ANMC Maternal Child Health Neonatal Abstinence Syndrome Guideline with Eat, Sleep Console Tools (ESC)	
Revision Date: May 2020 **Replaces:** ANMC Maternal Child Health Neonatal Abstinence Syndrome Guideline August 2016 version	**Written:** April 1994 **Reviewed Date:** 5/2020

Purpose: To standardize evaluation and treatment of the newborn at risk for Neonatal Abstinence Syndrome (NAS), with the focus on Neonatal Opioid Withdrawal Syndrome (NOWS). To ensure that optimal care of the mother-infant dyad is provided by a nonjudgmental, multidisciplinary team that is well versed in the management of maternal substance abuse and NAS. To assess the infant with NOWS using the ESC Care Tool, and provide optimal interventions and management.

Definition of Neonatal Abstinence Syndrome (NAS): A collection of clinical findings associated with habituation/withdrawal following in-utero exposure to some prescription and illicit drugs.

Definition of Neonatal Opioid Withdrawal Syndrome (NOWS): NAS related to in-utero opioid exposure.

General: Chronic in-utero exposure to certain illicit and prescription drugs can lead to developmental abnormalities including habituation. Withdrawal results when the drug exposure is removed after birth. Withdrawal can be confused or overlain with acute toxicity from maternal drug intake in the immediate antepartum period. Signs and symptoms of *withdrawal* worsen as drug levels decrease, whereas signs and symptoms of *acute toxicity* lessen with drug elimination. Opioid exposure produces the most clinically significant withdrawal syndrome. Infants with NAS due to agents other than opioids may be cared for using all of the Non-Pharm Care Interventions recommended within this guideline. Pharmacologic treatment with replacement opioids in the absence of opioid exposure is not recommended.

Special Considerations: The clinical course in a neonate with NAS is difficult to predict and depends on the drug(s) involved, the dose, duration of exposure, and maternal and neonatal metabolism and excretion. The prevalence of polysubstance abuse makes it more challenging to diagnose and treat neonates experiencing withdrawal.

Signs and Symptoms of Neonatal Withdrawal

Drug	Signs and Symptoms
Alcohol	Hyperactivity, crying, irritability, poor suck, tremors, seizures, poor sleeping patterns, hyperphagia, diaphoresis. (Onset: 3-12 hours)
Barbiturates	Irritability, severe tremors, hyperacusis (sensitivity to noise), excessive crying, vasomotor instability, diarrhea, restlessness, increased tone, hyperphagia, vomiting, disturbed sleep. (Onset: 4-7 days)
SSRIs	Crying, irritability, tremors, poor suck, feeding difficulty, hypertonia, tachypnea, sleep disturbances, hypoglycemia, seizures. (Onset: hours to days)
Opiates	Autonomic dysfunction, diarrhea, excessive sucking, excessive, high-pitched cries, GI dysfunction, hyperactive reflexes, hypertension, hypertonicity, ineffective feeding, irritability, jittery movements, mottling, respiratory distress, seizures, sleep disturbance, sweating, temperature instability, tremors, yawning. (Onset: Short-acting opiates 24-36 hours; long-acting opioids 5-7 days)

Cocaine	Abnormal sleep and feeding patterns, apnea, excessive sucking, excessive alertness, high-pitched cry, hypertonicity, irritability, tachycardia, tremors, hyperactivity. (Usually no signs of withdrawal, but may have symptoms of acute toxicity.)
Marijuana	Fine tremors, hyperacusis, and prominent Moro reflex.
Methamphetamine	Disorganized sucking and swallowing abilities, inconsolable frantic crying, increased metabolic rate, large insensible water loss, seizures, sleep regulation difficulties, tremors. (Onset: 48-60 hours)
Diazepam	Apnea, hyperactivity, hyperreflexia, hypertonia, hypothermia, hypotonia, poor sucking ability, tachypnea, tremors, vomiting. (Onset: 1-3 days)

1. Use of Eating, Sleeping, Consoling (ESC) Care Tool for Infants with NOWS

1.1. Family involvement will be emphasized, ideally starting prenatally.

1.1.1. After birth, separation of mother and infant will be avoided unless medically indicated.

1.1.2. Engaging parent participation is the best treatment modality.

1.2. Postnatal rooming-in is effective in reducing the need for pharmacologic treatment of NOWS and decreases the duration of needed treatment. Maintaining maternal-infant contact in this high-risk population is crucial, both for the benefits of skin-to-skin care for physiologic stability and in the bonding needed for psychosocial stability.

