

Mother & Baby Substance Exposure Toolkit

Best Practice No. 23

A part of the California Medication Assisted Treatment Expansion Project

This version was published on 2020-09-04

Develop guidelines for inpatient monitoring of newborns receiving morphine, clonidine, or methadone pharmacotherapy prior to discharge

Best Practice No. 23

Nursery/NICU and Treatment

Overview

When morphine and/or clonidine are used for pharmacologic treatment in a newborn with neonatal abstinence syndrome (NAS), our consensus-based recommendation is that the newborn be monitored as an inpatient for a minimum of 48 hours after the last dose. A newborn treated with methadone, given the longer half-life, should be monitored as an inpatient for a minimum of 48–72 hours after the last dose of methadone is administered.

Why we are recommending this best practice

Medication clearance in newborns is variable. There are no well-established, evidence-based guidelines for duration of monitoring after pharmacotherapy cessation for NAS.

Strategies for Implementation

A recommended observation period after discontinuation of medication should be included in a hospital's written guidelines.

References

1. Pacifici GM. Metabolism and pharmacokinetics of morphine in neonates: a review. *Clinics*. 2016;71(8):474-480.
2. Saarenmaa E, Neuvonen PJ, Rosenberg P, Fellman V. Morphine clearance and effects in newborn infants in relation to gestational age. *Clin Pharmacol Ther*. 2000;68(2):160-166.
3. Lynn AM, Slattery JT. Morphine pharmacokinetics in early infancy. *Anesthesiology*. 1987;66(2):136-139.
4. 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.
5. Davis et al. Comparison of safety and efficacy of methadone vs morphine for treatment of neonatal abstinence syndrome: a randomized control trial. *JAMA Peds*. 2018;172(8).

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.