



# Neonatal Abstinence Syndrome:

# A Multidisciplinary Single-Center Improvement Project

iNICQ 2013 NAS Improvement Team

Beth Israel Deaconess Medical Center  
Boston, Massachusetts

## AIM

To improve the clinical care of babies with Neonatal Abstinence Syndrome (NAS) born at Beth Israel Deaconess Medical Center (BIDMC), and to enhance the support provided to their families

## SETTING

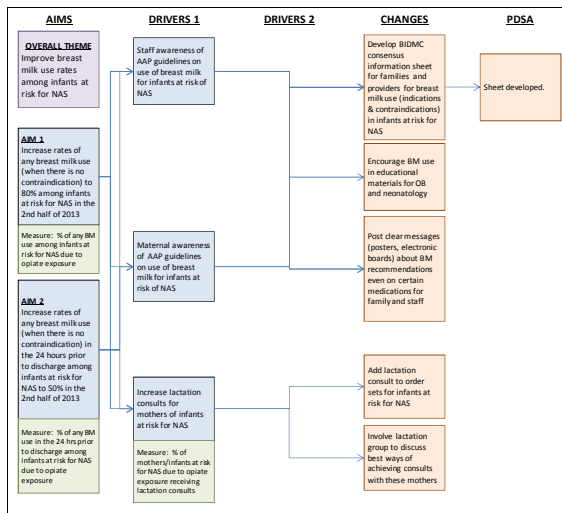
- BIDMC is a tertiary center in Boston, MA
- Approximately 4,800 deliveries per year
- NAS incidence at BIDMC in 2012 – 2013:
  - 2012 - 28 infants were identified with NAS (64% required treatment)
  - 2013 - 11 identified with NAS to date (82% required treatment)
- In the context of a broad initiative to improve the care of babies and families identified with and/or at risk for NAS, we joined the 2013 Vermont Oxford Network (VON) iNICQ quality improvement collaborative and the MA state subgroup
- We have assembled a 32-member multidisciplinary team that represent staff from the Newborn Nursery, Neonatal Intensive Care Unit (NICU), Labor and Delivery, and postpartum floors

## METHODS

- Through the use of prioritization matrix, our team identified 10 target areas for improvement, and selected 4 as focus areas for this project (bolded):
  - Term infants with NAS: scoring and management**
  - Preterm infants with NAS: scoring and management**
  - Breast-milk use in the NAS population**
  - Communication with families prior to delivery**
- Partnering with families in care of infants
- Consistency between obstetrics and neonatology
- Optimal service/location for infants with NAS
- Optimizing non-pharmacologic treatment of NAS
- Optimizing pharmacologic treatment of NAS
- Exploring impact of maternal SSRI use
- Four multidisciplinary teams assembled
- Each team used a step-wise approach to improvement:
  - Developed a SMART AIM to define the project
  - Developed a flow diagram to help understand current process
  - Developed a key driver diagram to structure project
  - Will use PDSA cycles to test and implement changes

## IMPROVEMENT PROJECTS

### BREASTFEEDING IN THE NAS POPULATION



### Neonatal Abstinence Syndrome (NAS) and Breastfeeding Information for Families and Providers

Questions regarding the safety of breastfeeding infants often arise when a mother is using medications or substances that can cause withdrawal or neonatal abstinence syndrome (NAS). The benefits of breastfeeding, however, may outweigh risks for infants with NAS.

When Breastfeeding can be supported. Information about long-term outcomes for infants exposed to medications/drugs in breast milk is limited and there may be negative effects of drug exposures. However, because of the known benefits of breast milk for infants and breastfeeding for mothers, with guidance we support breastfeeding for infants when mothers are on the following:

- Methadone as part of a drug treatment program
- Buprenorphine (e.g., Suboxone, Subutex) as part of a drug treatment program
- Benzodiazepines (e.g., clonazepam/lorazepam, etc.) (prescribed)
- Pain medications (prescribed)

When Breastfeeding is Discouraged. We discourage breastfeeding/providing breast milk for infants whose mothers have recently taken (within last 12 weeks) the following:

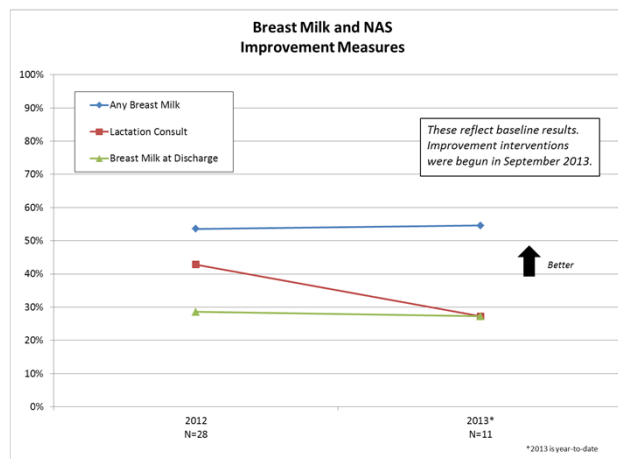
- Opiates/opioids not prescribed by a provider
- Heroin
- Cocaine
- Amphetamines (unprescribed)
- Phencyclidine (PCP)

Discussing the Benefits and Risks of Breastfeeding. We recommend that mothers and clinicians discuss the benefits and risks of breastfeeding whenever mothers are on medications or other substances.

