NEONATAL OPIOID WITHDRAWAL SYNDROME (NOWS)

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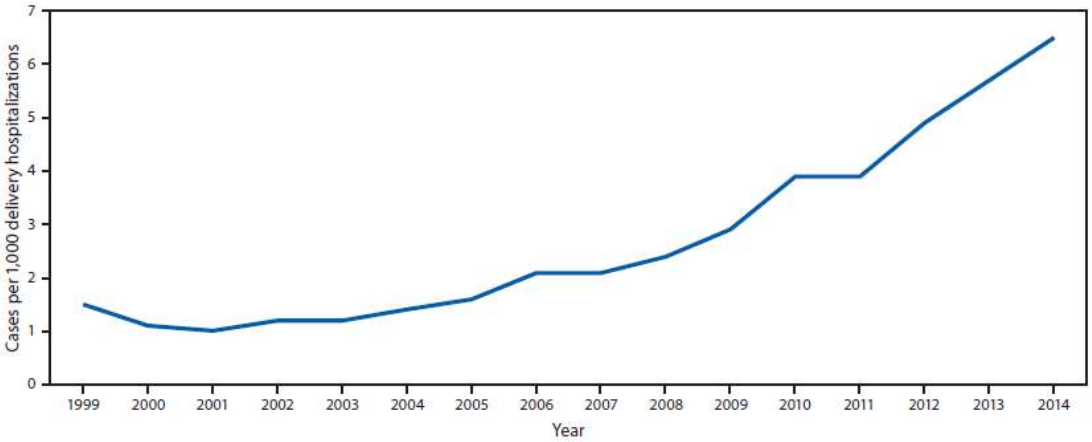
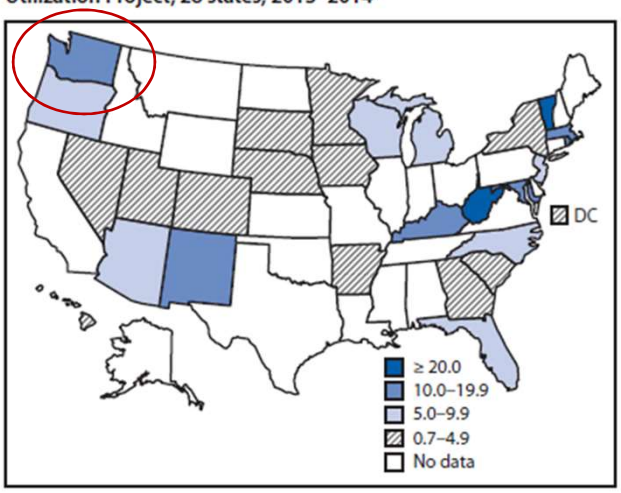
Prenatal Opioid Use (US)



(Haight et al., 2018)

Maternal Opioid Use

FIGURE 2. Prevalence of opioid use disorder per 1,000 delivery hospitalizations* — State Inpatient Database, Healthcare Cost and Utilization Project, 28 states, 2013–2014†

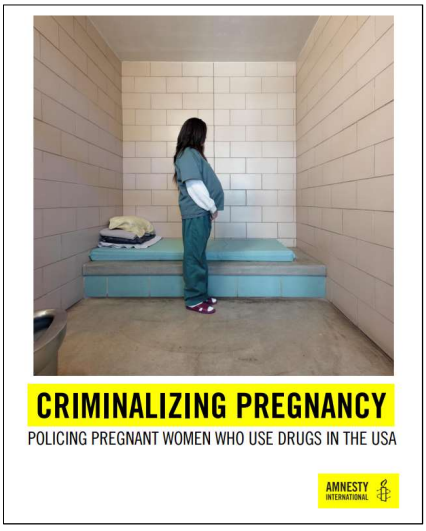


(Winkelman et al., 2018)

