**Neonatal Abstinence Syndrome and Guidelines for Management**:

Opioid use and dependence during pregnancy continues to be a significant public health concern. Data from the National Survey on Drug Use and Health indicates an increase in the use of opioids in both medical and non-medical use.

During pregnancy the cycle of opioid use and withdrawal can be devastating for the developing fetus leading to fetal hypoxia, utero-placental insufficiency and risk of prematurity, low birth rate and fetal demise.

Methadone, a synthetic opioid, will eliminate symptoms and signs of withdrawal, reduce cravings, and block euphoric effects if supplemental opioids are used. The long half- life and predictable dosing has been associated with improved fetal growth and duration of pregnancy. As the pregnancy progresses, methadone is metabolized more rapidly and higher doses may be required. Lowering the dose of methadone has lead to increased illicit drug use and harm to the developing fetus.

There has been no evidence that the dose of methadone correlates to the severity of withdrawal symptoms in the newborn.

Buprenorphine (subutex) and Buprenorphine plus naloxone (Suboxone) have been approved for use during pregnancy and can be used in place of methadone.

The prevalence of Hepatitis B and C and Human Immuno-deficiency virus (HIV) is higher in women who are opioid-dependent primarily due to needle sharing and unsafe sexual practices. Women who are opioid-dependent should be screened for these viruses as well.

The management of addiction in pregnancy is complex and attention must be focused not only on medication, but also on the complicated psychological and social needs of these women. A high proportion of these women have a history of trauma; sexual or physical abuse or domestic violence, or they may have witnessed violence as children, are poorly educated, financially constrained, and have poor relationships with partners who may also be substance abusers. They frequently have dysfunctional families with a high prevalence of substance abuse and alcoholism. Many of these women have co-morbid psychiatric illnesses, most commonly depression, and bipolar disorder, and suffer from low self- esteem. In addition, many of these women may have no or minimal prenatal care due to feelings of guilt and shame associated with use or fear of losing custody of their children upon admitting the substance problem or seeking treatment. This delay in treatment may lead to both maternal and infant complications.

**Guidelines for the newborn:**

**Screening**: via urine and/or meconium drug testing

1. All infants born to mothers who have had a positive drug screen during their pregnancy
2. All infants born to mothers with no prenatal care or minimal prenatal care
3. Any infant the health care provider feels has a high risk of being exposed to substance abuse during the pregnancy

**Scoring Infants:**

The Finnegan scoring system is adequate to use for objective NAS scoring.

■ Infants should be assessed for signs of withdrawal every 3-4 hours.

■ Infants should have all symptoms scored within the preceding 3 to 4 hour interval, not just symptoms that occur during assessment.

■ Infants should not be awakened unless they have been asleep for more than 3 hours.

■Infants should be fed before they are scored, and calmed prior to assessing muscle tone and respiratory rate.

**Treatment should be initiated if an infant has 2 consecutive scores >8 or 1 score>/= 12**

1. Monitor for withdrawal signs for a minimum of 72hrs(96)

Approximately 60-80% of infants born to mothers on opioids will require treatment for withdrawal.

**Pharmacologic treatment:**

**Morphine sulfate is the recommended treatment of choice.**

***Every institution should have a written protocol for treatment of NAS, including escalation of dosing and when to add an adjunct therapy. The protocol should also address how and when weaning should proceed.***

***The Need for adjunctive therapy: Phenobarbital may be considered if:***

***■Polysubstance exposure*** *(benzodiazepines, barbituates, antipsychotics, antidepressants, other sedatives/hypnotics, tobacco) is suspected/confirmed*

***■AND CNS findings (****tremors, increased muscle tone, etc) rather than GI findings predominate on NAS sub scale score*

***■And Morphine dose*** *exceeds 0.3mg/kg/dose with score remaining >8; OR unable to wean for 2 consecutive days*

**Non-pharmacologic Supportive Care:**

Provide education/support to mother/family on non-pharm techniques:

1. Skin-to-skin contact or gentle swaddling
2. Low lights
3. Minimal sound, touch, movement
4. Frequent feedings
5. Non-nutritive sucking
6. Gentle slow, vertical rocking, arms contained
7. Gentle rubbing of the back vs. patting during burping

**Infant Feeding**:

Breast feeding is recommended unless contraindicated by medical condition or illicit drug use. Breastfeeding is not contraindicated in methadone maintenance but is contraindicated in women who are HIV positive.

