

Background

- Opioid use in pregnant women contributes to neonatal abstinence syndrome (NAS) and postnatal opioid exposure
- Nonpharmacologic interventions such as swaddling, pacifiers, low stimulation, 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

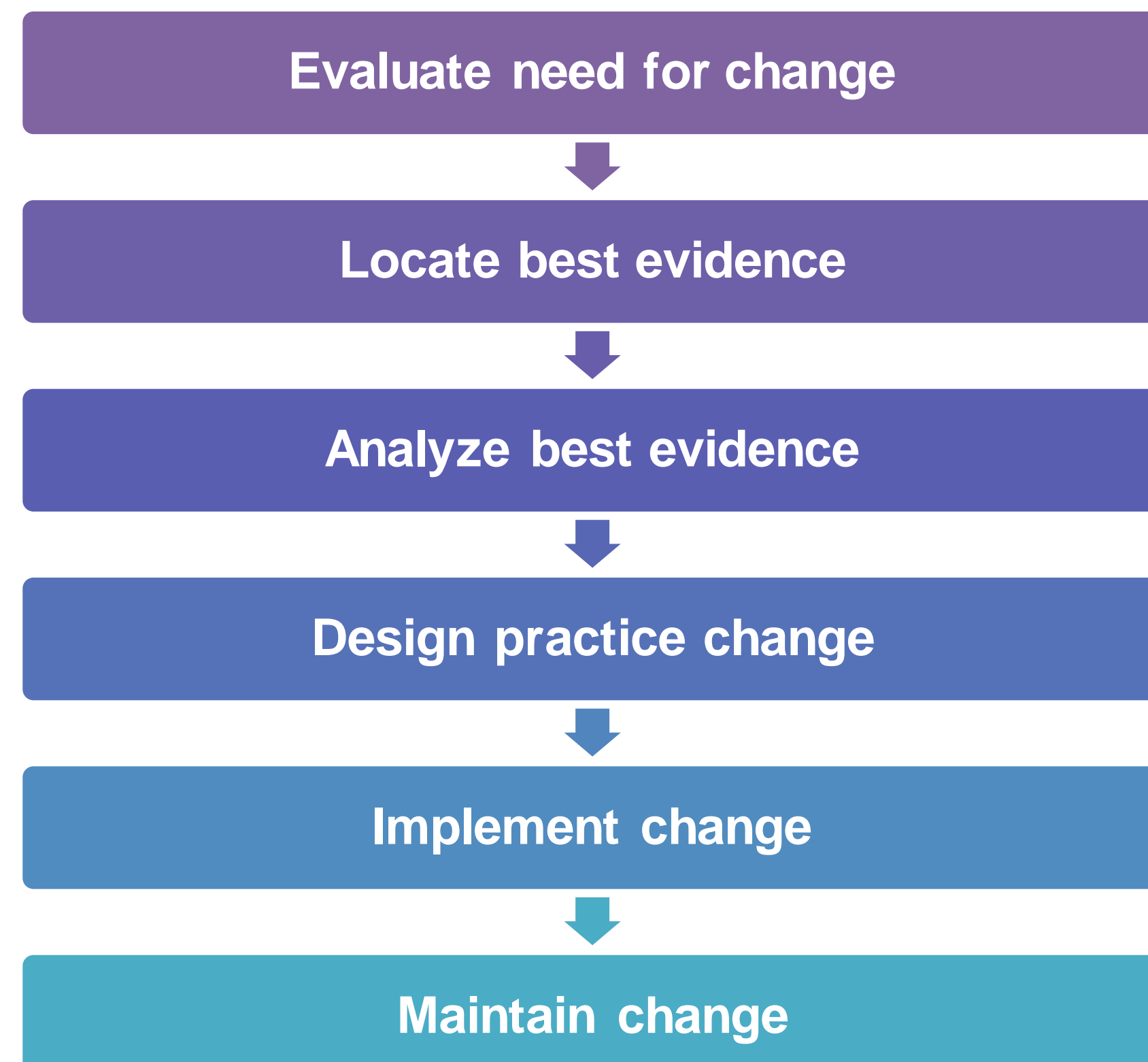
- Educate nurses on the use of nonpharmacologic interventions to reduce symptoms in infants with neonatal abstinence syndrome

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



ACKNOWLEDGEMENTS: Pamela Semanik PhD, APN; JoEllen Wilbur PhD, APN, FAAN

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

Prevalence
Every 15 minutes in the U.S., an infant is born addicted to opioids.¹

Disparities
80 Percent of infants treated for NAS are enrolled in Medicaid services.²

Did you know?
There are multiple ways to manage care for withdrawing infants. The Finnegan Neonatal Abstinence Scoring System is our current assessment tool.

Eat, Sleep, Console:

- Emphasizes non-pharmacologic interventions before PRN opioids
- Simplified discharge goals: eat well, sleep, and console
- Reduces length of stay and neonatal opioid exposure³⁻⁵
- Prospective NAS management tool for MGH

Bedside Nurse Role
What can I do as a bedside nurse?

- Use non-pharmacologic interventions **first-line**
- Document the non-pharmacologic interventions **each scoring interval**

RN Survey Results

- Are opioids always indicated? 5% No, 95% Yes
- Are nonpharmacologic interventions used first-line at MGH? 13% No, 87% Yes
- Does nonpharmacologic care help? 4% No, 96% Yes

Nurses' ability to identify 6-8 nonpharmacologic interventions

- 37% Yes, able to identify
- 54% Yes, somewhat able to identify
- 9% No, unable to identify

Nurses' confidence in educating caregivers about nonpharmacologic interventions to prepare for discharge

- 24% Novice
- 30% Beginner
- 31% Competent
- 9% Proficient
- 6% Expert

Nonpharmacologic Care Documentation

Signs & Symptoms: High Pitched Cry, Weak Reflex, Irritability, Muscle Tone, Shivering, Tremor, Sweating, Fever, Yawning, Moaning, Diaphoretic Sweating, Hoarse Crying, Respiratory Rate, Respiratory Pauses, Irritability/Agitation, Total Score, **Non-Pharmacologic (per Po...)**

Select Multiple Options: (F5)
Quiet Environment
Low Stimulation
Light swaddle with cotton blankets
Skin to skin
Small, frequent feedings on demand
Frequent diaper changes
Clustering cares
Non-nutritive sucking
Swing
Weighted Support
Comment (F6)

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