NEONATAL ABSTINENCE SYNDROME: POST PARTUM ASSESSMENT
Objectives

- Reflect on personal perceptions and attitudes towards opioid addiction in pregnancy
- Recognize how perceptions and attitudes impact mother’s experience and health outcomes
- Describe factors that impact NAS presentation
- Identify resources for healthcare providers when developing NAS protocols/policy
- Describe NAS symptoms
- Explain the importance of adopting an accurate NAS tool and procedure for scoring NAS symptoms
- Describe non-pharmacologic inventions
- Identify ways to include the mother in her infant’s plan of care
What is my first thought when encountering opioid addiction in pregnancy? Neonatal Abstinence Syndrome?

What do I want my first encounter with this family to look like?
What Happened at HCMC?

- 2010-2013 HCMC saw a 130% increase in neonates experiencing withdrawal
  - Rates: 25/1000 live births opioid exposure; 18/1000 live births with NAS (2014)
  - 5 times the national average
- Goal to develop a NAS protocol/policy for every newborn exposed in utero
- Vermont Oxford Network
  - iNICQ: Neonatal Abstinence Syndrome
    - Collaboration between NICU, Pediatrics, OB inpatient
Creating a safe, supportive environment for any chemically dependent mom will improve outcomes.

Providing a better experience for families can promote better bonding and care for their infants.

A welcoming environment creates a better place to work:
- Decreases stress on both nurses and families caring for chemically dependent moms and their newborns.
Methadone is most commonly used method of treatment for opioid dependency.

Maternal dosage or cumulative exposure are not correlated with severity of infant withdrawal.

Maternal smoking, psychotropic drugs, or polysubstance abuse increases severity of neonatal withdrawal.
Neonatal Abstinence Syndrome

- Reports of 400% increase of Neonatal Withdrawal nationally
- 55-94% of infants exposed to opioids will exhibit withdrawal.
- 30-90% infants with NAS will need pharmacologic treatment.
- Symptoms generally appear within the first 24-72 hours after birth.
- Lower gestational age is associated with less severe withdrawal.
Variability in Presentation of NAS

- Maternal exposures
  - Substances used, concurrent prescribed medications, timing of exposures, polysubstance (nicotine)

- Maternal factors
  - Nutrition, infections, stress, psychiatric conditions

- Genetics

- Infant factors
  - Preterm birth, comorbid infections, medications, excretion

- Environmental factors
  - Ability of caregivers to respond to infant cues, physical environment
Mothers currently receiving treatment for their drug addiction have made a choice to do what’s best for their baby.

Mothers receiving treatment have improved prenatal care and decreased risk of relapse.

Infants of mothers on opioid-substitution therapies have higher birth weights and gestational age as opposed drug-addicted moms not receiving treatment.
Prenatal Education
- What to expect after their baby is born.
  - Many mothers will feel guilty when their infant is withdrawing. If they know what to expect, they will feel better-prepared.
  - Importance of breast milk and/or breastfeeding (if sober) to help ease baby’s withdrawal symptoms.

Postpartum
- Non-pharmacologic interventions
- NAS Scoring
Neonatal Symptoms

- Central Nervous System
- Gastrointestinal
- Autonomic Symptoms
Central Nervous System

- Tremors
- Irritability
- Increase wakefulness
- High pitched cry
- Increased muscle tone
- Hyperactive reflexes
- Seizures
- Frequent yawning and sneezing
Gastrointestinal Dysfunction

- Poor feeding
- Uncoordinated and constant sucking
- Vomiting
- Diarrhea
- Dehydration
- Poor weight gain
Autonomic Signs

- Increased sweating
- Nasal stuffiness
- Fever
- Mottling
- Temperature instability
Minnesota Hospital Association
NAS Toolkit

