The Impact of a Hospital Protocol in Neonates at Risk for Neonatal Abstinence Syndrome

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Abstract:

Background
In the midst of the opioid epidemic, neonatal abstinence syndrome (NAS) has become one of the leading causes of extended-stay admissions among neonates nationwide[1]. Within the last 2 decades, the use of controlled substances in adults, including pregnant women, have nearly quadrupled[2]. Patients diagnosed with NAS typically stay an average of 22 days in the hospital[3]. The "Eat, Sleep, Console" (ESC) protocol was designed to maximize non-pharmacological measures to reduce symptoms of NAS, as well as dependence on one or more substances. If pharmacologic treatments are deemed necessary despite non-pharmacological therapy, ESC utilizes a daily morphine taper to slowly reduce dependence on these controlled substances[4]. Although not well understood, it is hypothesized that implementing protocols such as ESC can decrease length of hospital stay, as well as reduce the usage of morphine and other rescue treatments by nearly 50 percent according to a paper published by Grossman et al. With that in mind, this protocol was implemented at St. Rose Hospital – Siena Campus in September of 2021 to establish a standard of care within the facility, as well as to understand the impact the ESC protocol has on neonatal patients.

Methods
This retrospective review will assess the effectiveness of the ESC protocol in neonates at risk for NAS at St. Rose Dominican Hospital – Siena Campus. This study will include neonates (age ≤ 28 days since birth) staying in the NICU or PED units with a positive urine, cord, or meconium toxicology for mono or polysubstance, and administration of oral morphine. Exclusion criteria for this study are neonates with a gestational age of < 37 weeks, where NAS symptoms may not be as easily identifiable. The primary outcome of this study is to observe the length of hospital stay in patients who underwent ESC. The secondary outcome would be cumulative doses of (scheduled and as needed) morphine given during the patients' stay. This study will be conducted to evaluate these outcomes prior to (11/01/2020-08/31/2021) and post-ESC protocol implementation (09/01/21-3/31/2023). The IRB has reviewed this protocol and has deemed it as research.

Results
In terms of length of hospital stay, patients in the pre-ESC group who did not receive morphine had shorter admissions (4.0 v. 6.8 days; p-value 0.01). For secondary outcomes with regards to morphine administration, the Post-ESC group had an average of 9.2 ± 5.2 days, while the pre-ESC group being at 16.5 ± 5.4 days. However, this was not statistically significant (P-value 0.25). The mean days of as needed morphine use between the pre- and post-ESC groups were similar (P-value 1.00).

Conclusion
Although the length of stay post-ESC implementation was lower (i.e. morphine group), there is no statistically significant difference between the 2 groups. However, limitations were identified (i.e. lack of documentation and hospital resources) that may have contributed to the overall result. Since identifying these issues, action has been implemented to better document these events in order to help evaluate the true effect of the ESC protocol implementation.

Keywords: neonatal abstinence syndrome, neonatal opioid withdrawal syndrome, morphine, protocol

1. Background

In the midst of the opioid epidemic, neonatal abstinence syndrome (NAS) has become one of the leading causes of extended-stay admissions among neonates nationwide[1]. Within the last 2 decades, the usage of controlled substances in adults, including pregnant women, have nearly quadrupled. The rates have increased from 1.19% to 5.63% per every 1,000 hospital births.[2] Patients diagnosed with NAS typically stay on average 22 days in the hospital before being discharged, as compared to a general NICU stay of 13.2 days[3]. Prior to 37 weeks gestation, NAS symptoms may not be as easily identifiable. Typical presentation includes poor feeding, slow weight gain, body shakes (i.e. tremors, twitching, tight muscle tone), poor sleep behavior, and excessive crying[1]. The "Eat, Sleep, Console" (ESC) protocol was designed to maximize non-pharmacological measures to reduce symptoms of NAS, as well as dependence on mono or polysubstance. If pharmacologic treatments are deemed necessary despite non-pharmacological therapy, ESC utilizes a daily morphine taper to slowly reduce dependence on these controlled substances[4]. Morphine, a mu-receptor agonist, is known for its role in pain relief, sedation, and euphoria, and is one of the standards of care for reducing the symptoms of NAS. Other common treatments used include clonidine and phenobarbital[1]. Although not well understood, it is hypothesized that implementing protocols such as ESC can decrease length of hospital stay, as well as reduce the usage of morphine and other rescue treatments by nearly 50 percent according to a paper published by Grossman et al. With that in mind, this protocol was implemented at St. Rose Hospital – Siena Campus in September of 2021 to establish a standard of care within the facility, as well as to understand the impact the ESC protocol has on neonatal patients. To maintain the consistency of this study, neonatal opioid withdrawal syndrome (NOWS) will be used interchangeably for NAS as it is one of the conditions that is affiliated with NAS.

