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Comprehensive and Compassionate Responses for Opioid Use Disorder Among Pregnant and Parenting Women

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Abstract

Pregnant and parenting women with opioid use disorder face multiple challenges to recovery. Trauma histories, poverty, stigma and discrimination, and lack of access to treatment intersect to marginalize this population. It is important that pregnant and parenting women with opioid use disorder receive comprehensive care to improve their health, the health of their child(ren), and prevent the intergenerational transmission of opioid and other substance use disorders. For nearly 50 years the Maternal Addiction Treatment, Education, and Research program has provided an evolving and expanding range of comprehensive services for treating opioid and other substance use disorders in this population. In this review the rationale for, and processes by which, key components of a comprehensive approach are discussed. These components include patient navigation for access to care, low-barrier medications for opioid use disorder, effective trauma-responsive therapy, prenatal and well-child healthcare, and other support services that make it possible for pregnant and parenting women to engage in treatment and improve the health of the entire family. Additionally, a method for supporting staff to build resilience and reduce fatigue and burnout is discussed. These components comprise an effective model of care for pregnant and parenting women with opioid and other substance use disorders.

Keywords: opioid use disorder, pregnancy, prenatal, parenting, addiction

Disclosure of Interest

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Introduction

The United States' ongoing overdose crisis claimed over 67,000 lives in 2018, with opioids involved in nearly 70% of deaths (Wilson et al., 2020). Opioid use disorder (OUD) has historically been less prevalent among women, but increased at a faster rate among women compared to men between 2002-2013 (C. M. Jones et al., 2015). Among pregnant women, the prevalence of OUD at delivery increased fourfold between 1999-2014 (Haight et al., 2018). Within a similar timeframe (1999-2013), the incidence of neonatal abstinence syndrome (NAS) concomitantly increased from 1.5 to 6.0 per 1000 births (Ko et al., 2016). After delivery, rates of maternal overdose increase substantially through 12 months postpartum (Schiff et al., 2018). Treatment for OUD among reproductive-aged women must be responsive to differing needs across life stages due to the significant rates and impacts of OUD before and after pregnancy. Furthermore, a comprehensive response that addresses factors that underlie OUD and other substance use disorders (SUDs) is necessary to promote whole-person wellness, build resilience in families, and prevent intergenerational transmission of SUDs.

The ongoing crisis is occurring within a context of trauma history, stigma and discrimination, and the effects of toxic stress. Adverse childhood experiences (ACEs) are known to be associated with poor health outcomes in adults and are highly prevalent among women with SUDs (Gannon et al., 2020). Women who use substances face stigma and discrimination in healthcare, criminal justice, and social welfare arenas (Stone, 2015). The intersection of the experiences of trauma and stigma affect treatment adherence and recovery.

Treatment for OUD has become more widely available. There have been increases in federally licensed opioid treatment programs that provide medications for OUD (mOUD) and related services, such as expansions of waivers for clinicians to prescribe buprenorphine. While mOUD is a critical part of treatment for pregnant and parenting women with OUD, there are life factors that enable or challenge treatment adherence. Comprehensive services that address poverty, trauma, and advocacy are necessary to improve the health of the mother-infant dyad

and broader family. Comprehensive treatment and support services for women with children may have a “treatment as prevention” effect by disrupting intergenerational transmission of ACEs and thus reducing the likelihood that children will develop poor health and SUDs in adulthood.

Comprehensive treatment for OUD among pregnant and parenting women must address poverty, education, and other socioeconomic factors in addition to treatment that is informed by trauma-responsiveness, stress reduction, and state-of-the-art substance use disorder therapy. Over the last five decades, the Maternal Addiction Treatment, Education, and Research (MATER) program’s comprehensive approach to treating OUD among pregnant and parenting women has evolved and grown to move toward holistically meeting these needs. MATER provides OUD treatment and comprehensive healthcare and psychosocial services in both outpatient and residential settings that serve approximately 350 pregnant and parenting women each year. A transdisciplinary team of patient navigators, peer specialists, therapists, nurses, nurse practitioners, physicians of various specialties, childcare workers, and others provides coordinated wrap-around services (Figure 1). At the center of care are providing mOUD and offering trauma-responsive therapy, with patient navigation assisting with entrance into treatment and continued engagement in core and additional support services. The entire team, including support staff, receives continuous active support to cultivate compassion toward patients, colleagues, and themselves, and promote effective self-care using Mindfulness-Based Stress Reduction as a framework. The Mindfulness Dialogue for Life program for all staff and leadership, which involves weekly reflections, group guided meditation, and group discussion aimed at connecting, exploring, and discovering, has been useful for staff in managing the regular stresses of such difficult work and added stress related to the COVID-19 pandemic (Abatemarco et al., 2021). The present review describes the rationale for essential components in a model of comprehensive care, including patient navigation, mOUD, therapy, healthcare