1.3. In addition to education on well-baby care, caregivers will be trained to recognize the signs and symptoms of opioid withdrawal. Caregivers will also be informed about the expected course for infant during admission and after discharge, and the importance of their role in the management of NOWS.

1.4. Staff should educate caregivers in use of the ESC Care Tool.

1.4.1. Teach caregivers ESC assessment items and their definitions.

1.4.2. Indications for Formal Parent/Caregiver and Full Care Team Huddles.

1.4.3. Optimal ways to implement Non-Pharm Care Interventions (NPI).

1.4.4. How to use the Newborn Care Diary.

1.5. Involve caregivers in newborn assessments:

1.5.1. How well their baby is eating, sleeping and consoling,

1.5.2. Best methods for consoling their infant.

1.5.3. Remind parents to request infant assessments after feedings.

2. Eating, Sleeping, Consoling (ESC) Assessment for NOWS

2.1. Staff should perform Eating, Sleeping, Consoling (ESC) care assessments every 2-4 hours after feedings, clustering other cares (e.g., vital signs) at the same time.

2.2. Assessments will be initiated within 4-6 hours of birth and should continue for 5-7 days for neonates exposed to long-acting opioids (e.g., buprenorphine, methadone), and for a minimum of 48 hours for shorter acting opioids (e.g., oxycodone, codeine).

2.3. Assessments should include all ESC behaviors that occurred since the neonate's previous assessment as well as all non-pharm care interventions implemented during that interval.

2.3.1. Assessments should incorporate input from all caregivers (e.g., mother/other parent, nurse, cuddler, infant provider) who interacted with the newborn during this time interval.

2.3.2. Neonates should be assessed in their own room, ideally while being held by mother/caregiver.

2.4. Assess the neonate using the Eating, Sleeping, Consoling (ESC) Care Tool (See Appendix A).

2.4.1. This form is for opiate withdrawal only.

2.4.2. Do not awaken the patient to perform ESC assessment.

2.4.3. Assess the neonates after feeding and while held by parent/family member/staff member, if possible.

2.5. Recommend that parents use the Newborn Care Diary to keep track of the baby's behaviors and for staff to incorporate their observations into the ESC assessments. Staff should document ESC assessments and care recommendations on the ESC flowsheet, either in the electronic health record (EHR) or using a paper version, and share these with parents/caregivers following each assessment.

2.6. Given feeding immaturity of premature neonates, gestational and postnatal age-expected feeding patterns will be used as a baseline on the ESC Care Tool. The sleep and consoling items can be used without modification for premature neonates.

2.6.1. If patient feeding ability and tolerance is significantly worse than expected for gestational age and may be due to NAS, indicate Yes for "Poor eating due to NAS".

2.6.2. If the newborn is sedated or critically ill, assess as typical for the clinical setting.

2.7. ESC Behaviors (See Definitions, on second page of ESC Care Tool in Appendix A.)

2.7.1. Eat

2.7.2. Sleep

2.7.3. Console

2.8. Non-Pharmacological Care Interventions (NPI's)

2.8.1. Non-pharmacologic, supportive treatment is the foundation of management for NOWS. Strategies for supporting the parents/caregivers in meeting the needs of their newborn may include the following:

2.8.1.1. Provide comfort interventions to help the newborn achieve and maintain a supported, calm, behavioral state.

2.8.1.2. Promote cuddling and skin-to-skin Kangaroo care, if appropriate.

2.8.1.3. Offer a pacifier.

2.8.1.4. Encourage swaying and rocking as calming techniques.

2.8.1.5. Decrease stimulation at the first signs of distress.

2.8.1.6. Calm the newborn who is crying by holding firmly to the caregiver's body and gently rocking.

2.8.1.7. Tightly swaddle to avoid auto-stimulation. Caution: Use a light blanket to reduce the risk of elevated temperature.

2.8.1.8. Maintain bed space as dark and quiet as possible to minimize environmental stimuli.

2.8.2. Feed the neonate on demand.

2.8.2.1. Begin feeding as soon as awake and manifesting hunger cues. Do not wait until the newborn has become disorganized and reached an inconsolable behavioral state.