2. Methods

This retrospective review will assess the effectiveness of the ESC Protocol in neonates at risk for NAS at St. Rose Dominican Hospital – Siena Campus. This study will include neonates (age ≤ 28 days since birth) staying in the NICU or PED units with a positive urine, cord, or meconium toxicology for mono or polysubstance, and administration of oral morphine. All patients that required pharmacological intervention in this study only received oral morphine; other rescue treatments (i.e. methadone, clonidine, phenobarbital) were not needed to reduce symptoms. For simplicity, our facilities limited pharmacologic treatment to oral morphine, unless patients had any contraindications or lack of relief after the taper has been administered. Exclusion criteria for this study were neonates with a gestational age of < 37 weeks, due to symptoms being less identifiable. The primary outcome of this study is to observe the length of hospital stay in patients who underwent ESC. The secondary outcome would be cumulative doses of (scheduled and as needed) morphine given during the patients' stay. This study will be conducted to evaluate these outcomes prior to (11/01/2020-08/31/2021) and post-ESC protocol implementation (09/01/21-3/31/2023). The IRB has reviewed this protocol and has deemed it as research.

2.1 Data Collection

Inclusion Criteria:

- Neonates admitted into the Pediatric or NICU units at St. Rose Hospital – Siena Campus with a positive urine, cord, or meconium toxicology of mono or polysubstance

Exclusion Criteria:

- Neonates with a gestational age of < 37 weeks

Patients who meet the inclusion criteria within the specified time frame will be pulled onto a password protected spreadsheet for record of: medical record number (MRN), gestational age, usage of morphine, etc. A template of this information can be found in Appendix B. Once the data is saved, every patient will be transferred and renamed to a unique identification number (i.e. NAS1, NAS2, NAS3) for patient privacy. A template of this information can be found in Appendix C. The primary investigator reviewed all relevant charts.

2.2 Data Analysis

This research had a proposed sample size of approximately 140 records to be reviewed

retrospectively from November 2020 to March 2023. One investigator will be analyzing these 140 records. The number of records to be reviewed was determined by how frequently the new protocol had been utilized since implementation and the amount of data available for analysis.

The proposed time period for this research are as follows: November 2020 to August 2021 (prior to protocol implementation) and September 2021 to March 2023 (post-protocol implementation).

2.3 Statistical Analysis

Statistical significance was defined by a p-value < 0.05. Chi-squared test was used for categorical measures. Independent two-sample t-test was used for continuous measures.

3. Results

Pre-ESC data was collected from November 1, 2020 to August 31, 2021. Post-ESC data was collected from September 1, 2021 to March 31, 2023. There was a total of 140 neonates that met inclusion criteria.

Baseline Characteristic	Pre-ESC (n = 83)	Post-ESC (n = 57)	P-Value
Female Gender – n (%)	34 (40.9)	24 (42.1)	0.89
Median Gestational Age – (weeks + days)	39+3	38+6	0.40
Mean Birth Weight – kg ± SD	3.06 ± 0.55	3.10 ± 0.46	0.55
Feeding Type – n (BF/FOR/BF+FOR)	10/60/13	5/41/11	-
Positive Urine Toxicology – n (%)	8 (9.6)	9 (15.7)	0.27
Positive Cord Toxicology – n (%)	19 (22.8)	18 (31.6)	0.25
Positive Meconium Toxicology – n (%)	71 (85.5)	40 (70.1)	0.02

