



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Recommendations to the Indian Health Service on American Indian/Alaska Native Pregnant Women and Women of Childbearing Age with Opioid Use Disorder

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Executive Summary

Opioid overdose is a leading cause of death in adults 25-45 years of age in the United States. Since 1999, every racial demographic has seen an increase in overdoses. American Indian and Alaska Native (AI/AN) women have the highest risk of dying from a prescription opioid overdose. Low-income women and women of color are at higher risk for barriers to appropriate care for substance use disorders during pregnancy. Native women with opioid use disorder (OUD) encounter specific barriers to accessing services for treatment.

The American Society of Addiction Medicine (ASAM) defines “opioid use disorder” as a pattern of opioid use characterized by craving, inability to control use, and continued use despite knowledge of adverse consequences to self, relationships, health, and livelihood. Without practical interventions, opioid use disorder can have devastating consequences on mothers, babies, families, and communities.

The recommendations in this document utilize national standards of care for establishing opioid use disorder treatment in pregnant and reproductive-age women, as well as those who are at risk for developing an opioid use disorder. The specific guidelines in this document are tailored for Native women and were developed under the contract between the Indian Health Service and the American College of Obstetricians and Gynecologists (ACOG). The ACOG AI/AN Committee recognizes the necessary wide-ranging scope of treatment for opioid use disorder, especially among AI/AN childbearing woman.

Key ACOG recommendations to prevent opioid use disorder in women of reproductive age include strategies to avoid or minimize the use of opioids for pain management and encouraging alternative pain therapies such as nonpharmacological modalities including exercise, physical therapy, cognitive behavioral therapy, mindfulness-based therapy, acupuncture, and occupational therapy.

In pregnancy, ACOG recommends that obstetric providers perform universal screening and brief intervention (SBIRT) using a validated tool as early in prenatal care as possible. Medication-Assisted Therapy (MAT), using buprenorphine or methadone for management of opioid use disorder in pregnancy is recommended. The use of buprenorphine, methadone, or naltrexone in pregnant and non-pregnant women helps reduce cravings to prevent continued opioid use. Buprenorphine is now considered a first-line option for MAT in pregnancy as an alternative to methadone. However, the choice of whether to initiate methadone or buprenorphine in a pregnant patient must be individualized, and can often be restricted by availability, state policy, and access to services. Naltrexone has the potential to

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treat select opioid-dependent pregnant women while eliminating the risk of neonatal opioid withdrawal syndrome (NOWS). Naltrexone may have a role for selected pregnant women who conceive while using naltrexone or do not have access to MAT with methadone or buprenorphine. As the medical literature on naltrexone in pregnancy is limited to case series and small retrospective series, naltrexone

cannot be currently recommended as a first line treatment. Comprehensive guidelines to manage the care of pregnant women with opioid dependence who live in rural or remote communities do not currently exist. There are few Opioid Treatment Programs (OTPs) offering methadone treatment on tribal lands. In Indian Country, co-occurrence of methamphetamine use with opioid use disorder may be common. Women who are unable to stop using methamphetamine during pregnancy should be referred for treatment.

Based on ACOG guidelines, women who are receiving medication-assisted treatment for opioid use disorder during pregnancy should be maintained on their dose of methadone or buprenorphine while in labor and should receive additional pain relief. Daily doses of methadone or buprenorphine should

be maintained postpartum and patients should have advance knowledge of this plan.

Breastfeeding is recommended for women on opioid agonist therapy who meet criteria and has been associated with decreased severity of NOWS, less need for pharmacotherapy for the neonate, and shorter infant hospital stays. It is recommended that access to family planning and postpartum contraception options are available.

Most women with substance misuse also have a history of trauma. Therefore, trauma-informed approaches to opioid use disorder in women are essential. Interdisciplinary approaches to post-traumatic stress disorder that engage tribal resources, social structures, and assets are crucial to impactful care of opioid use disorder.

The following recommendations can be ascertained from this report:

- **Screening for opioid use disorders using a validated screening tool in women of reproductive age offers opportunities for intervention across the life course.**
- **Initiation of medication-assisted therapy (MAT) is recommended for all pregnant women with opioid use disorder along with access to counseling and mental health services.**
- **Treating mothers and infants as a dyad is recommended postpartum to improve the course of neonatal opioid withdrawal syndrome (NOWS).**
- **Opioid use disorder is a chronic, relapsing and remitting medical illness that can be managed successfully with a combination of behavioral therapy, MAT, and recovery support.**

Background

Mortality due to opioid use disorders (OUD) is increasing at alarming rates across the nation. In the general population, between 1999 and 2015, the rate of overdose deaths due to prescription opioids increased 471 percent among women, and 218 percent among men. Heroin deaths among women increased more than twice as much as deaths among men. Finally, deaths due to opioids have increased 850 percent in women (U.S. Department of Health and Human Services, 2017). Since 1999, every racial demographic has seen an increase in overdoses. However, non-Hispanic whites and American Indian/Alaska Natives have experienced the largest increase in opioid-related deaths (CDC, 2017).

The consequences of untreated opioid use disorder for women, their families, and the communities in which they reside include serious health risks and severe disruption of family and community cohesion. Sequelae include perpetuation of intergenerational emotional trauma, adverse childhood experiences (ACES), and criminalization, further threatening resilience and the opportunities for communities to thrive. As one indicator of potential health and cost impacts, the proportion of infants with neonatal opioid withdrawal syndrome (NOWS) and requiring pharmacological treatment has risen dramatically as well (Sanlorenzo, 2018). These challenges are particularly prevalent in rural communities and can overwhelm available medical and behavioral health resources.

The American College of Obstetricians and Gynecologists (ACOG) has a longstanding commitment to improving the health care of American Indian/Alaska Native (AI/AN) women and their children. ACOG's Committee on American Indian/Alaska Native Women's Health has worked in collaboration with the Indian Health Service (IHS) and tribal health organizations in rural and urban Indian communities. Recently, the committee's

focus has included management of substance use disorders (SUD), especially opioid use disorders among pregnant AI/AN women and NOWS in their newborns. The committee has been collaborating closely with the American Academy of Pediatrics' Committee on Native American Child Health (CONACH) to pursue this focus.

The U.S. Department of Health and Human Services (DHHS) has proposed a five-pronged strategy to combat the opioid epidemic: improving access to treatment and recovery services; promotion of overdose-reversing drugs (naloxone); improved public health surveillance;

support for cutting-edge research on pain and addiction; and advancement of better practices for pain management (Price, 2017). This document will utilize national standards of care for establishing opioid use disorder treatment in pregnant and reproductive-age women, as well as

those who are at risk for developing an opioid use disorder. The specific guidelines in this document are further tailored for Native women and were developed under the contract between the Indian Health Service and the American College of Obstetricians and Gynecologists. The ACOG AI/AN Committee recognizes the need for a wide-ranging scope of treatment for opioid use disorder, especially among AI/AN childbearing women. Besides care for OUD, treatment may require management of co-occurring polysubstance use disorders, behavioral

“The consequences of untreated substance use disorder for women, their families, and the communities in which they reside include serious health risks and severe disruption of family and community cohesion.”

health issues, and personalized care that acknowledges the contributions of intergenerational and personal trauma. Comprehensive treatment includes newborn and family care, and encompasses the extended community, including collaborative assistance from various professional and tribal services for ongoing substance use disorder treatment, mental health, social work, child and family services, and possibly judicial services and law enforcement. Where appropriate, this document relies on existing professional guidance, including several ACOG committee opinions, a 2017 report from the Office of Women’s Health on opioid use and misuse in women (U.S. Department of Health and Human Services, 2017), and 2018 clinical guidelines from the Substance Abuse and Mental Health Services Administration (SAHMSA) for treating pregnant women with OUD (Substance Abuse and Mental Health Services Administration (SAMHSA), 2018).

Fetuses exposed to tobacco, alcohol, prescribed medications, and illicit substances may exhibit signs of physiologic withdrawal from these substances after birth. Neonatal abstinence syndrome is a nonspecific term assigned to this presentation in the newborn. It is widely applied clinically to infants withdrawing from opioids. However, the more specific term neonatal opioid withdrawal syndrome (NOWS) more accurately identifies the numbers of infants experiencing withdrawal from opioid exposure in utero. This distinction is important because specific screening and treatment protocols can be used to promote the best outcomes for these infants.

NOWS represents a constellation of symptoms in the newborn related to opioid use during pregnancy. Maternal medication-assisted therapy during pregnancy, and dyad-specific care during the postpartum period impacts the clinical course of NOWS. However, we defer further detailed

recommendations on standards of care for newborns with perinatal opioid exposure to AAP CONACH guidelines, submitted separately. These complementary guidelines include a description of NOWS and an overview of available treatment modalities to reduce harm from neonatal opioid exposure. Where appropriate, based on social work recommendations and clinical evaluation, we reinforce the concept of treating mothers and infants as a dyad and emphasize that efforts should be made to keep infants with mothers following birth when there are no other contraindications, to encourage breastfeeding, and to promote family preservation to improve neonatal outcomes.

Terminology

The American Society of Addiction Medicine (ASAM) defines “opioid use disorder” as a pattern of opioid use characterized by craving, inability to control use, and continued use despite knowledge of adverse consequences to self, relationships, health, and livelihood. The term “opioid use disorder” is recommended rather than historical terms that may inaccurately imply that a person is choosing to use substances or has the ability to stop using at will. Throughout this document, we recommend and attempt to model the use of person-first language that avoids stigma, for example, referring to “people with opioid use disorder” rather than terms like “addict” or “junkie” (Wakeman, 2013). Older terminology referring to “abuse” or “dependence” is no longer encouraged (American College of Obstetricians and Gynecologists, 2017). Opioid use disorder is a chronic, relapsing and remitting medical illness that can be managed successfully with a combination of behavioral therapy, medication-assisted therapy (MAT), and recovery support. Opioid use disorder is classified by severity as mild, moderate, or severe based on the number of screening symptoms present.

We refer to “women” in this report to mean primarily cisgender women. However, we recognize and

emphasize that transgender men and gender non-conforming individuals also carry pregnancies, seek to prevent pregnancy using contraceptive technologies, and benefit from prevention, screening, and treatment strategies discussed in this report, which embraces all reproductive age individuals at risk for opioid use disorder, with potential contraceptive or obstetric care needs.