Birthing Parent Challenges

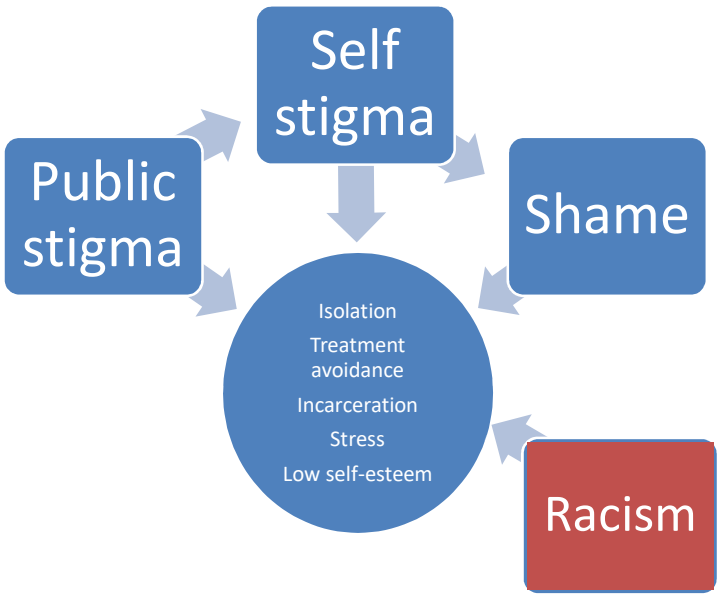
Challenges faced by mothers (Cleveland and Bonugli, 2014)

- **Lack of knowledge** about substance use disorders and withdrawal
- **Shame and guilt** of watching their infant withdraw from opioids
- **Judged and stigmatized** by the nursing staff
- Hard to build **trust** with the nurses



Addiction Stigma

*"**Negative attitudes** towards those suffering from substance use disorder that one, arise on account of the substance use disorder itself, and two, are likely to impact physical, psychological, social, and professional wellbeing."* (Avery & Avery, 2019)



(Terplan e al., 2015; Benoit et al., 2015; Matthews, 2019)

Myths

- Hedonistic pleasure seeking
- Selfish choice
- Maternal unfitness
- Born addicted
- Opioids cause excessive harm to fetus and newborn
- MAT = cheating
- MAT treats pain

Facts

- Reduce cravings
- Reduce withdrawal symptoms
- Chronic pain
- Adult and childhood trauma
- Love their children
- Physical dependence ≠ addiction
- Alcohol, tobacco much worse
- MAT is the standard of care
- SUD is a chronic relapsing disease
- Need additional pain treatment

Well-Earned Mistrust

Pregnant people with OUD have good reasons to mistrust

- CPS and Criminalization
- Urine drug screening
- Misinformation, lack of information
- Under-treatment of pain
- Misattribution of normal symptoms to drug use

Life Stress, OUD, and Pregnancy

- Housing instability
- Incarceration
- Unstable relationships
- Finances
- Job insecurity
- 86% of pregnancies unintended (Heil et al., 2011)

Comorbidities of OUD

- Increased mental health risks compared to controls (Faherty et al., 2018)
  - Depression (RR 1.8)
  - Bipolar (RR 2.2)
  - Schizophrenia (RR 4.6)
- 57% of mothers with SUD had additional psychiatric condition (Strengell et al., 2015)
- 44 – 52% of pregnant women with OUD smoked cigarettes (Faherty et al., 2018)

Lives Impacted by Trauma

Interviews with 27 struggling with substance use in pregnancy and postpartum (Torchalla et al., 2014),

- Adverse childhood experiences
- Trauma continued in adulthood
- Intimate Partner Violence
- Structural violence (health care, police)
- Transgenerational trauma
- Desire for trauma counseling

ACES

Health problem	Number of categories	Sample size, N[a]	Prevalence, %[b]	Adjusted odds ratio[c]
Considers self an alcoholic	0	3,841	2.9	1.0
	1	1,993	5.7	2.0
	2	1,042	10.3	4.0
	3	586	11.3	4.9
	4 or more	540	16.1	7.4
	Total	8,002	5.9	—
Ever used illicit drugs	0	3,856	6.4	1.0
	1	1,998	11.4	1.7
	2	1,045	19.2	2.9
	3	589	21.5	3.6
	4 or more	541	28.4	4.7
	Total	8,029	11.6	—
Ever injected drugs	0	3,855	0.3	1.0
	1	1,996	0.5	1.3
	2	1,044	1.4	3.8
	3	587	2.3	7.1
	4 or more	540	3.4	10.3
	Total	8,022	0.8	—

