

# Mother & Baby Substance Exposure Toolkit Best Practices

Best Practice No. 16

A part of the California Medication Assisted Treatment Expansion Project

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# Implement a non-pharmacologic NAS bundle of care for medical staff and parents to follow

Best Practice No. 16

Nursery/NICU and Treatment

## Overview

Implement a non-pharmacologic NAS bundle of care for medical staff and parents to follow.

## Why we are recommending this best practice

A non-pharmacologic bundle of care for NAS will help to prioritize non-pharmacologic interventions over medication, may reduce the length of stay, and will keep staff and parents aligned on the care being provided to the newborn.

## Strategies for Implementation

Collaborate with nursing and health care teams to develop a written guideline with a bundle of care that is specific for your unit. An example of a non-pharmacologic bundle of care for NAS would be:

- **Parent/caregiver contact:** Emphasize parental presence at the bedside, the importance of skin-to-skin/holding the newborn, swaddling with the newborn's hands near the mouth, and non-nutritive sucking/pacifier use. Consider a volunteer cuddler when a parent or caregiver is unavailable.
- **Environment:** Establish an environment that is quiet with low lighting, limit the number of visitors, avoid excessive handling, encourage only one stimulus at a time (e.g., do not walk or sway while feeding). Swinging is okay but should be stopped if the newborn is overstimulated.
- **Nursing care:** Cluster nursing assessments and interventions at times when the newborn is awake.

- **Feeding:** Feed on-demand; encourage breastfeeding and lactation consultation if eligible (breastfeeding while the mother is on methadone or buprenorphine treatment as part of a program is okay); prioritize feeding consult if bottle feeding; and if formula feeding, consider reduced lactose or partially hydrolyzed lactose (not evidence-based) and consider 22 kcal/oz after day 2-3 if there is poor weight gain (loss of >10% of birthweight or not back to birthweight by 7 days of life).
  - Determine contraindications for maternal breastfeeding by unit for consistency. There are no medical contraindications to breastfeeding based on maternal methadone (prescribed as part of a treatment program), buprenorphine, or short-term low-dose prescription opioid use alone. The concentrations of methadone that can be found in human milk are low, and women on stable doses of methadone maintenance should be encouraged to breastfeed regardless of maternal methadone dose if they are in a treatment program. Buprenorphine has low levels in breastmilk and poor oral bioavailability in newborns.
  - Use breastmilk when not contraindicated to reduce the severity of NAS and to minimize the need for pharmacologic exposure. Ensure a mother eligible for breastmilk use has a lactation consultation, access to a breast pump, and adequate instructions for its use.
  - Feed based on hunger cues/ad lib (usually q2-3 hours), if medically appropriate.
  - Anticipate possible increased caloric needs.
  - Rule out non-NAS causes of poor feeding including transitional sleepiness or frequent spit-ups in the first 24 hours of life, poor latch due to newborn/maternal anatomic factors or immature gestational age, and physiologic cluster feeding.
  
- **Skin:** Practice proactive prevention of diaper dermatitis and skin breakdown. Start diaper/barrier creams on day one and treat other areas of skin excoriation due to newborn tremors promptly.
  - Frequent stools increase the risk of perianal breakdown. This can be prevented by:
    - Starting diaper creams/barrier creams on day one
    - Frequent diaper changes
    - Liberal application of emollients and/or moisturizers
    - Careful assessment with each diaper change
  - Excoriation from tremors is most common on the extremities, face, chin, knees, and gluteal folds.
    - Applying a medical dressing over the knees and other body surfaces that are being rubbed can be protective.
    - Using mittens to decrease scratching can also be helpful.
    - Avoid friction with cleansing. Do not use harsh wipes.
    - Use only water for cleansing; a sitz bottle works well.

- Use gentle patting to dry.
- Apply a no-sting barrier to areas of skin breakdown.
- Apply a skin protectant to areas of skin breakdown.
- Leave areas of skin breakdown open to air as much as possible.
- Treat areas of breakdown for at least 24 hours.
- Teach parents proper skin care techniques.



## Baby M

Baby M is now 24 hours old and is being assessed for withdrawal based on functional impairment (his ability to eat, sleep, and be consoled within set periods of time). The hospital has recently implemented this system in place of the traditional Finnegan score assessment, and the staff has found that fewer newborns need medication and many are able to go home sooner. A nurse performs the assessment after Baby M awakes and is concerned because he slept less than an hour and has high-pitched cries. However, Kayla is able to breastfeed, and Baby M is calmer after feeding. The nurse is pleased that Baby M was adequately consoled. She talks to Kayla about keeping Baby M calm by decreasing environmental stimulation with low light, fewer visitors, and low sound. She also shows Kayla various techniques of how to console Baby M such as speaking to him softly, bringing his hands to his mouth, bringing his flexed arms and legs to the center of his body, placing him skin-to-skin or swaddling him, gently rocking him, giving him a pacifier, or feeding him if he shows hunger cues. The nurse talks to the charge nurse and moves Kayla and Baby M to a single room in the postpartum unit to minimize environmental stimulation.

## Resources

1. PQCNC and MAiN resources under pharmacological section.
2. ILPQC Newborn Care Diary.
3. Ohio Perinatal Quality Collaborative Provider Resources.
4. Ohio Collaborative Crib Card.
5. NeoQIC Resources for Hospitals.

