MARY BRIDGE APPROACH TO NEONATAL ABSTINENCE

ENLIGHTENED
AND
EVOLVING

Mary Bridge Children's

WHY DO WE TREAT NEONATAL ABSTINENCE SYNDROME (NAS)?

- Allow for adequate feeding.
- Allow for maternal-child bonding.
- Reduce suffering.
- Are there long-term problems in neonates of under-treated or un-treated withdrawal?
- Are we treating the patient, or ourselves, or our staff?

COMPETING GOALS OF TREATMENT

- Shortest possible time on medications?
- Shortest possible hospital stay?
- Least suffering, evidence of withdrawal?
- Achieving infant ADLs:
  - Consoling, feeding, growing, sleeping, maternal-child bonding, development …

MARY BRIDGE APPROACH 2015-2017

- Infant drug testing: urine, meconium
- Observe up to 96 hours for withdrawal
- Early transfer to Mary Bridge
- Rule of 24 = 2 consecutive scores of 12, or 3 scores of 8
- Standard order set
  - Establish starting dose: morphine 50 mcg/kg
  - Begin wean within 48 hours
  - Clonidine for patients on > 200 mcg/kg morphine
  - Wean 10% of daily dose daily
  - Discharge after 24-48 hours off drug treatment

NON-PHARMACOLOGIC SUPPORTIVE CARE

- Maternal-child focus
- Rooming in
- Skin-to-skin
- Breastfeeding
  - Scant methadone in breast-milk
- Flexible Feeding Schedule
- 24 kcal formula
- Low-stimulation
- 'Trauma-centered care'
- Parent contracts?
- Volunteers?

MODIFIED FINNEGAN'S SCORING

- Hyperactive Moro
- Tremors
- Muscle tone
- Excoriation
- Myoclonus
- Convulsions
- Sweating
- Hyperthermia
- Tachypnea
- Poor feeding
- *Duration and quality of cry*
- *Length of sleep after feeds*
- *Yawning*
- *Mottling*
- *Nasal stuffiness*
- *Sneezing*
- *Nasal flaring*
- *Excessive sucking*
- *Spit-ups vs. projectile*
- *Loose/watery stool*

FINNEGAN'S PIT-FALLS

- Cross-over with normal newborn behaviors
- Staff-training / Inter-observer reliability
  - D'Apolito Reliability Training System
- Parental presence?
- Scoring before feeds?
- Increased scores after 3 weeks of age (add 2)(Zimmerman-Bauer et al. Finnegan neonatal abstinence scoring system: normal values for he first 3 days and weeks 5-6 in non-addicted infants. *Addiction*. 2010:105: 524-38.)

2018 NURSING COLLABORATIVE GOALS

- How is NAS treatment going currently?
  - Finnegan scoring and schedule?
  - Pace of weaning? Length of stay?
  - Non-pharmacologic care?
  - Family involvement? Breastfeeding rate?
  - How do family's feel in our care?
- Are there innovations out there?
- What should be our next steps?

FINNEGAN SCORING

- How is the workload?
- Does it feel valid?
- How does it fit with the feeding schedule?

PACE OF WEANING

- Are we sometimes weaning too fast?
- Are we sometimes weaning too slow?
- Does the pace seem to make a difference?

NON-PHARMACOLOGIC CARE

- Are we using it?
- Are families doing it?
- Do we know how to teach families?
- Who can help us and families do it?

FAMILY INVOLVEMENT

- Are we keeping families involved?
- Are we maximizing breastfeeding?
- What are the barriers?

INNOVATIONS

- Ohio: Finnegan's training and re-training (Asti et al, A Quality Improvement Program to Decrease Length of Stay for NAS, *Pediatrics* 2014; 135(6): e1494-99)
- Dartmouth: '(re)modified' Finnegan, aggressive rooming-in and non-pharmacologic care (Holmes et al, Rooming In to Treat NAS: Improved Family Centered Care at Lower Cost, Pediatrics 2017; 137(6): e1-e9)
- Yale: no Finnegan's, non-pharmacologic care over medications, PRN medication, aggressive weaning, use of volunteers, use of ESCape score (Grossman et al, A Novel Approach to Assessing Infants with NAS, *Hospital Pediatrics* 2018;8;1-6)

THE 'DARTMOUTH' FINNEGANS

(HOLMES ET AL, ROOMING IN TO TREAT NAS: IMPROVED FAMILY CENTERED CARE AT LOWER COST, PEDIATRICS 2017; 137(6): E1-E9)

