

IN-PATIENT PEDIATRIC REHABILITATION

Neonatal Abstinence Syndrome Program

Carissa H. Snelling, MS, OTR/L, BCP
Erika Herzer, PT, DPT, PCS, CBIS

April 2017



CHARACTERISTICS OF NAS

Drug(s)	Symptoms of Withdrawal
Opioids	Hyperirritability, GI dysfunctions, tremors, high-pitched cry, hypertonia, seizures, nasal congestion, hyperthermia, tachypnea
Cocaine	No significant withdrawal symptoms
Benzodiazepines	Few infants have withdrawal syndrome
Cannabis	Jitteriness, tremors, impaired sleeping
Alcohol	Hyperactivity, central nervous system dysfunction, fetal alcohol syndrome, jitteriness, irritability, hyperreflexia, hypertonia, poor suck, tremors, seizures, poor sleep patterns, hyperphagia, diaphoresis
Selective Serotonin Reuptake Inhibitors (SSRIs)	Jitteriness, respiratory distress, sleep disturbance

THERAPEUTIC WEANING

- Pharmacological interventions to slowly and safely decrease dependence on opioids
- Methodical dosage tapering based on signs and symptoms of withdrawal
- Methadone frequently used for opioid dependence
- Dependent upon objective and thorough assessments

“Non-pharmacological therapy should be the standard of care, regardless of the additional need for medication therapy” (Jansson, Velez, & Harrow, 2009)



NAS SCORING AND TREATMENT FORM

- Evidence-based objective assessment tool
 - Adapted from Finnegan (1975) and Jansson, Velez, & Harrow (2009)
- Responsibility of all staff to assess