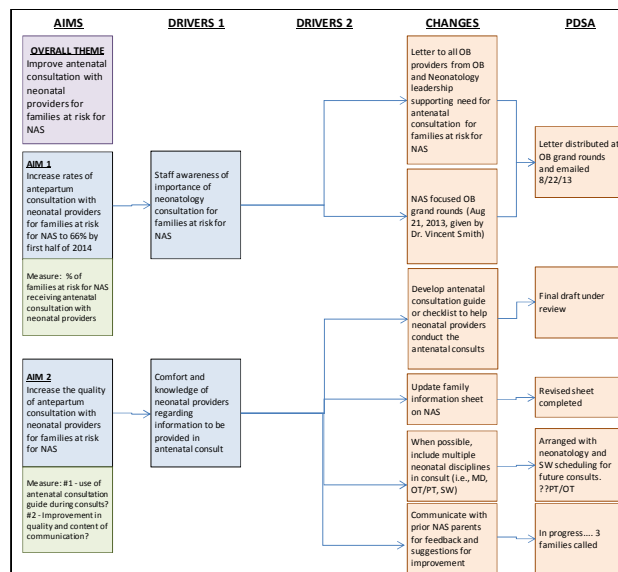
Ideally, this conversation will occur before delivery, and a mother wishes to breastfeed. We recommend that obstetricians offer parents a neonatology consultation as part of prenatal care if their infants will be at risk for NAS.

- If no consultation has occurred before delivery, and a mother wishes to breastfeed, we recommend that staff support the initiation of breastfeeding infants at risk for NAS if the following conditions are met:
  - mother is documented as HIV-negative. A rapid test can be sent if this has not been done during the antepartum.
  - or
  - there are no positive toxicology screens upon admission to labor and delivery or during the prior 12 week period for cocaine, heroin, unprescribed amphetamines, PCP or a non-prescribed opiate/opioid.

Breastfeeding while using other substances/medications is beyond the scope of this document. We recommend that mothers and providers discuss all substances/medications used during breastfeeding. This includes prescription and non-prescription medications, alcohol, other substances or a combination of medications. We recommend that all smoking mothers quit, if possible, or at a minimum reduce their intake of tobacco or other smoked substances.



### ANTENATAL FAMILY COMMUNICATION



### OTHER PROJECTS

Project	Measure	Status
Scoring and management of term infants with NAS	Staff education test score	In development
	% Staff observation of online NAS scoring video	In development
Scoring and management of preterm infants with NAS	Staff comfort with NAS scoring in preterm infants	In development
	Staff education test score	In development
	% Staff observation of online NAS scoring video	In development

### LESSONS LEARNED

- Many improvement opportunities identified within our care of infants and families impacted by NAS
- Prioritization matrix useful for selecting focus areas among list of potential improvement opportunities
- Multidisciplinary involvement in overall improvement team and in each specific project team vital
- Key driver diagrams key for organizing aims, measures, and potential changes → found as useful tool for keeping track of team progress

### NEXT STEPS

- Continue to refine existing process measures and key driver diagrams for all four projects
- Develop outcome and process measures for each key driver diagram
- Explore change concepts, identify potential changes
- Test changes using PDSA cycles
- Develop NAS binder that encompasses all of the materials relevant to assessment and management of NAS and have it available in all care areas
- Evaluate different scoring and education tools in order to improve consistency of management of NAS at BIDMC

### IMPROVEMENT TEAM:

Stacy Adamson (Physical Therapy), Brenda Baker (MD, OBGYN), Dara Brodsky (MD, Newborn), Rosanne Buck (NNP, NICU), Heather Burris (MD, Newborn), Connie Clauson (RN, NICU), Rachel Copertino (NNP, NICU), Dmitry Dukhovny (MD, Newborn), Greg Dumas (Pharmacy), Munish Gupta (MD, Newborn), Chanel Harding (RN, OB), Heena Lee (MD, Nursery), Jonathan Litt (MD, Newborn), Erin MacIntosh (Occupational Therapist), Melissa March (MD, OBGYN), Dori McLaughlin (RN, Nursery), Monica Mendiola (MD, OBGYN), Cindy Krug (RN, Nursery), Colleen O'Connell (RN, NICU), MaryAnn Ouellette (NP, Nursery), Elizabeth Oh (MD, Nursery), DeWayne Pursley (MD, Newborn), Mary Quinn (NNP, NICU), Susan Remy (Social Work), Patricia Severson (MD, Nursery), Elizabeth Schinkel (RN, NICU), Jane Smallcomb (RN, Perinatal Services), Vincent Smith (MD, Newborn), Kathy Spaine-Vella (RN, NICU), Gail Wolfsdorf (Social Work), Susan Young (RN, NICU)

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