1001/jamanetworkopen.2020.29043 [PubMed: 33306115]

Trost SL, Beauregard J, Chandra G, Njie F, Berry J, Harvey A, & Goodman DA (2022). Pregnancy-related deaths: Data from maternal mortality review committees, 36 U.S. states, 2017–2019. Atlanta, GA. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. Retrieved august 2 from pregnancy-related deaths: Data from maternal mortality review committees in 36 US states, 2017–2019 | CDC.

Ulrich M, Memmo EP, Cruz A, Heinz A, & Iverson RE (2021). Implementation of a universal screening process for substance use in pregnancy. Obstetrics & Gynecology, 137(4), 695–701. 10.1097/AOG.0000000000004305 [PubMed: 33706353]

US Department of Health and Human Services. (2021). Practice guidelines for the administration of buprenorphine for treating opioid use disorder. Federal Register. Published online April, 28, 2021. Retrieved on August 2 from Federal Register :: Practice Guidelines for the Administration of Buprenorphine for Treating Opioid Use Disorder.

US Drug Enforcement Administration. Mainstreaming addiction treatment act of 2021. Amendment of Controlled substances act. Title 21 – Food and drugs; Chapter 13 – Drug abuse prevention and control; Subchapter I – Control and enforcement. Part C – Registration of manufacturers,

distributors, and dispensers of controlled substances. S.445. https://www.congress.gov/bill/117th-congress/senate-bill/445/text.

US Food and Drug Administration. Controlled substances act. Title 21 – Food and drugs; Chapter 13 – Drug abuse prevention and control; Subchapter I – Control and enforcement. Part C – Registration of manufacturers, distributors, and dispensers of controlled substances. https://www.govinfo.gov/content/pkg/USCODE-2020-title21/html/USCODE-2020-title21-chap13-subchapI-partC-sec823.htm.

White WR, Ray-Griffith SL, & Coker JL (2023). Time to pay attention: An underrecognized casualty of the opioid epidemic. Archives in Women's Mental Health, 26, 561–563. 10.1007/s00737-023-01334-z

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Table 1

Thematic analysis of barriers to access to and coordination of quality care for pregnant and postpartum persons with opioid use disorder - Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative Learning Community state action plans, 15 states[a], 2019.

Theme[b]	Summary of barriers[c]	# states[d]
Partner engagement & coordination of integrated services	Lack of coordination between OB/GYN providers, birthing hospitals, pediatric clinics, ancillary providers, and other partners to deliver comprehensive, integrated care and wraparound support services during pregnancy, delivery, and postpartum	15
Provider awareness, training, & service capacity	Insufficient numbers and/or types of providers trained and actively prescribing MOUD (i.e., methadone or buprenorphine) Insufficient treatment beds, unsustainable support programs, or other limits in capacity to provide MOUD and/or other support services Need for increased knowledge and awareness among families, communities, providers, and partners of the programs, resources, treatment options, and other plans of safe care available to pregnant or postpartum people with OUD, infants prenatally exposed to substances, and their caregivers Provider bias and discrimination toward persons with OUD impact universal screening, equitable treatment, and referral to treatment and/or support services	10
Insurance eligibility, coverage, & reimbursement	Limitations in Medicaid eligibility and coverage periods postpartum (ex. Medicaid coverage eligibility ending 60 days after delivery) Need for reimbursable standard-of-care billing codes, including SBIRT, to ensure coverage and optimize payment and reimbursement from Medicaid and private insurers for screening, treatment, and wraparound services	6
Universal screening, treatment, and referral protocols	Lack of standardized, evidence-based practices (i.e., SBIRT) or protocols among providers, birthing hospitals, and support staff for identifying, screening, and referring to treatment pregnant and postpartum people with OUD and their infants Lack of consistency and transparency in protocols for notifying CPS or offering support services after CPS notification	5

Abbreviations: OB/GYN = obstetrics/gynecology; MOUD = medications for opioid use disorder; OUD = opioid use disorder; SBIRT = screening, brief intervention, & referral to treatment; CPS = child protective services.

[a]Alaska, Florida, Illinois, Indiana, Kentucky, Nevada, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Vermont, Washington, West Virginia, and Wyoming.

[b]Themes for barriers to accessing or coordinating quality care identified by OMNI LC state teams.

[c]Summary of existing barriers.

[d]The number of OMNI LC state teams reporting barriers within each theme.

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Table 2

Thematic analysis of facilitators leveraged to improve access to and coordination of quality care for pregnant and postpartum persons with opioid use disorder - Opioid Use Disorder, Maternal Outcomes, and Neonatal Abstinence Syndrome Initiative Learning Community, state action plans, 15 states[a], 2019.