services, and support services for parents, supporting staff wellness, and the processes by which each is delivered at MATER.

Compassion as a Foundation

Compassion is an awareness of suffering with a desire to reduce that suffering. Whereas empathy involves awareness of suffering, compassion goes a step further toward alleviating suffering. When directed toward others, compassion embodies the idea of “meeting the person where they are,” as a construct, greater self-compassion is associated with lower risk of SUD (Phelps et al., 2018). Compassion-focused therapy, which is explicitly aimed at fostering self-compassion, is feasible and acceptable for individuals with OUD (Carlyle et al., 2019). Further, it is a critical component in providing mindful and person-centered care. Compassion as a tenet of care influences each component of comprehensive OUD treatment, beginning with a person’s entry into care and continued engagement.

Patient Navigation - Entering and Continued Engagement in Care

Pregnancy is a unique period of increased motivation and opportunity for women with OUD. While not every woman chooses to continue a pregnancy or to parent, those that do are often strongly motivated to seek treatment in an effort to protect the health of themselves and their babies (Frazer et al., 2019). The desire to protect the pregnancy leads to more future-oriented thinking around parenting goals. Acknowledging that complex trauma histories and experience of stigmatization and discrimination challenge interacting with medical systems, a compassionate and low-barrier approach to initiating care is essential.

Low-barrier access to mOUD has proven a highly efficient method for engaging women in treatment. For some, self-initiation onto buprenorphine prescribed with minimal additional services is effective (Lee et al., 2014). Others may need a full opioid agonist like methadone and more structured and coordinated services to meet their goals. Methadone initiation can be

less accessible due to needing to meet regulatory criteria for treatment and requirements for daily attendance and monitoring to titrate dosing. For pregnant individuals, MATER offers continuous access to immediate evaluation and initiation onto mOUD through our affiliated academic medical center's inpatient obstetrics unit. A 3-5 day inpatient admission offers a unique opportunity to rapidly initiate an agonist medication, assess urgent maternal-fetal medical concerns, and in conjunction with MATER's Patient Navigation Team guide women to needed treatment and recovery supports. MATER's Patient Navigation Team utilizes hospitalization, a time of both increased motivation and decreased distraction, to provide comprehensive care coordination toward each individual's treatment goals.

The Patient Navigation team operates on foundational principles of compassion, dignity, and respect. Motivational Interviewing tenets of relationship building, open-ended questions, active and reflective listening, and client-driven goal-setting guide care coordination. These tenets dually inform interactions with both clients and providers. Navigators meet with each patient to build a relationship and discuss personal needs and goals. This collaborative, patient-driven needs assessment helps to identify an individualized treatment path and plan to enter treatment post-hospitalization. Navigators and patients converse and reflect on elements of past treatment that were helpful (if applicable), barriers to treatment, goals, and individual strengths; this reflection is essential to engagement in structured treatment and recovery.

As additional supports, navigators provide each person with a welcome kit that includes items like a mindfulness journal, daily planner, and general activity books. The journals and daily planners begin laying the groundwork for recovery behaviors, such as developing coping skills through journaling, brief mindfulness practice, and creating daily plans. Activity books afford opportunities to engage in alternative behaviors during an abrupt change from OUD-related behaviors and to mitigate boredom. In addition, navigators obtain other items requested by individuals after the first encounter, which have included yoga mats, preferred shampoo, and clothing items.

