SUPPORTING MOTHERS AND BABIES AFFECTED BY OPIOID USE DISORDER (OUD)
SPONSORED BY
THE FLORIDA ALCOHOL AND DRUG ABUSE ASSOCIATION (FADAA) AND THE STATE OF FLORIDA (FL), DEPARTMENT OF CHILDREN AND FAMILIES.
LEARNING OBJECTIVES

- Understand the impact of the opioid epidemic on women and infants.
- Recognize and support the delivery of optimal care for pregnant and parenting women with opioid use disorder (OUD).
- Discuss the role of pharmacotherapy and treatment during pregnancy and the post-partum period in promoting the health of the infant.
- Understand neonatal abstinence syndrome (NAS) and strategies for minimizing and managing it.
IMPACT OF THE OPIOID EPIDEMIC ON WOMEN AND CHILDREN

- Epidemiology
Opium is the substance from the opioid poppy. It contains codeine and morphine.

Opiates include codeine and morphine separated from opium through chemical processes, and other drugs such as heroin (which is chemically-modified morphine).

Opioids are pharmaceutical products that have properties like opioids but are derived chemically. Examples are oxycodone, fentanyl, and methadone.

Synthetic opioids are non-pharmaceutical opioids. Typically, they are illicitly manufactured analogues of fentanyl and are very potent. These substances are increasingly found mixed into cocaine, benzodiazepines, and fake pills sold as pharmaceuticals.
NATIONAL PICTURE

- National Survey on Drug Use and Health (NSDUH)
- Reproductive Age: 15-44
- Few significant changes from 2016 to 2017
- Pregnant women remain a population of concern
Past Year Pain Reliever Use 12 and Older Percentages, Annual Averages

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2016 and 2017.
Past Year Heroine Use 12 and Older Percentages, Annual Averages

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, NSDUH, 2016 and 2017.
PREGNANT WOMEN REMAIN A POPULATION OF CONCERN

- Not all changes between 2016 and 2017 were statistically significant
- Data appear to be trending in the wrong direction with respect to illicit drug use
  - Cocaine
  - Marijuana
  - Opioids
Past-month use of heroin or prescription opioids
- Pregnant: 32,000
- Non-pregnant women of reproductive age: 986,000
WOMEN AND OUD

- Women experience a faster onset and progression of OUD than men.
- Women experience greater impairment in social and occupational function than men.
- Women are less likely to engage in treatment than men.
PREGNANCY AND OUD

- OUD has increased among pregnant women in all states.
- 6.5 per 1,000 women have OUD at delivery.
- Pregnant women who took opioids for non-medical uses were more likely than non-pregnant women to obtain their opioids from doctors.
- There has been a sustained increase in both maternal OUD and NAS diagnoses among rural residents.
National OUD rates at delivery more than quadrupled during 1999–2014. In all 28 states with 3 years of data, rates significantly increased.
POSTPARTUM WOMEN AND OUD

- Stigma of having a substance-exposed infant is intense
- Experiencing hormonal changes and a high risk for depression
- More likely to leave treatment
- No longer have Medicaid
- High risk of relapse to other substances
TOBACCO USE

- Daily cigarette use; past month
  - Pregnant women: 9%
  - Non-pregnant women of reproductive age: 10.4%

- Tobacco use; past month
  - Pregnant women: 14.7%
  - Non-pregnant women of reproductive age: 20.8%

NSDUH 2018 Table 6.67B
ALCOHOL USE

- Past month; any
  - Pregnant: 11.5%
  - Non-pregnant women of reproductive age: 54.5%
- Past month; heavy
  - Pregnant: 0.5%
  - Non-pregnant women of reproductive age: 5.8%
- Past month: binge
  - Pregnant: 5.2%
  - Non-pregnant women of reproductive age: 29%

NSDUH 2018 Table 6.68B
TRANQUILIZERS AND SEDATIVES

- Past month use:
  - Pregnant: 18,000
  - Non-pregnant women of reproductive age: 652,000

NSDUH 2018 Table 6.65A
According to one study, 14% of pregnant women reported a non-fatal overdose in the past year.

In this study, younger age was the only risk factor identified.

Most study participants had received opioid overdose education and naloxone.

Another study found that risk of overdose was four times higher in the post-partum period than in the 3rd trimester.

Risk of overdose was highest in the period 7 to 12 months post-partum.
Women remain a population of concern nationwide.

Women appear to become addicted more quickly and with less drug use than men. They suffer more harms due to drug use.