(Felitti et al., 1998)

Nurses' Experiences

- Nurses' concerns about caring for infants with NAS and their families (Maguire et al., 2012)
  - Infants are **irritable and hard to comfort**
  - Parents may act **defensively or aggressively** towards nurses
  - **Safety** of the infant after discharge
- What makes the care difficult (Kantrowitz-Gordon et al., in press)
  - Mothers are defensive and difficult to help
  - Lack of trust
  - Inadequate social support for mothers
  - Need for more nurse training and support

Nurses' Stigma and Bias

- *"It sometimes feels that their heightened concern regarding bathing, dressing and not allowing infant to cry is in opposition to the fact they have harmed their infant with drug use. I find myself frustrated if these moms are more protective of their infants than the average new parent."*
- *"Sometimes it's hard to understand behaviors and choices they made in life"*
- *"Dealing with my own emotions is hard, because I truly believe they deserve the best possible care, but I can't help sometimes and judge their history of substance abuse"*

(Kantrowitz-Gordon et al., in press)

Examining Own Bias

- Why does this patient have a substance use disorder?
- Are they in pain or "drug seeking"?
- Do our own experiences (with addiction, opioid misuse, and drug-seeking behaviors) influence how we see our patients?
- What does a person with OUD look like?

- What are your thoughts about these patients? Talk with a neighbor (Pair share)

Language Matters

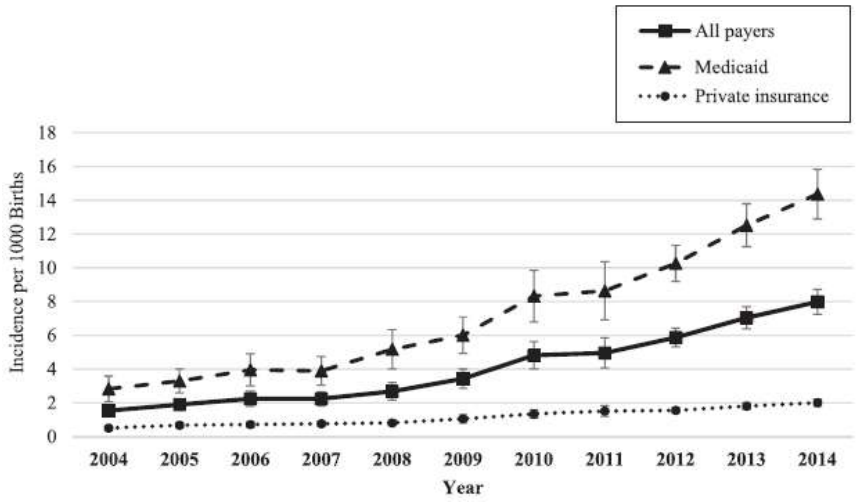
Avoid
- Addict, addiction
- Abuser, junkie
- Clean and dirty (urine/people)
- Sober
- Neonatal abstinence
- Substance abuse
- Drug habit
- Noncompliant
- Resistant
- Opioid substitution
- Co-dependent

Preferred
- People first language
- Substance use, disorder
- Neonatal Opioid Withdrawal Syndrome
- Medication assisted treatment
- Opted not to
- Ambivalent about

(Broyles et al., 2014)