2.8.2.2. Breast milk is the optimal source of nutrition for newborns and infants of opioid-dependent mothers.

2.8.2.2.1. Enhances maternal/child bonding

2.8.2.2.2. Decreases neonatal abstinence severity
2.8.2.2.3. Improves mother's adherence to treatment and abstinence
2.8.2.3. Breastfeeding mothers should receive encouragement, as well as any education and assistance necessary to support breastfeeding, provided they are:
2.8.2.3.1. Enrolled in a substance abuse treatment program (e.g. buprenorphine or methadone),
2.8.2.3.2. Or under the care of a provider (e.g., long term pain management)
2.8.2.3.3. And provided there are no other contraindications such as ongoing illicit drug use, HIV infection, or lack of prenatal care.
2.8.2.3.4. While breastfeeding is encouraged, the infant's caloric needs may be high. Hyper-caloric supplementation may be required (22-24 kcal/ounce).
2.8.2.3.5. Rooming-in is the best way to facilitate breastfeeding.
2.8.2.4. Frequently burp the infant and monitor during the feeding for increased stress.

2.9. Parent/Caregiver Huddle
2.9.1. A Formal Parent/Caregiver Huddle is recommended at any time if the infant has a Yes for any ESC item OR 3 for *Consoling Support Needed*. During the huddle, the neonate's RN/provider and parent/caregiver should discuss:
2.9.1.1. Ways to further optimize Non-Pharm Care Interventions (NPI's)
2.9.1.2. Newborn's response to, and efficacy of, NPIs implemented
2.9.1.3. Efforts to improve feeding (when needed)
2.9.1.4. Assessment of the infant's environment
2.9.2. Staff should make all efforts to encourage the parents/caregivers to be present at all times to provide optimal non-pharm care for the newborn.

2.10. Full Care Team Huddle
2.10.1. If non-pharm care has been optimized and the patient continues to receive a Yes on any ESC item or a 3 for Consoling Support Needed (or other significant concerns are present), a Full Care Team Huddle should be called to include all of the following:
2.10.1.1. Parent/caregiver
2.10.1.2. Bedside nurse
2.10.1.3. Provider
2.10.1.4. Inpatient pediatric pharmacist, when available
2.10.2. If non-pharm care is maximized and the neonate continues to have poor eating, sleeping, or consoling (or other significant concerns are present) and symptoms are felt due to opioid withdrawal, then an opioid replacement medication should be considered.
2.10.3. Whether or not pharmacological care is started or modified, Non-Pharm Care Interventions should continue to be maximized.

3. Pharmacologic Treatment

3.1. Pharmacological treatment may be initiated by the Full Care Team Huddle when the following are seen. This constitutes an unacceptable level of withdrawal:
3.1.1. Any "Yes" responses on ESC Care Tool, or 3 for Console, AND
3.1.2. Non-pharmacological care has been optimized, AND
3.1.3. Pt has been evaluated for non-opioid withdrawal causes of symptoms

3.2. Enteral methadone will be the primary pharmacologic agent used for NOWS treatment
3.2.1.Inpatient pediatric pharmacy will be consulted to assist with managing methadone for NOWS
3.2.2. Methadone will be initiated via EHR orders at 0.05 mg/kg/dose PO/NG/NJ.

3.2.3. A one-time dose can be considered before starting scheduled doses

3.2.3.1. There is some evidence that an isolated dose may be sufficient to control symptoms for some patients, in combination with optimized non-pharm care

3.2.4. The initial scheduled methadone regimen will be 0.05 mg/kg q12h PO/NG/NJ (step 1 below)

3.3. All patients will have a cardiac-respiratory monitor and pulse oximeter placed when methadone is initiated. Monitoring may be discontinued by the provider when tapering methadone. Neonates starting methadone will also be screened for risks of QTc prolongation and a baseline value will be obtained if the provider feels it is warranted.