Tobacco and alcohol are both known to harm the pregnancy and the infant.

The risk of overdose is highest during the post-partum period.
OPTIMAL CARE FOR PREGNANT AND PARENTING WOMEN WITH OUD
CLINICAL GUIDANCE FOR TREATING PREGNANT AND PARENTING WOMEN WITH OPIOID USE DISORDER AND THEIR INFANTS

GOOD CARE FOR YOU AND YOUR BABY WHILE RECEIVING OPIOID USE DISORDER TREATMENT

Introduction

If you have an opioid use disorder (OUD), receiving the right medicine along with counseling and recovery support services is important at all stages in your life. From pregnancy to delivery to caring for your baby, addressing your OUD and taking care of yourself is a continuous process. You will be better able to protect and care for your baby with a focus on creating and updating your treatment plan and getting the support you need. In all situations, your commitment to treatment and recovery will go a long way.

After your pregnancy, the actions you take or don’t take matter. Below are some important things to know about OUD and caring for your baby, as well as the Do’s and Don’ts for creating a healthy environment for your family.

Things to know

- Birth control is important to prevent pregnancies you do not want as well as to ensure proper space between pregnancies. Talk to your healthcare professionals about the full range of birth control options, including long-acting reversible contraception and the best birth control options while you are breastfeeding.
- Breastfeeding is healthy for you and your baby, so you should continue breastfeeding as long as possible. The amount of OUD medicine that passes into breast milk is extremely small. Talk with your healthcare provider or treatment professionals to make sure your breastfeeding is safe.

Medicine Dose

Now is a good time to ask your OUD treatment professionals to check your medicine dose. An effective dose during pregnancy may be too high or too low once your baby is born. It is normal to feel tired and stressed, but if these feelings are causing you to have

https://store.samhsa.gov/product/Good-Care-for-You-and-Your-Baby-While-Receiving-Opioid-Use-Disorder-Treatment/sma18-5071fs4
Most women have an OUD and then become pregnant.
The path to initiation of opioid use is complex and may include:
- Childhood physical and/or emotional abuse and/or neglect
- Living in a culture that allows gender inequality/discrimination
- Chronic stress
- Psychiatric co-morbidities
- Poor nutrition/Food insecurity
- Intimate partner abuse
- Intergenerational substance use
- Economic challenges
FEAR, DISCRIMINATION, AND BARRIERS TO CARE

- Fear of being incarcerated for illicit drug use or for exposing their fetus to illicit drugs
- Fear of losing custody of their children
- Shame and fear of being judged
- Limited resources
- Lack of funds to pay for services
- Transportation
- Child care

“I was one of the people that was scared to seek treatment. That’s why I stopped going to my OB appointments.” — Veronica Robinson, UNC Horizons Patient
Screening for OUD/SUD determines whether a pregnant woman needs an assessment.

Screens include
- Interviews or questionnaires.
- Toxicology tests.

Screenings should be universal and comprehensive.
- Past, present, prescribed, licit, and illicit substance use
- Methadone, buprenorphine, or other opioid treatment medications
Alcohol and tobacco (the most common), and other substances

High-risk behaviors
  - Injection drug use
  - Exposure to interpersonal violence

Infectious transmitted diseases (STDs), and hepatitis B and C

Comorbid behavioral health disorders
  - Depression
  - Anxiety diseases
Has either of your **parents** had a problem with drugs or alcohol?
Does your **partner** have a problem with drugs or alcohol?
Have you had a problem with drugs or alcohol in the **past**?
Have you used any drugs and alcohol during this **pregnancy**?
Institute for Health and Recovery’s Integrated 5P’s Screening Tool

- Did any of your parents have problems with alcohol or drug use?
- Do any of your friends (peers) have problems with alcohol or drug use?
- Does your partner have a problem with alcohol or drug use?
- Before you were pregnant did you have problems with alcohol or drug use?
- In the past month, did you drink beer, wine, or liquor or use other drugs (pregnancy)?
- Have you smoked any cigarettes in the past three months?
The pregnant woman should be asked to provide informed consent for urine, blood, or saliva screenings for substance use.

Oral consent is often used, but a signed paper or electronic form is preferred.

The healthcare professional should review with the pregnant woman:
- Risks and limitations of each type of test.
- Need for confirmatory testing for any positive results.
- The process and meaning of test results before specimen collection.
- Local legal implications of testing
Urine toxicology screening and confirmatory testing for

- Opioids and illicit drugs, including cocaine, stimulants, cannabis, and benzodiazepines
- Alcohol

Patient consent required before specimen collection

Toxicology screens are not a substitute for verbal, interactive questioning and screening of patients about their drug and alcohol use.
If screenings indicate that a patient has symptoms of an OUD/SUD or a mental health condition, an assessment is needed.