Epidemiology

Patterns in opioid use are different for women and men. According to the Centers for Disease Control and Prevention (CDC), women are more likely to report chronic pain, prior physical, emotional, and sexual trauma, in addition to sustained use of prescription opioid pain medications and other addictive substances. Women also tend to respond to substances differently than men, sometimes using smaller amounts of a drug for a shorter duration of time before developing dependence (National Institute on Drug Abuse, 2017). From 2002 to 2013, the largest increase in heroin use was among women (Jones, Logan, Gladden, & Bohm, 2015). A 2014 SAMHSA report showed female treatment admissions for opioid use disorder outnumber male admissions in all age categories (Substance Abuse and Mental Health Services Administration (SAMHSA), 2015).

Prior opiate and heroin epidemics have predominantly affected urban males; however, we are now seeing equal rates among men and women, rising rates in women as quoted above, and rural areas as core epicenters (<https://www.womenshealth.gov/files/documents/final-report-opioid-508.pdf>, n.d.). The rate of opioid use during pregnancy specifically was approximately 5.6 per 1000 live births in 2009 (Substance Abuse and Mental Health Services Administration (SAMHSA), 2016). One study reported greater than 85 percent of pregnancies in women with opioid use disorder were unintended (Heil, et al., 2011).

White women, and especially middle class white women, are more likely than their minority counterparts to be prescribed opioids for chronic pain (Substance Abuse and Mental Health Services Administration (SAMHSA), 2015). Prescriber bias may therefore contribute to disparities in opioid use disorder. Minorities and those with less education and lower income are less likely to be prescribed opioids for chronic pain but are more likely to develop substance use disorder. For Medicaid beneficiaries, CDC researchers found opioid prescriptions were nearly one and a half times higher among white, non-Hispanic women ages 15-44, compared with non-Hispanic black or Hispanic women (Centers for Disease Control and Prevention (CDC), 2015). Disparities impacting Native women relevant to opioid use disorder are particularly extreme when compared to other substance use disorders (Atwell, Weiss, Gibson, Miller, & Corden, 2016). American Indian or Alaska Native women have the highest risk of dying from a prescription opioid overdose (Centers for Disease Control and Prevention (CDC), 2013). Native women with opioid use disorder encounter specific barriers to access for services for treatment of mental health disorders, personal histories of trauma and accompanying opioid use disorder, and outcomes related to neonatal opioid withdrawal.

Patterns of specific substance use disorders appear to differ widely across states and tribal lands. Specific information is often limited, in part due to migration of Native women with substance use disorders to urban areas. Polysubstance use is increasingly common, with concomitant alcohol and methamphetamine use predominant in many tribal areas. Proximity to the Mexican border affects the availability and cost of heroin, which can lead to greater use of synthetic opioids (i.e. fentanyl and car-fentanyl) for women distant from the border.

Prevention of Opioid Use Disorder in Women of Reproductive Age

An average of 39.4 percent of Medicaid insured and 27.7 percent of privately insured women of reproductive age (15-44 years) filled an outpatient prescription for an opioid between 2008 and 2012 (Ailes, et al., 2015). This escalation has led to a rise in opioid use during pregnancy. One out of five pregnant Medicaid-insured women (21.6 percent) filled a prescription for an opioid and 2.5 percent received an opioid prescription for greater than 30 days (Desai, Hernandez-Diaz, Bateman, & Huybrechts, 2014). Increases in prescription opioid use among pregnant women has led to an increase in the proportion of women needing opioid use disorder treatment.

Among pregnant women in the United States, 5.1 percent report nonmedical opioid use in the past year. This opioid use is closely associated with depression, and anxiety; however co-occurring use of tobacco, alcohol, marijuana, methamphetamine or other substances suggests missed opportunities to differentiate and prevent opioid use in this population (Kozhimannil, Graves, Levy, & Patrick, 2017). Key ACOG recommendations to prevent opioid use disorder in women of reproductive age include strategies to avoid or minimize the use of opioids for pain management, encouraging alternative pain therapies such as nonpharmacological modalities including exercise, physical therapy, cognitive behavioral therapy, mindfulness-based therapy, acupuncture, and occupational therapy (American College of Obstetricians and Gynecologists, 2017). Non-opioid pharmacologic interventions include non-steroidal anti-inflammatory medications along with acetaminophen which have been shown in a randomized controlled trial to be more effective than opioid medications 12 months after initiation (Krebs, et al., 2018).

Before prescribing opioids to patients, providers should ensure that opioids are appropriately indicated, discussing risks and benefits of opioid use and treatment goals, take a thorough history of substance use and review the local

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Prescription Drug Monitoring Program (PDMP) to determine whether patients have received prior prescriptions for opioids or benzodiazepines. Prescription Drug Monitoring programs are currently operational in 49 states and the District of Columbia, and several states require that health care providers have logins to PDMPs and consult PDMPs prior to any opioid prescribing. IHS has already taken important steps towards requiring PDMP usage, and integration into clinical workflows (Smith M. , 2016).

Screening for Opioid Use Disorder in Women of Reproductive Age and Pregnant Women

Screening for opioid use disorders in women of reproductive age offers opportunities for intervention across the life course. The screening can extend beyond assessing present and past substance use disorder to include an assessment of adverse childhood events, intimate partner violence and sexual trauma all of which increase susceptibility to opioid use disorder (Smith, Homish, Leonard, & Cornelius, 2012). In pregnancy, ACOG recommends that obstetric providers perform universal screening and brief intervention (SBIRT) using a validated tool as early in prenatal care as possible (American College of Obstetricians and Gynecologists, 2017). To avoid selective screening based on race, ethnicity or socioeconomic status, screening should be universal, and a validated screening tool should be used. Women have the right to decline drug testing

of biologic samples (American College of Obstetricians and Gynecologists, 2015). Ethical issues around criminalization and screening using biologic testing are reviewed in further detail below. There must be specified criteria established for universal screening. Validated screening tools include 4Ps, the National Institute on Drug Abuse (NIDA) Quick Screen, and CRAFFT (see appendices). Providers should screen for concurrent use of other illicit drugs, alcohol and prescription medications to provide optimal management of maternal substance use disorders, assess maternal risk for overdose and to improve outcomes related to neonatal opioid withdrawal syndrome.

Medication-Assisted Therapy (MAT) for Management of Opioid Use Disorder

MAT use during pregnancy has been shown to increase prenatal care utilization, reduce illicit drug use, reduce infection exposure, improve maternal nutrition, improve infant birth weight, and improve outcomes associated with neonatal opioid withdrawal syndrome (Mozurkewich & Rayburn, 2014). The goal of MAT with methadone, buprenorphine, or naltrexone in pregnant and non-pregnant women is to reduce cravings to prevent continued opioid use. Secondary advantages in the absence of ongoing illicit opioid use during pregnancy include prevention of associated maternal acquisition of infection such as human immunodeficiency virus (HIV) and hepatitis, high-risk sexual behavior, fetal growth restriction, placental abruption, preterm labor, and fetal death.

Treatment options also include medically supervised detoxification (withdrawal). Pregnant women with OUD, with or without a history of pharmacotherapy for OUD, should be advised that medically supervised withdrawal from opioids is associated with high rates of return to substance use and is not the recommended course of treatment. If a pregnant woman on pharmacotherapy for OUD decides to

move forward with medically supervised withdrawal, it can be conducted in a controlled setting in any trimester in the pregnancy if the benefits outweigh the risks. However, the woman should be informed that discontinuing pharmacotherapy is associated with high rates of return to substance use, poorer fetal health, and therefore is not the recommended course of treatment. (Substance Abuse and Mental Health Services Administration (SAMHSA), 2018)

Until buprenorphine was compared to methadone in the Maternal Opioid Treatment: Human Experimental Research (MOTHER) Trial (National Institute of Drug Abuse, 2012), a multicenter randomized clinical trial, methadone was considered the first line medication for opioid use disorder in pregnancy. The MOTHER Trial demonstrated equivalent maternal outcomes and improved neonatal outcomes with buprenorphine. There was a small decrease in the proportion of neonates requiring pharmacological treatment for NOWS in the buprenorphine group, and buprenorphine-exposed neonates required, on average, 89 percent less morphine to treat NOWS, a 43 percent shorter hospital stay, and a 58 percent shorter duration of medical treatment for NOWS compared to methadone-exposed newborns and a substantially shorter length of treatment. Buprenorphine is now considered a first-line option for medication-assisted treatment (Jones, et al., 2010).

There are few Opioid Treatment Programs (OTPs) offering methadone treatment on tribal land; however, some are based in locations close to Native communities including Albuquerque, Farmington, Tucson, Phoenix, Flagstaff, Anchorage, and Missoula. SAMHSA has a website which lists OTPs in each state

(<https://dpt2.samhsa.gov/treatment/directory.aspx>).

Advantages of buprenorphine over methadone include a lower risk of overdose, fewer drug interactions, office-based treatment delivery, and a shorter NOWS course. Disadvantages compared with methadone include lack of long-term data on consequences of fetal exposure for the infant, potential limited efficacy in patients with high levels of opioid use, requirement of moderate withdrawal symptoms prior to initiation to avoid iatrogenic withdrawal, and an increased risk of diversion (Mozurkewich & Rayburn, 2014). Other concerns about buprenorphine use is the street demand for the drug. *Diversion* is defined as the “unauthorized rerouting or misappropriation of prescription medication to someone other than for whom it was intended.” This can occur either voluntarily or involuntarily, within or outside of informal networks, and either with or without the exchange of money or other services. Misuse may or may not be related to diversion; rather, it can refer to the taking of a substance differently than prescribed—by route, or by dose (Lofwall & Walsh, 2014).

The setting for induction with buprenorphine in pregnancy may be an outpatient clinic, inpatient, or intensive outpatient substance use disorder treatment program or a hospital’s maternity care unit. Some physicians and programs prefer to admit women to the hospital after viability (i.e. 22-23 weeks) for induction and titration of buprenorphine to facilitate fetal monitoring and other interventions such as betamethasone administration, more intensive ongoing monitoring, and/or recommendation for earlier delivery in the event of fetal distress, as well as due to concern about precipitating preterm contractions (McCarthy, Leamon, Finnegan, & Fassbender, 2017). Although rigorous studies of the frequency of preterm labor or miscarriage during buprenorphine induction are not available, it appears to be quite rare when buprenorphine induction in pregnancy happens under medical supervision. To place the induction in perspective, many women

using heroin or prescription opioids frequently experience recurrent mild to severe unsupervised withdrawal compared to a brief period of moderate withdrawal for initiation of buprenorphine treatment. Under the Drug Addiction Treatment Act of 2000 (DATA 2000) (Substance Abuse and Mental Health Services Administration (SAMHSA), n.d.), physicians can receive a medical license “waiver” to prescribe buprenorphine by completing an 8-hour online training and supported prescribing program with the American Society of Addiction Medicine (ASAM). ACOG, in conjunction with ASAM, has provided these waiver trainings for the IHS at no cost. In addition, the lecture portion of the training has been tailored with a women’s health focus. In July 2016, the Comprehensive Addiction and Recovery Act (CARA) extended the privilege of prescribing buprenorphine in office-based settings to qualifying nurse practitioners (NPs) and physician assistants (PAs). Nurse practitioners and physician assistants require twenty-four hours of Substance Abuse Mental Health Services Administration approved training to receive the waiver, which is limited to thirty patients through 2020.