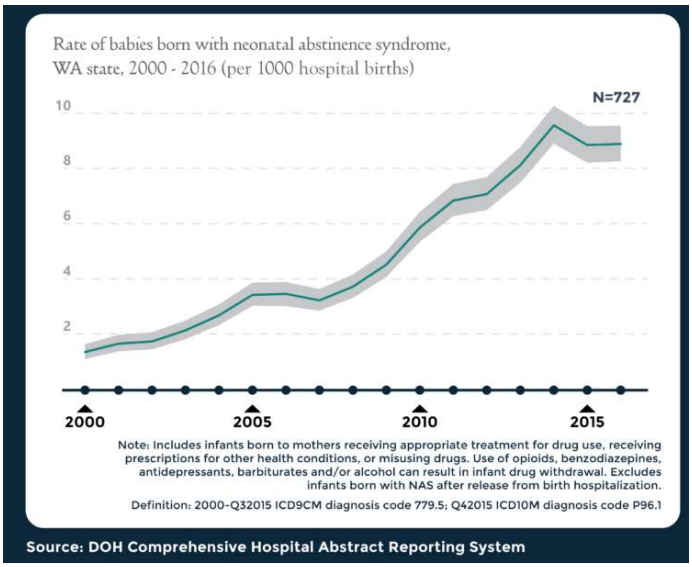
https://www.shatterproof.org/about-addiction/stigma/stigma-reducing-language

Newborn Opioid Withdrawal

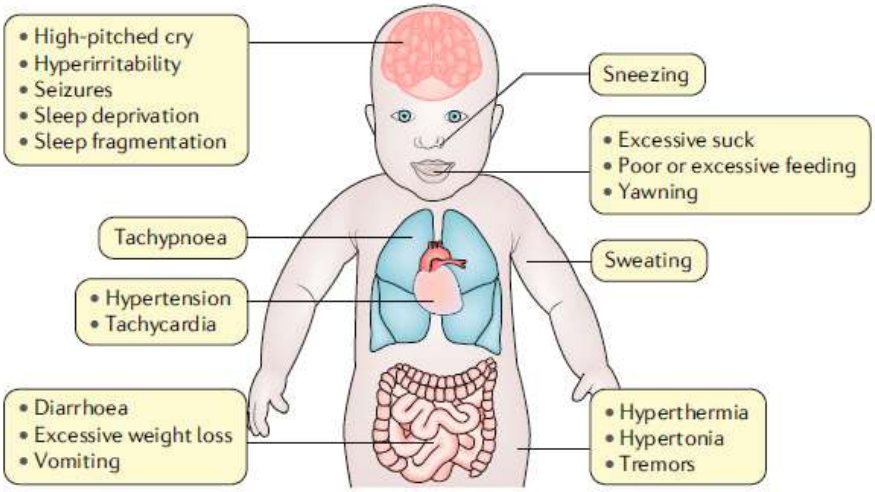


(Winkelman et al., 2018)

Neonatal Opioid Withdrawal in WA

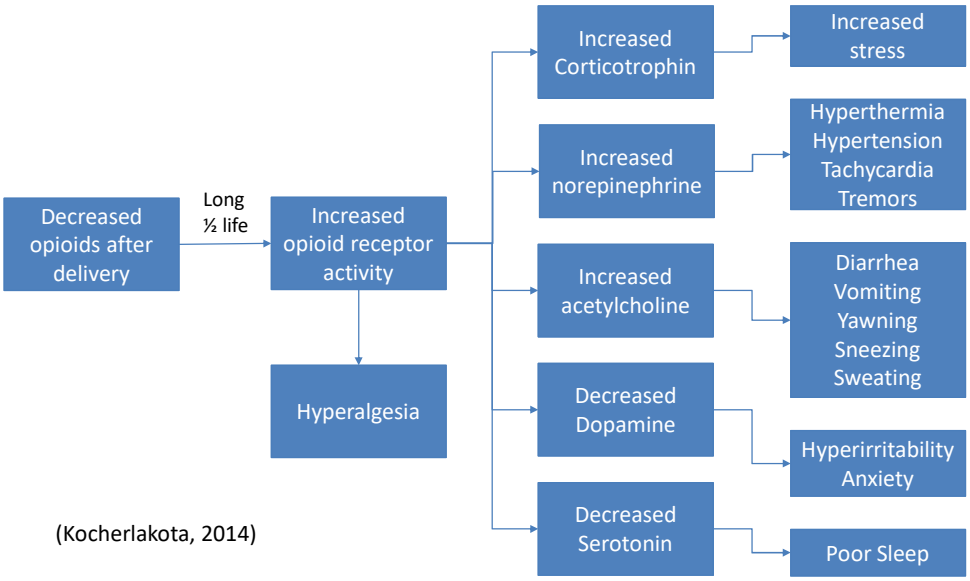


NOWS Symptoms



(Coyle, 2018)