As the relationship between a patient and a navigator strengthens over the hospitalization, navigators connect individuals to treatment. Based on an individual's goals and life circumstances, navigators identify treatment options and discuss details of the options with patients. Navigators engage and empower individuals during the entire process. One example of this is by facilitating phone calls with programs so individuals can ask questions directly to providers to foster a sense of partnership and ownership over their own process. Additionally, navigators work to address barriers to treatment like problem-solving childcare concerns, planning transportation, and confidentiality with their family. From 2017-2021, 773 individuals with OUD received Patient Navigation services and 73% began treatment for OUD. Of those, 75% entered treatment at MATER's programs, and 25% entered other programs due to differences in patient needs, goals, and insurance coverage.

For those individuals entering treatment at MATER's programs, navigators are a bridge into care at MATER. Navigators provide orientation and scheduling of the first weeks of treatment, using planners from the welcome kit. Once discharged from the hospital, the navigator continues to work alongside the patient. The navigator provides the patient with a tour of the MATER facility, introduces them to staff with whom they will most often interact, and walks them through medicating processes. The navigator also completes intake with the client. As intake procedures can be extremely personal and include intimate information, the relationship built between patient and navigator can help the patient be more comfortable during this period of vulnerability. The transition to attending and engaging in a comprehensive daily structure of treatment requires many levels of behavior change. Navigators practice sensitivity and compassion as they accompany clients through the transition into treatment and recovery.

Navigators remain a member of each patient's treatment team. Each navigator partners with a counselor, who will be the primary therapeutic support person for the patient, and the pair continue to work closely with the patient. Having built a trusting relationship with the patient, the navigator introduces the patient to the counselor and the three conduct a joint initial session, if

appropriate. Alternatively, a communicated utilization of transitive trust such as “you trust me, I trust this counselor, therefore you can trust this counselor” can help ease the transition. As treatment continues, navigators meet with patients at least once a month to maintain their relationship, evaluate care coordination needs, provide emotional and advocacy support. Navigators track engagement daily by reviewing medication dispensing logs and through communication with counselors and other staff. Navi

Medications for Opioid use Disorder in Pregnancy

The benefits of agonist medications for OUD, methadone and buprenorphine, are well established for pregnant and non-pregnant individuals. Opioid agonist medication continues to be the recommended pharmacotherapy by leading professional and public health organizations (ACOG Committee on Health Care for Underserved Women & American Society of Addiction Medicine, 2012; Kampman & Jarvis, 2015). Withdrawal management alone is not recommended due to high occurrence of return to use (Terplan et al., 2018). Extended release naltrexone is currently being studied for its effectiveness and safety in pregnancy. The two opioid agonist medications each have benefits and limitations. Given differing regulatory structures and insurance handling, the medication choice often dictates the type of support services and overall treatment structure that is available to the person. During the above-described hospitalization for stabilization, the patient, Patient Navigation team, and physicians engage in shared decision-making in selecting the mOUD most likely to meet the patient’s needs.

Methadone

Methadone is a full opioid agonist with a long history of use for OUD. Being a full agonist with a long half life, a single daily dose of methadone can be beneficial for individuals with high opioid tolerance. Methadone is also available in liquid formats that allow doses to be finely tailored to a person’s needs. It is also potentially more dangerous because it can cause

somnolescene and because full agonists have higher overdose risks. When titrated to an appropriate dose that reduces withdrawal and cravings, methadone prevents additional opioid use from producing effects, and produces minimal somnolescence, methadone is a safe medication.

During pregnancy, many individuals experience changes in how their bodies metabolize methadone. These changes can affect the amount of methadone needed to achieve pharmacological effectiveness and how long each dose prevents withdrawal and cravings. Methadone doses should be increased, as needed, to prevent withdrawal and cravings in pregnant individuals. There is no consistent association between higher maternal methadone doses and increased risk of neonatal abstinence syndrome (NAS) (Berghella et al., 2003; Cleary et al., 2010; McCarthy et al., 2005).

Splitting the maternal daily dose of methadone during pregnancy into two or more doses throughout the day is an effective means for managing increases in methadone metabolism and may reduce the risk of NAS. Many pregnant individuals experience an increase in methadone metabolism. Increased methadone metabolism may cause withdrawal symptoms to arise before the next day's dose. Providing multiple doses of methadone can prevent cycling between effective management and withdrawal. In one study among pregnant individuals who received split doses of methadone, NAS requiring pharmacotherapy occurred 29% of the time vs. 60-80% in the literature of individuals receiving daily doses (McCarthy et al., 2015). Methadone metabolism returns to pre-pregancy rates rapidly following the end of pregnancy (McCarthy et al., 2018).