Primary Outcome(s):

Outcome	Pre-ESC w/o Morphine (n=77)	Post-ESC w/o Morphine (n=51)	P-Value
Median LOS – n ± SD (days)	4.08 ± 3.19	6.80 ± 6.95	0.01
Outcome	**Pre-ESC With Morphine (n=6)**	**Post-ESC With Morphine (n=6)**	**P-Value**
Median LOS – n ± SD (days)	21 ± 10.3	15 ± 1.72	0.26

Secondary Outcome(s): *1 patient in each group

Outcome	Pre-ESC With Morphine (n=6)	Post-ESC With Morphine (n=6)	P-Value
Mean Days of Scheduled Morphine Use – n (days)	16.5 ± 5.4	9.2 ± 5.2	0.15
Mean Amount of All Morphine Used – (mg/admission)	10.6 ± 0.86	5.7 ± 3.11	0.25
Mean Days of PRN Morphine Use* – n (days)	1	1	1.0

4. Discussion

Although the LOS was lower post-ESC protocol implementation (i.e. the morphine group), there was no statistically significant difference. Longer length of stay could be related to several factors such as a stricter criteria for discharge (i.e. 24 hour monitoring period), concurrent comorbidities, mono-substance versus polysubstance, and the type of substance used.

4.1 Limitations

There were several limitations to this study. Firstly, it was difficult to obtain information due to lack of documentation. It was assumed that medical staff were performing the mandated ESC protocol. Further measures have been implemented (i.e. Pediatric P&T discussion) to ensure that proper documentation is now occurring. Secondly, the facility had lack of resources (i.e. swings, place for parents to room) that may have limited the amount of non-pharmacologic measures that the neonate could have used to help with NAS symptoms. Lastly, the time to collect data was limited. Because of the shorter post-protocol period, this could have been the reason to why a significant difference was not observed in the "with morphine" group. Further investigation is warranted for validation.

5. Conclusion

The LOS was lower in the post-ESC protocol implementation in patients receiving morphine. However, there was no statistical significance found. There was also a longer LOS in the post-protocol group which could have been related to several factors such as having a stricter criteria for discharge. There was a mandated 24-hour watch period prior to patients being discharged from the hospital which could have extend the length of stay. Concurrent comorbidities could have also contributed to an extended length of stay. These comorbidities were not factored into this research and would be an applicable variable to look further into for future studies. Finally, the presence of monosubstance versus polysubstance could have contributed to the neonate's length of stay. Certain substances (i.e. methadone) have longer half-lives which remain in the body longer than others. Likewise, multiple substances in the body can lead to a longer stay.

For future research, analysis of these certain variables that may interfere with length of hospital stay should be discussed. Other avenues to consider for the ESC protocol at our facility would include different NAS treatments not utilized (i.e. phenobarbital, methadone, clonidine). Different treatments may change how our patients with NAS react, as well as affect their overall length of hospital stay.

Conflicts of Interest

The author declares no competing interests.

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References

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Dignity Health
St. Rose Dominican

POLICY/PROCEDURE

CATEGORY**:** Clinical/NICU/MCC/PEDS

SUBJECT: **Neonatal Opiate Withdrawal Syndrome, Non-Pharmacological and Pharmacological Management**

ORIGINATED: 9/21 EFFECTIVE: 9/21 SUPERSEDES: N/A

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1.0 PURPOSE

1.1 Scope – To define the process for the management of Neonatal Opiate Withdrawal Syndrome (NOWS) at Dignity Health St. Rose Dominican (SRD).

1.2 Objective – To provide guidelines for non-pharmacological/pharmacological support to neonates with NOWS with the goal to:

1.2.1 Decrease irritability and neurologic manifestation of opiate withdrawal
1.2.2 Provide adequate nutrition and optimize weight gain
1.2.3 Reduce the length of stay in neonates exposed to opiates
1.2.4 Minimize separation of the mother and baby
1.2.5 Allow appropriate sleep without excessive sedation

2.0 RESPONSIBILITIES

2.1 Care Coordination – is responsible to develop, complete and submit the Comprehensive Addiction and Recovery Act (CARA) Plan of Care via Open Beds/CARA platform with the infant's parent and/or legal representative prior to infant's discharge. (See Reference 8.1)

2.2 Developmental Team (Speech and Language Pathology, Physical Therapy, Occupational Therapy) – is responsible for the collaboration with the multidisciplinary team to provide nonpharmacologic interventions for infants who are exposed to NOWS and exhibiting withdrawal symptoms.