Pathophysiology: Neurotransmitters



(Kocherlakota, 2014)

Nonpharmacologic Approaches

- Nonpharmacological treatment methods first line of treatment for NAS/NOWS (Kocherlakota, 2014)
- Parents are the treatment - social integration (Mangat et al., 2019)
  - Rooming in
  - Empowerment
  - Swaddling, skin to skin
  - Breastfeeding (methadone/buprenorphine ok)
- Quiet and soothing environment (avoid excessive stimuli)
- Prolonged postpartum stays (5 days)

Eat Sleep Console

- Focus on function – can newborn accomplish "activities of daily living"
- Evidence from QI projects showing significant reductions in morphine, lengths of stay
- **Eat** – appropriate amounts for age, breastfeeding going well
- **Sleep** – undisturbed for at least an hour; may need to be held
- **Console** – within 10 minutes; if not, may need nonpharm attempts or second caregiver

(Grossman et al., 2017; Grisham et al., 2019)

Consoling Support Interventions

1. Calm voice (soft and slow)
2. Hand to mouth
3. Hand on abdomen (firm, gentle)
4. Bring arms and legs to center of body
5. Hold (skin to skin or swaddled), gently rock or sway
6. Finger or pacifier for soothing, feeding

(Grossman et al., 2017)

Signs of Consoled Infant

- Eyes open
- Stilling
- Calming
- Slower breathing

Supporting the Parent-Newborn Relationship

parent-child relationship programs at the Barnard Center

Promoting First Relationships® in Pediatrics

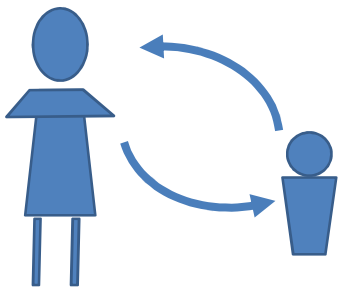
Co-Regulation

- Major task of the first year of life is co-regulation
- 0-3 months focus is on **physiological** regulation
  - Eating, sleeping, distress—not being over stimulated
- Co-regulation is highly dependent on the skills of the adult caregiver to be sensitive, responsive and a careful observer.

What is Co-Regulation

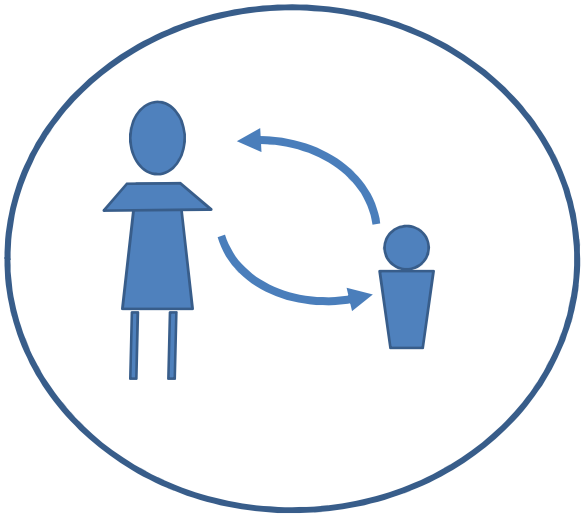
- It is the "Serve and Return" to cues sent by the baby and the adult
- **Baby to Adult Communication and Response**
  - A baby smiles and an adult smiles back
  - A baby frowns and an adult shows an empathy face
  - When a baby yawns or rubs their ear the adult acknowledges the "statement" and moves toward sleep routine behavior
- **Adult to Baby Communication and Response**
  - An adult smiles and the baby smiles back –or the baby may regulate the interaction by
    - Looking away
    - Turning away
    - Sucking on fingers
  - An adult frowns and baby stills, and watches
  - An adult moves an activity along too quickly and a baby tries to crawl away