By regulation, methadone may only be dispensed for treating OUD by federally approved opioid treatment programs (OTPs). The regulations under which OTPs operate can help to reduce safety risks, such as requiring licensed staff to dispense medication, ensuring careful measurement of methadone doses that are dispensed, and requiring individuals to be observed taking their medication. These regulations also require that OTPs provide support

services and therapy. The requirements of daily dispensing and mandatory therapy can be barriers to this level of care for some individuals and may give others the accountability and structure needed to support their recovery.

Buprenorphine

Buprenorphine is a partial opioid agonist and antagonist at different opioid receptor types. Buprenorphine's opioid effects reach a ceiling that limits its overdose potential. Buprenorphine may be prescribed for treating OUD by specially licensed prescribers, including physicians and advanced practice providers, or dispensed from OTPs, which can make it a more accessible medication for OUD. In the context of pregnancy, buprenorphine is equally effective to methadone for treating OUD and may be associated with lower NAS severity (H. E. Jones et al., 2010, 2012). The diminishing effectiveness of increasing doses of buprenorphine may be problematic for individuals with high opioid tolerance, and self-managed dosing can be difficult for some individuals' recovery.

For non-pregnant individuals, buprenorphine is usually taken as a single daily dose, like methadone. Also like methadone, pregnancy causes changes in buprenorphine metabolism that often require repeated dosing throughout the day based on an assumed effective plasma concentration of 1ng/mL (Caritis et al., 2017). Long-acting injectables and implants that release doses over time are currently being evaluated for safety and efficacy in pregnancy.
There has been debate whether mono-product buprenorphine or dual-product buprenorphine plus naloxone is most appropriate in pregnancy, given some early safety concerns regarding naloxone in pregnancy. A recent meta-analysis found no significant adverse effects of the dual-product in pregnancy and significantly reduced incidence of NAS among infants whose mothers received the dual-product (Link et al., 2020). The product used should match the person's response but may be influenced by state or insurance policies that mandate mono- or dual-products.

Overall, both methadone and buprenorphine are effective and safe medications for OUD. Individuals may have better responses to one or the other, and there is some evidence that buprenorphine products may be associated with less severe neonatal withdrawal. Unfortunately, these medications and comprehensive care are not equally available. Medication costs may be a significant barrier for OTPs as buprenorphine products are many times more expensive than methadone. Individuals receiving care at OTPs are at a disadvantage for receiving what may be a more beneficial medication for them. Individuals who receive buprenorphine from office-based providers may not have access to the same wrap-around services that are available through OTPs. Softening of regulations for OTPs, alignment of methadone and buprenorphine regulations and insurance policies about medication use, equitable funding for OTPs to provide all medications for OUD, and integration of wraparound services across all OUD treatment settings are needed to minimize disparities in access and effectiveness of services.

Therapy and Trauma Responsiveness

Most people with OUD benefit from receiving evidence-based therapy. Therapy provided in individual or group modalities has long been a cornerstone of OUD treatment, and there is growing evidence and support for including family members in these therapeutic services (Rowe, 2012). For pregnant and parenting women with OUD, therapy effectiveness is enhanced when gender-specific services are provided, particularly when addressing acute and chronic trauma (Greenfield et al., 2007). Psychoeducational interventions provided in group format are also beneficial when tailored to the specific needs of the population, such as around parenting, child care, and physical health.

A majority of women with OUD have experienced trauma, including ACEs. Within a sample of 152 women receiving treatment at MATER, 65% reported experiencing 4 or more ACEs, and only 5% reported experiencing none (Gannon et al., 2020). Responses to such a

high prevalence of trauma must occur at multiple levels and involve a programmatic approach that includes trauma-focused therapy along with other practices to prevent perpetuating additional trauma. Group-based therapeutic interventions that address trauma and are specific to the needs of women with trauma histories include the Trauma Recovery and Empowerment Model (TREM) (Fallot & Harris, 2002) and Seeking Safety (Najavits, 2002). Both TREM and Seeking Safety are manualized interventions with known efficacy in helping to increase feelings of safety and may reduce drug use (Bailey et al., 2019).