2.3 Licensed Independent Practitioner (LIP) - who are credentialed and privileged to do so, are responsible for the management and appropriate treatment of infants who are experiencing drug withdrawal symptoms.

2.4 Registered Nurse (RN) – is responsible for the care and management of infants who are experiencing drug withdrawal symptoms using non-pharmacological and pharmacological interventions, as ordered by the LIP.

2.5 Nurse Shift Manager (NSM)/Lead – is responsible for coordinating with the RN, LIP and multidisciplinary team the appropriate care and management of the infants who are experiencing withdrawal symptoms.

3.0 DEFINITIONS

3.1 Neonatal Opiate Withdrawal Syndrome (NOWS) – is a group of problems that occur in a newborn who was exposed to addictive illegal or prescription drug substances as a fetus. NOW is a result of the sudden discontinuation of fetal exposure to substances that were used or abused by the mother during pregnancy.

Policy # NC-N-22.100

3.2 Neonates – First four weeks of life.

3.3 Infant – Four weeks to one year of life.

4.0 POLICY

4.1 Screening for NOWS:

4.1.1 Neonatal screening and therapy should be initiated with a maternal history of opioid use during pregnancy (recreational and/or prescribed).

4.1.1.1 If NOWS is suspected, it may be appropriate to begin screening using the Eat, Sleep, Console (ESC) scoring tool, without a documented history of maternal narcotic use.

4.1.2 Signs and symptoms of NOWS:

- 4.1.2.1 Trembling or shaking
- 4.1.2.2 Tight muscle tone or tenseness
- 4.1.2.3 Excessive crying
- 4.1.2.4 High-pitched cry
- 4.1.2.5 Vomiting
- 4.1.2.6 Diarrhea
- 4.1.2.7 Poor feeding
- 4.1.2.8 Yawning
- 4.1.2.9 Stuffy nose
- 4.1.2.10 Sneezing
- 4.1.2.11 Unstable temperature

4.1.3 Toxicology screening should be conducted: (See Reference 8.2)

4.1.3.1 Obstetrical mothers who admits to substance use or has any characteristics and/or signs and symptoms

4.1.3.1.1 Obtain toxicology screening order from LIP.

4.1.3.1.2 Inform the obstetrical mother of the LIP order for toxicology screening and obtain verbal consent prior to specimen collection.

4.1.3.2 Neonates who exhibit any signs and symptoms of substance exposure, or as ordered by the LIP.

4.1.3.3 Neonatal toxicology screening should be performed on neonates whose maternal toxicology screening was refused or unknown. (See Reference 8.2, 8.3 & 8.4)

4.2 Begin ESC scoring tool when there is evidence supporting maternal narcotic use during pregnancy and/or the neonate is experiencing symptoms consistent with opiate withdrawal.

4.2.1 Ensure all NOWS neonates have appropriate emergency equipment at the bedside. (See Reference 8.5, 8.6 & 8.7)

4.2.2 Routine scoring and neonatal care should be done while skin-to-skin or swaddled.

4.3 Initiate scoring within 4-6 hours after birth or when symptoms first appear.

4.3.1 Continue to score the neonate at 3-4 hours intervals with routine care.

4.3.2 It is not necessary to wake the neonate to perform an ESC assessment score.

4.3.2.1 It is important to note that some neonates that appear to be asleep may not actually be in a sleep state, but rather a hypersensitive state with closed eyes and minimal body movements in order to avoid external stimuli.

4.3.2.1.1 This should be suspected if neonates are difficult to arouse with care and/or lack the ability to achieve a quiet alert state during caregiver interactions.