1. Provide breastfeeding support to mother – refer to lactation consultant

**Discharge Planning**:

If no withdrawal signs or symptoms noted: A comprehensive discharge plan that addresses maternal substance abuse treatment, a safe environment for both mother and baby, and parenting and community supports are essential.

1. Comprehensive case management is recommended if available.
2. Social Service consult; consider activation of the DFS high risk protocol.
3. All efforts should be made to schedule an appt. with the Pediatrician/PCP within 48 hrs., prior to discharge.
4. Inform the pediatrician/PCP that the baby has tested positive and may develop signs of withdrawal up to 5-7 days after birth. They should contact DFS if the patient fails to show for the arranged appointment
5. Refer all infants with a positive drug screen to DFS
6. Request a home nursing visit for any baby that had a positive drug screen and /or diagnosis of NAS prior to discharge.
7. Any baby treated for NAS should be referred to a State Developmental Program.
8. If a Safety plan has been implemented, the Pediatrician/PCP and home visiting agency must be notified and receive a copy of the plan.
9. Provide Safe Sleep education to mother/family per Hospital Safe Sleep policy.
10. Provide Abusive head Trauma education to mother/family per Hospital policy.

**Guidelines for Supportive Care to Mom:**

1. Patient/Family Agreement Tool may be reviewed and utilized if deemed appropriate by facility. If deemed appropriate, have Parent(s) sign.
2. Provide mom with information regarding the importance and benefits of breastfeeding. Support Mom with opportunities to breastfeed and encourage her unless contraindicated by medical condition or illicit drug use. (Refer to Lactation Consultant if necessary)
3. Educate mom on non-pharmacological strategies to soothe the baby
4. Educate and support mom on actively taking care of her newborn including the importance of rooming in.
5. Notify mom’s treatment facility and/or counselor prior to mom’s discharge. (if mom on Methadone, need for readjustment of dose)
6. Refer mom to substance abuse treatment and/or mental health treatment if mom not currently in treatment prior to discharge.
7. Refer mom for parenting classes if services are available.
8. Reinforce the safe sleep message.
9. Reinforce abusive head trauma education.
10. Address Contraception with mom at time of discharge
11. Address Birth Spacing with mom at time of discharge.
12. If mother has been engaged in home visiting during the pregnancy, verify continuation of home visiting services.
    1. Consider referral to home visiting program prior to discharge
       1. Smart Start (DPH)
       2. Healthy Families America (CFF)

**References:**

1. Backes CH et al. Neonatal Abstinence Syndrome: Transitioning methadone treated infants from inpatient to an outpatient setting. J Perinat (2012) 32,425-430
2. Brown MS. Caring for Infants with Neonatal Abstinence Syndrome and their families; 4 year experience from a primary service area in Maine. Fall Maine AAP Conf Nov 3, 2012
3. Hadak ML, Tan RC. Neonatal Drug Withdrawal. The committee on drugs and the committee of Fetus and Newborn Pediatrics.
4. Johnston A, Metayer J. Robinson E. Management of Neonatal Withdrawal. Vermont Practice Guidelines. PQCNC [www.pqcnc.org/documents](http://www.pqcnc.org/documents)
5. Ohio’s Children’s Hospitals Neonatal Research Consortium Enteral Morphine or Methadone Protocol for NAS from Maternal Exposure. August 2013.

Revised 10/29/2014