Theme[b]	Summary of facilitators[c]	# states[d]
Partner engagement & coordination of integrated services	Improve communication between prenatal clinics, birthing hospitals, and pediatrics to coordinate care and standardize practices Improve the communication and dissemination of research, data, policies, and plans of safe care between clinical providers and other partners Engage local health departments in statewide efforts to identify, map, and link providers trained and willing to provide MOUD, and evaluate the availability, utilization, perceptions, and coverage of evidence-based care Develop policies to allow for behavioral health integration into medical settings	15
Provider awareness, training, & service capacity	Buprenorphine trainings to increase the number of providers (OB/GYN, Family practice, Physician Assistants, Nurse Practitioners) who prescribe MOUD Encourage peer-to-peer coaching and cross-train providers, child welfare staff, and home visiting program staff to administer counseling services Develop communication materials for clinical providers, public health workers, insurance providers, and ancillary services Implicit bias training for providers, medical staff, public health professionals, and state leaders to reduce bias, stigma, and discrimination related to substance use disorders and to increase understanding of addiction, treatment, and evidence-based prevention/interventions	14
Insurance eligibility, coverage, & reimbursement	Standardized definitions, policies, and protocols for insurance coding and billing to facilitate coverage and optimize payment for evidence-based identification, screening, brief intervention, and referral to treatment (SBIRT) for OUD prenatally, at delivery, and postpartum State and federal efforts to extend Medicaid coverage for clinical support and wraparound services beyond the 60-day postpartum period	9
Universal screening, treatment, and referral protocols	Standardize definitions and protocols in birthing hospitals and other clinical settings for the evidence-based identification, screening, and treatment referral prenatally, at delivery, and postpartum Create toolkits for ongoing trainings for new staff and routine refresher trainings for current staff Develop universal protocols for the involvement of CPS for OUD populations; and offer support services through ancillary programs that work in conjunction with CPS Increase awareness among hospitals and prenatal care providers of available MOUD providers for referral Convene advisory committees to educate state leaders on NAS, substance use disorder, and the impact of OUD discrimination with recommendations and capacity-building among clinical and non-clinical providers to implement systems changes	7

Abbreviations: OB/GYN = obstetrics/gynecology; MOUD = medications for opioid use disorder; OUD = opioid use disorder; SBIRT = screening, brief intervention, & referral to treatment; CPS = child protective services.

[a] Alaska, Florida, Illinois, Indiana, Kentucky, Nevada, New York, Ohio, Pennsylvania, Rhode Island, Tennessee, Vermont, Washington, West Virginia, and Wyoming.

[b] Themes of facilitators for accessing or coordinating quality care identified by OMNI LC state teams.

[c] Summary of existing facilitators.

[d] The number of OMNI LC state teams reporting facilitators within each theme.

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Table 3

Provider trainings to address opioid use disorder in pregnant and postpartum persons hosted by Perinatal Quality Collaboratives funded by the Centers for Disease Control and Prevention, 12 states[a], 2019–2021.

Training topic[b]	**Number of PQCs reporting trainings[c]**	**Number of trainings reported[d]**	**Number of providers completing training[e]**
Maternity care provider waiver training	10	NR	3399
Screening for OUD	11	198	1845
Stigma, bias, and trauma-informed care	12	81	1854
Treatment for OUD (MOUD and/or behavioral)	11	131	1655

Abbreviations: NR = not reported; PQCs = Perinatal Quality Collaboratives; OUD = opioid use disorder; MOUD = medications for opioid use disorder.

[a]Colorado, Delaware, Florida, Illinois, Louisiana, Massachusetts, Minnesota, Mississippi, New Jersey, New York, Oregon, and Wisconsin.

[b]Subject matter content of the provider trainings hosted by PQCs.

[c]The total number of PQCs that reported hosting trainings on the topic.

[d]The total number of PQC-hosted trainings reported.

[e]The total number of providers who participated and completed training on the topic.

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Table 4

Number of hospitals participating in statewide Perinatal Quality Collaboratives funded by the Centers of Disease Control and Prevention with protocols for opioid use disorder at baseline and end of project, 12 states[a], September 2019–September 2021.

Measure[b]	Total number of PQCs reporting[c]	Number of PQC hospitals reporting at baseline[d]	Number of PQC hospitals reporting at end of project[e]
Number of delivery hospitals with protocols for the care of pregnant/ postpartum women with OUD	9	8	105
Number of delivery hospitals with protocols for OUD specific pain management and opioid prescribing.	9	8	116
Number of hospitals that have implemented a universal validated self-report screening tool for screening all pregnant/ postpartum women for OUD on admission to all units caring for pregnant or postpartum women	6	8	97
Number of hospitals with local OUD treatment resource documents available post discharge	6	15	88

Abbreviations: OUD = opioid use disorder; PQCs = perinatal quality collaboratives.

[a] Colorado, Delaware, Florida, Illinois, Louisiana, Massachusetts, Minnesota, Mississippi, New Jersey, New York, Oregon, and Wisconsin.

[b] Performance measure from the Performance Progress and Monitoring Report.

[c] The total number of PQCs reporting on the performance measure.

[d] The total number of hospitals participating in a PQC that reported on the performance measure at baseline.

[e] The total number of hospitals participating in a PQC that reported on the performance measure at the end of the project.