The assessment should include a comprehensive substance use history:
- Past, present, prescribed, licit, and illicit substance use
- Methadone, buprenorphine, or other long-acting opioids
- Nature of the patient’s substance use
- Underlying or co-occurring diseases or conditions, especially depression, anxiety, and posttraumatic stress conditions
- Effect of opioid use on physical and psychological functioning
- Outcomes of past treatment episodes, including history of medications for SUD and mental illness
- Prescription Drug Monitoring Program (PDMP)
DEVELOP A TREATMENT PLAN

Individualize

- Is customized for the patient
- Includes patient input and preferences
- Includes medications (especially for OUD), referrals, therapy, and follow-up appointments

Coordinate

- Collaborate with all healthcare professionals involved in caring for the mother and the infant
  - OB/GYNs
  - SUD and mental health specialists
  - Nurses, care managers, peer recovery coaches
A pregnant woman with OUD can take a number of additional steps to maximize her health and that of the infant.

- She can enroll in a tobacco cessation program and participate in treatment programs for comorbid alcohol and other SUDs as needed.
- She can maintain a healthy weight and take prenatal vitamins as prescribed.
- She can learn about the benefits of breastfeeding.
- She can enroll in parenting classes recommended by her OB/GYN.
PATIENT AND FAMILY EDUCATION ON NAS

- NAS is an expected and treatable condition among infants exposed to methadone or buprenorphine in utero.

- Pregnant women should know what symptoms indicate the onset of NAS and when to seek additional medical care for the infant.

- Nonpharmacological interventions can reduce the incidence and severity of NAS. These include:
  - Breastfeeding
  - Rooming-in after delivery
  - Skin-to-skin contact
  - Low stimulation environment
Infant withdrawal usually begins a few days after the baby is born but may begin as late as 2 to 4 weeks after birth.

Reducing the dose of pharmacotherapy before delivery will **NOT** reduce NAS expression or severity.

Smoking cessation and minimization of other substance use can reduce NAS expression and severity.
ADDRESSING A RETURN TO OPIOID OR OTHER SUBSTANCE USE DURING PREGNANCY

Common among people with OUD and SUD

- Should not be considered a setback or failure but something to address

Return to opioid use

- Reassess and adjust pharmacotherapy plan – Increased dosage of methadone or buprenorphine is often necessary
- Consider higher level of care, such as residential treatment
ADDRESSING A RETURN TO OPIOID OR OTHER SUBSTANCE USE DURING PREGNANCY

Experiencing cravings or withdrawal

- Evaluate for possible medication dose or schedule change, including split dosing

Return to use of benzodiazepines, alcohol, or stimulants

- Increased risk of respiratory depression
- Destabilization
- Potential for erratic behavior that interferes with treatment and services
OUD pharmacotherapy must be differentiated from labor/delivery pain relief.

- OUD pharmacotherapy will not provide pain relief intrapartum/postpartum.
- Must *not* attempt to increase the woman’s prescribed dose of buprenorphine or methadone for short-term intrapartum or postpartum pain control.
- Need of higher doses of nonsteroidal anti-inflammatory drugs (NSAIDs), acetaminophen, or short-acting opioid analgesics for adequate intrapartum pain relief may continue into the initial postpartum period regardless of the method of delivery.

Pregnant women with OUD need reassurance that they will receive adequate pain relief during labor and the postpartum period.
Screen for symptoms of comorbid mental disorders before discharge from the hospital and again at the postpartum outpatient appointment.

Develop a safe care plan.

The plan should:

- Address any existing maternal comorbid medical or psychiatric condition.
- Recognize that physiological changes after delivery, stress, and sleep deprivation may exacerbate these conditions or trigger a return to some form of substance use.
- Include strategies for the new mother to get immediate and nonjudgmental assistance if she feels she is or may become unstable.
CONTRACEPTION

- Women of reproductive age with OUD experience a high rate of unintended pregnancy.
- Preventing unintended pregnancies and planning for future pregnancies are critical.
- Women with OUD, whether receiving pharmacotherapy or not, should be counseled regarding contraception and have immediate, easy access to her contraceptive of choice before her discharge.
Immediate postpartum long-acting reversible contraception should be offered.

