

Background

- Opioid use in pregnant women contributes to neonatal abstinence syndrome (NAS) and postnatal opioid exposure
- Nonpharmacologic interventions such as swaddling, pacifiers, low simulation, and low lights reduce infant withdrawal symptoms
- At a large Midwest hospital infants are currently assessed for withdrawal symptoms and managed by giving opioids
- Little attention is paid to nonpharmacologic interventions
- Eat Sleep Console* is an evidence-based protocol that uses nonpharmacologic interventions before giving opioids to manage withdrawal
- A culture shift away from giving opioids prior to the use of nonpharmacologic interventions to eliminate symptoms of NAS is recommended
- Educating postpartum and neonatal intensive care unit (NICU) nurses on nonpharmacologic interventions as routine care is the first step in transitioning to the full *Eat Sleep Console* protocol

Purpose

- Educate nurses on the use of nonpharmacologic interventions to reduce symptoms in infants with neonatal abstinence syndrome

Outcome Objectives

- Increase nurses' use of nonpharmacologic interventions to manage neonatal drug withdrawal
- Reduce the number of opioid doses given to infants
- Reduce infant hospital length of stay

Framework

Rosswurm and Larrabee's Model for Evidence-based Practice



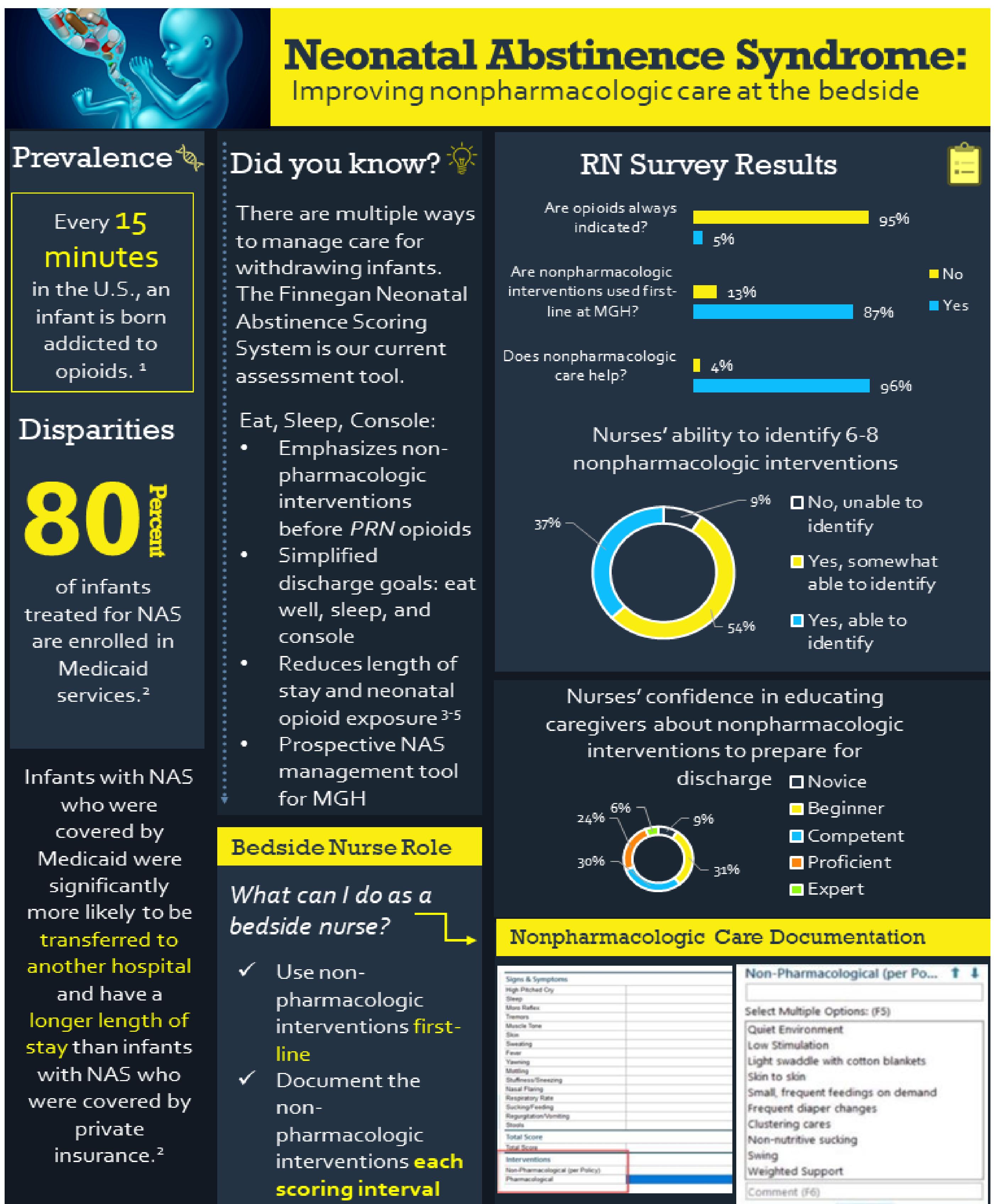
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Methods