3.4. The initial goal of pharmacological therapy is stabilization

3.4.1. Stabilization is defined as no/few "yes" responses to ESC Care Tool over 24 hours, without change in methadone dose

3.4.2. If the initial methadone dose or regimen is not sufficient for stabilization, in other words if an unacceptable level of withdrawal still seen as defined above, then methadone may be escalated at the decision of a Full Care Team Huddle

3.4.2.1. Methadone regimen escalation will proceed as follows:

3.4.2.1.1. Step 1: methadone 0.05 mg/kg PO/NG/NJ q12h (initiation step)

3.4.2.1.2. Step 2: methadone 0.05 mg/kg PO/NG/NJ q8h

3.4.2.1.3. Step 3: methadone 0.05 mg/kg PO/NG/NJ q6h

3.4.2.1.4. Step 4: methadone 0.075 mg/kg PO/NG/NJ q6h

3.4.2.1.5. Step 5: consider adding a secondary agent

3.4.2.1.5.1. When escalating, the new interval will usually start at the time the order is placed.

3.4.2.1.5.2. Secondary agents to be considered may include oral clonidine or oral/IV phenobarbital

3.5. Following stabilization, methadone will be tapered off by inpatient pharmacy

3.5.1. Pharmacy will closely monitor the patient and write daily progress notes in the EHR

3.5.2. Methadone will be tapered daily or every other day by about 2-5% of the maximum dose

3.5.3. The planned taper and any taper modifications will be detailed in the daily note

3.5.4. Relevant sections of the taper will be shown on the EHR methadone orders

3.6. During tapering, the methadone regimen may be modified by pharmacy at the decision of a Full Care Team Huddle for an unacceptable level of withdrawal

3.6.1. If near the end of the taper, or if there is suspicion for non-pharmacological causes of distress, attempt to hold the current dose for up to 24 hours

3.6.2. If the level of withdrawal is still unacceptable, or if not near the end of the taper, modification to the methadone regimen will proceed as follows:

3.6.2.1. Consider a bolus equal to the current dose

3.6.2.2. Resume the prior taper step, or increase the dose by 10-20%

3.6.2.3. Resume the taper when an acceptable level of withdrawal is present (e.g., no/few "Yes" responses or 3 for Console on ESC Care Tool)

3.6.2.4. Consider extending the methadone taper

3.7. During tapering, if the newborn appears able to tolerate a more rapid wean the methadone regimen may be accelerated by pharmacy at the decision of a Full Care Team Huddle

3.8. ESC care assessments should continue for 24-48 hours following completion of a methadone taper

4. Transfers

4.1. Reasons for transfer to the pediatric unit may include, but are not limited to:
  4.1.1. Need for pharmacologic management
  4.1.2. High census on the postpartum unit limiting room availability, and when pediatric census and staffing allow

4.2. Transfer to the neonatal intensive care unit (NICU) should be reserved for medical indications
  4.2.1. The sensory atmosphere of the NICU may escalate NOWS/NAS symptoms
  4.2.2. NICU admission will severely impede parent/caregiver involvement

4.3. Refer to ANMC staffing guidelines when no parent/caregiver is present to care for the newborn

5. Consults

5.1. Nursery Provider (Physician or Nurse Practitioner) will be notified of maternal admission during Team STEPPS shift report. If a consultation with the Nursery provider was not done prenatally, consider requesting one upon admission to L&D, if feasible due to maternal stage of labor.

5.2. A social work consult will be ordered on any mother presenting with known or suspected illicit drug use, or with a history of chronic use of prescribed pain medications or medications provided through a treatment program. This will be ordered early in the mother's hospitalization to ensure adequate time to obtain information and identify resources that are available for her and her newborn. This will also help ensure adequate time if a child protective investigation is indicated. Ensure Office of Children's Services (OCS) follow-up and/or ongoing maternal treatment after discharge.

5.3. A physical therapy (PT) consultation should be considered as the newborn will need ongoing developmental assessments throughout the first years of life. PT can also instruct parents in infant massage to aid in parent/child bonding and supportive therapy. The Infant Learning Program and Referral to the Child and Family Developmental Services can be recommended to the family.

5.4. A Speech Language Pathologist (SLP) consultation will be considered for assessment of feeding and ongoing neuro-protection needs

5.5. A Lactation consult will be ordered for any infant who is breastfeeding

5.6. Inpatient pediatric pharmacy will be consulted for Full Care Team Huddles and to assist with dosing methadone during stabilization and tapering per above.

