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Achieving Lactation Success in the Neonatal Intensive Care Unit

2020 Regional Neonatal Conference

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Objectives:

Be	Be able to identify two common lactation issues affecting mothers in the Neonatal Intensive Care Unit
Be	Be able to identify two barriers impacting mother's ability to achieve their breastfeeding goals when their infant is admitted to the Neonatal Intensive Care Unit
List	List 3 strategies for improving breastmilk/breastfeeding rates at discharge.

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AAP Recommendations

- In 2012 the AAP revised its policy on breastfeeding and reaffirmed, *"its recommendation of exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant."*
- http://pediatrics.aappublications.org/content/129/3/e827

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Breastfeeding can reduce incidence of:

- Infant
  - SUIDS
  - Type II diabetes
  - Asthma
  - Ear Infections
  - Obesity
  - Childhood Cancers
- Mom
  - Hypertension
  - Type II Diabetes
  - Ovarian Cancer
  - Breast Cancer.
  - There is a cumulative breastfeeding benefit for the mother.

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1. All preterm infants should receive human milk.
• Human milk should be fortified, with protein, minerals, and vitamins to ensure optimal nutrient intake for infants weighing <1500 g at birth.
• Pasteurized donor human milk, appropriately fortified, should be used if mother's own milk is unavailable or its use is contraindicated.
2. Methods and training protocols for manual and mechanical milk expression must be available to mothers.
3. Neonatal intensive care units should possess evidence-based protocols for collection, storage, and labeling of human milk.[10]
4. Neonatal intensive care units should prevent the misadministration of human milk (http://www.cdc.gov/breastfeeding/recommendations/other_mothers_milk.htm).
5. There are no data to support routinely culturing human milk for bacterial or other organisms.

AAP Recommendations on Breastfeeding Management for Pre-Term Infants

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Breastmilk & Risk Reduction in the NICU

Decrease	Necrotizing Enterocolitis by up to 76%.
Decrease	Ear infections by up to 50%.
Decrease	Serious respiratory tract infections by 72%.
Decrease	Incidence of VAP with use of oral pharyngeal colostrum.
Decrease	Gastroenteritis by more than 50%.
Decrease	Re-admission of infant for other reasons by 60%.
Decrease	Lower ROP incidence and severity.

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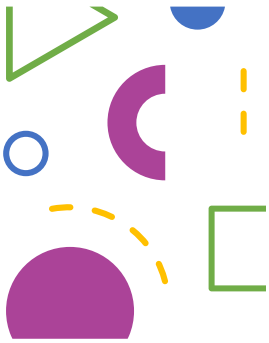
Interactive Survey

What are the top barriers to breastfeeding or providing human milk in your setting?



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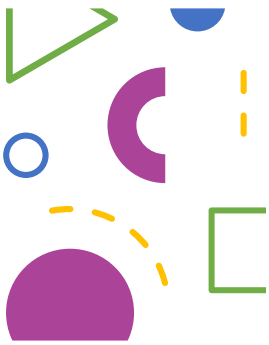
Maternal Goals

- Be aware of mother's goals:
  - Can change throughout admission for many reasons.
  - Provide support and look for ways to integrate maternal goals into plan of care throughout inpatient stay.
  - Protect and establish the milk supply to keep options open for mother.
- Avoid Pressure
  - Even well-meaning information can be perceived as pressure.
  - Be aware that mom is getting information and "suggestions" from everyone (providers, nurses, lactation consultants, friends, family, Facebook).