Co-Regulation: It's in the Relationship

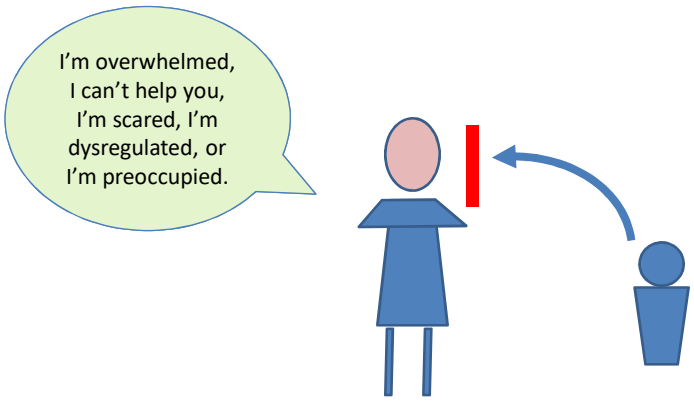


Containment

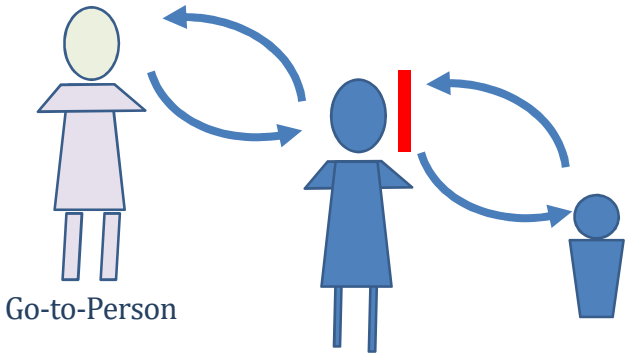
Parent receives and understands emotional communication from the infant without being overwhelmed and communicates this back to the infant.



Unable to Contain



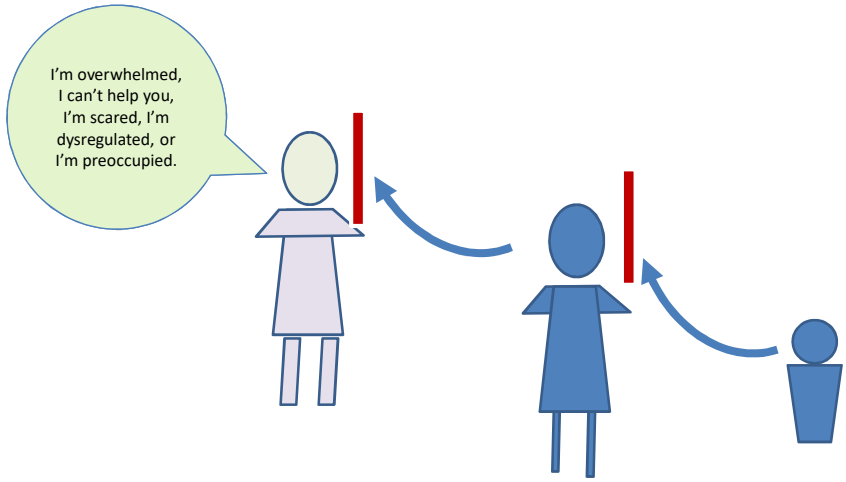
Parallel Process



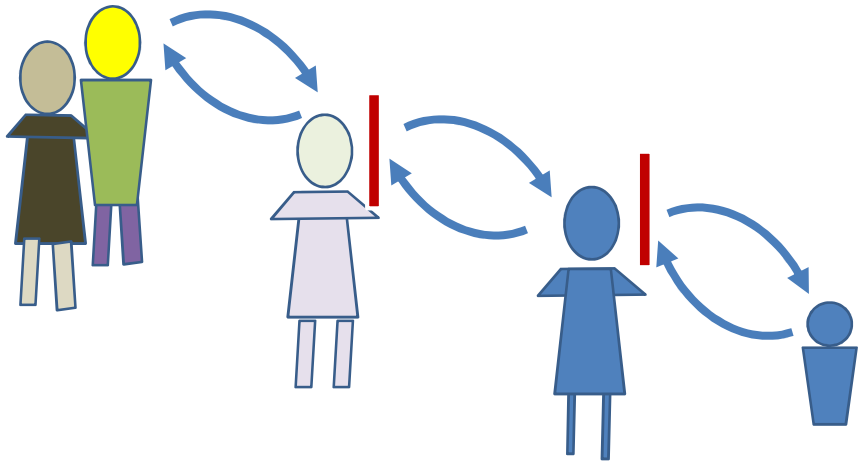
Parallel process

- Listen to the parent's distress
- Pause before reacting
  - Reflect on own feelings
  - Reflect on parent's feelings
  - Wonder: why are they reacting this way, what is their need?
  - Reflect on baby's needs
- Respond

