

# Mother & Baby Substance Exposure Toolkit

## Best Practice No. 24

A part of the California Medication Assisted Treatment Expansion Project

This version was published on 2020-09-03

# Establish a pharmacotherapy weaning protocol

Best Practice No. 24

Nursery/NICU and Treatment

## Overview

Hospitals should establish a clear weaning protocol for all potential pharmacotherapy treatments of neonatal abstinence syndrome (NAS) rather than relying on individual approaches that are likely to yield patient outcomes and experiences that are highly variable.

## Why we are recommending this best practice

Regardless of the treatment opioid chosen, newborns receiving protocol-based weans experience a significantly shorter duration of opioid treatment (17.7 vs. 32.1 days,  $P < .0001$ ) and shorter hospital stay (22.7 vs. 32.1 days,  $P = .004$ ).

## Strategies for Implementation

Collaborate with members of the care team to establish an acceptable weaning protocol for all pharmacologic therapies for NAS. Some hospitals may consider weaning opioid doses q24-48 hours if meeting criteria; others may wean as rapidly as 10% up to three times a day.

## Special Consideration

We do not recommend routine discharge of newborns while still weaning pharmacotherapy due to the evidence for longer length of pharmacotherapy exposure associated with this practice. However, we recognize that this strategy may be utilized in specific situations in which a well-established structure between the discharging hospital and the community PCP exists for close monitoring, strict follow-up criteria and prescription tracking are used, and the family is deemed reliable to follow-up.

While discharging home on outpatient pharmacotherapy decreases the initial hospital length of stay, outpatient NAS pharmacotherapy has been associated with longer length of treatment (60 vs. 19 days) and higher rates of emergency department utilization within 6 months of discharge compared to infants treated exclusively as inpatients.

### References

1. Maalouf FI, Cooper WO, Slaughter JC, Dudley J, Patrick SW. Outpatient pharmacotherapy for neonatal abstinence syndrome. *J Pediatr* 2018;199:151-157. <https://www.ncbi.nlm.nih.gov/pubmed/29754866>.
2. Lai A, Philpot P, Boucher J, Meyer A. An outpatient methadone weaning program by a neonatal intensive care unit for neonatal abstinence syndrome. *Popul Health Manag* 2017 Oct;20(5):397-401. <https://www.ncbi.nlm.nih.gov.laneproxy.stanford.edu/pubmed/28430046#>.

## References

1. Hall ES, Wexelblatt SL, Crowley M, et al. A multicenter cohort study of treatments and hospital outcomes in neonatal abstinence syndrome. *Pediatrics*. 2014;134(2):e527-534.
2. Hall ES, Wexelblatt SL, Crowley M, et al. Implementation of a neonatal abstinence syndrome weaning protocol: a multicenter cohort Study. *Pediatrics*. 2015;136(4):e803-810.
3. 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).
4. Maalouf FI, Cooper WO, Slaughter JC, Dudley J, Patrick SW. Outpatient pharmacotherapy for neonatal abstinence syndrome. *J Pediatr* 2018;199:151-157. <https://www.ncbi.nlm.nih.gov/pubmed/29754866>.
5. Lai A, Philpot P, Boucher J, Meyer A. An outpatient methadone weaning program by a neonatal intensive care unit for neonatal abstinence syndrome. *Popul Health Manag*. 2017 Oct;20(5):397-401. <https://www.ncbi.nlm.nih.gov/pubmed/28430046>.

### Alexandra Iacob

MD

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**

MD

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.