TABLE 2 Physician interpretation of modified Finnegan scores

More Emphasis on These Symptoms	Less Emphasis on These Symptoms
Excessive crying	Tremors, disturbed
Poor sleep	Tremors, undisturbed
Poor wt gain	Exaggerated Moro reflex
Excessive wt loss	Increased tone
Poor feeding	Yawning
Emesis	Sneezing
Diarrhea	Excoriations
Tachypnea	
Fever	

YALE APPROACH

(GROSSMAN ET AL, A NOVEL APPROACH TO ASSESSING INFANTS WITH NAS, *HOSPITAL PEDIATRICS* 2018;8;1-6)

- LOS decreased from 29 to 5.9 days
- Buprenorphine-exposed infants rarely need meds
- Clonidine per Hopkins model
- ESC emphasizing normal newborn behaviors over Finnegans
  - Eating adequately (working towards growth)
  - Sleep for 1 hour (score = 2 on Finnegans)
  - Console-able
  - Use of volunteers?

ESC – ALTERNATIVE WEANING CRITERIA

(1) can the baby EAT (at lest 15 cc per feed in first few days and gain weight starting at day 5)

(2) can the baby SLEEP (for at least an hour at a time until #1 and #3 again),

(3) can the baby be CONSOLED within a reasonable amount of time (?10 minutes) after all non-pharmacologic treatments have been used: skin-to-skin, holding, feeding again, volunteers, swing

MARY BRIDGE DATA

	2014 - 2016	2017	2018
Number of patients	10-20 per year	20	36
Average Length of Stay	11-12 days	6.7	4.4
% patients receiving morphine	100%	45%	35%
Direct Costs	$ 10,000 – $12,000	TBD	TBD

2015-2017 MARY BRIDGE DATA COMPARED

	MB	Nationwide (Finnegans)	Vancouver (rooming in)	Dartmouth (non-pharm)	Yale (ESC)
ALOS	11+ days down to 4.4 days	36 days down to 18/23 days	24 days down to 12 days	17 days down to 12 days	30 days down to 6 days
Direct Costs	$ 10,000 – $12,000			$20,000 down to $9,000	$45,000 down to $11,000
% of patients exposed to morphine	35%				12%

Mary Bridge Nurses Meet ESCape

- Rolled out Spring of 2017
- Mandatory staff meetings
- Video to present "the why"
- EPIC "smart phrase"
- EPIC order set

Mary Bridge Children's

Non-Pharmacologic Interventions

For Family, Nurses & Volunteers

- Decrease sensory stimulation (dimly lit, quiet environment, limit visitor numbers)
- Swaddling, swinging, rocking, electric rocker as needed
- Soft music, if tolerated
- Pacifier
- Use fleece sleep sack to minimize excoriation
- Warm baths after umbilicus detaches or warm cloth baths as tolerated.
- Frequent diaper changes for loose and frequent stools
- Cluster care to allow for uninterrupted sleep periods
- Skin-to-skin (Kangaroo)
- Chest baby carrier for parents if available and child is at least 8 pounds.
- Prioritize patient for VOLUNTEER involvement
- ENCOURAGE BREASTFEEDING.

NURSING ORDERS

RN ASSESSMENT – ESCape CRITERIA

Call MD if any of the following are NOT being achieved after 6 hours of ad lib (at least 8x per day in the first 10 days of life) feeding and non-pharmacologic interventions:

- Is patient EATING at least one-half ounce every 3 hours in the first 3 days, or at least an ounce every feed after 3 days of life, AND gaining weight on 24 kcal formula starting at 5 days of life?
- Is patient SLEEPING at least an hour at a time (before non-pharmacologic or feeding interventions are needed again)?
- Is patient able to be CONSOLED within 15 minutes AFTER patient is offered feeding and the COMPLETION of ALL available non-pharmacologic interventions.