Despite prenatal interest in using LARC, most pregnant women with OUD on MAT did not receive postpartum LARC.

The provision of immediate postpartum LARC services may reduce barriers to postpartum LARC receipt such as poor attendance at the postpartum visit.
Good Care for You and Your Baby While Receiving Opioid Use Disorder Treatment
Steps for healthy growth and development

Introduction

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PHARMACOTHERAPY ADJUSTMENTS POSTPARTUM

- After delivery, a new mother’s body goes through multiple physiological changes; her previously effective dose for OUD pharmacotherapy may, therefore, need to be adjusted.
- If a new mother is exhibiting signs of oversedation and is breastfeeding, the healthcare professional should assess both the mother and the infant.
- The mother could be drowsy because she has a demanding newborn who does not sleep or eat well.
PHARMACOTHERAPY ADJUSTMENTS POSTPARTUM, CONTINUED

- Dose changes need to be individualized.
- The healthcare professional should schedule a follow-up visit with the mother as early as possible after delivery.
- Mothers being treated for OUD with pharmacotherapy need to be especially careful to avoid alcohol or any sedating medications, especially benzodiazepines.
- Ensure naloxone is at home and caregivers know how to use it.
A mother who wants to change pharmacotherapy for OUD should first consider the risks and benefits with her treatment provider.

- Potential for destabilization
- Return to substance use
- Breastfeeding
  - Conversation may need to focus on formula feeding
- Unless safety is a concern, discontinuing one pharmacotherapy to start another should be avoided until breastfeeding is naturally concluded.
DISCONTINUATION OF PHARMACOTHERAPY

Reasons

- Pressure from family and friends
- Pressure from treatment programs or legal system
- Costs of medication
- Time needed for other responsibilities vs. time needed to participate in treatment
- Fear of prejudice and discrimination
- Wanting to use again
Discontinuation of pharmacotherapy for OUD should generally be avoided in the immediate postpartum period.

It may be considered later if the mother is stable and the mother and child are well bonded and have a safe, stable social environment and home, though the risk of return to use is elevated any time someone discontinues pharmacotherapy.

Discontinuation of pharmacotherapy should, at the very least, be delayed until after the infant is consistently sleeping through the night and has completed breastfeeding.

The longer the patient continues on OUD pharmacotherapy, the lower her risk of return to substance use when she eventually chooses to taper.
A safety plan for the mother and family needs to be in place before the tapering starts; the mother must know what to do if she returns to substance use.

Once a decision has been made to discontinue pharmacotherapy with methadone or buprenorphine, the medication must be tapered gradually by her treatment provider to prevent withdrawal.

Ensure naloxone is at home and that caregivers know how to use it.
MATERNAL RETURN TO SUBSTANCE USE

Return to substance use is common among people with SUD
- Should not be viewed as failure
- Not a reason to discontinue treatment

Addressing return to substance use
- Reassess and adjust pharmacotherapy plan
  - Increased dosage of methadone or buprenorphine may be necessary
  - Consider higher level of care, such as residential treatment
  - If patient is experiencing cravings or withdrawal, evaluate for possible medication dose or schedule change

Return to use of benzodiazepines, alcohol, and stimulants
- Increased risk of respiratory depression
- Destabilization
- Potential for erratic behavior that interferes with treatment and services
- Identifying pregnant women with OUD as early as possible is important to get them appropriate care and make referrals to specialized treatment.
- Healthcare professionals should universally screen pregnant patients for substance use, including opioid use, as early as possible, preferably at the first prenatal visit.
- Screening should be conducted using validated screening tools.
- Treatment of OUD in pregnant women with other comorbid behavioral health disorders is likely to result in better outcomes for the mother–infant dyad.
- Continued use of opioids and other drugs is common among women with OUD and other substance use disorders (SUDs).
THE ROLE OF PHARMACOTHERAPY AND TREATMENT DURING PREGNANCY AND THE POST-PARTUM PERIOD IN PROMOTING THE HEALTH OF THE INFANT
PHARMACOLOGICAL OPTIONS FOR PREGNANT WOMEN WITH OUD

- Preferred options
  - Methadone
  - Buprenorphine
- When taken as prescribed, methadone and buprenorphine are safe and effective treatment options during pregnancy
- Other medicines under study for use with pregnant women
  - Buprenorphine/naloxone
  - Naltrexone
Pharmacotherapy is a critical element in the treatment of OUD for pregnant women.

Pharmacotherapy helps patients with OUD avoid:
- Experiencing withdrawal symptoms.
- Overwhelming cravings when the opioid misuse is stopped.