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For the provider, the choice of whether to initiate methadone or buprenorphine in a pregnant patient must be individualized, and can often be restricted by availability, state policy, and access to services. In settings where each medication option is available, an increasing proportion of pregnant women are choosing buprenorphine. At the University of New Mexico’s Milagro Program in 2018, approximately 2/3 of the pregnant women on MAT are using buprenorphine and 1/3 methadone. The women on

methadone include predominantly women on methadone prior to pregnancy or who relapsed after initiating buprenorphine during pregnancy. However, in one study, only 53 percent of admissions for opioid use disorder during pregnancy involved MAT, with the greatest predictor of appropriate management being Medicaid coverage of methadone. Medicaid coverage for methadone costs is associated with a 33 percent higher probability of pregnant women seeking MAT (Bachhuber, Mehta, Faherty, & Saloner, 2017). Professional organizations and specialists recommend that payment for both buprenorphine and methadone should be available to all women to permit patient autonomy in decision-making. Despite buprenorphine's relative advantages for neonates, it will not be effective for all women because it is a self-administered, prescribed medication with risk for diversion. Individual women in different stages of recovery may require higher levels of structure and support. The best neonatal outcomes will be achieved by providing the most appropriate and effective treatment for the mother.

Of note, studies show that methadone pharmacokinetics are altered in pregnancy, which may lead to an increase in maternal withdrawal symptoms over the course of pregnancy, even in individuals who are stable in their recovery. Methadone metabolism may be affected by alterations in gastrointestinal absorption, increases in total body fluid, blood volume, and body fat, and by changes in protein binding throughout pregnancy. Methadone metabolism is also increased because of induction of the CYP3A4 isozyme, which may alter serum methadone concentrations during pregnancy. Relative to the postpartum period, methadone clearance increases from the first to the third trimesters, correlating with decreased methadone trough concentrations. Split-dosing regimens in the third trimester of pregnancy may therefore be

beneficial in maintaining a sustained serum concentration of methadone and improving patients' compliance with methadone maintenance programs. A detailed study of buprenorphine metabolism during pregnancy is ongoing. Women's healthcare providers must recognize that increased symptoms of craving and withdrawal occurring in the third trimester may in fact reflect altered medication metabolism. As a solution, dividing usual treatment doses of methadone or buprenorphine into two or three doses daily during the third trimester and postpartum period can be recommended on an individualized basis if symptoms or cravings are present to optimize treatment efficacy (Shiu & Ensom, 2012).

Naltrexone (pregnancy category C) is a non-selective opioid receptor antagonist which has shown promise in treating opioid use disorders by decreasing drug-seeking behaviors, drug cravings, and increasing treatment retention (Leslie, et al., 2015). Naltrexone has the potential to treat select opioid-dependent pregnant women while eliminating the risk of neonatal opioid withdrawal syndrome; however, limited human data are available on naltrexone's safety and efficacy in pregnancy (Kelly & Hulse, 2017). Addiction specialists and treatment providers may choose to continue naltrexone in pregnant women who were prescribed the medication for management of substance use disorder prior to pregnancy.

Currently, opioid overdose is a leading cause of death in adults 25-45 years of age in the United States. Education and expansion of access to naloxone is one evidence-based strategy to address this issue. No study has looked at pregnancy outcomes in patients treated with naloxone for acute opioid overdose. However, the use of naloxone for resuscitation in overdose should not be withheld out of concern for the developing fetus.

Integration of Prenatal Care with Treatment of Opioid Use Disorder

Elements of prenatal care that should be particularly emphasized in the care of pregnant women with opioid use disorder include contracts to structure expectations of care and adherence, integration of expertise in counseling and behavioral support, and testing for sexually transmitted infections (STIs) including HIV, hepatitis B and C, chlamydia, gonorrhea, syphilis, and tuberculosis. Hepatitis B vaccination is recommended for pregnant women who are HBsAg negative but at high risk of acquisition. Given high rates of behavioral health co-morbidity and prior sexual trauma, screening for depression should be performed at least once per trimester with timely referral to behavioral health and psychiatry services to encourage retention in care and prevent relapse. Consideration should be given to an interval ultrasound in pregnant women on medication-assisted therapy or who are using prescribed or illicit opioids to screen for fetal growth abnormalities (American College of Obstetricians and Gynecologists (ACOG), 2016). Consultations with anesthesia, addiction medicine, pain management, pediatrics, behavioral health, nutrition, and social services should be available as needed. Smoking cessation services and counseling for other substance use disorders should be encouraged.

The Substance Abuse and Mental Health Services Administration affirms that recovery is facilitated by social support. Four types of social support have been identified in the literature: emotional, informational, instrumental, and affiliational support (Substance Abuse and Mental Health Services Administration (SAMHSA), 2009). Mechanisms for integrating social support into integrated prenatal and recovery-based care may include the use of peer recovery coaches, community health worker models, and group prenatal care. Co-location of prenatal and opioid use disorder treatment services may also enhance care by supporting evidence-based access to

medication-assisted treatment, and linkage to addiction treatment postpartum (Goodman, 2015). One pilot study of the Optimizing Pregnancy Treatment Interventions for Moms (OPTI-Moms) program in Pittsburgh suggested that a patient navigation model to improve engagement in pregnant women initiating buprenorphine treatment was feasible, acceptable, and improved treatment adherence, prenatal care utilization, and mood.

In Indian Country, co-occurrence of methamphetamine use with opioid use disorder may be common. Women who are unable to stop using methamphetamines during pregnancy with outpatient treatment should be offered residential treatment whenever possible. If outpatient treatment is used, intensive schedules of three to five visits per week are needed for the first several weeks; as with opioid use disorder, cognitive-behavioral therapy, such as the Matrix Model, which includes behavioral therapy, family education, individual counseling, 12-step support, and drug testing is recommended. Such services may also include tribal solutions and supports designed and implemented by tribal councils. Tangible incentives in exchange for engaging in treatment and maintaining abstinence have been shown to be effective. No pharmacologic treatments specific to methamphetamines have been shown to be effective, and this is the focus of new and emerging research. MAT for co-occurring OUD can be offered. (American College of Obstetricians and Gynecologists (ACOG), 2011)

To date, research on group prenatal care co-located with treatment of opioid use disorder is limited. In some reports, Centering Pregnancy[®] has been shown to impact outcomes such as gestational age birthweight, postpartum show rate, postpartum family planning utilization, and interpregnancy interval (Hale, Picklesimer, Billings, & Covington-Kolb, 2014); however other studies have not demonstrated benefit. Centering has not been

specifically tested in high risk groups such as those with substance use disorder. Data on the impact of a group prenatal care model is forthcoming from the Milagro program.

Considerations for Delivery in Women with Opioid Use Disorder

Based on ACOG guidelines, women who are receiving medication-assisted treatment for opioid use disorder during pregnancy should be maintained on their dose of methadone or buprenorphine while in labor and should receive additional pain relief (Meyer, Wagner, Benvenuto, Plante, & Howard, 2007). Epidural and spinal analgesia should be offered as appropriate or desired. Opioid agonist-antagonist drugs should be avoided since they can precipitate acute withdrawal in patients taking an opioid agonist. Examples of such medications are butorphanol, nalbuphine, and pentazocine. Buprenorphine should not be offered to a patient who takes methadone for the same reason. Pediatric staff should be notified of all infants exposed to opioids—whether prescribed opioids or those used illicitly.

It is expected that women on methadone or buprenorphine will require higher doses of opioids to achieve labor analgesia. Adequate labor pain relief can be achieved with short-acting opioids, local anesthetics via epidural or intrathecal administration, and with nitrous oxide. Daily doses of methadone or buprenorphine should be maintained postpartum and patients should have advance knowledge of this plan to prevent anxiety and concern over issues related to custody.

Women using buprenorphine having a vaginal delivery can anticipate a decreased postpartum need for non-opioid analgesic medication due to the beneficial effect of buprenorphine for postpartum pain. However, women using buprenorphine who have a cesarean delivery will often not obtain adequate postpartum pain relief with the usual

dosage of opioid pain medications due to buprenorphine's opioid antagonist effect. Post cesarean pain control options include scheduled administration of nonsteroidal anti-inflammatory drugs (NSAIDs) and/or acetaminophen, higher doses of oral or parental opioids or continuous postpartum epidural analgesia for 24-48 hours postpartum (Meyer, Wagner, Benvenuto, Plante, & Howard, 2007). Due to a lack of national guidelines for postpartum pain control in women on MAT the development of local policies in collaboration with the anesthesia team based on local resources is encouraged. Consultation with an anesthesiologist upon admission to the labor unit and postpartum can help to optimize pain management. To avoid over sedation as the physiological changes of pregnancy resolve, women on methadone often need a small decrease in their postpartum daily dose over the first few weeks, but this should be individualized (Pace, et al., 2014).

Postpartum Care of Women with Opioid Use Disorder

The postpartum period is associated with a high rate of relapse. Postpartum triggers include postpartum mood changes, newborns with NOWS, management of postpartum pain, sleep deprivation, changes in insurance status and access to treatment, breastfeeding

and possible issues regarding neonatal custody and child protective services that may exacerbate mood disorders, as well as histories of trauma.

“The provision of highly effective contraception in the immediate postpartum period requires patient education and shared decision making prior to birth.”

Substance use and overdose are increasingly being recognized as key contributors to pregnancy-

associated death in the United States, with a disproportionate share of deaths occurring postpartum (Bachhuber, Mehta, Faherty, & Saloner, 2017). Postpartum planning needs to be included early and throughout prenatal care and substance abuse treatment. The access to highly effective contraception in the immediate postpartum period requires patient education and shared decision-making prior to birth.