Broader programmatic changes to be trauma-responsive are also critical. Most SUD treatment programs require urine drug testing, often under conditions of observation. Urine drug testing can be a useful tool for providing objective feedback to person on their recovery. Many find this feedback particularly motivating to achieving a goal of abstinence, especially when combined with reinforcement as in contingency management (Hand, Ellis, et al., 2017; Ledgerwood & Petry, 2006; Walter & Petry, 2016). However, it can be a source of harm in damaging a clinician-individual trust, and the mere act of being observed by another person while urinating is traumatizing for some (Khatri & Aronowitz, 2020). Other organizational factors that may cause re-traumatization include security controls, medication denial, and the stigma associated with engaging in SUD treatment. Organizational approaches to trauma-responsiveness, such as Mindfulness Based Stress Reduction training or the Sanctuary Model may be helpful at minimizing re-traumatization in addition to creating a safe and welcoming space for all individuals regardless of trauma histories.

Therapeutic staff should also be knowledgeable about all substances as they frequently must address polysubstance use. Over 60% of pregnant women entering treatment for OUD report using two or more substances, primarily benzodiazepines, cocaine, and cannabis (Hand, Short, et al., 2017). Use of other drugs, especially cocaine, increases risk of early treatment discontinuation, making therapy aimed at reducing other drug use especially important (Levine et al., 2015).

The setting and intensity of services should be flexible to meet a person's needs. A single institution that offers multiple levels of care within the American Society of Addiction Medicine's continuum can help individuals receive different frequencies and types of services under a single guiding set of principles. Only 15% of facilities report having specialized treatment for pregnant and postpartum women, and only 19% of those offer child care (Terplan et al., 2015). With so few SUD treatment options available that serve pregnant and parenting women and their needs, it is unlikely that a pregnant or parenting person will have access to multiple levels of care across different organizations.

Support Services for Parents

The inclusion of additional support services is also an important component of comprehensive treatment for pregnant and parenting women with OUD. Services that facilitate engagement in therapy can help retention and can be areas to foster additional growth. Child care is chiefly important, especially when parents are engaging in therapy or psychoeducational sessions. Co-located child care with OUD treatment services can also be leveraged to provide connection and engagement in early intervention programs, including Head Start. These facilities can also be safe places to facilitate parent-child play and to assist interventions directly focused on improving the quality of parenting and mother-child attachment.

The mother-child dyad relationship is uniquely challenged by a mother's journey in her recovery. This population of mothers faces multiple barriers to recovery and healthy living including unemployment, homelessness, domestic violence, incarceration, and physical and mental health problems (Skinner et al., 2011). Compared to parenting women without OUD, they often experience higher levels of stress (Bagner et al., 2009), more depressive symptoms (Liles et al., 2012), guilt associated with their drug use (Silva et al., 2013), fear of losing custody of their child (Marsh et al., 2011),and feelings of being a failure (Sheinkopf et al., 2006). While individual barriers to treatment include fears around child protective services involvement or the

loss of custody, there are also systems-level barriers to treatment: only 26% of drug courts allow pregnant women to be treated with buprenorphine or methadone (Hall et al., 2016). The complex synergy of challenges facing women in treatment for OUD can ultimately lead to maladaptive attachment in the dyad, which is critical as the mother child attachment bond is the single most significant relationship the child endures through adolescence (Collins & Laursen, 2004).

Parenting deficits have long been known and studied in this population (Suchman & Luthar, 2000, 2001). Behaviors involved in, or associated with, acquiring, using, and recovering from the effects of substances, may lead to a parent to act distant or less engaged in their child's development (Salo & Flykt, 2013). Complex post-traumatic stress, which is prevalent among women with SUDs, increase difficulties in bonding and attachment (Schwerdtfeger & Goff, 2007). Attachment, bonding, and positive parenting are essential to support women through the difficult recovery processes and to protect the infant and prevent intergenerational transmission of trauma. Early childhood experiences of trauma are prevalent in this population, at a substantially higher rate than the general population (Gannon et al., 2020).

