Non-Pharmacologic Innovative Practices for NAS

Dr. Lenora Marcellus, School of Nursing, University of Victoria
AAP District VIII Section on Neonatal Perinatal Medicine
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Disclosure
The content of this presentation does not relate to any product of a commercial entity; therefore, I have no relationships to report.

Learning outcomes
1. Describe the range of current non-pharmacological interventions identified in the literature that are used to support infants through their withdrawal.
2. Discuss the pros and cons of a bundling approach to non-pharmacological interventions.
3. Apply an ecological framework to expand conceptualization of a non-pharmacological intervention.
4. Identify two opportunities for improving the use of non-pharmacological interventions in your practice setting in the next three months.

New government ministry - 2017

New Ministry of Mental Health and Addictions aims to tackle B.C.'s opioid crisis

B.C. declares public health emergency after fentanyl overdoses

1,850 babies
New national guideline

- Recent literature supports practices that keep opioid-dependent mothers and their infants together from birth, such as rooming-in. A rooming-in model—rather than admission to NICU—can be considered for mother-infant dyads at risk for developing NAS symptoms when infants are term or near-term medically stable, and adequate resources are in place to support both the family and HCPs.
- Initial treatment should primarily be supportive.
- Examples of supportive interventions include skin-to-skin contact, safe swaddling, gentle waking, quiet environment, minimal stimulation, secure light, developmental positioning, music or massage therapy.
- Breastfeeding should be encouraged.
- Supplementation if poor weight gain.

In “The Canadian Nurse”

Dr. Sydney Segal

MD helped bring fetal alcohol syndrome out of the closet in BC.

http://www.fasd-evaluation.ca/home/
A shift in thinking about NAS practices

- 28 women – Western Canada
- 59 children
- 14 with NAS, 10 to Sunnyhill, 7 apprehended
- Critical feminist analysis
- Chapter on NAS:
  - Mothers controlled and punished through our care practices
  - Ideological assumptions about good mothers, medicalization of mothering
  - Program embedded in class, race and gender biases
  - Staff labeled as “baby snatchers”
  - Environment of hostility toward mothers and experimental treatment of infants

Challenging ‘standards of care’

- FIR Square – unit at BC Women’s Hospital in Vancouver that provides care for women before and after birth and whose pregnancies are complicated by substance use.
- 952 moms and babies at FIR Square - babies who were kept with their moms after birth (rather than separated and observed in a quiet room) had fewer admissions to the neonatal intensive care unit, a shorter hospital stay, were more likely to be breastfed while in the hospital, and were more likely to go home with their mothers.
Definition of non-pharmacological intervention

• Therapeutic activities that are not pharmacological in nature that reduce the impact of the clinical condition
• We tend to have a specific individual approach to what these strategies could be

Current state of practice


• 76/95 (80%) responses rate, in 34 states, in BORN Network
• 58% supportive care
• Diverse practices
• Included modifications to the environment, parental care and alternative interventions
• Rooming in and other supportive care measures that promoted maternal contact were reduced during pharmacologic treatment
• Only 11% offered rooming in during pharmacologic treatment; 41% never offered; 33% Kelley's did
• Wide variation in breastfeeding criteria

JAMA April 2018: Key findings

• 53 articles in past 10 years
• 13 related to assessment methods
• 25 related to non-pharmacological care – rooming in; breastfeeding/infant feeding; acupuncture; location of care (inpatient versus outpatient)
• 11 related to infant pharmacological management
• 4 related to maternal pharmacological management