Most pregnant women who take methadone will require an increased dosage during pregnancy, but the relationship between methadone dose, serum concentration, and treatment effect is not predictable. Routine, standardized postpartum methadone reduction is therefore not indicated; rather, dose reduction should be performed based on close observation of symptoms of over sedation in the postpartum patient. Relapse is more common postpartum compared to during pregnancy, therefore women with substance use disorder should continue their opioid agonist medication-assisted treatment postpartum with supported transition to ongoing care for opioid use disorder postpartum.

Optimal treatment of NOWS is based on dyad care where mother and baby are in the same room. Breastfeeding, skin-to-skin contact, and decreased stimulation should be highly encouraged, where appropriate, to decrease need for neonatal pharmacotherapy and neonatal length of stay (Grossman, et al., 2017). Planning during prenatal care for prolonged maternal postpartum stays and breastfeeding is important to support dyad care.

Women and their families may be concerned that presenting for care during pregnancy in the setting of opioid use disorder may result in referral to child protective services or punitive action (Martha A. Jessup, 2003). Women who are on MAT without ongoing substance use, are in treatment for substance use disorder, and not generating concerns for child

abuse or neglect, can be informed that a Child Protective Services (CPS) referral may be deferred. The detection of methadone or buprenorphine in a urine drug screen is a sign of adherence to treatment and should not trigger referral when there are no concerns for abuse or neglect. Child Protective Services' approach, legal requirements, and child abuse laws vary widely among states. Maternity care providers should be familiar with local policies and create institutional guidelines and procedures that respond to local needs.

In many states, medication-assisted treatment and access to behavioral health services may be tied to pregnancy-related medical care or Medicaid coverage that ends at 6 weeks/60 days postpartum. Studies have shown that the first three months postpartum are a high-risk time for relapse (American College of Obstetricians and Gynecologists, 2017). Women who relapse after MAT have decreased opioid tolerance and are at higher risk of overdose. One model to facilitate ongoing MAT and substance use care is to link it with the ongoing outpatient care of the infant with perinatal drug exposure. Due to the issues of perinatal opioid exposure, increased incidence of growth restriction and preterm birth, and potential for environmental neglect, the infants are at increased risk of developmental issues.

Breastfeeding

Breastfeeding is recommended for women on opioid agonist therapy who meet criteria. It has been associated with decreased severity of NOWS, less need for pharmacotherapy for the neonate, and shorter infant hospital stays. Breastfeeding also promotes attachment and bonding, facilitates skin-to-skin care which has proven neurological benefits, and provides immunity. Methadone and buprenorphine are both lactation category C and transferred via the breast milk but in amounts approximating <1 percent of the maternal blood

levels. Published guidelines from the American Academy of Pediatrics (AAP), ACOG, and the Academy of Breastfeeding Medicine (ABM) support breastfeeding for women stabilized on MAT, regardless of dose. The 2015 ABM statement includes criteria for encouraging breastfeeding

outcomes (Holmes, et al., 2016). There are significant maternal benefits including reinforcing sobriety, enhancing maternal self-esteem, and promoting mother-infant bonding. Previous studies have not differentiated between direct breastfeeding and pumped breast milk, nor mixed feeding versus

“Breastfeeding also promotes attachment and bonding, facilitates skin-to-skin care which has proven neurological benefits, and provides immunity.”

among mothers with the following: (1) compliance with a substance use disorder treatment program, (2) consistent prenatal care, (3) negative urine toxicology screen for non-prescribed/illicit substances at the time of delivery, and (4) negative urine screens for 30-90 days prior to delivery for anything other than the MAT. (Reece-Stremtan & Marinelli, 2015)

Some institutions expand on the ABM criteria based on local outcomes—for example, by (1) defining consistent prenatal care as attendance of at least 50 percent of scheduled visits, including two visits within the last 2 months, and (2) creating a guideline of no positive urine drug screens over a 4-week period for breastfeeding initiation. These policies have led to subsequent improved breastfeeding rates (Wachman, et al., 2015). We recommend creating a local protocol to facilitate trust in marginalized, traditional communities that may highly value the mother-infant bond in the first few days of life. The value of prenatal urine drug screens as a predictor for postpartum recovery remains unknown. Testing of breastmilk to determine substance exposure is not validated or recommended. Of note, breastfeeding should not be promoted in women who have other contraindications, such as HIV infection with unsuppressed viral load.

Numerous studies have shown a strong association between rooming in and improved neonatal

exclusive breastfeeding, but benefits are likely tightly related to maternal presence at the bedside, skin-to-skin contact, and engagement and trust in care.

Co-Management of Behavioral Health Issues and Mood Disorders

Mood disorders and behavioral health issues are strongly associated with substance use disorders, and in many cases reflect an attempt to self-medicate. All women of reproductive age and pregnant women should be screened for mood and behavioral health issues, with co-location of behavioral health and psychiatric care during pregnancy being a key programmatic element if possible. If co-location of care is not possible, efforts should be made to coordinate behavioral health care with obstetric and reproductive care. Communication and collaboration across providers and systems is critical to consistent and comprehensive treatment of women with substance use disorders.

Infants of untreated, depressed mothers demonstrate poor outcomes; for example, reduced scores for motor adaptation and self-regulation, higher arousal scores, difficulty being consoled, and developmental delay or poor neonatal attachment (American College of Obstetricians and Gynecologists (ACOG), 2008) (Hayes, Goodman, & Carlson, 2013) (Salisbury, et al., 2016). Several reviews demonstrate the safety of selective serotonin

reuptake inhibitors (SSRIs) in later pregnancy, with the exception of paroxetine, which may increase the incidence of cardiac defects when administered in early pregnancy. The most common and the best established adverse effect of SSRIs is poor neonatal adaptation (PNA); PNA is prolonged when SSRIs are combined with benzodiazepines, SSRIs in combination with opioids can worsen severity of NOWS (Hulse, O'Neill, Pereira, & Brewer, 2008) (Wachman, et al., 2011).

The decision of when and how to treat perinatal depression is therefore a complex risk-benefit algorithm. Mild to moderate depression should be treated with cognitive behavioral therapy or interpersonal therapy (if available). For anxiety disorders, SSRIs should be considered the first line pharmacotherapy. Benzodiazepines are relatively contraindicated in women with opioid use disorders due to their sedating effects and increased accidental injury when used by women prescribed buprenorphine or methadone (Schuman-Olivier, et al., 2013).

Reproductive Life Planning

Unintended, undesired pregnancy rates in women with substance use disorder can be as high as 85 percent (Terplan, Hand, Hutchinson, Salisbury-Afshar, & Heil, 2015) (Price, 2017). Use of reliable contraception is lower in this population, potentially due to social determinants of health such as poverty, housing instability, lack of insurance, stigma faced in the health system, coercion, barriers to care, self-perceived infertility given medical illness, and other stressors such as prior trauma and poor self-efficacy. Discussion of a full range of contraceptive options and reproductive life planning should begin during prenatal care for pregnant women with opioid use disorder. Prevention of pregnancy in those who do not wish to conceive offers an opportunity for highly effective secondary prevention of perinatal opioid exposure and NOWS. Women and their families can

be counseled about the option of immediate or interval long-acting reversible contraception, which has few contraindications and is highly effective and convenient. These options are supported for breastfeeding women by the CDC medical eligibility criteria based on randomized controlled trials (Turok, et al., 2017) (Gurtcheff, et al., 2011). Training for immediate postpartum long-acting reversible contraception (LARC) placement – either an intrauterine device or the etonorgestrel implant – is available for

providers nationwide through ACOG. Although oral contraception, vaginal ring, patch and

“Unintended, undesired pregnancy rates in women with substance use disorder can be as high as 85 percent.”

intramuscular medroxyprogesterone (Depo Provera) are effective if used appropriately, relapse could negatively impact ability to access contraception. Women who are using opioids are likely to be less able to take pills daily, go to a health facility for an injection, or refill prescriptions at a pharmacy. For women who have completed childbearing, postpartum tubal ligation or vasectomy can be excellent options, although it is vital that a permanent reproductive decision be made from a stable life situation to decrease the risk of regret. Women can be discharged from outpatient reproductive health and primary care visits or hospital admissions with emergency contraception as another tool for birth spacing. However, providers must be highly sensitive to the presence of historical marginalization, stigma and bias in their management of women with substance use disorder, and take measures to utilize patient-centered counseling techniques that minimize the risk of contraceptive and reproductive coercion. This is particularly important since having children and stable family life is an important aspect of recovery for many women of reproductive age. Training and

technical assistance is available through the American College of Obstetricians and Gynecologists, the Association of State and Territorial Health Officials, Upstream, Provide, and others.

Trauma-Informed Care

Relationships and family history play a critical role in women's introduction to substance use; prior traumatic experiences from sexual, emotional, or physical abuse may be very common in women with substance use disorder. Trauma-informed care refers to the principle that service delivery is designed with an understanding of the impact of victimization and trauma (U.S. Department of Health and Human Services, 2017). A research review by Najavits et al. found that a lifetime history of trauma was found in 55 percent to 99 percent of women with substance misuse (Najavits, Weiss, & Shaw, 1997). Often this trauma is perpetrated by people women know and trust (Covington, Women and addiction: A trauma-informed approach, 2008). Women are more likely to initiate hazardous drug use while in some type of intimate partner relationship, particularly after

a triggering time for those with trauma histories, and Native women may carry the intergenerational impact of historical and collective trauma. Trauma-informed approaches to the management of opioid use disorder in women are absolutely essential.

Trauma-informed care has become more prevalent as a method to care for women in gender-specific substance use treatment programs (Elliott, Bjelajac, Falot, Markoff, & Reed, 2005) (Covington, Burke, Keaton, & Norcott, 2008). Yet, a recent secondary analysis using publicly available data by Terplan et al. found that trauma-related services were only selectively available in urban centers and states with larger populations, and a large percentage of women in treatment programs reported unmet needs (Terplan, Longinaker, & Appel, Women-centered drug treatment services and need in the United States, 2002-2009, 2015). Unmet needs in rural areas are likely even higher. Interdisciplinary approaches to post-traumatic stress disorder that engage tribal resources, social structures, and assets are crucial to impactful care of women with opioid use disorder.

“Trauma-informed care refers to the principle that service delivery is designed with an understanding of the impact of victimization and trauma.”

introduction of the substance by a boyfriend or spouse (Brecht, O'Brien, von Mayrhauser, & Anglin, 2004). Psychological and emotional distress have been identified as factors in nonmedical prescription opioid use among women.