Given this prevailing data on the lived experience of trauma for these mothers, as well as the parenting challenges they face, MATER developed a trauma-responsive Mindfulness Based Parenting (MBP) program. MBP engages women to bring a sense of intentional attention to the newborn, and other children, without judgement. MBP is a way of enhancing self-compassion that is then integrated with parenting to foster intentional compassion to one's children. MBP is provided as a group therapy session at MATER, with curriculum spread across 2-hour sessions each week over 13 weeks. Each weekly session includes a meditative practice, mindful movement, didactic piece around mindfulness and child development, discussion and inquiry over patterns of behavior and experience, and experiential mindful play with their children. The MBP program has been shown to increase positive parenting behaviors

(Gannon et al., 2017), and decrease parental stress (Short et al., 2017) and post-partum depression (Alexander et al., 2019).

Support Services for Families

Recognizing that many ACEs and other traumatic events are shared among family, MATER has begun expanding mindfulness-based support services to family members. This transformative project, funded by SAMHSA, involves expanding the lessons learned from the development of MBP to help heal family relationships among individuals in MATER's residential treatment program. Mindfulness-based family support, family therapy, and linkage to community supports during and continuing after residential treatment are aimed at fostering a community support system that includes the family. This family engagement can also support maintenance of intact maternal-child dyads or aid in reunification of mothers with their children who have been placed in protective care. This is critical as data shows that parents with custodial rights of their children have more successful recovery, than those without custodial rights (Comiskey, 2013). Interim analyses have revealed eagerness of family members to engage in these services, as exemplified by most individuals having family members attend biweekly family dinners, high utilization of home visiting services, and engagement in MBP. The research component of this project is scheduled to be completed in 2023.

Prenatal Care

Prenatal care (PNC) is essential for healthy pregnancies. Women in SUD treatment may not have supportive partners during pregnancy/labor/post-partum and may not have consistent exposure to education around pregnancy, birth, and taking care of a newborn. Adequate PNC provides screening for and management of risk factors and health conditions, and education and counseling on healthy behaviors. Adequate PNC may be especially important for women with OUD given the prevalence of risk factors and health conditions often associated with poor

perinatal outcomes, including unplanned pregnancies (Heil et al., 2011), co-occurring mental health conditions (e.g., stress, anxiety, depression) (Holbrook & Kaltenbach, 2012; Le Strat et al., 2011), cigarette smoking (H. E. Jones et al., 2009), polysubstance use, and trauma history (Gannon et al., 2020). For women with OUD, PNC should be co-managed by obstetricians, gynecologists, and addiction medicine specialists, and coordinated with pediatric providers post-delivery for the care of in utero exposed infants. In the absence of other medical indications, more intensive medical care or a referral to a maternal-fetal medicine specialist is not necessary (H. E. Jones et al., 2014).

Despite the importance of PNC for optimizing the health of mothers and neonates, receiving inadequate PNC is common in women with OUD (Heil et al., 2011) and preconception substance use has a negative association with healthcare utilization during pregnancy (Kotelchuck et al., 2017; Schempf & Strobino, 2008). Inadequate care is likely due to a variety of factors, including perceptions of stigma and discrimination from and poor communication with healthcare providers (Alexander et al., 2020; Frazer et al., 2019; Kuo et al., 2013). Finding ways to improve PNC utilization, perhaps through more higher quality patient-centered care, could have major implications for the mother-infant dyad affected by maternal OUD.

An alternative model to individual PNC that may benefit women with OUD, is group-based PNC, such as CenteringPregnancy. The CenteringPregnancy model brings women of similar gestational ages together, where they receive one-on-one assessments with a clinician and engage in group discussions on topics related to their particular stage of pregnancy (Massey et al., 2006). This patient-centered group care model bundles the medical assessment of traditional PNC with comprehensive prenatal health education, consultation, and peer support facilitated by a credentialed health care provider within a group environment (Rising, 1998). Data on the effectiveness of group PNC among women with OUD, however, is lacking; research is required for establishing group PNC as an evidence-based model for this patient population.

Though it may be beneficial as it can provide continuity of care, build trust, and allow access to a similar group of women who are at varying points along the recovery process.

MATER's nursing department coordinates PNC for all pregnant individuals receiving treatment at its programs. The default since 2019 has been to enroll pregnant individuals into the CenteringPregnancy program, with the ability to opt out and engage in traditional prenatal are at MATER's affiliated academic medical center. Both are provided by the same providers, however CenteringPregnancy ensures the pregnant person sees the same provider at each visit versus rotating providers in the traditional PNC clinic. Pregnant women who have preferred prenatal care providers at other institutions are encouraged to continue that relationship, although the nursing department's ability to coordinate care is diminished.