Pharmacotherapy can help pregnant women stop:
- Injecting drugs, a primary route of infection for people who use drugs.
- Risky behaviors associated with drug acquisition.
METHADONE

- Is a full mu opioid receptor agonist
- Has been accepted since the late 1970s to treat OUD during pregnancy
- Substantially reduces fluctuations in maternal serum opioid levels, protecting the fetus from repeated withdrawal episodes
- Along with comprehensive prenatal care, reduces the risk of
  - Obstetrical and fetal complications
  - In utero growth restriction
  - Neonatal morbidity and mortality
METHADONE ADVANTAGES AND DISADVANTAGES

Advantages

- Reduces/eliminates cravings for opioid drugs
- Prevents onset of withdrawal for 24 hours
- Promotes increased physical and emotional health
- Has a higher treatment retention than other treatments
Disadvantages

- Achieving stable dose could take days to weeks
- Higher risk of overdose compared to buprenorphine
- Usually requires daily visits to federally certified opioid treatment programs
- Longer NAS duration than buprenorphine
- Does not block the effects of other opioids
METHADONE DOSAGE CONSIDERATIONS

- Women already on methadone when they become pregnant should be maintained initially at their pre-pregnancy dosage.
- Pregnant women on methadone often experience symptoms of withdrawal in later stages of pregnancy.
- Dosage increases may be needed to maintain blood levels of methadone and avoid withdrawal symptoms.
- Split dosing can help manage the impact of metabolic changes on the methadone level for women in the third trimester of pregnancy.
- Any adjustment of dose or schedule needs to be based on evaluation of the patient.
BUPRENORPHINE

- Is a mu opioid receptor partial agonist
- Has a ceiling effect
- Has several formulations
- Single agent oral product
- Combination oral product
  - Buprenorphine/Naloxone
- Monthly injectable product
- 6-month implant product
BUPRENORPHINE ADVANTAGES AND DISADVANTAGES

Advantages
- Lower risk of overdose than methadone
- Fewer drug interactions
- Office-based treatment delivery
- Shorter NAS course
- Blocks other opioids
- Long-acting formulations available

Disadvantages
- Lack of long-term data on fetal exposure
- Demonstrated clinical withdrawal symptoms
- Lower retention in treatment than methadone
BUPRENORPHINE/NALOXONE

- Adding naloxone to buprenorphine theoretically decreases the likelihood of diversion and misuse.
- There is insufficient evidence to recommend this formulation for pregnant women.
- Historically, pregnant women who had been on the combination product were transitioned to the buprenorphine-only product for the remainder of their pregnancy.
  - Many providers no longer do this.
- Avoiding the naloxone containing product was thought necessary to reduce the risk of precipitated withdrawal caused by naloxone if the product was misused by injection.
LATE INITIATION AND DISCONTINUATION

- Associated factors:
  - younger age,
  - non-white race,
  - residents of rural counties,
  - fewer outpatient visits,
  - more frequent emergency department visits and hospitalizations, and
  - lower buprenorphine daily dose.
TREATMENT RETENTION

- Significant association between length of time in treatment and reduction in opioid use
- Factors associated with failure of retention
  - past treatment for a psychiatric illness
  - prior criminal history of a misdemeanor conviction
NALTREXONE

- Is an antagonist
- Binds and blocks opioid receptors
- Reduces opioid cravings
- Has no misuse and diversion potential
- Experts do not agree on whether a woman on naltrexone can continue it if she becomes pregnant.
MEDICALLY SUPERVISED WITHDRAWAL

- Is *not* recommended for pregnant women with OUD
- Pharmacotherapy is the recommended standard of care and the best option for a pregnant woman with OUD
- Remaining on pharmacotherapy helps pregnant women with OUD avoid a return to substance use, which has the potential for overdose or death
- Risks
  - High relapse rates
  - Low completion rates
Pregnant patients should be advised that withdrawal during pregnancy increases the risk of relapse without fetal or maternal benefit.

MEDICALLY SUPERVISED WITHDRAWAL, CONTINUED

- A decision to withdraw from pharmacotherapy should be made with great care on a case-by-case basis.
- A pregnant woman receiving treatment for OUD may decide to move forward with medically supervised withdrawal if:
  - It can be conducted in a controlled setting.
  - The benefits to her outweigh the risks.