4.4 Neonates who exhibit severe signs and symptoms of NOWS should be immediately transferred to the Neonatal Intensive Care Unit (NICU) for evaluation, as per LIP order.

4.4.1 Seizure activity

4.4.2 Moderate to severe tremors at rest

4.4.3 Projectile vomiting

4.5 All neonates who are receiving pharmacological intervention should immediately be admitted to either the Neonatal Intensive Care Unit (NICU) or the Pediatric unit for closer observation, as ordered by the LIP.

4.6 Narcan should never be used with neonates with known or suspected NOWS

4.7 Over-sedation, notify the LIP immediately
4.7.1 If the neonate does not wake for two consecutive feeds
4.7.2 If neonate is unarousable and exhibiting evidence of respiratory depression
4.7.2.1 Provide immediate positive pressure ventilation (PPV) (See Reference 8.8)

4.8 Family Centered Care should be encouraged and promoted.
4.8.1 Parents and/or patient representative should be present as much as possible and empowered to be partners in the care of their neonate. (See Reference 8.1)
4.8.1.1 ACTS is an approach to respectfully and constructively communicate with the parents and/or patient representatives of neonates with NOWS.

A	**Acknowledge:** "I used to feel the same way, then I got to know one of my moms and realized she loved her baby."
C	**Create Reflection**: "I wonder what may have happened in her life that led her to make the choices she has." "She is so gentle with her baby and is really wanting to learn how to take care of her baby." **Teach:**
T	"I have learned that often these women have experienced a lot and learned to cope in ways I may not approve of, but when I am working with them, I try to take it slowly and look for ways to build bridges." **Support:**
S	"I saw that the mother was smiling and seemed more relaxed when you were working with her."

4.8.1.2 Parent and/or patient representative should be educated on the use of the Eat Sleep Console (ESC) Newborn Care Diary to keep track of their neonate's behaviors and for nursing staff to incorporate these observations into the ESC scoring tool. (See Reference 8.9 & 8.10)

4.9 Close monitoring of the neonate for symptoms should occur for an appropriate time prior to potential discharge to ensure proper symptom evaluation (See Table 1).
4.9.1 Neonates whose mothers were taking short acting opioids such as Heroin and Morphine should be observed or a minimum of 72 hours, as ordered by the LIP.
4.9.2 Neonates whose mothers were taking long-acting opioids such as Methadone and Buprenorphine, symptoms should be observed for a minimum of 5 days, as ordered by the LIP.

Table 1

Opiate	Half-Life	Approximate time to onset of withdrawal symptoms
Heroin	30 minutes	24-48 hours
Morphine	2-4 hours	36-72 hours
Methadone	8-59 hours	48-72 hours
Buprenorphine	16-37 hours	36-60 hours

5.0 PROCEDURE

5.1 Follow the procedure as outlined in Clinical Skills, Dignity Health Clinical Reference (CR) icon found on your desktop.

5.1.1 *Neonatal Opioid Withdrawal Syndrome (Neonatal)*

5.2 Assess and document the neonates with NOWS using the Eat, Sleep, Console tool on admission and ongoing every 3-4 hours. (See Attachment 9.1).

5.2.1 Assessment includes the following three criteria:

5.2.1.1 Can the neonate tolerate feeds? (Eat)

5.2.1.2 Can the neonate sleep for > 1 hour after a feed? (Sleep)

5.2.1.3 Is the neonate able to be consoled within 10 minutes? (Console)

5.2.2 Assess neonate after feedings, preferably while skin-to-skin or held swaddled by mother/caregiver.

5.2.3 Review neonate's ESC behavior with mother/caregiver since last assessment 3-4 hours ago. (See Reference 8.9)

5.2.4 If neonate is assessed as "YES" for all of the three (3) ESC item, the neonate is considered to be tolerating withdrawal symptoms

5.2.5 If neonate assessed as "NO" for one or more ESC item, perform a huddle

5.3 Team huddle is the discussion involving the RN, NSM/Lead & LIP .

5.3.1 May include the multidisciplinary team (Social Worker, Developmental Team, Child Life Specialist, Cuddler & etc.) which includes:

5.2.1 Ways to further optimize non-pharmacological care

5.2.2 Efforts to improve feeding (when applicable).

5.2.2.1 The goal is for the neonate to feed when showing feeding cues (Infant-Driven Feeding) without constraints placed on length or volume of feed.