OUD is strongly associated with intimate partner violence and victimization (Back, Lawson, Singleton, & Brady, 2011). Women are particularly susceptible to such violence when under the influence of opioids (Smith, Homish, Leonard, & Cornelius, 2012). In addition to this link between substance use disorder and trauma, pregnancy can be

Legal and Ethical Issues

State policies regarding the response to and reporting of substance use disorder in pregnancy vary. Recently in some states, policymakers have implemented legislation criminalizing substance use disorder in pregnancy. Eighteen states require health care professionals to report suspected prenatal use of illicit substances, four require healthcare professionals to test for prenatal drug exposure if substance use disorders are suspected, and 18 states consider substance use disorders during pregnancy to be child abuse under civil child-welfare statutes (Gutmacher Institute, 2016). Low-income women

and women of color are at higher risk for barriers to appropriate care for substance use disorders during pregnancy, in part explaining the poor perinatal outcomes in this population (Schempf & Strobino, Illicit drug use and adverse birth outcomes: is it drugs or context, 2008). One study found a clear association between little or no prenatal care and opioid use, with a cohort of postpartum patients reporting external locus of control, fear of being reported to the police, and disbelief in the efficacy of care as factors (Schempf & Strobino, Drug use and limited prenatal care: an examination of responsible barriers, 2009).

Pregnancy can be a major motivating factor for seeking treatment for opioid use disorder due to maternal concerns regarding fetal and neonatal effects, and desires to maintain family integration and custody. Family members, community members, peers and even other opioid users or “dealers” may urge and support pregnant women to seek treatment. The stigma of being pregnant with opioid use disorder and concerns regarding losing custody of a newborn may deter women from seeking treatment. Due to legal issues regarding procuring and possessing illicit opioids, as well as common patterns of criminal activity associated with use of illicit substances, it is common for pregnant women with OUD to be arrested and/or incarcerated, creating specific issues around access to high quality, continuous care, trust, and integrated, co-located social and behavioral health services. Incarceration during the prenatal period may also be mandated by tribal law in certain settings. Given various barriers and stigma impacting effective care of this population, ACOG emphasizes that routine screening for substance use disorder should be applied equally to all populations regardless of race/ethnicity and insurance status; that routine testing of biologic samples as a form of screening is discouraged; that if biologic testing is clinically required that written informed consent should be

obtained or documentation of verbal consent should be performed (which has been established through legal precedent as well as professional guideline); that providers’ first priority should be maintaining and building a therapeutic alliance with patients through treating patients with dignity and respect; and that separation of parents and children solely on the basis of a diagnosis of substance use disorder should be strongly discouraged (American College of Obstetricians and Gynecologists, 2015).

Tailoring Approaches for American Indian and Alaska Native Populations

Limited data exist on how the guidelines and findings above can be adapted specifically to ensure high quality, accessible care to tribal and Native populations. However, it is clear from our site visits and clinical experience that adaptation of systems for integration and reach in rural settings is necessary, with potentially different needs and assets in Native and rural populations. Native culture and traditions also offer opportunities for community engagement and support that is integrated into medical care for women with

opioid use disorder. In one review focusing on the Canadian experience, rural women had significantly less involvement

“...ACOG emphasizes that routine screening for substance use disorder should be applied equally to all populations regardless of race/ethnicity and insurance status...”

with child-protective services, and their infants had shorter hospital stays and were less likely to need pharmacologic treatment for NOWS (Jumah, Rural, pregnant, and opioid dependent: A systematic review, 2016). The authors of this study note that indigenous identity had less impact on neonatal outcomes as compared to rural location. An inherent limitation of this study is underreporting (Shannon

LM, 2010). Studies of indigenous pregnant women with opioid dependence who reside in rural areas vary widely in terms of patients' socioeconomic status, ethnic diversity and proximity to urban resources. Regardless of the opioid used, treatment strategies for pregnant women in these communities primarily involve methadone maintenance if medication-assisted treatment is being used at all (Kaltenbach, Berghella, & Finnegan, 1998) (Fajemirokun-Odudeyi, et al., 2006).

Comprehensive guidelines to manage the care of pregnant women with opioid dependence who live in rural or remote communities do not currently exist. This absence, in addition to a lack of resources, a lack of training in the treatment of substance use disorder in pregnancy, and providers' discomfort with opioid agonist therapy in pregnancy, has contributed to wide variation in the quality of care these women receive.

The Protecting Our Infants Act of 2015 (Substance Abuse and Mental Health Services Administration (SAMHSA), 2017) became law on November 25,

2015. The Act (Public Law 114-91) addresses problems related to prenatal opioid exposure and includes several mandates for the U.S. Department of Health and Human Services (HHS) that inform the recommendations below. Pregnant women are identified as priority populations in MAT regulations and federal block grant programs, but if programs and providers are not available in a community, being a priority population is of limited benefit. Efforts to expand access to MAT are limited by resistance to MAT from the greater treatment community. Limiting factors include the perception that regulation of MAT is burdensome and the persistent lack of acceptance of SUD as a chronic brain disease despite abundant supporting research and extensive public education. Rejection of the evidence for MAT by abstinence-based programs results in the exclusion of persons receiving MAT from social and behavioral services available to others through these programs. This situation is further complicated for women who are excluded from services because their infants or older children cannot be accommodated.

Recommendations:

- Screening, Brief Intervention and Referral to Treatment (SBIRT) (Wright, et al., 2016)
 - Screen all pregnant women at the initial prenatal visit, in each trimester, and all unscheduled or emergency visits using a validated questionnaire (for recommended screening tools, see Appendix)
 - Use culturally acceptable forms of screening for OUD with non-punitive approaches and document patient consent for urine and or blood drug testing
 - Encourage screening at least annually in primary care and reproductive health clinics
 - Women without opioid use disorder should be provided information on prevention strategies such as limiting use of alcohol, marijuana and tobacco
 - Women assessed to be at moderate risk for substance use disorder, or who screen positive for substance use disorder should receive a brief intervention such as motivational interviewing by the provider or other trained health care personnel (e.g. nurse, social worker, counselor)
 - Women at high risk should be referred at the initial visit for substance use disorder counseling and initiation of medication-assisted therapy, if appropriate
- Prevention of Opioid Use Disorder and Opioid Overdose
 - All prescribing providers should receive periodic education regarding use of opioids
 - Use Prescription Drug Monitoring Programs at time of initiation of treatment with opioids and periodically throughout treatment
 - Employ alternatives to opioids for management of chronic pain, including nonsteroidal anti-inflammatory drugs, acetaminophen, cognitive behavioral therapy, and physical therapy
 - Electronic Health Records should be leveraged for point-of-care-based decision support and limits on long-term prescribing and dispensing (i.e. 7-day prescription limits)
 - Naloxone distribution using non-traditional networks such as law enforcement, as well as clinics and pharmacies and community networks with community buy-in for overdose prevention
- Prenatal Care for Women with Opioid Use Disorder
 - Integrate prenatal care with OUD treatment including MAT where possible
 - Telehealth and remote mentoring for providers interested in prescribing
 - Consider Centering Pregnancy[®] and group prenatal care models that allow for peer recovery support
 - In partnership with tribal councils and local government, de-emphasize policies that encourage criminalization
 - Enhanced screening for bloodborne diseases (HIV, Hepatitis B, Hepatitis C) and sexually transmitted infections (STIs) for women with SUD
 - Discuss NOWS, breastfeeding, and advantages of dyad care early in prenatal care to allow mothers to develop a plan for rooming-in
 - Optimally, site of delivery and postpartum care is in the community and offers rooming-in/dyad care
 - Routine transfer of infants with perinatal opioid exposure or NOWS to neonatal intensive care units (NICUs) or Intermediate Care Nurseries (ICNs) is discouraged

- Behavioral Health and Substance Use Disorder Counseling
 - Women with OUD should have access to substance use disorder counseling and mental health services. MAT by itself should not be the entire treatment plan
 - Trauma-based care: Behavioral health services and prenatal care staff must be trained in trauma-informed care to encourage entry and continuation of care. Recognition of trauma from intimate partner violence, childhood sexual trauma, rape and adverse childhood experiences (ACEs) will facilitate access to culturally sensitive care
- Medication-Assisted Treatment (MAT)
 - Initiation of medication-assisted treatment with either methadone or buprenorphine is recommended for all pregnant women with opioid use disorder
 - Medically supervised detoxification should only be used if women decline MAT after counseling regarding the high failure rate of detoxification, the risks of overdose with failure of detoxification, and the option to start maintenance therapy at any point should relapse occur (Jumah, Graves, & Kahan, The management of opioid dependence during pregnancy in rural and remote settings, 2015). (Substance Abuse and Mental Health Services Administration (SAMHSA), 2018)
 - Increase the number of maternity care providers trained to provide buprenorphine
 - Collaborate with primary care and psychiatry providers for MAT if not offered by maternity care providers
 - Each site offering MAT should have the ability to consult with Addiction Medicine specialists—whether in person or via telehealth arrangements
 - Advocate for state coverage of both methadone and buprenorphine by Medicaid
 - Collaborate with nearby federally certified Opioid Treatment Programs (OTPs) and residential programs offering methadone maintenance to assure that patients can access the preferred treatment to optimize individual outcomes; advocate for increased OTP capacity via tribal mechanisms and with community engagement
 - Widespread access to intensive outpatient treatment options
 - Telehealth provision of buprenorphine, co-located with prenatal care
 - Systems to incentivize providers, hospitals, and tribal networks to partner and explore local implementation of non-punitive policies utilizing restorative justice approaches and emphasizing community integration
- Postpartum Care
 - All pregnant women with opioid use disorder should be offered postpartum MAT and substance use disorder treatment, with individualized treatment plans that emphasize an individual’s context and goals
 - Home visiting and culturally acceptable community-based and peer support
 - Linkages to treatment of OUD
 - Recognition of loss of custody as a trigger for relapse; prioritization of preserving the maternal-child dyad and family unit
 - Support for rooming-in policies for management of NOWS

- Long-Acting Reversible Contraception (LARC)
 - Offer LARC as part of a menu of options for birth spacing and reproductive life planning
 - Offer immediate postpartum LARC including intrauterine devices (IUDs) on labor and delivery and operating room settings and subdermal implants prior to discharge
 - Integrate family planning provision into OUD treatment settings and primary care facilities to help prevent undesired pregnancy in women with OUD
- Breastfeeding
 - Encourage consistent guidelines that allow for breastfeeding in women with OUD who meet criteria, i.e., on MAT but no illicit substance use, to promote attachment, provide nonpharmacological treatment for Nows, and improve neonatal developmental outcomes
 - Initiation of breastfeeding with skin-to-skin care in the delivery room can be supported when maternity and neonatal providers are unsure about whether patient meets “criteria,” as there is minimal transmission by first day colostrum

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Resources

Opioid use and opioid use disorder in pregnancy. Committee Opinion No. 711. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2017;130:e81–94.