Pregnant patients should be advised that withdrawal during pregnancy increases the risk of relapse without fetal or maternal benefit.
POLYSUBSTANCE USE

- Is common among pregnant women with OUD
- Frequently used substances
  - Alcohol
  - Benzodiazepines
  - Cannabis
  - Tobacco
    - 88% to 95% of pregnant women receiving pharmacotherapy for OUD continue to smoke
- Adverse outcomes
  - Low birth weight
  - Severe NAS symptoms
Behavioral therapy provides women with OUD with several benefits:

- Encouragement and motivation to continue with treatment
- Enhanced coping skills
- Reduced risk of a return to substance use
When taken as prescribed, both methadone and buprenorphine are safe and effective treatment options during pregnancy.

The benefits of pharmacotherapy for OUD during pregnancy outweigh the risks of untreated OUD.

Medically supervised withdrawal is *not* recommended for pregnant women with OUD.

Increased or split dosing may be required in the third trimester for pregnant women being treated with methadone or buprenorphine.
NAS AND STRATEGIES TO MINIMIZE AND MANAGE IT
TREATING BABIES WHO WERE EXPOSED TO OPIOIDS BEFORE BIRTH

Support for a new beginning

Introduction

Many pregnant women with an opioid use disorder (OUD) worry about harmful effects of opioids to the fetus. Neonatal abstinence syndrome (NAS) is a group of withdrawal signs that may occur in a newborn who has been exposed to opioids and other substances. NAS signs may include high-pitched and excessive crying, seizures, feeding difficulties, and poor sleeping. NAS is a treatable condition.

The actions you take or don’t take play a vital role in your baby’s well-being. Below are some important things to know about what to expect if your baby needs special care after birth, as well as the Do’s and Don’ts for understanding and responding to your baby’s needs.

Things to know

- A baby born to a mother who used opioids or took OUD medicine during pregnancy is typically observed in the hospital by a medical provider for 4-7 days for any physical signs of NAS. A care plan is created for your baby right away if signs of NAS are noted.

- Some babies with NAS may need medicines such as liquid oral morphine or liquid oral methadone in addition to non-medicine care supports.

Medicine Dose and NAS

If you are taking medicine for your OUD, reducing your dose will NOT help your unborn baby, but it might put your baby at risk. Changing or reducing your OUD medicine while pregnant is not a good idea because it can increase your risk for a return to substance use and might increase the chance of having your baby die from NAS during the first year of life.

NEONATAL ABSTINENCE SYNDROME (NAS)

Infants with NAS are born dependent on, NOT ADDICTED to, opioids.

NAS is an expected and treatable drug withdrawal syndrome that occurs among many opioid-exposed infants shortly after birth.
Infants exposed to tobacco, alcohol, prescription medications (e.g., benzodiazepines), and illicit substances in utero may exhibit signs of physiologic withdrawal from these substances.

Neonatal opioid withdrawal syndrome (NOWS) is a subset of NAS and refers to withdrawal symptoms associated specifically with opioid exposure.

- Approximately, 50% to 80% of opioid-exposed infants will develop NAS.
## SIGNS AND SYMPTOMS OF NAS

**Neurologic**
- Excessive or high-pitched crying
- Short and/or irregular sleep patterns
- Tremors or irritability
- Skin breakdown (face/knees)
- Increased muscle tone
- Myoclonic jerks
- Seizures
- Frequent sneezing and/or yawning

**Gastrointestinal**
- Excessive sucking
- Poor feeding
- Vomiting
- Loose stools and/or diarrhea
- Poor weight gain

**Autonomic**
- Sweating
- Low-grade fever
- Nasal stuffiness
- Fast breathing
- Mottling of skin
Risks of NAS for opioid-exposed infants
- Difficult to predict
- Complicated by exposure to additional substances
- Expression and severity affected by infant-related variables
  - Genetics
  - Gender
  - Gestational age
- NAS attributed to pharmacotherapy is not worse than NAS attributed to untreated heroin use
ASSOCIATION AMONG COUNTY-LEVEL ECONOMIC FACTORS, RURAL LOCATION, AND NAS

- Higher county level rates of NAS associated with
  - Higher long-term unemployment
  - Higher mental health clinician shortage areas
  - Remote rural county
NAS IMPACT AND COSTS

- Between 50% and 80% of opioid-exposed infants develop NAS
- Mean length of hospital stay: 16 days
- Mean hospital charge: $93,400 per infant
- Total cost: $1.5 billion