5.2.2.2 If optimal feeding is hindered due to NOWS, efforts to improve feeding should be instituted, per dietician recommendations and LIP order, and may include:

5.2.2.2.1 More frequent feeds

5.2.2.2.2 Smaller volume of feeds

5.2.2.2.3.Fortification of feeds

5.2.2.2.4 Enteral feeding tube

5.3 Neurodevelopmental support and non-pharmacological management of NOWS.

5.3.2 Non-pharmacological treatment is the initial option for neonates affected by NOWS.

5.3.3 All neonates should be provided non-pharmacological interventions to minimize stress, and reduce irritability to include but not limited to:

5.3.3.1 Skin-to-skin holding with parents or family representative (See Reference 8.11)

5.3.3.2 Holding/rocking

5.3.3.3 Clustered care

5.3.3.4 Dim lights

5.3.3.5 Quiet voices

5.3.3.6 Pacifier (medical need)

5.3.3.7 Swaddling

5.3.3.8 White noise machine

5.3.3.9 Feeding when hungry

5.3.3.10 Swaddled bath

5.3.3.11 Swing/infant seat

5.4 Breastfeeding and/or expressed breastmilk (EBM) should be encouraged for neonates whose mothers are receiving prescribed medications (i.e. Methadone, Buprenorphine) and with no concerns about compliance to their treatment.

5.4.3 If breastfeeding, or using EBM, order a lactation consult as per LIP order.
5.4.4 Mothers actively taking illicit drugs or non-prescribed opiates will not be allowed to breastfeed or provide expressed milk to their neonates.
5.4.5 Due to increased caloric needs in this population fortification of feeds should considered, as recommended by dietician and ordered by the LIP.
5.4.6 Simethicone can also be considered as adjunct therapy to reduce abdominal discomfort, as ordered by the LIP.
5.4.6.1. This should be assessed for efficacy on an individual basis
5.4.7 Given the potential for excessive motor activity and high stool output, consider precautions to avoid skin breakdown and diaper dermatitis.
5.4.7.1 Prophylactic use of skin barrier creams and use of gentle skin cleansers should be initiated on admission and used as a routine throughout hospitalization, or as ordered by the LIP.
5.5 Pharmacological Treatment of NOWS, as ordered by the LIP. (See Attachment 9.2).
5.5.3 Oral Morphine is the principle pharmacological agent to treat NOWS.
5.5.3.1 Utilize birthweight for morphine dosing and weaning.
5.5.3.2 Do not adjust Morphine for daily weight.
5.5.4 If optimal non-pharmacological care interventions are not effective, the LIP should be notified so that a team huddle can take place to determine if the neonate is a candidate for a rescue dose of Morphine.
5.5.5 If a rescue dose is given and the neonate continue to assessed as "NO" for one or more ESC item, notify the LIP and initiate a team huddle to assess the need for an additional rescue dose
5.5.6 Scheduled Morphine doses should begin every 3 hours, once the neonate has received three (3) rescue doses in a twenty-four (24) hour period.
5.5.6.1 Once scheduled Morphine doses are initiated, PRN Morphine doses may be given if symptoms are not controlled and team huddle is in agreement, document intervention in the Electronic Health Record (EHR).
5.5.6.2 After initiating oral Morphine therapy, neonate should be assessed at least twice daily by the LIP for therapeutic response (with a goal to achieve "NO" via ESC item).
5.6 Weaning pharmacological treatment for NOWS (See Attachment 9.2).
5.6.1 If the neonate assessed as "NO" for ESC item in the preceding 24 hour:
5.6.1.1 Clinical judgment should be used to determine if neonates above that threshold are stable enough to wean pharmacological treatment.
5.6.2 The LIP should assess neonates at least every twenty-four (24 hour) for the ability to wean.
5.6.3 To facilitate good communication RNs and LIPs should share their perspectives on the current clinical status of the neonate.
5.6.4 Decisions to wean pharmacologic treatment should primarily take place during daily rounds.
5.6.5 Follow the *Eat Sleep Console Morphine Wean Power Plan* as ordered by the LIP. (See Attachment 9.2)
5.6.6 After discontinuing Morphine, continue to perform ESC scoring every 3-4 hours with routine care for 24-48 hours, as per LIP order.
5.6.5.1 If neonate assessed as "NO" for one or more of ESC item, recheck in two (2) hours.
5.6.5.1.1 If neonate continues to assessed as "NO", notify the LIP to consider a rescue dose of morphine.
5.6.5.1.1.1 If the neonate needs several rescue doses, resume prior Morphine schedule
5.7 When all medication is discontinued continue to perform ESC scoring for 24-48 hours before discharging the neonate.