Substance abuse reporting and pregnancy: the role of the obstetrician–gynecologist. Committee Opinion No. 473. American College of Obstetricians and Gynecologists. *Obstet Gynecol* 2011;117:200–1.

Sutter MB, Leeman L, Hsi A. Neonatal opioid withdrawal syndrome. *Obstet Gynecol Clin North Am.* 2014 Jun;41(2):317-34.

Center for Substance Abuse Treatment. Medication-assisted treatment for opioid addiction during pregnancy. In: Medication-assisted treatment for opioid addiction in opioid treatment programs. Treatment Improvement Protocol (TIP) Series, No. 43. Rockville (MD): Substance Abuse and Mental Health Services Administration; 2005. p. 211–24.

Wright TE, Terplan M, Ondersma SJ, Boyce C, Yonkers K, Chang G, et al. The role of screening, brief intervention, and referral to treatment in the perinatal period. *Am J Obstet Gynecol* 2016;215:539–47.

Substance Abuse and Mental Health Services Administration. *A Collaborative Approach to the Treatment of Pregnant Women with Opioid Use Disorders*. HHS Publication No. (SMA) 16-4978. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2016.

Holmes AV, Atwood EC, Whalen B, Beliveau J, Jarvis JD, Matulis JC, Ralston SL. *Pediatrics*. 2016 Jun;137(6).

An Initiative to Improve the Quality of Care of Infants With Neonatal Abstinence Syndrome.

Grossman MR, Berkowitz AK, Osborn RR, Xu Y, Esserman DA, Shapiro ED, Bizzarro MJ.

Pediatrics. 2017 Jun;139(6).

Obstet Gynecol Clin North Am. 2017 Mar;44(1):95-107.

Patient-centered Care to Address Barriers for Pregnant Women with Opioid Dependence.

Sutter MB1, Gopman S2, Leeman L3.

Bell J, Towers CV, Hennessy MD, Heitzman C, Smith B, Chattin K. Detoxification from opiate drugs during pregnancy. *Am J Obstet Gynecol* 2016; 215:374.e1–6

Neonatal abstinence syndrome after methadone or buprenorphine exposure.

Jones HE, Kaltenbach K, Heil SH, Stine SM, Coyle MG, Arria AM, O'Grady KE, Selby P, Martin PR, Fischer G. *N Engl J Med*. 2010 Dec 9;363(24):2320-31

Drug Alcohol Depend. 2018 Feb 1;185:40-49.

Prenatal exposure to methadone or buprenorphine: Early childhood developmental outcomes.

Kaltenbach K1, O'Grady KE2, Heil SH3, Salisbury AL4, Coyle MG5, Fischer G6, Martin PR7, Stine S8, Jones HE.

[Eur J Pain](#). 2010 Oct;14(9):939-43. doi: 10.1016/j.ejpain.2010.03.002. Epub 2010 May 4.

Intrapartum and postpartum analgesia for women maintained on buprenorphine during pregnancy.

[Meyer M¹](#), [Paranya G](#), [Keefer Norris A](#), [Howard D](#).

The Council on Patient Safety in Women's Health Care's Safety Bundle on Obstetric care for women with opioid use disorder. <http://safehealthcareforeverywoman.org/patient-safety-bundles/obstetric-care-for-women-with-opioid-use-disorder/>

American Society of Addiction Medicine <https://www.asam.org>

Appendix 1: Impactful Programs in Indian Country

Maternal Outreach and Mitigation Services, or “MOMS” program

White Earth Nation in Naytahwaush, MN. Holistic services, especially for pregnant women including outpatient services, case managers, parenting groups, prenatal care, MAT referrals, and support services for infants/children.

Phone: (218) 936-2442

Email: julie.williams@whiteearth-nsn.gov

<http://www.whiteearthculturaldivision.com/programs/moms-program>

Red Lake Chemical Health – Pregnant Women and Families Program

Individualized treatment plan and counseling, outpatient group, alcohol/chemical dependency education, aftercare planning and referrals, Rule 25 Assessments, case management, mental health referrals, physical and sexual abuse referrals, prevention education on fetal alcohol spectrum. Transportation provided to group counseling. On Call 24 hours a day, 7 days a week.

Red Lake Pregnant Women & Families Program

PO Box 114

Red Lake, MN 56671

Phone: (218) 679-3331

Email: chemicalhealth@redlakenation.org

<http://www.redlakenation.org/tribal-programs/health-services/chemical-health>

Wrapped in Hope

Project Term: 24 months; Ended 2017. Grant Amount: \$100,000

The Hope Project of Lake County and the Flathead Reservation is a collaboration between Providence Montana Health Foundation and St. Joseph Hospital, with strong support from the Confederated Salish and Kootenai tribal government, to implement a multi-disciplinary approach to drug use during pregnancy through both clinical and home-based services. Both hospitals will implement a collaborative, team-based approach that provides holistic, respectful, family-centered care. They will hire licensed clinical social workers (LCSWs) with expertise in addictions, and implement a comprehensive, coordinated approach to providing prenatal care and coordinate supportive services for pregnant women struggling with addiction. Beyond the direct impacts of drug use during pregnancy, an accompanying problem is that women struggling with addiction often have poor or no prenatal care, often because of fears of criminal prosecution and social service involvement. A second component of the program will focus on community outreach to encourage people to seek care early in pregnancy or prior, and inform them of the availability of supportive services. The Best Beginnings program (focused on early childhood) and the County Health Department’s Parents as Teachers program will also serve Hope Project families.

<https://mthcf.org/grantee/wrapped-in-hope-improving-health-outcomes-for-mom-and-baby-impacted-by-substance-abuse-during-pregnancy/>

Project Nurture, Portland, Oregon

Prenatal, inpatient maternity, and postpartum care and addiction treatment, but not specific to Native American health.

<http://www.healthshareoregon.org/transforming-health-together/care-innovations/maternal-child-and-family-wellness/Projectpercent20Nurturepercent20-percent20Learnpercent20Morepercent20Flyer.pdf>

Four Directions Treatment & Recovery Center of Mescalero

Mescalero Tribal Health Services – 90-day inpatient and outpatient programs, including a family residential treatment program (only if children are at least 6 months of age)

<https://mescaleroapachetribe.com/fdtrcm/>

Muckleshoot Indian Tribe’s Behavioral Health Program

No mention of pregnancy-related care. Provide comprehensive mental health, state certified chemical dependency treatment, adult recovery housing and prevention services to Tribal community members, families and other Native Americans living on and near the Muckleshoot Indian Reservation. MAT and mental health services.

<http://www.muckleshoot.nsn.us/services/health-and-wellness/behavioral-health-program.aspx>

Indian Health Care Resource Center, Tulsa, OK

No mention of pregnancy related care. Comprehensive treatment package. Includes psychiatrists, psychologists, social workers and counselors. Provides individual, group, family, couples counseling. Wraparound support services for both children and adults. Arranges inpatient admission and aftercare with community support as needed. Walk-ins welcome

<https://www.ihcrc.org/behavioralhealth>

Phoenix Area Integrated Behavioral Health Program, IHS

No mention of pregnancy-related care. Provides consultation services. Psychology, social work, substance use treatment, tele-behavioral health.

<https://www.ihs.gov/phoenix/programsservices/integratedbehavioralhealth/>

Thunderbird Treatment Center, Seattle, WA

No mention of pregnancy-related care. Inpatient and outpatient adult addiction services. Support therapy including group therapy, individual counseling, health education, arts and crafts. Traditional Indian medicine component including a sweat lodge and talking circles. Shuttle provides transportation to routine medical care.

<http://www.sihb.org/ttc/>

The Healing Lodge of the Seven Nations, Spokane Valley, WA

Teens only, no pregnancy-related care. ASAM Level 3 residential facility. Focus on culturally relevant curriculum. Rate of relapse 1 year after treatment is 23 percent (90 percent nationally).

Individual and group therapy, life skills instruction, family education and counseling, aftercare planning.

<http://www.healinglodge.org/>

Healing of the Canoe: The Community Pulling Together Project, Suquamish Tribe & University of Washington

Youth only, no mention of pregnancy-related care. 11-session curriculum after school and during summer months, life skills manual to lead a clean and sober journey.

<http://healingofthecanoe.org/>

Oglala Native Healing, Rapid City, SD

No mention of pregnancy-related care. Tribally run, outpatient and counseling services. Largely alcohol-related substance use.

<https://www.nativehealingprogram.net/>

Four Bands Healing Center, Eagle Butte SD

No specific mention of pregnancy-related care. No dedicated website, appears to be a transitional living facility geared towards alcohol use.

<https://yourfirststep.org/treatment-center/crst-behavioral-health-department-crst-four-bands-healing-center-eagle-butte-sd/>

Northern Ontario Suboxone Support program, Fort Hope, Ontario, Canada

No mention of pregnancy-related care. Family medicine physicians deployed to area to work alongside local intake workers, community nurses, the local council and even school staff. Community members provide aftercare counseling to prevent relapse. Successful educational interventions for opioid dosing included a workshop, interactive case discussions, online chat rooms, video conferencing and consultant support.

http://www.cpso.on.ca/CPSO/media/documents/Methadone/Presentations/15Nov6_Cirone-Sharon_Krishnamurthy-Ashok.pdf