STANDARDIZED SCREENING FOR NAS

- All labor and delivery units should use standardized protocols to screen for, assess, and treat infants with NAS.
- Nurses should be trained on how to administer a standardized NAS screening tool.
- Mothers should also be taught how to score their infant for NAS.
SCREENING TOOLS FOR NAS

- Finnegan Scale
  - First scale for NAS
  - Published in the 1970s
- MOTHER NAS Scale (a Modified Finnegan Scale)
  - Contains 28 items, of which 19 are used for scoring and medication decisions
  - Eliminates many symptoms listed in Finnegan Scale (e.g., myoclonic jerks, mottling, nasal flaring, watery stools)
  - Adds 2 items: irritability and failure to thrive
Maternal and infant toxicology screening:

- Do not rely solely on toxicology screens. In addition to toxicology screens, patients should be interviewed about their substance use.
- Obtain informed consent to screen the mother.
  - Mothers must give consent in order for toxicology screening to be done.
  - Informed consent is not required for the infant.
- Understand legal responsibility for reporting of confirmed positive results in the infant.
  - All healthcare professionals must understand their legal responsibility for reporting substance exposure or withdrawal of an infant.
BREASTFEEDING

- Highly recommended
  - Breastfeeding has positive physical and behavioral effects for the mother–infant dyad.
- Safe in most cases
  - Women who are stable on buprenorphine, combination buprenorphine/naloxone, or methadone should be advised to breastfeed, if appropriate.
  - Women living with HIV or women with ongoing illicit drug use should not breast feed.

The mother can be reassured that the amount of prescribed pharmacotherapy to which the baby is exposed via breast milk is extremely small, while the risk of harm to the infant from her return to substance use is much greater.
ROOMING-IN

- Recommended approach to care
- Reduced need for medication
- Shortened hospital stay
- Should be offered to all mother–infant dyads
- Facilitates breastfeeding
- Infants at risk of NAS should be carefully monitored for 4–7 days and managed according to formal protocols for NAS.

- Every labor and delivery unit should have standardized protocols for assessing and treating infants at risk for NAS or showing signs of withdrawal.

- Nursing staff should be trained on how to administer a standardized NAS assessment tool.

- Use of standardized treatment protocols reduces the duration of both pharmacological treatment and length of stay.
ONSET OF NAS

- Heroin/short-acting opioids
  - Infants exposed to heroin or other short-acting opioids will typically present NAS symptoms within 2–3 days of delivery.

- Methadone and buprenorphine/long-acting opioids
  - Infants exposed to methadone or buprenorphine usually will exhibit NAS symptoms within the first 4 days of birth.
  - Median time to treatment initiation has been shown to be 1 day later in buprenorphine-exposed neonates compared with methadone-exposed neonates.
  - An opioid-exposed newborn requires a minimum of 4 days (96 hours) in the hospital for NAS scoring.
MANAGING MILD SIGNS OF NAS

- Mild scores for the MOTHER NAS Scale are between 0-8.
- Nonpharmacological interventions are recommended for all substance-exposed infants, including the following:
  - Rooming-in
  - Extended skin-to-skin contact
  - Breastfeeding
  - Gentle handling
  - Swaddling
  - Pacifiers
  - Quiet environments
  - Supine positions
- Caregiver education is required on treatment options, infant’s behaviors, and intensive social supports and therapy.
MANAGING MODERATE TO SEVERE SIGNS OF NAS

- MOTHER NAS Scale
  - Moderate NAS scores are between 9 and 16.
  - Severe NAS scores are 17+.
- Nonpharmacological interventions
  - Infants exhibiting moderate to severe signs of NAS should receive nonpharmacological interventions in conjunction with additional treatment options.
- Pharmacotherapy
  - When nonpharmacological interventions are not enough, infants may need medications.
Morphine or methadone

- The American Academy of Pediatrics (AAP) recommends oral morphine solution or methadone to treat withdrawal that infants experience following cessation of prenatal opioid exposure.
- Because of the short half-life of morphine, dosing is needed at least every 4 hours.
- Healthcare professionals should be aware that these medications are usually dissolved in alcohol for compounding.
- Where possible, compounding with alcohol should be avoided, and preservative-free preparations should be used.
Additional medications for the treatment of NAS

- **Buprenorphine**
  - Not enough evidence exists to recommend for or against the use of sublingual buprenorphine for the management of moderate to severe NAS.
  - Preliminary evidence suggests that sublingual buprenorphine may be more effective than morphine for treating moderate to severe NAS.

