Caring for Our Most Fragile Patients with Neonatal Abstinence Syndrome

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Purpose/Goal(s):
The purpose of this activity is to increase the understanding of the care needed for babies with NAS in the inpatient setting.

- Describe RI opioid crisis statistics and NAS statistics and its impact
- Describe and identify problems in NAS programs
- Describe the process of implementation of the NAS program at WIHRI
- Examine data that compares past and present state of NAS program at WIHRI
- Examine the meaning of family-centered care and how it impacts and drives a program in a positive direction
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Women & Infants Hospital of RI
Providence, Rhode Island
April 25, 2019
Women and Infants

• Specialty hospital providing primarily Obstetrical and Gynecologic care

• Pediatric services provided are Newborn Nursery and Neonatal Intensive Care Unit

• 62% of Payer Mix is either Self Pay or Medicaid/Medicare Health Plans
NAS:
Neonatal Abstinence Syndrome
NAS: Neonatal Abstinence Syndrome

- The clinical manifestation of abrupt opioid discontinuation in infants
- Causes autonomic instability and neuroendocrine dysfunction
Neonatal abstinence syndrome

- Corticotrophin increase
  - Increased stress
  - Hyperphagia

- Serotonin decrease
  - Sleep deprivation
  - Sleep fragmentation

- Noradrenaline increase
  - Hyperthermia
  - Hypertension
  - Tremors
  - Tachycardia

- Dopamine decrease
  - Hyperreactivity
  - Anxiety

- Acetylcholine increase
  - Diarrhea
  - Vomiting
  - Yawning
  - Sneezing
  - Sweating

- Lack of opioids in chronically stimulated receptors
  - Super activation of adenyl cyclase
  - Increased cyclic adenosine monophosphate
  - Increased protein kinase
  - Increased transcription factors
  - Increased release of neurotransmitters

- Other receptor activity increase
  - Hyperalgesia
  - Allodynia
Neonatal Abstinence Syndrome

- Treatment of Neonatal Abstinence Syndrome is different than the treatment of Addiction
- Addiction treatment has two objectives
  1. Physical Dependence
  2. Behavior Modification
- The objective of NAS treatment is to mitigate the infant’s physical dependence to opioids.
Rhode Island’s Opioid Crisis
Rhode Island Opioid Crisis: STATISTICS

- Drug overdoses in Rhode Island are a public health crisis. The number of deaths are increasing.
- RI ranks 7th in the nation in overdose deaths from prescription drugs (RI DOH, 2015)

[Graph showing monthly accidental drug-related overdose deaths from 2013 to 2017]

Number of Deaths

Month/Year

Deaths Trend Data for the most recent 3 months are...
NAS Statistics in Rhode Island

• Every 25 minutes a baby is born with opiate dependence a 5 fold increase since 2000 (Patrick et al, 2015)

• NAS rates in RI have more than doubled in the last decade
  2005  44/10,000 births
  2010  56/10,000 births
  2015  95/10,000 births

• 97% of the opioid exposed infants born in 2015 were born at Women & Infants

• 98% were managed in the Newborn Nursery

• The average charge is $70,506 / infant; regionally average is $93,815 / infant
Patient Story: Baby M

• Born February 2016

• Involved parents; Both in methadone programs

• Total stay was 38 Days

• Total morphine need was
  • 50.6 mg total
  • 18.7 mg a day
  • 2.3 mg /kg/ dose

• Stayed on 4 different hospital units
Problem Identification

• Poor Communication
  • Healthcare Provider to Healthcare Provider
  • Healthcare Provider to Family

• No Central Treatment Location / Continuity of Nursing Staff

• Reduced focus on Discharge

• Flexibility with Protocol “Provider Preference”

• Inconsistency with Rounding

• Families Felt Powerless
The Journey Begins

Act → Plan → Study → Do
Develop a new model of care for babies with NAS

1. Centralize our Care
2. Improve Communication Between the Family and Team
3. Create Structure
4. Empower our Patient’s Family
5. Discharge Begins on Admission
Centralize the Location of Care
Centralize Location of Care

- NAS Task Force initiated
- Model of care changed from a boarder nursery to a family centered approach with a centralized location
- Developed a criteria for family boarding
Centralize Location of Care

- Education and support for the nursing staff is ongoing
- Developed a “Cuddler” program
- First line of therapy for babies with NAS is non-pharmacologic, with clustered supportive care
- Care is a team approach; parents included every step of the way
Improve Communication

“I get 6 different messages from 4 different people”
Team Communication

- Expanded the team to including all stakeholders
- Rebrand the team “Family Care Team”
Family Care Rounds
Family Care Rounds

- Family Care Rounds Start Every Day at 13:30
- Conducted in the Patient Room with the entire team
- Family responsible to update team about previous 24 hours
- Date of Discharge is discussed everyday
Implementation
Implementation

- May 2016 we went live with our Family Centered Care Model
- Babies kept in the room with the mother
- Nursing and Family partnered to assign NAS Scores
- Families were informed of our new model during prenatal consults
Comparison

Pre-intervention
05/2015-04/2016

8,220 Discharges from Nursery

89 NAS Babies

16 Exclusive Methadone Babies

Intervention
05/2016-04/2017

7644 Discharges from Nursery

71 NAS Babies

20 Exclusive Methadone Babies

4/25/2019
### Length of Stay

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<th>Post</th>
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**Graph:**
- **Green:** Mean prior to intervention
- **Blue:** Mean after intervention

**Graph Notes:**
- Data points represent the number of days over time from 28-May-2015 to 27-Apr-2017.
**Length of Treatment**

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<table>
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<tr>
<td>7.06</td>
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Future Direction

• Through our Family Centered Care we have seen a reduction in length of stay, length of treatment, and total doses of morphine needed.
Participants are encouraged to ask questions and share comments.

- Please submit any questions or comments via the chat box in the lower left corner of your screen.
- Questions and comments are visible only to presenters.
- Questions will be answered in the order they are received.
Thank You For Attending

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