Works Cited

- Ailes, E. C., Dawson, A. L., Lind, J. N., Gilboa, S. M., Frey, M. T., Broussard, C. S., & Honein, M. A. (2015). Opioid prescription claims among women of reproductive age—United States, 2008–2012. *Morbidity and Mortality Weekly Report (MMWR)*, *64*(2), 37–41. Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6402a1.htm>
- American College of Obstetricians and Gynecologists. (2015). Alcohol abuse and other substance use disorders: ethical issues in obstetric and gynecologic practice. Committee Opinion No. 633. *Obstetrics & Gynecology*, *125*, 1529–1537. doi:10.1097/01.AOG.0000466371.86393.9b
- American College of Obstetricians and Gynecologists. (2008, April). Practice Bulletin No. 92: Clinical management guidelines for obstetrician-gynecologists. *Obstetrics & Gynecology*, *111*(4), 1001–1020. doi:10.1097/AOG.0b013e31816fd910
- American College of Obstetricians and Gynecologists. (2011, March). Committee Opinion No. 479: Methamphetamine Abuse in Women of Reproductive Age. *Obstetrics & Gynecology*, *117*(3), 751–755. doi:10.1097/AOG.0b013e318214784e
- American College of Obstetricians and Gynecologists. (2016). Practice Bulletin No. 175: Ultrasound in Pregnancy. *Obstetrics & Gynecology*, *128*(6), 241–256. doi:10.1097/AOG.0000000000001815
- American College of Obstetricians and Gynecologists. (2017). Committee Opinion No. 711: Opioid Use and Opioid Use Disorder in Pregnancy. *Obstetrics & Gynecology*, 81–94. doi:10.1097/AOG.0000000000002235
- Atwell, K. A., Weiss, H. B., Gibson, C., Miller, R., & Corden, T. E. (2016). Neonatal Abstinence Syndrome and Maternal Substance Use in Wisconsin, 2009–2014. *Wisconsin Medical Journal*, *115*(6), 287–294. Retrieved from https://www.wisconsinmedicalsociety.org/_WMS/publications/wmj/pdf/115/6/287.pdf
- Bachhuber, M. A., Mehta, P. K., Faherty, L. J., & Saloner, B. (2017). Medicaid coverage of methadone maintenance and the use of opioid agonist therapy among pregnant women in specialty treatment. *Medical Care*, *55*(12), 985–990. doi:10.1097/MLR.0000000000000803
- Back, S. E., Lawson, K., Singleton, L., & Brady, K. T. (2011). Characteristics and Correlates of Men and Women with Prescription Opioid Dependence. *Addictive Behaviors*, *36*(8), 829–834. doi:10.1016/j.addbeh.2011.03.013
- Bell, J., Towers, C. V., Hennessy, M. D., Heitzman, C., Smith, B., & Chattin, K. (2016). Detoxification from opioid drugs during pregnancy. *American Journal of Obstetrics & Gynecology*, *215*(3), 374.e1–374.e6. doi:10.1016/j.ajog.2016.03.015
- Brecht, M.-L., O'Brien, A., von Mayrhauser, C., & Anglin, M. (2004). Methamphetamine use behaviors and gender differences. *Addictive Behaviors*, *29*(1), 89–106. doi:10.1016/S0306-4603(03)00082-0
- CDC. (2017, August 1). *Prescription Opioid Overdose Data*. Retrieved from <http://www.cdc.gov/https://www.cdc.gov/drugoverdose/data/overdose.html>
- Centers for Disease Control and Prevention. (2013). Vital Signs: Overdoses of Prescription Opioid Pain Relievers and Other Drugs Among Women — United States, 1999–2010. *Morbidity and Mortality Weekly Report (MMWR)*, *62*(26), 537–542. Retrieved from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6226a3.htm>
- Centers for Disease Control and Prevention. (2015, January 22). *Opioid painkillers widely prescribed among reproductive age women [Press Release]*. Retrieved from Centers for Disease Control and Prevention: <http://www.cdc.gov/media/releases/2015/p0122-pregnancy-opioids.html>
- Centers for Disease Control and Prevention. (2017, March 23). *Prescription Painkiller Overdose*. Retrieved from [cdc.gov/vitalsigns](http://www.cdc.gov/vitalsigns): <https://www.cdc.gov/vitalsigns/prescriptionpainkilleroverdoses/index.html>
- Covington, S. S. (2008). Women and addiction: A trauma-informed approach. *Journal of Psychoactive Drugs*, *40*, 377–385.
- Covington, S. S., Burke, C., Keaton, S., & Norcott, C. (2008). Evaluation of a trauma-informed and gender-responsive intervention for women in drug-treatment. *Journal Psychoactive Drugs, Suppl 5*, 387–398.

- Desai, R. J., Hernandez-Diaz, S., Bateman, B. T., & Huybrechts, K. F. (2014). Increase in prescription opioid use during pregnancy among Medicaid-enrolled women. *Obstetrics & Gynecology*, *123*(5), 997-1002. doi:10.1097/AOG.0000000000000208
- Elliott, D. E., Bjelajac, P., Fallot, R. D., Markoff, L. S., & Reed, B. G. (2005). Trauma-informed or trauma-denied: principles and implementation of trauma-informed services for women. *Journal of Community Psychology*, *33*(4), 461-477. doi:10.1002/jcop.20063
- Fajemirokun-Odudeyi, O., Sinha, C., Tutty, S., Pairedeau, P., Armstrong, D., Phillips, T., & Lindow, S. (2006). Pregnancy outcome in women who use opiates. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *126*(2), 170-175. doi:10.1016/j.ejogrb.2005.08.010
- Goodman, D. (2015). Improving access to maternity care for women with opioid use disorders: Colocation of midwifery. *Journal of Midwifery & Women's Health*, *60*(6), 706-712. doi:10.1111/jmwh.12340
- Grossman, M. R., Berkowitz, A. K., Osborn, R. R., Xu, Y., Esserman, D. A., Shapiro, E. D., & Bizzarro, M. J. (2017). An initiative to improve the quality of care of infants With neonatal abstinence syndrome. *Pediatrics*, *139*(6). doi:10.1542/peds.2016-3360
- Gurtcheff, S. E., Turok, D. K., Stoddard, G., Murphy, P., Gibson, M., & Jones, K. P. (2011). Lactogenesis after early postpartum use of contraceptive implant: a randomized controlled trial. *Obstetrics & Gynecology*, *117*(5), 1114-1121. doi:10.1097/AOG.0b013e3182165ee8
- Guttmacher Institute. (2016). *Substance Use During Pregnancy*. Retrieved June 21, 2018, from Guttmacher Institute: <https://www.guttmacher.org/state-policy/explore/substance-use-during-pregnancy>
- Hale, N., Picklesimer, A. H., Billings, D. L., & Covington-Kolb, S. (2014). The impact of centering pregnancy group prenatal care on postpartum family planning. *American Journal of Obstetrics and Gynecology*, *210*(1), 50e1-50e7. doi:10.1016/j.ajog.2013.09.001
- Hayes, L. J., Goodman, S. H., & Carlson, E. (2013). Maternal antenatal depression and infant disorganized attachment at 12 months. *Attachment & Human Development*, *15*(2), 133-153. doi:10.1080/14616734.2013.743256
- Heil, S. H., Jones, H. E., Arria, A., Kaltenbach, K., Coyle, M., Fischer, G., . . . Martin, P. R. (2011). Unintended pregnancy in opioid-abusing women. *Journal of Substance Abuse Treatment*, *40*(2), 199-202. doi:10.1016/j.jsat.2010.08.011
- Holmes, A. V., Atwood, E. C., Whalen, B., Beliveau, J., Jarvis, J., Matulis, J. C., & Ralston, S. L. (2016). Rooming-in care for infants of opioid-dependent mothers: Implementation and evaluation at a tertiary care hospital. *Pediatrics*, *137*(6), 555-561. doi:10.1542/peds.2015-2929
- Hulse, G., O'Neill, G., Pereira, C., & Brewer, C. (2008). Obstetric and neonatal outcomes associated with the maternal naltrexone exposure. *Australian and New Zealand Journal of Obstetrics and Gynaecology*, *41*, 424-428. doi:10.1111/j.1479-828X.2001.tb01322.x
- Jones, C. M., Logan, J., Gladden, M., & Bohm, M. K. (2015). Vital Signs: Demographic and substance use trends among heroin users - United States, 2002-2013. *Morbidity and Mortality Weekly Report (MMWR)*, *64*(26), 719-725. Retrieved June 21, 2018, from <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6426a3.htm>
- Jones, H. E., Kaltenbach, K., Heil, S. H., Stine, S. M., Coyle, M. G., Arria, A. M., . . . Fischer, G. (2010). Neonatal abstinence syndrome after methadone or buprenorphine exposure. *New England Journal of Medicine*, *363*, 2320-2331. doi:10.1056/NEJMoa1005359
- Jumah, N. A. (2016). Rural, pregnant, and opioid dependent: A systematic review. *Substance Abuse: Research and Treatment, Suppl 1*, 35-41. doi:10.4137/SART.S34547
- Jumah, N. A., Graves, L., & Kahan, M. (2015). The management of opioid dependence during pregnancy in rural and remote settings. *CMAJ: Canadian Medical Association Journal*, *187*(1), E41-E46. doi:10.1503/cmaj.131723
- Kaltenbach, K., Berghella, V., & Finnegan, L. (1998). Opioid dependence during pregnancy: effects and management. *Obstetrics and Gynecology Clinics of North America*, *25*(1), 139-151. doi:10.1016/S0889-8545(05)70362-4