Recent literature reviews


Positioning of non-pharmacological care in clinical practice guidelines

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<tr>
<th>Guideline</th>
<th>Recommendation</th>
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<tr>
<td>AAP (2018)</td>
<td>Pharmacological treatment initiated 5 days does not expand to recommended course of non-pharmacologic support.</td>
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<tr>
<td>NICHD (2013)</td>
<td>A infant exhibiting risk of harm should be managed with nonpharmacological interventions such as covering or more monitoring for progression to severe withdrawal according to the NICHD protocol.</td>
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<tr>
<td>NICHD (2014)</td>
<td>Maternal care facilities providing obstetric care should have a protocol for identifying, assessing, monitoring, and intervening using nonpharmacological care.</td>
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<tr>
<td>NICHD (2016)</td>
<td>Nonpharmacological interventions involving the light, sound environment, rooming in and skin-to-skin contact should not be used until 24 hours postpartum.</td>
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<tr>
<td>NICHD (2017)</td>
<td>The exploration of intervention measures, quiet area, rooming-in, dim lighting, response prompting, lactation support and pain management practices to support infant's growth and maturation should be examined.</td>
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Supplemental chart – 5 ongoing studies through ClinicalTrials.gov

• Donor milk
• Aromatherapy
• Auricular acupuncture
• Weighted blankets
• Stochastic vibrotactile stimulation – crib mattress

Additional:

• Live music therapy (2018)
Related to pain – a similar “first line” approach to care

- There is pressure for pain management to shift away from reliance on opioids, ineffective procedures and surgeries toward comprehensive pain management that includes evidence-based non-pharmacologic options.
- Transforming the system of pain care to a responsive comprehensive model necessitates that options for treatment and collaborative care be evidence-based and include effective non-pharmacologic strategies.
- Call to action: Increase awareness of effective non-pharmacologic treatments for pain.

Cochrane non-pharmacologic strategies for pain

- There is evidence that different non-pharmacological interventions can be used with preterms, neonates, and older infants to significantly manage pain behaviors associated with acutely painful procedures.
- The most established evidence was for non-nutritive sucking, swaddling/facilitated tucking, and rocking/holding.
- All analyses reflected that more research is needed to bolster our confidence in the direction of the findings. There are significant gaps in the existing literature on non-pharmacological management of acute pain in infancy.

Treatment/intervention concepts applied to non-pharmacological care

- Dose – volume (what), frequency (when), administration (how)
- Harm/adverse events:
  - Iatrogenic: Separating mother and baby – impairing the attachment relationship
  - Over/treatment/under treatment:
    - Choosing Wisely

Other ways to conceptualize non-pharmacologic care

- Fundamentals of care – “back to basics”:
  - Australia – Kitson Model
  - UK – NHS Essence of Care – Dignity in care

Factors:

- “Nice to do”, not need to do
- Research capacity
- Research focused in specialty areas rather than basic care
- Lack of funding – need investment in nursing science - Not valued by funding bodies the same as pharmacological or technological research
Ecological framework

Micro-system: Infant and family
- Usually what we read about when it comes to interventions
- Infant:
  - Comforting/consoling
  - Feeding
  - Skin care
- Infant and family:
  - Supporting intact mother-baby dyad
    - Parental presence
    - Rooming in
    - Skin to skin care
    - Baby wearing
    - Direct instrumental parent support
    - Trauma informed principles of care
    - Cue based care by parents

The concept of a Neonatal Intensive Parenting Unit – specific to NAS

Sensory/vestibular strategies:
- Swaddling, massaging, bathing
- Vertical rocking
- Stochastic vibrotactile stimulation - low level
- SVS via specially constructed mattress that provides gentle vibrations and sounds
- Infant seats that mimic natural parent motions
- Laser acupuncture
- Weighted blanket
- Aromatherapy
- Music therapy

Feeding strategies:
- Breastfeeding
- Donor milk
- Non-nutritive sucking
- Feeding adaptations – infant led, small frequent
- Strategies to reduce abdominal discomfort