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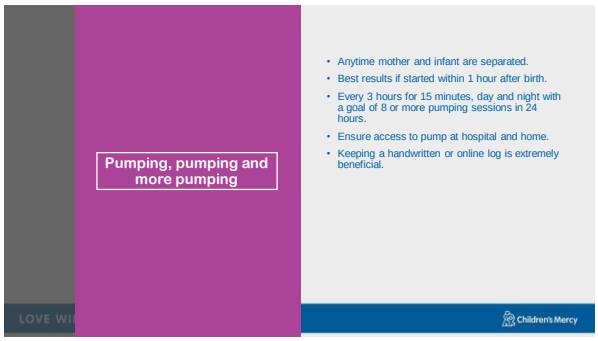
Pumping, pumping and more pumping
• Anytime mother and infant are separated.
• Best results if started within 1 hour after birth.
• Every 3 hours for 15 minutes, day and night with a goal of 8 or more pumping sessions in 24 hours.
• Ensure access to pump at hospital and home.
• Keeping a handwritten or online log is extremely beneficial.
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Pumping, pumping and more pumping
• At night too? YES!
• Prolactin (hormone that drives milk production), is naturally higher overnight.
• Ways to preserve rest while still pumping overnight.
• Pump set up and cooler bag available for storage.
• Extra pump parts at bedside to avoid need to wash in the night.
• Avoid relying on alarm to wake. Drink large cup of water before bed and let bladder do the wake up.
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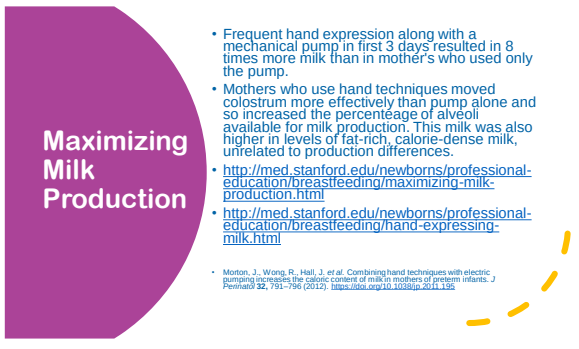
Maximizing Milk Production
• Frequent hand expression along with a mechanical pump in first 3 days resulted in 8 times more milk than in mother's who used only the pump.
• Mothers who use hand techniques moved colostrum more effectively than pump alone and so increased the percentage of alveoli available for milk production. This milk was also higher in levels of fat-rich, calorie-dense milk, unrelated to production differences.
• http://med.stanford.edu/newborns/professional-education/breastfeeding/maximizing-milk-production.html
• http://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html
• Morton, J., Wong, R., Hall, J. et al. Combining hand techniques with electric pumping increases the caloric content of milk in mothers of preterm infants. J Perinatol 32, 791–796 (2012). https://doi.org/10.1038/jp.2011.192

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Interactive Survey

- How much milk do you expect mom to produce in the first 24 hours after delivery?
  - A) 80 mls/kg
  - B) 60 mls/kg
  - C) one half oz to 2 ounces
  - D) 10 to16 ounces

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Normal Progression of milk supply

Hours post birth	Volume ml/pump Session
24	5-15
36	5-15
48	15-25
60	30-45
72	45-60
96	45-75

After the first 2 weeks:

Ideal supply
- >750 mL/24 hours or
- 90 mL/pumping

Borderline
- 350-500 mL/24 hours

Low
- < 350 mL/24 hours

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How Big is a Newborn's Stomach?

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"Get in ma Belly"

- Based on ultrasound images, the capacity of a term infant's stomach is likely 15 to 20 mls in the first few days.
- How much smaller might that preterm tummy be?
- Consider smaller more frequent feeds?
- True cue-based or ad lib breastfeeds?

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Balancing Breastfeeding Norms with Medical Needs:

- Healthy newborn feeding patterns, frequency, durations
- Gestational Age
- Diagnosis
- Normal physiologic feeding patterns vs. NICU schedule
- Impact of delayed feedings (premature, critically ill)

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Waiting for milk to come in:

- Provide reassurance to mom regarding small amounts pumped in first 48-72 hours.
- Be aware of amount given for supplementation after BF or by bottle when mother is not available to breastfeed. ABM protocols #3 and #10.
- Discuss with medical team if waiting for breastmilk availability is appropriate.

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How to support a mother with low milk supply:

Evaluate	Evaluate pumping regimen • Re-educate on optimal pumping frequency • Does she want to increase pumping frequency?
Provide	Provide education and place importance on any breast milk mother can provide. Breast-milk in any amount provides benefits.
Review	Review mother's goals

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Where is all the milk?