What Our Nurses Say

Pros:

- "It just makes more sense"
- Less need for monitors
- Care is easier & hospital life is better
- PRN morphine is still an option

Cons:

- "I wish we had volunteers on night shift"
- Can be tough WITHOUT family involvement
- Can be tough WITH family involvement

SUPPORTING A BABY WITH NAS

LEARNING NON-PHARMACOLOGICAL WAYS TO CALM, SOOTHE AND SUPPORT A BABY EXPERIENCING WITHDRAWAL SYMPTOMS

OBJECTIVES

- Understanding your role as a volunteer and the importance of maintaining professional boundaries and compassionate care when supporting NAS babies
- Learn basic understanding of normal infant development
- Identify typical behaviors of an infant experiencing withdrawal symptoms
- Learn soothing techniques to support babies with NAS

WHAT IS NAS

Babies born to women who have used opioids during pregnancy frequently develop withdrawal symptoms following birth. Opioids are painkillers a provider may prescribe to someone who has been injured or had surgery. These babies have something called Neonatal Abstinence Syndrome (also known as NAS). Some babies can be managed at home but most babies will be hospitalized to manage these symptoms.

HOW CAN YOU HELP?

- All babies need to feel safe, loved, and have their basic needs met.
- Much like other patients at Mary Bridge these babies may or may not have consistent caregivers during their hospital stay.
- By providing comfort techniques for these babies we can reduce the amount of medications given and hopefully reduce the number of days they are hospitalized.

MAINTAINING HIPPA AND PROFESSIONAL BOUNDARIES

- Always maintain HIPPA privacy laws and never share patient information/diagnosis with others.
- Refrain from seeking out unnecessary information from staff including reason for admission, family dynamics, or other psychosocial information.
- While we want you to develop compassion and care for these babies, it is important to refrain from kissing babies (no matter how cute they are) and maintain appropriate boundaries.

NORMAL INFANT DEVELOPMENT 0-3MO

	Movement	Understanding	Socialization	Language
0-3 Months	• Move arms and legs with minimal control • Can lift head briefly and turn side to side • Use body language to make things happen • Suck on pacifier or fingers for comfort	• Recognizes faces, voices, and smells • Learn through senses • See objects 8-12" away	• Rely on others for comfort • Cry when distressed • Longer period of alertness • Smiling by 2-3mo • Building trusting relationships	• Make soft sounds by 1mo • Cooing by 3mo • Likes to hear sounds and voices

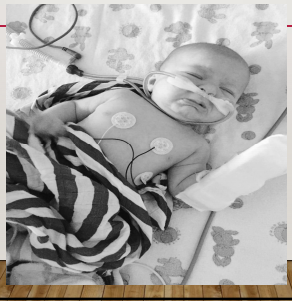
NORMAL INFANT DEVELOPMENT 3-6MO

	Movement	Understanding	Socialization	Language
3-6 Months	• Learning to control body • Can hold head up • Reach and hold onto toys • Roll from side to side • Sit with support	• Preference towards people • Interest in body parts • Look at self in mirror • Learn through mouthing • Follow daily routines • See colors, shapes and sizes	• Smiling • Initiate social interactions • Match feelings to people around them	• Communicate through sounds, actions and facial expressions • Coo's, chuckles, gurgles, and laughs • Turns toward sounds

TYPICAL SIGNS OF NAS

High Pitched Cry	Irritability
Tremor/jittering	Sleeping difficulties
Stuffy nose	Sneezing
Feeding difficulties due to sucking problems	Tens arms, legs and back (arching back)
Poor weight gain	Vomiting/diarrhea
Skin irritation	Increased breathing rate

SOOTHING A BABY WITH NAS



Behavior	Calming Suggestions
Prolonged crying (often high-pitched)	• Hold baby close to your body, perhaps wrapped in a sheet or swaddled • Decrease loud noises, bright lights, excessive handling • Humming, gentle rocking may help (try the swing as well)
Sleeplessness	• Reduce noise, bright lights, patting or touching too much • Try soft, gentle music or rocking baby • RN should ensure their diaper is clean
Excessive sucking of fists	• Cover hands with socks or mittens if skin is damaged • Try offering a pacifier or other toy to suck/chew
Cueing they are hungry	• Let RN know if baby seems hungry (babies with NAS are often fed on-demand) • Volunteers are not able to feed babies

HAVE QUESTIONS? JUST ASK!

- Always ask patient's RN prior to seeing the baby if he/she has any preferences or important things to know
- Ask RN if baby has a preferred method of being soothed
- Set appropriate expectations with RN (how long are you available)
- Ask the RN to help get you situated/comfortable with baby
- Ensure the call light button is always in reach
- Some babies may spit up or vomit, ensure you wear a gown before holding the baby. If the baby vomits, please let RN know and they will provide clean up and support.
- Need a break? Or feel uncomfortable? Let the RN know and they can help support you

THANK YOU FOR MAKING A DIFFERENCE IN THE LIFE OF A BABY