6. Discharges

6.1. Follow up arrangements for ongoing care and support after discharge should include:
  6.1.1.1. Primary care provider empanelment
  6.1.1.2. Referral to Child and Family Developmental Services
  6.1.1.3. Enrollment in Infant Learning Program
  6.1.1.4. Outpatient lactation support

7. References

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Written: 08/16
Reviewed: 11/17
Revised: 05/2020

Appendix A:

EAT, SLEEP, CONSOLE (ESC) CARE TOOL ESC 3rd edition 11.14.19

- **Review ESC behaviors**, **signs of withdrawal present,** and **Non-Pharm Care Interventions (NPIs)** with parent(s)/caregiver **every 2-4 hours** (using **Newborn Care Diary**), ***clustering care with infant's wakings and feedings.*** With each assessment, **reinforce NPIs** that parents/caregivers are implementing well **("R"),** *and* **educate ("E") / coach parents** in ways that **other NPIs can be increased further** (**"I"**).
- If **Yes** for any **ESC** item *or* **3** for **Consoling Support Needed:** Perform a **Formal Parent/Caregiver Huddle** to ***formally*** **review NPIs that can be optimized further to help with infant's current ESC difficulties** and **continue to monitor infant closely.**
- If **2nd Yes in a row** for **any single ESC** item **(*or* 2nd "3"** for **Consoling Support Needed)** despite **maximal non-pharm care** *OR* ***other significant concerns*** are present *(e.g., seizures, apnea)*: Perform a **Full Care Team Huddle** with **parent/caregiver**, **infant RN** *and* **physician or associate provider** to 1) **consider all potential etiologies** for symptoms, 2) **re-assess if NPIs** are **maximized** to fullest extent possible in infant's clinical setting, and 3) **determine if Neonatal Opioid Withdrawal Syndrome (NOWS)/Neonatal Abstinence Syndrome (NAS) medication treatment is needed. Continue** to **maximize all NPIs and monitor infant closely.**

Perform assessment of ESC behaviors, signs of withdrawal, and NPIs for time period since last ESC assessment *– note date/time:*	
NOWS/NAS ASSESSMENT	
Are signs of withdrawal present? (e.g., hyperactive moro, tremors/jitteriness, increased tone, excessive/disorganized suck) Yes / No	
If Yes, is timing of withdrawal consistent with known opioid exposure? Yes / No / Unsure	
Are co-exposures present that may be contributing to signs of withdrawal? Yes / No / Unsure (please list co-exposures)	
Are NPIs maximized to fullest extent possible in infant's clinical setting? Yes / No / Unsure	
EATING	
Takes > 10 min to coordinate feeding *or* **breastfeeds < 10 min** *or* **feeds < 10 mL** (*or* other age-appropriate duration/volume) **due to NOWS/NAS?** Yes / No	
SLEEPING	
Sleeps < 1 hr due to NOWS/NAS? Yes / No	
CONSOLING	
Takes > 10 min to console (*or* cannot stay consoled for *at least* 10 min) due to NOWS/NAS? Yes / No	
Consoling Support Needed **1:** Able to console on own **2:** Able to console within (and stay consoled for) 10 min with caregiver support **3:** Takes > 10 min to console (*or* cannot stay consoled for *at least* 10 min) despite caregiver's best efforts	
CARE PLAN	
Formal Parent/Caregiver Huddle Performed to formally review NPIs to be increased further? Yes / No	
Full Care Team Huddle Performed to formally consider all possible etiologies for symptoms, re-assess if NPIs are maximized to fullest extent possible, and determine if NOWS/NAS medication treatment is needed? Yes / No	
Management Decision **a: Continue/Optimize NPIs** **b: Initiate NOWS/NAS Medication Treatment** (e.g., if baby's symptoms & timing of symptoms are consistent with mother's particular opioid *and* NPIs are maximized to fullest extent possible in infant's clinical setting, *OR* other significant NOWS/NAS concerns are present (e.g., seizures, apnea) – please list medication(s) initiated **c: Continue NOWS/NAS Medication Treatment** **d: Other** (please describe – e.g., Start 2nd Pharmacologic Agent (indicate name); Wean or Discontinue Medication Treatment)	
PARENT/CAREGIVER PRESENCE SINCE LAST ASSESSMENT	
> 3 hours (includes if parent/caregiver present entire time), **2-3 hours**, **1-2 hours**, **< 1 hour**, **0 hours** (no parent/caregiver present)	
NON-PHARM CARE INTERVENTIONS (I = Increase Now, **R** = Reinforce, **E** = Educate for Future, **NA** = Not Applicable/Available)	
Rooming-in (i.e., caring for infant in their own room with earlier caregiver response to infant stress or hunger cues)	
Parent/caregiver presence to help calm and care for infant	
Skin-to-skin contact when caregiver fully awake/alert to help organize infant feeding behaviors, calming & sleep	
Holding by parent/caregiver/cuddler to help calm infant & aid in sleep (with caregiver fully awake/alert)	
Safe & effective swaddling (e.g., extremities swaddled in flexed position, blanket snug, no extra blanket around baby's face)	
Optimal feeding (e.g., baby offered feedings when showing hunger cues & fed till content)	
Non-nutritive sucking with infant's hand, pacifier, adult caregiver's washed or gloved finger	
Quiet, low light environment to help limit overstimulation of infant (e.g., tv volume down, quiet "white noise" machine or phone app)	
Rhythmic movement provided by parent/caregiver or infant calming device (e.g., "jiggling" or infant swing in presence of alert adult)	
Additional help/support in room (e.g., other parent, family member, friend, cuddler, staff member, recovery coach, DCYF worker)	
Limiting # of visitors & duration of visit(s) to minimize disruptions in infant's care environment & sleep	
Clustering care & assessments with infant's awake times (e.g., RN & infant provider perform assessment together after infant feedings)	
Safe sleep/fall prevention (e.g., infant sleeps on back, safely swaddled, in own sleep space)	
Parent/caregiver self-care & rest (e.g., identifying another adult to care for infant so parent can rest or take a walk/break)	
Optional Comments: (e.g., staff caring for/consoling baby as parents not available or able to safely care for baby)	