## References

1. Welle-Strand GK, Skurtveit S, Jansson LM, Bakstad B, Bjarko L, Ravndal E. Breastfeeding reduces the need for withdrawal treatment in opioid-

- exposed infants. *Acta paediatrica* (Oslo, Norway : 1992). 2013;102(11):1060-1066.
2. Grossman MR, Berkwitt AK, Osborn RR, et al. An Initiative to Improve the Quality of Care of Infants With Neonatal Abstinence Syndrome. *Pediatrics*. 2017;139(6).
  3. Wachman EM, Grossman M, Schiff DM, et al. Quality improvement initiative to improve inpatient outcomes for Neonatal Abstinence Syndrome. *J Perinatol*. 2018;38(8):1114-1122.
  4. Wiles JR, Isemann B, Ward LP, Vinks AA, Akinbi H. Current management of neonatal abstinence syndrome secondary to intrauterine opioid exposure. *J Pediatr*. 2014;165(3):440-446. doi:10.1016/j.jpeds.2014.05.010.
  5. Abdel-Latif ME, Pinner J, Clews S, Cooke F, Lui K, Oei J. Effects of breast milk on the severity and outcome of neonatal abstinence syndrome among infants of drug-dependent mothers. *Pediatrics*. 2006;117(6):e1163-1169.
  6. Jansson, L, Choo R, Melez M, et al. Methadone maintenance and breast feeding in the neonatal period. *Pediatrics*. 2008;121:106-114.
  7. Reece-Stremtan S, Marinelli KA. ABM clinical protocol #21: Guidelines for breastfeeding and substance use or substance use disorder. *Breastfeed Med*. 2015;10(3):135-41. Buprenorphine. *Drugs and Lactation Database (LactMed)*.
  8. Buprenorphine. *Drugs and Lactation Database (LactMed)*. <https://www.ncbi.nlm.nih.gov/books/NBK501202/>. Accessed December 19, 2019.
  9. McQueen K, Taylor C, Murphy-Oikonen J. Systematic review of newborn feeding method and outcomes related to Neonatal Abstinence Syndrome. *J Obstet Gynecol Neonatal Nurs*. 2019;48(4):398-407.
  10. Wu D, Carre C. The impact of breastfeeding on health outcomes for infants diagnosed with Neonatal Abstinence Syndrome: A review. *Cureus* 2018;10(7):e3061.

## Alexandra Iacob

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Dr. Alexandra Iacob is a Neonatal-Perinatal Fellow at University of California, Irvine (UCI) based out of UCI Medical Center and Miller Children's and Women's Hospital Long Beach. While in fellowship, she is also pursuing a Master in Public Health at Johns Hopkins University. She is passionate about improving neonatal outcomes across all socioeconomic classes via both quality improvement projects and policy efforts. She is particularly interested in neonatal abstinence syndrome and the impact it has on the mother, the baby, and the family as a whole.

## Angela Huang

MPH, RNC-NIC

Angela Huang is a clinical nurse in the Neonatal Intensive Care Unit at Santa Clara Valley Medical Center, where she is also a nurse coordinator managing and leading quality improvement and research projects. She is actively involved in hospital-wide and county-wide opioid use reduction initiatives, specifically outcome improvement for mother/infant dyads with a history of substance use and exposure. Angela is also the co-chair for the CPQCC Maternal Substance Exposures Workgroup which is assessing the statewide scope of NAS and NAS management practices.

## Kathryn Ponder

MD, MMS

Dr. Ponder is a neonatologist with East Bay Newborn Specialists, working in the neonatal intensive care units at the UCSF Benioff Children's Oakland, John Muir Walnut Creek, and Alta Bates hospitals. She is also the director of the John Muir High Risk Infant Follow-Up clinic. She has revised her practice's guidelines for the care of infants with Neonatal Abstinence Syndrome and is leading a quality improvement initiative at John Muir to implement these changes. She has previously conducted research and published in the fields of developmental/placental biology and maternal health. She continues to be interested in the developmental origins of disease and optimizing neurodevelopmental outcomes for infants.

## Lisa Chyi

MD

Dr. Lisa Chyi is a practicing neonatologist at Kaiser Walnut Creek. She is co-chair for the CPQCC Maternal Substance Exposures Workgroup which is assessing the statewide scope of NAS and NAS management practices. She also helped develop the NAS management guideline and oversees NAS patient care for the Kaiser Northern California region.

## **Pamela Aron-Johnson**

RN

Pamela has been at UCI Medical Center in Irvine, California for 35 years in several roles including staff nurse in the NICU for 17 years, Outpatient Nurse Manager for Primary and Specialty Services, and currently the Quality and Patient Safety Advisor for the NICU and OB departments. She is also a member of the Data Committee Advisory Group for CPQCC, and is the data nurse coordinator at UCI for both CPQCC and CMQCC.

## **Priya Jegatheesan**

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Dr. Priya Jegatheesan is the Chief of Newborn Medicine and the Regional NICU Director for Santa Clara Valley Medical Center in San Jose, California, an institution committed to the medically underserved. Her main area of interest is outcomes and data-driven quality improvement. She established a comprehensive computerized database system in the SCVMC NICU that enables prospective data collection for quality improvement and research. She also actively participates in CPQCC's Perinatal Quality Improvement Panel and chaired the QI infrastructure sub-committee for 2 years. She became a member of the Society for Pediatric Research in 2014 and has actively participated in clinical research. She is currently the study site Principal Investigator for a NIH funded multi-center study evaluating ondansetron (5HT3 antagonist) for prevention of neonatal abstinence syndrome in newborns born to mothers who had chronic opioid use during pregnancy. She is a passionate champion for optimizing care of newborns exposed to substances during pregnancy to prevent neonatal abstinence syndrome by promoting mother-infant couplet care.