Design

- A survey was used to identify gaps in nurses' knowledge of neonatal abstinence syndrome
- Survey results informed development of an educational poster
- Chart review for 17 infants pre-educational intervention and 17 post-educational intervention

Educational Poster Intervention



Setting and Participants

- Large Midwest hospital with 5,000 births annually
- 157 Postpartum and NICU nurses who care for withdrawing infants
- Infant inclusion criteria: inborn infants, ≥36 weeks gestation, known or suspected in utero drug exposure, hospitalized between January 1, 2020 and July 31, 2021

Methods, contd.

Measures

Nurse knowledge questionnaire

- 14-items, covering:
 - Neonatal abstinence prevalence, disparities, best practices, and current practices

Infant chart review

- Infant birth weight (g), birth gestation (days)
- The average number of nonpharmacologic interventions documented per 12-hour shift over length of stay
- The cumulative number of opioid doses that each infant received during their hospital stay
- Hospital length of stay (hours)

Procedures

- E-mailed electronic nurse knowledge questionnaire via Survey Monkey to 157 nurses with one month reminder to non-responders
- Developed educational poster to educate nurses on evidence-based NAS interventions and new process to document nonpharmacologic interventions
- E-mailed educational poster to 157 nurses and displayed poster on postpartum & NICU units
- Modified the EMR to include documentation of nonpharmacologic interventions
- Collected chart data by manually auditing each infant flowsheet within the EMR

Results

- 63% (99/157) of RNs responded to electronic nurse knowledge questionnaire

Infant Characteristics and Outcomes Pre- and Post- Educational Program(n=34)

| | Pre (n=17) | Post (n=17) | | |
|--|------------|----------------|---------|----------------|
| | M | [min.-max.] | M | [min.-max.] |
| Infant Characteristics | | | | |
| Birth Weight (g) | 3228 | [2000-4070] | 3235.88 | [2680-3830] |
| Birth Gestation (days) | 273.47 | [252-287] | 267.12 | [252-287] |
| Outcomes | | | | |
| Nonpharmacologic Interventions per 12-hour shift | 1.71 | [1.00-3.68] | 3.65 | [1.00-6.25] |
| Opioid Doses | | | | |
| Total Doses of Methadone | 2.24 | [0.00-38.00] | 1.06 | [0.00-18.00] |
| Total Doses of Morphine | 19.94 | [0.00-236.00] | 7.41 | [0.00-72.00] |
| Length of Stay (hours) | 212.44 | [53.18-775.32] | 158.07 | [45.98-446.42] |

- There was a statistically significant increase in the number of nonpharmacologic interventions per 12-hour shift ($p<0.001$)
- Additionally, there was a decrease in the number of opioid doses and length of stay

Conclusions

- Educating nurses and modifying the EMR to facilitate nonpharmacologic interventions shifts the management strategy toward nonpharmacologic interventions as first-line treatment for infants with neonatal abstinence syndrome
- Increasing nonpharmacologic interventions may reduce overall opioid doses infants with NAS receive while hospitalized and may reduce hospital length of stay
- The next step is to adopt *Eat Sleep Console* for withdrawing infants to further reduce neonatal opioid exposure