- NAS
- Risk Factors Associated with NAS
  - Maternal and Newborn Screening
- NAS Assessment Tools
  - 5 tools listed
  - Neonatal Withdrawal Inventory (NWI)
- Treatment of Neonate
- Sample Policy
Change to Neonatal Withdrawal Inventory (NWI)

- Finnegan scoring system has been widely used for more than 20 years
- It is thorough but long
- The NWI is simple and can be completed in a short amount of time
The NWI consists of 7 prominent signs of withdrawal

- Hypertonicity
- Tremor
- Hyperactive Moro reflex
- Sweating/mottling
- Repeated sneezing/yawning
- Regurgitation and diarrhea
- Behavioral distress scale (crying/sucking)
Scoring not be based on one moment in time.
Scoring should take into account infant’s behavior over a period of time from one feeding to the next.

With 3 scores of 8 or greater or 2 scores of 12 or greater:
- Consider transfer to NICU
- Consider initiation of neonatal oral morphine treatment
- Consider increasing current dose
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<tr>
<th>Hypertonicity</th>
<th>Hyperactive Moro Reflex</th>
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Tremors When Disturbed or Tremors When Undisturbed

<table>
<thead>
<tr>
<th>Tremors When Disturbed</th>
<th>Tremors When Undisturbed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
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</tbody>
</table>

### Additional Symptoms

- **Sneezing or Yawning (>2 per session)**
  - 1

- **Sweating or Mottling**
  - 2

- **Regurgitation**
  - 2

- **Loose, Watery Stools**
  - 2

- **Irritability (restlessness, even after intervention)**
  - 1

- **Crying or Frantic Fist-Sucking**
  - 2

- **Fresh Excoriation of Limbs (w or w/out crying)**
  - 3

- **Continuous Crying**
  - 4
Normal postpartum assignment is 3-4 mother/baby couplets

RN and mother score infant together

24/7 rooming

Positive affirmation of ability to care for infant
Diaper rash is mistaken as excoriation
- Excoriation results from the constant rubbing of limbs against a surface covered with fabric
- Should only be scored when it first appears or increases

Scoring infants prior to feedings or interventions
- Infants should be scored after feedings and interventions to see how well they calm after interventions
Non-Pharmacological Measures

- Environment
  - Low lighting
  - Reduced noise
  - Soft music
  - Room temp not to exceed 72 degrees
Non-Pharmacological Measures

- **Activity**
  - Swaddling important but careful not to overheat
  - Group cares
  - Non-nutritive sucking
  - Soft sheets to minimize skin breakdown
  - Frequent diaper changes for loose stools
  - Diaper barrier cream for anticipated breakdown
  - Hand mitts to prevent scratching
  - Bulb suction available for nasal stuffiness
Non-Pharmacological Measures

- **Diet**
  - Encourage breastfeeding or breastmilk feeding
  - Small frequent feedings
  - Increased caloric formula for poor weight gain
  - Increased head of bed or side-lying for frequent emesis
  - Feed on demand
  - Diminish stimuli with feedings
  - Consider Similac Sensitive formula
Non-pharmacological Interventions

- Swaddling
  - Drug exposed infants cannot do three things simultaneously. They cannot control their bodies, breathe and suck at the same time. If they are focused on trying to control the discomfort in their bodies, they cannot focus on feeding or sleeping.
Swaddling helps control the infant’s body so they can focus on other tasks such as sleeping or eating.
Holding or laying a baby in a “C-position” increases the infant’s sense of control and ability to relax.

If he is allowed to stiffen his back, arms or legs, he is increasing his body tone and burning precious calories that he needs to grow.

Holding close to your body may be too stimulating.

Try to maintain the “C-position” when laying the baby down. Use a blanket roll to ring around his body to ensure he stays in this position.

As the symptoms diminish, introduce the back sleeping position recommended by the American Academy of Pediatrics.
The C-Position

Hold the baby firmly and curl the head and legs into a “C”. In doing so, the baby’s chin is resting near his chest with the arms midline; his back is slightly rounded with legs bent in an upright position.
Common techniques like back and forth rocking, a swing, and bouncing your infant are not recommended.