Unable to Contain



Nurse Needs a Go-To-Person



Case

You are caring for a 3 day old newborn who is being observed for risk of neonatal opioid withdrawal syndrome (NOWS).

The newborn is finally asleep and her mother arrives during a break in her residential substance treatment program.

The mother wants to dress her newborn in a new outfit and hold her.

What is happening for the mother?

What is happening for the newborn?

What is happening for the nurse?

How do you promote the mother-newborn relationship?

Relationship based approach

- Understanding mother's need to have time, interact, and bond with child
  - Not desire to disrupt newborn's sleep
- Mother may not understand newborn states and co-regulation
  - Help them understand
- Strengths-based approach
  - Acknowledge mother's presence, desire to bond and engage
  - Acknowledge shared goals
- Think at a system level: how can we help mother's be more present with newborn during hospitalization?

Case Continued

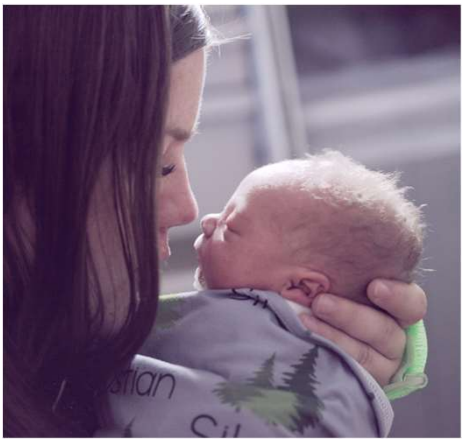
Later, the mother mother is holding her newborn skin to skin, but baby is crying and not settling after several minutes. Mother is getting frustrated and says, "why doesn't she like me? Why is he so difficult?"

What is happening for the mother?

What is happening for the newborn?

What is happening for the nurse?

How do you promote the mother-newborn relationship?



Relationship based approach

- Recognize the mother's cues
- Parallel process
  - Normalize being scared, upset, and stressed
  - Help reduce the mother's distress, so that she can help the baby
  - Model behaviors for the mother

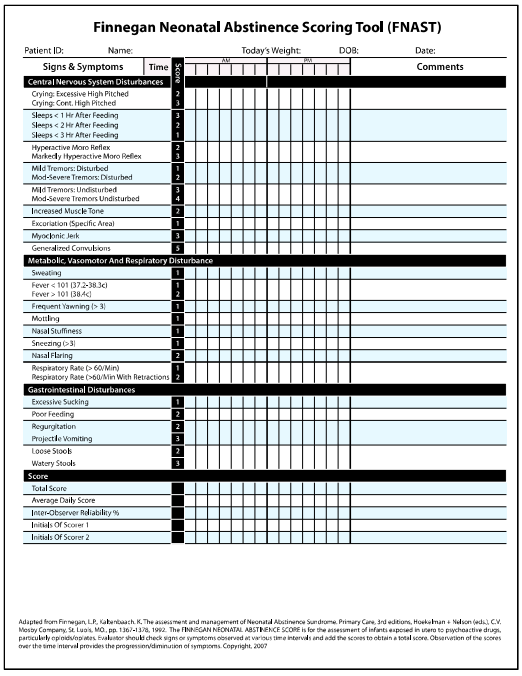
Neonatal Monitoring

- The timing of monitoring is based on the specific drug half-life.
  - Withdrawal from heroin 0 to 24 hours after birth
  - Withdrawal from daily methadone treatment 24 to 72 hours after birth
- Typically at risk newborns monitored for 72 to 96 hours