- Kelly, E., & Hulse, G. (2017). A retrospective cohort study of birth outcomes in neonates exposed to naltrexone in utero: A comparison with methadone-, buprenorphine-, and non-opioid-exposed neonates. *Drugs*, 77(11), 1211-1219. doi:10.1007/s40265-017-0763-8
- Kozhimannil, K. B., Graves, A. J., Levy, R., & Patrick, S. W. (2017). Nonmedical use of prescription opioids among pregnant U.S. women. *Womens Health Issues*, 27(3), 308-315. doi:10.1016/j.whi.2017.03.001
- Krebs, E. E., Gravely, A., Nugent, S., Jensen, A. C., DeRonne, B., Goldsmith, E. S., . . . Noorbaloochi, S. (2018). Effect of opioid vs nonopioid medications on pain-related function in patients with chronic back pain or hip or knee osteoarthritis pain. *JAMA*, 319(9), 872-882. doi:10.1001/jama.2018.0899
- Leslie, D. L., Milchak, W., Gastfriend, D., Herschman, P. L., Bixler, E. O., Velott, D. L., & Meyer, R. E. (2015). Effects of injectable extended-release naltrexone (XR-NTX) for opioid dependence on residential rehabilitation outcomes and early follow-up. *American Journal of Addictions*, 24(3), 265-270. doi:10.1111/ajad.12182
- Lofwall, M. R., & Walsh, S. L. (2014). A review of buprenorphine diversion and misuse: The current evidence base and experiences from around the world. *Journal of Addiction Medicine*, 8(5), 315-326. doi:10.1097/ADM.0000000000000045
- Martha A. Jessup, R. P. (2003, April 1). *Extrinsic Barriers to Substance Abuse Treatment among Pregnant Drug Dependent Women*. Retrieved from Sage journals: <https://doi.org/10.1177/002204260303300202>
- McCarthy, J. J., Leamon, M. H., Finnegan, L. P., & Fassbender, C. (2017). Opioid dependence and pregnancy: minimizing stress on the fetal brain. *American Journal of Obstetrics and Gynecology*, 216(3), 226-231. doi:10.1016/j.ajog.2016.10.003
- Meyer, M., Wagner, K., Benvenuto, A., Plante, D., & Howard, D. (2007, August). Intrapartum and postpartum analgesia for women maintained on methadone during pregnancy. *Obstetrics & Gynecology*, 110, 261-266. doi:10.1097/01.AOG.0000275288.47258.e0
- Mozurkewich, E. L., & Rayburn, W. F. (2014). Buprenorphine and methadone for opioid addiction during pregnancy. *Obstetrics and Gynecology Clinics of North America*, 41(2), 241-253. doi:10.1016/j.ogc.2014.02.005
- Najavits, L. M., Weiss, R. D., & Shaw, S. R. (1997). The link between substance abuse and posttraumatic stress disorder in women: A research review. *American Journal on Addictions*, 6, 273-283. doi:10.1111/j.1521-0391.1997.tb00408.x
- National Institute of Drug Abuse. (2012). *Buprenorphine During Pregnancy Reduces Neonate Distress*. Retrieved from National Institute of Drug Abuse : <https://www.drugabuse.gov/news-events/nida-notes/2012/07/buprenorphine-during-pregnancy-reduces-neonate-distress>. July 6, 2012. Accessed April 5, 2018.
- National Institute on Drug Abuse. (2017). *Substance Use in Women*. Retrieved June 21, 2018, from [www.drugabuse.gov: https://www.drugabuse.gov/publications/drugfacts/substance-use-in-women](https://www.drugabuse.gov/publications/drugfacts/substance-use-in-women)
- Pace, C. A., Kaminetzky, L. B., Winter, M., Cheng, D. M., Saia, K., Samet, J. H., & Walley, A. Y. (2014). Postpartum changes in methadone maintenance dose. *Journal of Substance Abuse Treatment*, 47(3), 229-232. doi:10.1016/j.jsat.2014.04.004
- Patrick SW, S. R. (2012). Neonatal abstinence syndrome and associated health care expenditures: United States, 2000-2009. *JAMA*, 1934-1940.
- Price, T. E. (2017). *Secretary Price Announces HHS Strategy for Fighting Opioid Crisis [Speech Transcript]*. Retrieved from U.S. Department of Health & Human Services: <https://www.hhs.gov/about/leadership/secretary/speeches/2017-speeches/secretary-price-announces-hhs-strategy-for-fighting-opioid-crisis/index.html>
- Pritham, U. A. (2013). Breastfeeding promotion for management of neonatal abstinence syndrome. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, 517-526. doi:10.1111/1552-6909.12242
- Reece-Stremtan, S., & Marinelli, K. A. (2015). ABM Clinical Protocol #21: Guidelines for breastfeeding and substance use or substance use disorder, revised 2015. *Breastfeeding Medicine*, 10(3), 135-141. doi:10.1089/bfm.2015.9992

- Saia, K. A., Schiff, D., Wachman, E. M., Mehta, P., Vilkins, A., Sia, M., . . . Bagley, S. (2016). Caring for pregnant women with opioid use disorder. *Current Obstetrics and Gynecology Reports*, 5(3), 257-263. doi:10.1007/s13669-016-0168-9
- Salisbury, A. L., O'Grady, K. E., Battle, C. L., Wisner, K. L., Anderson, G. M., Stroud, L. R., . . . Lester, B. M. (2016). The roles of maternal depression, serotonin reuptake inhibitor treatment, and concomitant benzodiazepine use on infant neurobehavioral functioning over the first postnatal month. *The American Journal of Psychiatry*, 173(2), 147-157. doi:10.1176/appi.ajp.2015.14080989
- Sanlorenzo, L. A. (2018). Neonatal Abstinence Syndrome: An Update. *Current Opinion in Pediatrics*, 182-186.
- Schempf, A. H., & Strobino, D. (2009). Drug use and limited prenatal care: an examination of responsible barriers. *American Journal of Obstetrics & Gynecology*, 200(4), 412.e1–412.e10. doi:10.1016/j.ajog.2008.10.055
- Schempf, A. H., & Strobino, D. M. (2008). Illicit drug use and adverse birth outcomes: is it drugs or context. *Journal of Urban Heal : Bulletin of the New York Academy of Medicine*, 85(6), 858-873. doi:10.1007/s11524-008-9315-6
- Schuman-Olivier, Z., Hoepfner, B. B., Weiss, R. D., Borodovsky, J., Shaffer, H. J., & Albanese, M. J. (2013). Benzodiazepine use during buprenorphine treatment for opioid dependence: clinical safety outcomes. *Drug and Alcohol Dependence*, 132(3), 580-586. doi:10.1016/j.drugalcdep.2013.04.006
- Shannon LM, H. J. (2010). Examining differences in substance use among rural and urban pregnant women. *American Journal on Addictions*, 467-473.
- Shiu, J. R., & Ensom, M. H. (2012). Dosing and monitoring of methadone in pregnancy: literature review. *Canadian Journal of Hospital Pharmacy*, 65(5), 380-386.
- Smith, M. (2016, July). *IHS Implements Groundbreaking New Policy Regarding Opioid [Blog Post]*. (Indian Health Service (IHS)) Retrieved from www.ihs.gov: <https://www.ihs.gov/newsroom/ihs-blog/july2016/ihs-implements-groundbreaking-new-policy-regarding-opioid-prescribing/>
- Smith, P. H., Homish, G. G., Leonard, K. E., & Cornelius, J. R. (2012). Intimate partner violence and specific substance use disorders: Findings from the National Epidemiologic Survey on Alcohol and Related Conditions. *Psychology of Addictive Behaviors*, 26(2), 236-245. doi:10.1037/a0024855
- Substance Abuse and Mental Health Services Administration. (2009). *What are Peer Recovery Support Services?* U.S. Department of Health and Human Services.
- Substance Abuse and Mental Health Services Administration. (2015). *Behavioral Health Barometer: United States, 2015*. U.S. Department of Health and Human Services, Rockville.
- Substance Abuse and Mental Health Services Administration. (2015, May 6). *Women Matter!* . Retrieved from www.samhsa.gov: <https://www.samhsa.gov/women-children-families/trainings/women-matter>
- Substance Abuse and Mental Health Services Administration. (2016). *Substance Abuse & Mental Health Data Archive (SAMHDA)*. Retrieved from samhsa.gov: <https://www.datafiles.samhsa.gov/study-series/national-survey-drug-use-and-health-nsduh-nid13517>
- Substance Abuse and Mental Health Services Administration. (2017). *Protecting Our Infants Act: Final Strategy*. Retrieved from www.samhsa.gov: https://www.samhsa.gov/sites/default/files/topics/specific_populations/final-strategy-protect-our-infants.pdf
- Substance Abuse and Mental Health Services Administration. (2018). *Clinical Guidance for Treating Pregnant and Parenting Women With Opioid Use Disorder and Their Infants*. U.S. Department of Health and Human Services. Rockville: U.S. Department of Health and Human Services. Retrieved 2018, from <https://store.samhsa.gov/shin/content/SMA18-5054/SMA18-5054.pdf>
- Substance Abuse and Mental Health Services Administration. (2018, April). *Finding Quality Treatment for Substance Use Disorders*. U.S. Department of Health and Human Services. Retrieved from samhsa.gov: <https://store.samhsa.gov/product/Finding-Quality-Treatment-for-Substance-Use-Disorders/PEP18-TREATMENT-LOC>

- Substance Abuse and Mental Health Services Administration. (n.d.). *Legislation, Regulations, and Guidelines*. Retrieved from Substance Abuse and Mental Health Services Administration: <https://www.samhsa.gov/programs-campaigns/medication-assisted-treatment/legislation-regulations-guidelines#DATA-2000>
- Terplan, M., Hand, D. J., Hutchinson, M., Salisbury-Afshar, E., & Heil, S. H. (2015). Contraceptive use and method choice among women with opioid and other substance use disorders: a systematic review. *Preventive Medicine, 80*, 23-31. doi:10.1016/j.ypmed.2015.04.008
- Terplan, M., Longinaker, N., & Appel, L. (2015). Women-centered drug treatment services and need in the United States, 2002-2009. *American Journal of Public Health, 105*(11), e50-e54. doi:10.2105/AJPH.2015.302821
- Turok, D. K., Leeman, L., Sanders, J. N., Thaxton, L., Eggebroten, J. L., Yonke, N., . . . Espey, E. (2017). Immediate postpartum levonorgestrel intrauterine device insertion and breastfeeding outcomes: a noninferiority randomized controlled trial. *American Journal of Obstetrics and Gynecology, 217*(6), 665.e1-665.e8. doi:10.1016/j.ajog.2017.08.003
- U.S. Department of Health and Human Services. (2017). *Final Report: Opioid Use, Misuse, and Overdose in Women*. U.S. Department of Health and Human Services, Office of Women's Health, Washington, DC. Retrieved from <https://www.womenshealth.gov/files/documents/final-report-opioid-508.pdf>
- Wachman, E. M., Byum, J., & Philipp, B. L. (2010). Breastfeeding rates among mothers of infants with neonatal abstinence syndrome. *Breastfeeding Medicine, 5*(4), 159-164. doi:10.1089/bfm.2009.0079
- Wachman, E. M., Newby, P., Vreeland, J., Byun, J., Bonganzi, A., Bauchner, H., & Philipp, B. L. (2011). The relationship between maternal opioid agonists and psychiatric medications on length of hospitalization for neonatal abstinence syndrom. *Journal of Addiction Medicine, 5*(4), 293-299. doi:10.1097/ADM.0b013e3182266a3a
- Wachman, E. M., Saia, Kelly, Humphreys, R., Minear, S., Combs, G., & Philipp, B. L. (2015). Revision of breastfeeding guidelines in the setting of maternal opioid use disorder: One institution's experience. *Journal of Human Lactation, 32*(2), 382-387. doi:10.1177/0890334415613823
- Wakeman, S. E. (2013). Language and addiction: Choosing words wisely. *American Journal of Public Health, 103*(4), e1-e2. doi:10.2105/AJPH.2012.301191
- Wright, T. E., Terplan, M., Ondersma, S. J., Boyce, C., Yonkers, K., Chang, G., & Creanga, A. A. (2016). The role of screening, brief intervention, and referral to treatment in the perinatal period. *American Journal of Obstetrics and Gynecology, 215*(5), 539-547. doi:10.1016/j.ajog.2016.06.038
- Yeung CY, L. H. (2014). Vertical transmission of hepatitis C virus: Current knowledge and perspectives. *World Journal of Hepatology, 6*(9), 643-651. doi:10.4254/wjh.v6.i9.643