Another service that may benefit perinatal women with OUD is one that involves doulas, non-clinical professionals who provide physical, emotional and informational support to mothers before, during and after childbirth, including continuous labor support (DONA International, n.d.). Doula services are associated with improved birth outcomes (lower C-section and preterm birth rates) and higher rates of breastfeeding initiation (Bohren et al., 2017; Campbell et al., 2006). Doula care services have also been studied in under-resourced communities, including Medicaid recipients, and similar benefits have been reported (Thomas et al., 2017). Doula access may also mitigate the effects of social determinants of health through addressing health literacy and social support needs (Kozhimannil et al., 2016).

Through collaboration with the Maternity Care Coalition and the City of Philadelphia's Doula Program, MATER has facilitated a referral relationship matching pregnant and early post-partum women in treatment with a doula to facilitate additional support for the maternal-infant dyad. The Doulas of this program are trained in SUD treatment and trauma-informed care, providing services such as emotional support, referrals for physical items such as cribs and car seats, instruction on positions to reduce discomfort during labor, breastfeeding support, and advocacy for women in either their own or their child's healthcare.

Well Child Care

Routine well child care (WCC) is an important component of healthcare for all children. WCC visits provide a critical opportunity for clinicians to assess family dynamics, diagnose and prevent illness and injury, evaluate child growth and development, and provide anticipatory guidance to optimize child outcomes (Committee on Practice and Ambulatory Medicine & Workgroup, 2017). Current research, however, suggests that the delivery of routine WCC for children affected by maternal OUD could be improved.

First, this population may be receiving inadequate WCC. Compared with the general population, children with intrauterine opioid exposure are 50% less likely to receive adequate WCC through the first two years of life (Goyal et al., 2020). Though they do receive timely immunizations and lead screening (Goyal et al., 2020). Second, mothers in treatment for OUD have reported limited family-centered care for their children during WCC visits. In a qualitative study of mothers in treatment with OUD, only about half reported that their child's provider "always" knew their child's medical history, listened carefully, clearly explained things and respected the mother (Short et al., 2019), proportions well below data reported elsewhere (AHRQ 2019). These perceptions of care may impact maternal trust and engagement in care, perceptions of stigmatization, and satisfaction with care, and lead to less healthcare utilization and ultimately, compromised child health.

Innovative approaches in the delivery of WCC for young children of mothers with OUD may be needed to address these gaps in care and improve perceptions. Future attempts to refine care may consider health care models that highlight aspects of WCC that mothers value, which include a personalized mother-provider relationship, positive communication with the health care team, and provider support for the mother's OUD treatment and recovery (Short et al., 2021). Group-based WCC is one approach that MATER has just begun using as part of OUD treatment. Group WCC visits allow for increased time with pediatricians, peer-to-peer

interaction, and more in-depth discussion of relevant topics (DeLago et al., 2018; Johnston et al., 2017; Mittal, 2011). The provision of WCC at the site of maternal OUD treatment should also be considered as the integration within the treatment program could potentially increase WCC convenience, reduce stigma, and provide a unique opportunity for coordination of other services for mother-child dyad. Additionally, women in treatment for OUD may be uniquely positioned for this care model based on their frequent (e.g., daily) treatment visits and familiarity with group therapy and programming. Addiction education tailored towards the needs of mothers with OUD and their children may also be beneficial for clinics providing WCC to this population. Clinical providers, including trainees, have reported negative feelings, such as frustration, stress, burnout, and disconnect (Murphy-Oikonen et al., 2010; Romisher et al., 2018), as well as discomfort with discussing mothers' substance use and trauma histories (Schiff et al., 2017).

Supporting Staff

Staff care and support is one of the most unrecognized but essential elements of SUD treatment. Staff are at risk for secondary trauma, burnout, and emotional stress. Mediating these factors and prioritizing staff wellbeing is unconventional in the U.S. health care system. However, addressing these issues stands to improve patient care and safety, therapeutic outcomes, longevity in terms of staff turnover, and communication. Mindfulness Dialogue for Life (MDfL) is a program implemented at MATER to improve leadership and staff communication and workplace satisfaction. MDfL trains leaders to have more courageous conversations and to think outside the box for enhanced treatment processes and employee support. Weekly hour-long sessions of MDfL allow employees to meditate together, to process the daily stress of life and work, to envision the job they want, and to make changes that reduce their stress at work. Additionally, staff are supported to take Mindfulness Based Stress Reduction (MBSR) and MATER pays the tuition for any staff that desires to take introductory or graduate courses in mindfulness-based practice. We have found that with 40% of staff

participation in MDfL and MBSR there are notable changes in the nature of the workplace and decreases in anxiety associated with a high stress job such as SUD treatment (Abatemarco et al., 2021).