Finnegan Scoring

- Finnegan Neonatal Abstinence Scale
- 21 symptoms
- Score 8 or greater (twice, 1 hour apart) treated pharmacologically
- Scoring is subjective, highly variable, overlaps with normal newborn
- Prenatal opioid dose not well correlated with extent of NAS

(Grisham et al., 2019)



Finnegan Neonatal Abstinence Scoring Tool (FNAST)

Patient ID: Name: Today's Weight: DOB: Date:

Signs & Symptoms	Time	Score	AM	PM	Comments
Central Nervous System Disturbances					
Crying: Excessive High Pitched		2			
Crying: Cont. High Pitched		3			
Sleeps < 1 Hr After Feeding		3			
Sleeps < 2 Hr After Feeding		2			
Sleeps < 3 Hr After Feeding		1			
Hyperactive Moro Reflex		2			
Markedly Hyperactive Moro Reflex		3			
Mild Tremors: Disturbed		1			
Mod-Severe Tremors: Disturbed		2			
Mild Tremors: Undisturbed		3			
Mod-Severe Tremors Undisturbed		4			
Increased Muscle Tone		2			
Excoriation (Specific Area)		1			
Myoclonic Jerk		3			
Generalized Convulsions		5			
Metabolic, Vasomotor And Respiratory Disturbance					
Sweating		1			
Fever < 101 (37.2-38.3c)		1			
Fever > 101 (38.4c)		2			
Frequent Yawning (> 3)		1			
Mottling		1			
Nasal Stuffiness		1			
Sneezing (>3)		1			
Nasal Flaring		2			
Respiratory Rate (> 60/Min)		1			
Respiratory Rate (>60/Min With Retractions		2			
Gastrointestinal Disturbances					
Excessive Sucking		1			
Poor Feeding		2			
Regurgitation		2			
Projectile Vomiting		3			
Loose Stools		2			
Watery Stools		3			
Score					
Total Score					
Average Daily Score					
Inter-Observer Reliability %					
Initials Of Scorer 1					
Initials Of Scorer 2					

Adapted from Finnegan, L.P., Kaltenbaach, K. The assessment and management of Neonatal Abstinence Syndrome. Primary Care, 3rd editions, Hoekelman + Nelson (eds.), C.V. Mosby Company, St. Louis, MO., pp. 1367-1378, 1992. The FINNEGAN NEONATAL ABSTINENCE SCORE is for the assesment of infants exposed in utero to psychoactive drugs, particularly opioids/opiates. Evaluator should check signs or symptoms observed at various time intervals and add the scores to obtain a total score. Observation of the scores over the time interval provides the progression/diminution of symptoms. Copyright, 2007

Initiating Pharmalogical Intervention

Symptom-based (q4 hours)

Score	Morphine (morphine sulfate oral solution 0.4 mg/mL)
0 to 8	0.00 mg
9 to 12	0.04 mg
13 to 16	0.08 mg
17 to 20	0.12 mg
21 to 24	0.16 mg
≥25	0.20 mg

Wean (scores are < 8) by tapering dose by 0.02 g every 24 hours

Weight-based (q3-4 hours)

- 0.04 mg/kg initially
- Increase by 0.04 mg/kg per dose to control symptoms
- Wean by tapering dose 10-20% every 2-3 days

PRN Dosing

- When using Eat, Sleep, Console as primary approach
- 0.04 mg/kg q3-4 hours PRN
- After 3 doses switch to maintenance dosing

- Using ESC as primary approach led to reduction in percentage of newborns requiring morphine from 62% to 12% (Grossman, 2017)

Other Pharmacologic Interventions

- Methadone
  - Longer half-life than morphine
  - Dose 0.2 mg/kg day in 2-6 divided doses
- Phenobarbital
  - Most often adjunct therapy
  - Loading dose 20 mg/kg
  - Standard dose 5 mg/kg
- Clonidine is being researched as an option

Key Points to Remember

- Understand biases and stigmas to remove them as barriers to effective care
- Non-pharmacological are the first-line approaches to helping newborns at risk of opioid withdrawal
- The mother/parent is the treatment
- A relationship-based approach will help engage the mother/parent in treatment