5.8 Discharge
5.8.1 A CARA Plan of Care will be developed and completed by Care Coordination prior to

discharge for all patients born with and identified as being affected by substance abuse or withdrawal symptoms resulting from prenatal drug exposure or fetal alcohol spectrum.

5.8.1.1 The completed CARA Plan of Care will be submitted via Open Beds/CARA platform.

5.8.2 It is recommended that discharge teaching should specifically include information about safe sleep practices. (See Reference 8.12)

5.8.3 It should also include that shaken baby syndrome is the most common trigger for abusive head trauma

6.0 DOCUMENTATION

6.1 Documentation in the infant's health record will include but is not limited to the following: (See Reference 8.13)

6.1.1 Eat Sleep Console scores (assessment and reassessment)
6.1.1.1 During downtime utilize the Eat Sleep Console Assessment Tool (See Reference 8.14)
6.1.2 Onset and signs of withdrawal
6.1.3 Non-pharmacologic interventions (time, type)
6.1.4 Pharmacologic interventions (time, dosage, route, side effects)
6.1.5 Response to nonpharmacological and pharmacologic interventions and weaning process
6.1.6 Family education, participation and understanding.

7.0 PATIENT/FAMILY EDUCATION

7.1 Parent and/or patient representative education will be documented in the patient's health record to include, but not limited to the following: (See Reference 8.9, 8.10, 8.15 & 8.16)

7.1.1 Explanation of Eat Sleep Console Scoring tool
7.1.2 Explanation on the Newborn Care Diary
7.1.3 Information regarding the reason for drug withdrawal
7.1.4 Signs and symptoms of withdrawal
7.1.5 Nonpharmacological and pharmacologic interventions the neonate may receive and ongoing assessment
7.1.6 Changes in the withdrawal management plan as they occur
7.1.7 Information for care of baby with NOWS
7.1.8 Encourage parents to participate in care and non-pharmacologic comfort measures.

8.0 REFERENCES

8.1 *Patient Caregiver*, SRDG Clinical policy # NS-C1.1016.

8.2 *Obstetrical Mother & Newborn Drug Screening*, SRD Clinical policy # MC-D1.1000.

8.3 *Patient Refusal of Treatment &/or Leaving LMA,* SRDH Clinical policy # OPD-A1.10.

8.4 Nevada State Legislature. *Abuse of controlled substance: Treatment authorized without consent of parent or guardian under certain circumstances*; NRS 129.050.

8.5 *Neonatal Intensive Care Units-Level II & Level III, SRDH Standards of Care.*

8.6 *Pediatrics,* SRDH Standards of Care.

8.7 *Maternal Child Center (MCC),* SRDH Standards of Care.

8.8 American Academy of Pediatrics and American Heart Association (AHA) (2021). *Text Book of Neonatal Resuscitation Text Book* (8th ed.).

8.9 *Eat Sleep Console (ESC) Newborn Diary,* SRD form # SRD-131.

8.10 *What to Expect When Your Baby is Going Through Neonatal Opiate Withdrawal*, SRD form # XRX-1487.

8.11 *Kangaroo Care in the NICU,* SRDH Clinical policy # NC-k11.300.