***Special note:** Numbers above are **not** intended as a "score" but instead may indicate/identify a need for increased intervention.*

DEFINITIONS

EATING

- **Takes > 10 min to coordinate feeding** *or* **breastfeeds < 10 min** *or* **feeds < 10 mL** (*or* other age-appropriate duration/volume) **due to NOWS/NAS?:** Baby **unable to coordinate feeding *within* 10 minutes of showing hunger** *OR* **sustain feeding for *at least* 10 minutes at breast** *OR* **with 10 mL by alternate feeding method** (*or other age-appropriate duration/volume)* **due to opioid withdrawal symptoms** (e.g., fussiness, tremors, uncoordinated suck, excessive rooting).
- ***Special Note:* Do not indicate Yes** if poor eating is **clearly due to non-opioid related factors** (e.g., prematurity, transitional sleepiness or spittiness in first 24 hours, inability to latch due to infant/maternal anatomical factors).

SLEEPING

- **Sleeps < 1 hour due to NOWS/NAS:** Baby **unable to sleep for *at least* one hour**, after feeding well, **due to opioid withdrawal symptoms** (e.g., fussiness, restlessness, increased startle, tremors).
- ***Special Note:* Do not indicate Yes** if sleep < 1 hour is **clearly due to non-opioid related factors** (e.g., symptoms in first day likely due to nicotine or SSRI withdrawal, physiologic cluster feeding in first few days of life, interruptions in sleep for routine newborn testing).

CONSOLING

- **Takes > 10 min to console (*or* cannot stay consoled for *at least* 10 min) due to NOWS/NAS:** Baby **takes longer than 10 minutes to console** *OR* **cannot stay consoled for *at least* 10 minutes (due to opioid withdrawal symptoms) despite** infant caregiver/provider's **best efforts to implement NPIs** (e.g., skin-to-skin contact, non-nutritive sucking when baby not hungry).
- ***Special Note:* Do not indicate Yes** if infant's difficulties consoling are clearly **due to non-opioid related factors** (e.g., caregiver non-responsiveness to infant hunger cues, circumcision pain).