- **Phenobarbital and clonidine**
  - Effective adjuvant therapies to morphine and methadone may be required when the maximum dose of the first-line medication has been reached or when weaning is unsuccessful.
An infant with NAS who cannot maintain adequate hydration or who loses weight despite optimal management should be:

- Evaluated to rule out other medical conditions.
- Considered for transfer to a neonatal intensive care unit.
NAS TREATMENT PLANS

- Goals
  - Self-regulation of infants
  - Help parents understand and respond to infant

- Treatment plan development
  - Is individualized
  - Is sensitive to mother’s strengths and challenges
  - Includes parental and other caregiver training
Mother and infant should leave the hospital at the same time.

- Infant discharge planning should begin before birth
- 80% of infants can be completely weaned from methadone within 5 to 10 days.
- If the infant remains in the hospital for pharmacotherapy after the mother is discharged, she should be invited to stay with her infant, as this promotes rooming-in and other nonpharmacological interventions.
INFANT DISCHARGE PLANNING, CONTINUED

- Home visits
  - Discharge plans should include home visitation and early intervention services.
    - Attachment-based parenting support
    - Home nursing consult
    - Social work consult
    - Referrals to healthcare professionals who are knowledgeable about NAS and accessible to the family immediately after discharge
CAREGIVER EDUCATION AND THE HOME ENVIRONMENT

- The benefits of a stable home environment have been explained.
- Healthy home environments can reduce the risk of SUD in children born to parents with SUD.
- Caregivers should know how to recognize NAS signs.
- Homes are secured from safety hazards, and prescription drugs are out of reach, preferably stored under lock and key.
Acute follow-up

Infants treated for NAS who have trouble eating or sleeping, cry excessively, or have loose stools should be evaluated by a healthcare professional.

Infant discharge plan and maternal safe care plan

The infant discharge plan should be compatible with and support the maternal safe care plan.

This includes addressing potential maternal comorbid medical or mental disorders.
 EARLY INTERVENTION ASSESSMENTS AND STRATEGIES

- Infants exposed to opioids should be screened while in the hospital and on subsequent pediatric visits for developmental milestones and whenever concerns arise about neurodevelopment.

- When a mother expresses concern about her child’s development, a healthcare professional should discuss assessments and screenings to address these concerns.
Developmental assessments should be conducted whenever there is concern.

Infants born to mothers who received methadone or buprenorphine during pregnancy were found as toddlers to have no more problems with certain developmental tasks than those from a normative sample of children of mothers without substance use disorder, after controlling for confounding factors, such as maternal psychological distress and instability in the home environment.
KEY MESSAGES

- Infant discharge planning should begin before birth, with discussions on ways to reduce NAS expression and severity and promote healthy attachment.
- Return to substance use is common for people with SUDs and should not be viewed as a failure.
- Discontinuation of pharmacotherapy for OUD should generally be avoided in the immediate postpartum period.
- A woman with OUD should be counseled regarding contraception and have immediate, easy access to her contraceptive of choice before her discharge.
KEY MESSAGES

- Infants exposed to opioid agonists and partial agonists in utero are prone to display withdrawal symptoms.
- NAS is an expected and treatable outcome following in utero exposure to opioids.
- Nonpharmacological interventions should be initiated to help soothe infants with NAS.
- Pregnant women with OUD should be encouraged to breast feed when possible.
- Pharmacotherapy is thought to have minimal long-term developmental impacts on children compared with untreated OUD.
HEALTHY PREGNANCY
HEALTHY BABY

- Opioid Use Disorder and Pregnancy
- Treating Opioid Use Disorder During Pregnancy
- Treating Babies Who Were Exposed to Opioids Before Birth
- Good Care for You and Your Baby While Receiving Opioid use Disorder Treatment

https://store.samhsa.gov/product/Opioid-Use-Disorder-and-Pregnancy/sma18-5071
FOR QUESTIONS, OR FOR ADDITIONAL INFORMATION

http://www.training.fadaa.org/

Child Welfare & Family Court Opioid Use Disorder Trainings

The Florida Alcohol and Drug Abuse Association in partnership with the Department of Children and Families offers a series of training modules designed for Child Welfare Protective Investigators, Child Welfare Case Managers, Florida Judges, Judiciary Staff and Child Welfare Stakeholders. These comprehensive modules focus on increasing understanding of the opioid crises in Florida, the effects on family systems, and how to engage recovery resources. The trainings were funded by the federal State Targeted Response to the Opioid Crisis (O-STR) grant from the Substance Abuse and Mental Health Services Administration (SAMHSA).


REFERENCES


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