8.12 *Baby Safe Sleep Program,* SRDH Clinical policy # MC-B2.900.

8.13 *Documentation of Patient Care,* SRDH Clinical policy # NS-C1.1016.

8.14 *Eat, Sleep, Console Assessment Tool*, SRD forms # S2074.

8.15 Interdisciplinary Patient & Family Education, SRDH Clinical policy # OPD-I9.55.

8.16 A Parent's Guide to Eat, Sleep, Console Brochure, SRD form XRX-1461.

9.0 ATTACHMENTS

9.1 Eat Sleep Console Clinical Pathway, Attachment A

9.2 Morphine Treatment for NOWS

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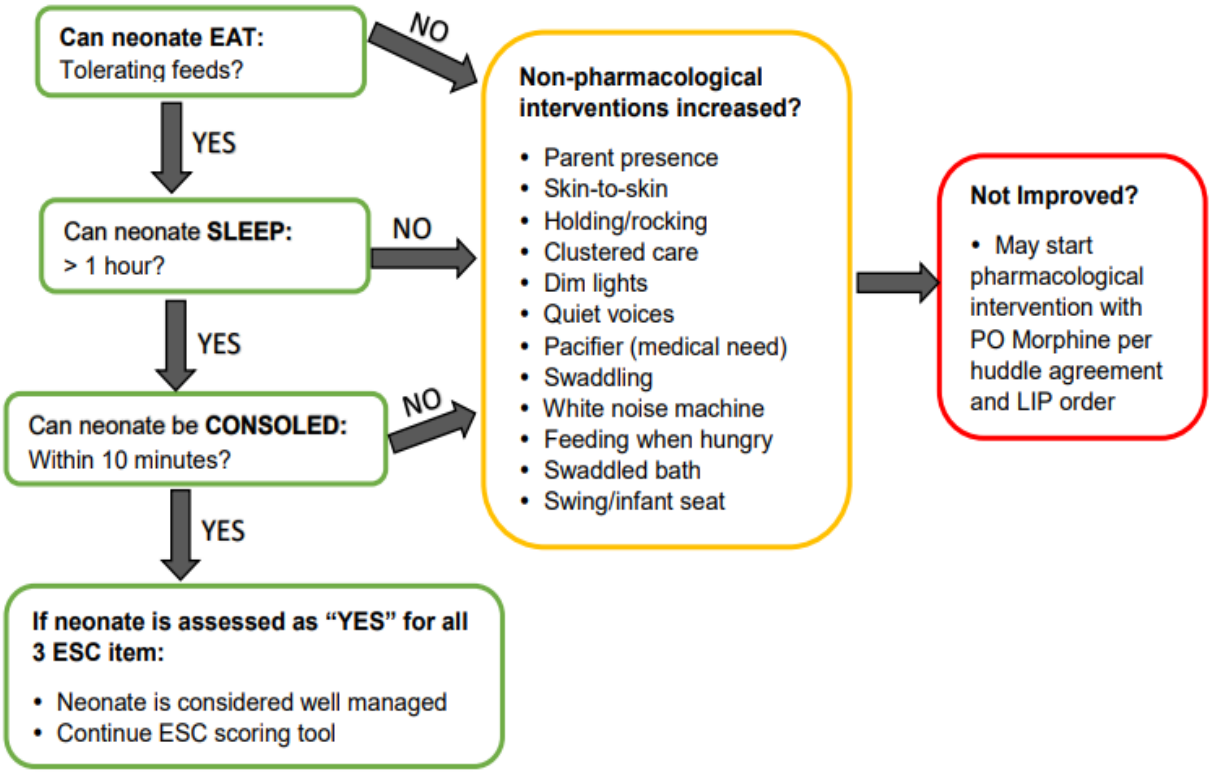
Author/Owner: NICU/PEDS/MCC

APPENDIX A:

Dignity Health.
St. Rose Dominican

Attachment A

EAT SLEEP CONSOLE CLINICAL PATHWAY



APPENDIX B:

Dignity Health. St. Rose Dominican

Attachment B

Morphine Treatment for NOWS

(Use birthweight for all Morphine dosing)