CONSOLING SUPPORT NEEDED

1. **Able to console on own:** Able to console on own without any caregiver support needed.
2. **Able to console within (and stay consoled for) 10 min with caregiver support:** Baby with absence of crying, grimacing, or other signs of distress while being held (or otherwise consoled) by a caregiver.
3. **Takes > 10 min to console (*or* cannot stay consoled for *at least* 10 min) despite caregiver's best efforts:** Baby with presence of crying, grimacing, squirming/tensing, or other signs of distress despite a caregiver's best efforts to implement recommended NPIs (e.g., parent/caregiver presence, skin-to-skin, holding, safe swaddling, optimal feeding, non-nutritive sucking when not hungry).

CARE PLAN

- **Formal Parent/Caregiver Huddle**: **RN bedside huddle** with **parent/caregiver** to ***formally* review NPIs that can be optimized** ("Increased") **further to help with infant's current eating, sleeping, and/or consoling difficulties**. To be performed if infant receives **Yes** for any **ESC** item ***or* 3** for **Consoling Support Needed**.
- **Full Care Team Huddle: Formal huddle** with **parent/caregiver**, **infant RN** *and* **physician or associate provider** to 1) **consider all potential etiologies** for symptoms, 2) **re-assess if NPIs** are **maximized** to fullest extent possible in infant's clinical setting, and 3) **determine if NOWS medication treatment is needed**. To be performed if infant **receives 2nd Yes in a row** for **any single ESC** item **(*or* 2nd "3"** for **Consoling Support Needed)** despite **maximal non-pharm care** *OR* ***other significant concerns*** are present.

PARENT/CAREGIVER PRESENCE SINCE LAST ASSESSMENT: Time (in hours) since last assessment that parent (or other caregiver) spent together with infant in own room *or* in Nursery.

OPTIMAL FEEDING:

- **Baby feeding at early hunger cues** and **until content** without any limit placed on duration or volume of feeding. Feedings are encouraged **at least every 3 hours, optimally 8-12 times per day**, to ensure baby does not become too hungry or disorganized with feeding and to optimize nutritional intake. A baby may remain sleeping for more than 3 hours *for therapeutic rest* if feeding difficulties or excessive weight loss are *not* present. If a pacifier is used, it should be introduced only after a baby has been fed or offered a feeding. As infants with NOWS/NAS may be hypermetabolic, **closely follow daily weights** and **provide increased volume and/or caloric density** of feedings, as needed, **for more than expected weight loss** *and/or* **poor weight gain for age.**
- **Breastfeeding:** Baby latching deeply with comfortable latch for mother, and sustained active suckling for baby with only brief pauses noted. **If feeding difficulties present**: a) **assist directly with breastfeeding** to help achieve more optimal latch and position, b) **demonstrate hand expression** and have mother **express colostrum prior to and/or during feedings**, and/or c) have baby feed on a clean or gloved adult finger first to **organize suck prior to latching**. As able based on infant's symptoms, consider withholding pacifiers until babies are breastfeeding well due to the potential to interfere with a good latch/suck. Consider use of nipple shield to facilitate palatal stimulation, or supplementation at the breast (as tolerated by mother), if infant requires assistance to maintain latch/suck.
- **Bottle feeding:** Baby effectively coordinating suck and swallow without gagging or excessive spitting up. **If feeding difficulties are present:** a) **assess need for altered nipple shape/flow rate**, b) instruct parent to **provide chin support during feedings**, *and/or* c) **modify position of bottle and flow of milk** to assist baby with feeding (e.g., modified side-lying position).
- **Consult a feeding specialist** (e.g., lactation, speech therapy, feeding team) when **feeding difficulties are present**.

Appendix B: Newborn Care Diary

Newborn Care Diary

Baby's name: _____ Room number: _____ Date: _____

Start and finish time of baby's feeding	Breast feeding (total minutes)	Bottle feeding (total ml)	Did baby feed well? (if no, please describe)	Time baby fell asleep	Time baby woke up	Did baby console/calm in 10 minutes? (please describe)	Time baby had a wet (pee) diaper	Time baby had a poopy diaper (describe)	Comments about care provided
Example: 12:15-12:40 p.m.	*L: 15 min R: 10 min*	*15 ml*	*Yes, but needed to calm by sucking on finger for 5 min. before able to latch.*	*1 p.m.*	*3:10 p.m.*	*No, took 15 min. to calm down while swaddling and sucking on my finger.*	*3:30 p.m.*	*4 p.m.; watery*	*Startling easily and having some tremors. Nurse helped me comfort him by putting him skin-to-skin.*

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