Caring for Substance Exposed Newborns

Rachana Singh

*University of Massachusetts Medical School, Baystate Health*

Let us know how access to this document benefits you.

Follow this and additional works at: [https://escholarship.umassmed.edu/cts_retreat](https://escholarship.umassmed.edu/cts_retreat)

Part of the Maternal and Child Health Commons, Pediatrics Commons, Substance Abuse and Addiction Commons, Translational Medical Research Commons, and the Women's Health Commons

**Repository Citation**


**Creative Commons License**

This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 3.0 License](https://creativecommons.org/licenses/by-nc-sa/3.0/). This material is brought to you by eScholarship@UMassChan. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMassChan. For more information, please contact Lisa.Palmer@umassmed.edu.
Caring for Substance Exposed Newborns

Rachana Singh, MD MS
Associate Professor of Pediatrics,
UMMS-Baystate

Medical Director, ICU Nurseries
Division of Newborn Medicine
Department of Pediatrics
Disclosure

• I have no actual or potential conflict of interest in relation to this program/presentation
Objective

• To give a brief overview of NAS pathophysiology

• To understand evidence based approach to care for Substance Exposed Newborns (SENs)

• To understand parental role in care provision to SENs
Neonatal Abstinence Syndrome

• Complex disorder with a recognized constellation of behavioral and physiologic symptoms and signs following discontinuation of prolonged exposure to opiate agents or other substances

• Due to CNS hyper arousal during re-adaptation to the absence of the drug of dependence

• Infants are born with physiological drug-dependence and NOT drug-addicted
NAS: Incidence

• 2000 and 2009, the incidence of NAS among newborns increased from 1.20 to 3.39 per 1000 hospital births per year.

• Antepartum maternal opiate use also increased from 1.19 to 5.63 per 1000 hospital births per year.

• Mean hospital charges for discharges with NAS increased from $39,400 in 2000 to $53,400 in 2009.

NAS : Incidence - MA

Massachusetts average 17.2/1000
2009 National average 3.4/1000

Slide courtesy NeoQIC: Neonatal Quality Improvement Collaborative of Massachusetts
Pre-conception

Prenatal

Postnatal

Post discharge

Healthy Maternal-Infant Dyad
Pre-conception

• Current focus is on providing much needed prenatal care to pregnant women affected with substance use and improving pharmacological therapy for the infants with NAS

• Areas that need more focus and resources are programs geared towards pre-conception rehabilitation off drugs with potential for abuse and/or weaning off of MAT

• Greater awareness/education for women of child bearing age of the impact of prenatal exposure on their newborns not only due to NAS but potential long term neuro-developmental and behavioral outcomes
Prenatal Management

- Rehabilitation through Medically Assisted Treatment Programs (Methadone, Buprenorphine)
- Provision of safe living environment
- Consistent Prenatal care institution
- Counselling about smoking cessation (tobacco as well as marijuana)
- Prenatal consultation with the Pediatric/Neonatal team make families aware of potential for NAS and its management
- Familial awareness of their responsibilities and role in caring of their baby

Jones et al. Neonatal Abstinence Syndrome after Methadone or Buprenorphine exposure. NEJM 2010
ACOG: Committee Opinion 2012. Opioid Abuse, Dependence and Addiction in Pregnancy
Postnatal Management

- Guidelines for monitoring
- Non-Pharmacological
- Pharmacological
Non-Pharmacological Management

• Initial management for all infants with NAS should be supportive care
  – Immediate skin to skin care post-partum
  – Providing non-nutritive sucking - pacifiers
  – Swaddling
  – Reduction in stimuli - light, noise
  – Maintaining calm, quiet environment
  – Small, frequent feedings with hypercaloric breast milk and/or formula to meet the calorie requirement
  – Breastfeeding strongly recommended if mother is in stable MAT programs
Pharmacological Management

- If supportive care fails then the next level of care is pharmacotherapy.
- The goal of pharmacotherapy is to:
  - Ameliorate the discomfort from withdrawal
  - Promote growth
  - Prevent seizures
- The choice of therapy should be tailored to the maternal medications in pregnancy.
- Opioids are the mainstay for treatment.
- Adjunctive medications help shorten the overall treatment time with smaller doses of opioids needed to treat.
- Most of these require in hospital treatment.

Post-Discharge

• Referral and follow-up with Early Intervention as high risk for neurocognitive and behavioral impairment

• Frequent follow-up
  - to optimize growth and nutrition
  - to wean off medications if discharged home on them (Methadone, Phenobarbital)
  - to provide support to families as they transition from hospital to home environment

Bandstra et al, J Addict Ds 2010
McMurray et al, Front Psychol 2013
Pre-conception

1. Education starting at the school level
2. Awareness and acceptance in community
3. Resources availability in community
Prenatal

1. Establishing early prenatal care
2. MAT referrals
3. Consistent care providers
4. Support programs like EMPOWER, Moms Do Care, Peer Support
5. Prenatal consult and education
6. Parental readiness and role assignments
Postnatal

1. Initiation of Skin to skin care, breastfeeding
2. Rooming-in care
3. Protocols for monitoring and treatment
4. Parents as primary care giver models
5. Staff education and Buy-in
6. Social support to navigate legal issues
Post-Discharge

1. Early Intervention referral and initiation
2. Continued maternal and infant medical follow-ups
3. Continued community resources availability
4. Continued peer support
Average LOS
Infants Monitored/Scored for NAS

Number of Days

Jan-17  Feb-17  Mar-17  Apr-17

All  Full-term  Pre-term
Percentage of Babies Monitored/Scored for NAS Requiring Treatment

Jan-17 | Feb-17 | Mar-17 | Apr-17

- All: [Graph showing percentage]
- Full-term: [Graph showing percentage]
- Pre-term: [Graph showing percentage]
Average Duration of Pharmacotherapy

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-17</td>
<td>14</td>
</tr>
<tr>
<td>Feb-17</td>
<td>7</td>
</tr>
<tr>
<td>Mar-17</td>
<td>11.8</td>
</tr>
<tr>
<td>Apr-17</td>
<td>14.5</td>
</tr>
</tbody>
</table>
Breastfeeding Initiation and at Discharge

- BF Initiation
- BF at Discharge

Jan-17 | Feb-17 | Mar-17 | Apr-17

Percentages vary from 0% to 100% across the months.
Percentage of Infants Discharged Home to Biological Families

- Jan-17: 50%
- Feb-17: 60%
- Mar-17: 100%
- Apr-17: 57%*