These motions are jarring and stimulating to a drug-affected baby’s nervous system.

A slow, rhythmic swaying following a line from head to toe with the baby swaddled and held firmly in the C-position is calming.

Keeping your movements slow and rhythmic will help to relax and settle the infant.
When you are holding a baby who is frantic and very hard to calm, you can maintain a “C-position”. Hold directly in front of you, with the infant two inches away from you body, facing away. Then slowly and rhythmically move the baby up and down. This head-to-toe movement is soothing to the baby’s neurological system, as is keeping the baby away from your body.
Vertical Rock
Another technique that can help the baby relax is to clap his diapered and blanketed bottom.

By cupping your hand and clapping or patting slowly and rhythmically, you will be able to feel the baby’s muscles relax.

This principle can be very soothing for some but can, for hypersensitive infants, have the opposite effect and cause over-stimulation.
Babies withdrawing from opiates suck frantically. This may make it difficult for the them to take in enough formula because their suck may also be disorganized.

Their stress levels are so high that they simply cannot organize an effective suck without help.

The key to feeding is to get your baby into a therapeutic hold and relaxed enough to suck.

Always feed in a low-stimulus environment—no bright lights, music, noise or other distractions.

Make sure the baby is swaddled and held in a C-Position.
In order for the therapeutic handling to be effective, limit the number of caregivers and offer a calm surrounding.

Loud noises increase their distress.
- Turn down TVs and music
- Limit loud voices
- Dim overhead lights

Routine is very important

Babies will respond more positively when caregivers use soft voices and speak and move slowly.
Introducing Stimuli

- All babies need stimulation for healthy development.
  - A drug exposed infant needs to have stimulation introduced in small doses and on a schedule dictated by his individual ability to adjust.
  - It is best to go slowly and introduce stimuli one at a time. (This can include light, sound, touch, voice, etc.)
First, loosen swaddled blankets and see how infant responds.

Then try gentle rocking or talking. If he shows signs of stress, return to the therapeutic handling techniques for a while longer.

This introducing of stimuli can take time and patience on the caregiver’s part, and will be also determined by the baby and his tolerance levels.

Watch for clues from the baby. Interact with the baby when she is ready and in an active/alert state, not just because you want to.
NAS scores will be documented in the NAS flowsheet.

A NAS note with drop-down lists of interventions.

Disorganized Behavior: Infant/Child (Birth to 5 years of age) care plan.
New NAS scoring tool

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<th>2/27/14</th>
<th>1100</th>
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**Neonatal Abstinence Score**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Normal</td>
</tr>
<tr>
<td>1</td>
<td>restless</td>
</tr>
</tbody>
</table>
| 2     | crying/frantic
| 3     | fresh excoriation of limbs
| 4     | continuous crying |

**Irritability**

- 0 - none
- 1 - restless
- 2 - crying/frantic/fist sucking
- 3 - fresh excoriation of limbs (with or without crying)
- 4 - continuous crying

**NAS Score**

- 0 - none
- 1 - restless
- 2 - crying/frantic/fist sucking
- 3 - fresh excoriation of limbs (with or without crying)
- 4 - continuous crying

**HCMC Labor and Delivery**

- Last Filed Value: 1100

**Selection Form**

- Accept
- Cancel
Future Focus

- Mother/baby treatment postnatally
  - Vancouver
    - Fir Square - inpatient unit BC Women’s Hospital
  - “Mom” withdrawal vs. opioid withdrawal

Hennepin County Medical Center. (2013). Neonatal Abstinence Syndrome Prevalence Data Based on Financial Codes.


Pediatric Interim Care Center, The Newborn Nursery. (2013). Therapeutic Handling retrieved at www.picc.net/1Caring/Therapeutic.htm