At many residential treatment programs, including MATER's residential facility, 24-hour staffing is provided by employees with high-school diplomas. Recognizing the need for career development for such staff, to increase opportunities for job advancement and financial mobility, and to enhance the therapeutic community MATER has begun a community health worker training and certification program. Small cohorts of staff, particularly 24-hour residential staff and parent child center staff, engage in 16 weeks of asynchronous and synchronous training during work hours. Upon successful completion, the staff member receives credentialing as a community health worker. As a result, there is less disparity in education and behaviors across the program's staff and an overall elevation in the standard of care.

Other Unmet Needs

There are many additional needs that are often unmet for pregnant and parenting women with OUD. Nicotine use, particularly cigarette smoking, is highly prevalent in this population with upwards of 90% of individuals reporting daily smoking (Akerman et al., 2015). Research on treating tobacco use disorder in this population is limited, but interactions between nicotine and opioids point to some biological reasons why quitting smoking is difficult for women with OUD (Kranzler et al., 2020; Oncken et al., 2019). Contingency management is an effective intervention, but is underutilized (Hand, Ellis, et al., 2017; Tuten et al., 2012). MATER integrates nicotine replacement therapy and smoking cessation counseling into standard care, with particular emphasis during residential treatment.

Drug use practices, like injecting drugs, or behaviors associated with drug use, like sex work, increase risk of contracting hepatitis, HIV, and sexually transmitted diseases. With advances in antiviral medications for Hepatitis C and HIV, integration of these services into

OUD treatment can significantly reduce these negative health outcomes. At MATER, routine and on-demand testing for these communicable diseases is incorporated into standard care. MATER has partnerships with organizations that provide treatment for HIV and Hepatitis C, which involve inviting providers into MATER's facility and coordinating delivery of medication as part of SUD treatment. Similarly, integrating on-demand sexual and reproductive health services can help with preventing and treating sexually transmitted diseases and facilitating access to family planning assistance (Heil et al., 2016). MATER achieves this through its relationship with its affiliation with the academic medical institution's department of obstetrics & gynecology.

Food insecurity can also be common due to poverty, lack of access to reliable sources of healthy food, and less than adequate welfare benefits (Rose-Jacobs, Trevino-Talbot, Vibbert, et al., 2019). Food insecurity during pregnancy is associated with increased risk of neonatal abstinence syndrome requiring pharmacotherapy for treatment (Rose-Jacobs, Trevino-Talbot, Lloyd-Travaglini, et al., 2019). Providing this aid could be outside the scope or budget or programs, requiring partnerships with local food pantries or similar charities. Of note, providing meals during prenatal care visits is a component of CenteringPregnancy, which can help provide at least temporary nutrition assistance.

Conclusions

Addressing OUD among pregnant and parenting women requires a comprehensive approach that is sensitive to the specific needs of this population. With trauma histories nearly ubiquitous among women with OUD, approaches must be trauma-responsive to facilitate healing and prevent re-traumatization. An approach that uses compassion as a foundation, which can be facilitated through mindfulness practice among staff and as a therapeutic modality, can achieve this goal. Co-location and integration of multiple support services into OUD treatment, under the same guiding principles, aids in ensuring a continuity of experience and

can prevent traumatization from engagements in traditional care settings. Lastly, supporting staff with meaningful self-care opportunities, can help reduce compassion fatigue that can drive suffering and burnout. The field of OUD treatment for pregnant and parenting women has substantially evolved over the last several decades. Its continued evolution toward whole-family health care is necessary to prevent intergenerational transmission of SUDs.

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Figure 1. A visual representation of the transdisciplinary team at MATER and its activities. Navigation guides engagement in medications for opioid use disorder (mOUD) and therapy and their interaction at the core, with additional services integrated and coordinated as individually appropriate.