- Systematic review, 1996-2015
- 4 studies – rooming in increases BF
- 9 studies – low levels of methadone and buprenorphine transfer
- 10 studies – BF associated with decreased rates of NAS
- 5 studies - barriers to BF:
  - Stringent eligibility criteria for BF
  - Logistics – time needed to make health and counselling appointments, costs of travel and childcare
  - Lack of education about safety of BF
  - Women’s concerns – rejection of breast, impact of smoking, lack of family support, methadone transfer; concern about infecting baby with Hepatitis C, not enough time, insufficient breastmilk or latching problems, overriding baby on methadone in their milk
  - Hospital nurses seen as unsupportive and unknowable
  - NICU environment not supportive of BF
- 1 study - Health care professionals lack training in supporting women on methadone to BF
- Most available evidence is about nurses, nothing reported about physicians

### Meso-system: Clinical setting

- **Physical environment:**
  - Reduced stimulation – sound, light, activity
  - Which location?
  - Support mother-baby dyad care – reducing barriers
- **Clinical practice:**
  - Guidelines, standards
  - Assessment/scoring tool
- **Team environment:**
  - Attitudes, values, beliefs – stigma, judgment – mothers/parents, will feel welcome, participate in infant care
  - Staffing, workload

### Exo-system: Organization and social system

- **Shared organizational values:**
  - Risk
  - Efficiency, cost effective
  - Short term focus
- **Funding models:**
  - Shared across clinical portfolio – maternal-infant, mental health and addiction, public health
- **Cross-sector protocols:**
  - In particular with child welfare
- **Integrated programs:**
  - Mother-baby models
  - Wrap-around – address determinants of health
  - Early intervention focus

### Macro-system: Social-cultural values

- **Society’s perspective on substance use:**
  - Varies – health condition, personal wellness
- **Stigma and judgment:**
  - Including health care workers
  - Socio-cultural bias:
    - Gendered, sexualized
    - Racialized
- **Legislation – justice response:**
  - Punitive
  - Infant valued more than mother
  - Varies – by step, substance
  - Institutions (Guttenburg Institute; Pathways)

### A bundle is...

- **Definition (IHI):** a structured way of improving the processes of care and patient outcomes: a small, straightforward set of evidence-based practices — generally three to five — that, when performed collectively and reliably, have been proven to improve patient outcomes.
- **Requirements:**
  - Complete consistency
  - Evidence based
  - Yes or no, all or nothing

### A bundle approach: Exemplars

- **Ohio Perinatal Quality Collaborative (OPQC) non-pharmacological bundle**
  - Swaddle; comfort; MBM or consider low lactose 22 kcal
- **Children’s Hospital at Dartmouth/Dartmouth/Hitchcock Medical Center**
  - Room in/patient presence; decrease stimulation/promote adequate rest and nutrition; calming techniques
- **Grossman et al. (2017)**
  - 4 standardized interventions: low stimulation environment; parent engagement (including rooming in, demand feeding, responding to crying); staff trained to see non-pharm as equivalent to pharma; breastmilk feeding

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**7/11/2018**
Benefits of and cautions for non-pharmacologic NAS bundles

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<th>Cautions</th>
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<td>Prioritizes non-pharmacologic practices as first line strategies</td>
<td>Dose of intervention – what counts?</td>
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<td>Engages parents</td>
<td>Increased pressure on parents related to being asked to be in hospital as much as possible – guilt, stigma</td>
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<td>Improves neonatal outcomes (less medication, shorter stays etc)</td>
<td>Influence of personal attitudes on practice</td>
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<td>Care consistent, reliable and evidence informed</td>
<td>Increases pressure to do work that is not possible with current resources – moral distress</td>
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Recommendations

- Optimize non-pharm - fundamentals
- Reduce barriers to fundamentals
- Consider how to incorporate emerging interventions:
  - Are there some interventions that should be implemented before others?
- Think beyond individual level interventions
- Research of fundamentals – all methods

Your own practice/unit/institution/community

- Current state
- Future state
- Actions: short term – medium term – long term
  - Next three months?

Thank You
lenoram@uvic.ca