NAS SCORING FORM: Signs & Symptoms

Excessive
Crying

Difficulty
Sleeping

Moro Reflex

Tremors

Increased
Muscle Tone

Excoriation

Hyperthermia

Yawning

Tachypnea

Poor Feeding

Vomiting

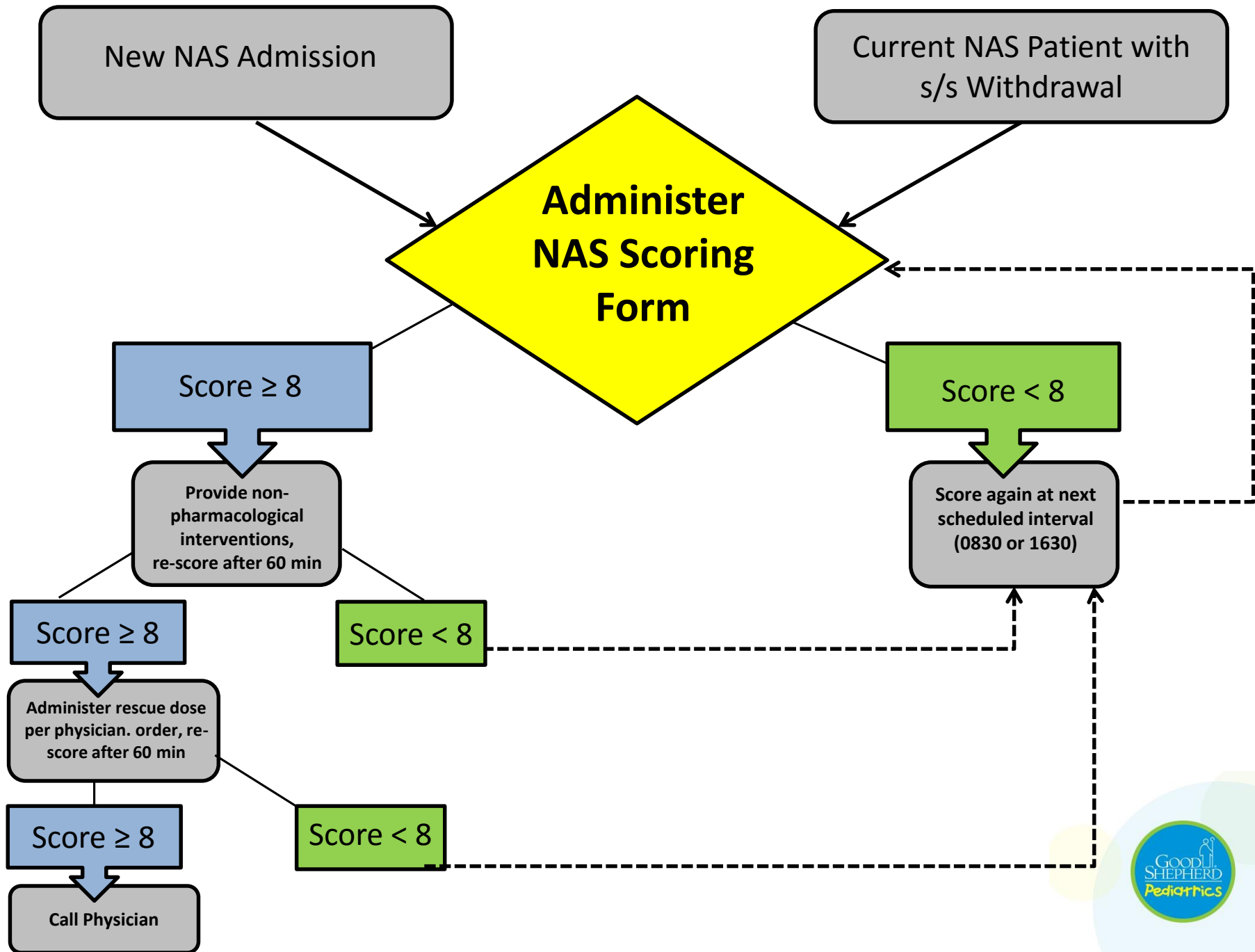
Loose Stools

Dysregulation



**GOOD SHEPHERD INPATIENT PEDIATRIC UNIT
NEONATAL ABSTINENCE SYNDROME
SCORING AND TREATMENT FORM**

SIGNS AND SYMPTOMS**	SCORE	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/	DATE/
		TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME	TIME
Excessive cry, difficult to console	2													
Excessive cry, inconsolable with comfort measures	3													
Sleeps < 3 hours after feeding	1													
Sleeps < 2 hours after feeding	2													
Sleeps < 1 hour after feeding	3													
Hyperactive Moro reflex	1													
Markedly hyperactive Moro reflex	2													
Mild tremors when disturbed	1													
Moderate-severe tremors when disturbed	2													
Muscle tone: Increased motor resistance with gentle handling	1													
Muscle tone: Increased tone is visible without handling	2													
Excitation: skin red, intact/healing from uncontrolled movement	1													
Excitation: skin broken from uncontrolled movement	2													
Hyperthermia > 100°F or 37.5°C (temporal artery)	1													
Frequent yawning	1													
Sweating	1													
Nasal stuffiness	1													
Sneezing	1													
Tachypnea (respiratory rate > 60/min)	1													
Poor Feeding	1													
Vomiting	1													
Loose stools	1													
Dysregulation/irritability: minor, regulates with intervention	1													
Dysregulation/irritability: moderate, regulates with intervention after time	2													
Dysregulation/irritability: severe, does not regulate with intervention	3													
TOTAL SCORE														
INITIALS														



NON-PHARMACOLOGIC INTERVENTIONS

Swaddling

Breastfeeding

Rooming in

Natural light

Low noise

Gentle holding

Pacifier use

Clustered care

Supervised tummy time

Gentle swinging

Soft white noise

Infant massage

Benefits of In-Patient Rehab

- Low stimulation, developmentally supportive environment
- Opportunities for private room, rooming in
- Therapy provided 3 hours/day, 6 days/week
- Goal: Safe, successful transition to home, community

- Nurse to patient ratio adjusted based on acuity
- Volunteer Cuddle Program
- Advanced notice of admission
- Diverse case mix

Neonatal Abstinence Program: Case Study

Patient* & Reason for Admission	Condition Upon Referral	Condition Upon Discharge	Alternative Scenario without Inpatient Rehab
<p>“Brooke”, 2 mos – Born at 41 weeks GA</p> <p>Born addicted to drugs as a result of an addicted mother</p> <p>2 prior admits to acute care hospital and multiple ER visits with severe withdrawal symptoms.</p>	<ul style="list-style-type: none"> • Opioid dependent • Liquid stools • Oral thrush • Rash on neck • Frequent sneezing • Poor oral intake • Severe irritability and inability to calm 	<ul style="list-style-type: none"> • 100% oral feeding • 100% weaned off all opioids • Tolerating handling and bonding 	<ul style="list-style-type: none"> • Avoided additional costly NICU days (\$3500/day) • No in-home nursing services • Likely ER visits, hospital readmissions • Leveraged EI services to monitor development; outpatient therapy services

*Names changed

Neonatal Abstinence Program: Case Study

Patient* & Reason for Admission	Condition Upon Referral	Condition Upon Discharge	Alternative Scenario without Inpatient Rehab
<p>“Sven”, 3.5 weeks – Born at 42 weeks GA</p> <p>Born to mother taking Methadone, Geodon, Lexapro, Valium</p> <p>Admitted after prolonged NICU stay and unsuccessful transition to oral feeding</p>	<ul style="list-style-type: none"> • Opioid dependent • 100% NG tube dependent • No rooting/sucking reflex • Rash on face • Jittery • Increased muscle tone • Severe irritability and inability to calm 	<ul style="list-style-type: none"> • 100% oral feeding • 100% weaned off all opioids • Tolerating handling, bonding, social interaction 	<ul style="list-style-type: none"> • Avoided additional costly NICU days (\$3500/day) • No in-home nursing services • Likely ER visits, hospital readmissions • Leveraged EI services to monitor development; outpatient therapy services • No supplemental tube feeding costs

*Names changed

To Make a Referral:

Contact Our

Nurse Liaison,

Brenda Early

484-788-5492

BEarly@gsrh.org



REFERENCES

- Finnegan L., Connaughton, J., Kron, R., & Emich, J. (1975). Neonatal abstinence syndrome: Assessment and management. *Addictive Diseases*, 2, 141-158.
- Hockenberry, M. J. & Wilson, D. (2011). *Wong's Nursing Care of Infants and Children*, 9th ed. St. Louis, MO: Elsevier
- Jansson, L. M., Velez, M., & Harrow, C. (2009). The opioid exposed newborn: Assessment and pharmacologic management. *Journal of Opioid Management*, 5(1), 47-55.
- MacMullen, N. J., Dulski, L. A., & Blobaum, P. (2014). Evidence-based interventions for neonatal abstinence syndrome. *Pediatric Nursing*, 40(4), 165-203.
- Murphy-Oikenen, J., Brownlee, K., Montelpare, W., Gerlach, K. (September/October, 2010).
The experiences of NICU nurses in caring for infants with neonatal abstinence syndrome. *Neonatal Network*, 29 (5), 307-313
- Sublett, J. (2013). Neonatal abstinence syndrome: Therapeutic interventions. *The American Journal of Maternal/Child Nursing*, 38(2), 102-107.