Factors that can be controlled or supported:

- Pumping initiation time
- Pumping frequency
- Access to pump
- Adequate nutrition, hydration, and rest
- Effectiveness of breastfeeding

Factors that may limit supply that may not be able to be changed:

- Maternal medical conditions
  - PCOS, thyroid disorders, diabetes, infertility, etc.
- Large blood loss at delivery
- Retained placenta
- Insufficient glandular tissue (IGT)

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Maternal Issues that Impact Lactation

- Limited resources, low socioeconomic status – WIC, Health Department, Uzazi Village,
- History of abuse – be sensitive and discreet in discussions. Abuse could be on going or from earlier in woman's life.
- Early return to work – be supportive of whatever amount of time she can provide milk.
- Pumping accommodations at work The Federal Break Time for Nursing Mothers law requires employers covered by the Fair Labor Standards Act (FLSA) to provide basic accommodations for breastfeeding mothers at work. Includes time for women to express milk and a private space that is not a bathroom each time they need to pump for up to one year after the nursing child's birth.
  - This applies to businesses with at least 50 employees.

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- Increasing in popularity
- Know the difference between informal milk sharing (raw) and pasteurized donor milk
- Psychological reasons for mothers to use donor milk without disclosing source.
- Considerations and risks, hospital policies, Informed Consent

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Legal and Prescription Drugs

- Antidepressants, Antihypertensives, Analgesics that are commonly prescribed to post partum mothers are generally considered safe with breastfeeding. If you are unsure, please use resources and encourage mom to speak to her physician.
- Cold and flu medications – avoid decongestants and antihistamines. If it dries up secretions it has the potential to dry up milk.

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Legal and Prescription Drugs

- Resources to determine compatibility; Medications and Mother's Milk by Thomas J Hale www.halesmeds.com
- Drugs and Lactation (LactMed) - National Library of Medicine. https://www.ncbi.nlm.nih.gov/books/NBK501922/

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Interactive Survey

- Which drug concentration shows up in the highest level in breastmilk?

A) Alcohol

B) THC (marijuana)

C) They are present at equal levels.

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Drug Issues

Alcohol use and Breastmilk

- Alcohol – mothers should NOT provide breastmilk if there is chronic alcohol use. The concentration of alcohol in HM parallels maternal blood alcohol concentrations.
- Alcohol interferes with the MER, may ultimately result in decreased production.
- Moderate use is defined by the CDC as = to 14.0 grams (0.6 ounces) of pure alcohol.
  - 12 ounces of beer (5% alcohol content).
  - 8 ounces of malt liquor (7% alcohol content).
  - 5 ounces of wine (12% alcohol content).
  - 1.5 ounces or a "shot" of 80-proof (40% alcohol content) distilled spirits or liquor (e.g., gin, rum, vodka, whiskey).

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Drug Issues

Tobacco use and Breastmilk

- Tobacco Smoking/Vaping/Nicotine - Strongly encouraged to stop these activities during breastfeeding.
- Decreases prolactin levels so frequently see low supply.
- Levels of nicotine in HM are 3x maternal plasma level. Dozens of other chemicals in cigarettes also pass into HM.

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Drug Issues

Illegal/Illicit Drugs and Breastmilk

- Methadone/Subutex - risk/benefit? Poor oral bio-availability, passes into milk in very low levels. There is increasing evidence to support reduction in severity and duration of treatment of NAS if mom on methadone maintenance therapy.
- Opiates, Methamphetamines
- Marijuana – concentration in human milk is up to 8x that of maternal blood levels. Counsel strongly with cautions but not enough data to recommend NOT breastfeeding.

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Transitioning to Direct Breastfeeding

- How early do we start?
  - Reviews show as early as 27-28 weeks and in fact, earlier start leads to earlier successes and higher exclusive breastfeeding/breastmilk rates at dc. Commonly, oral feeds are not started until 32 – 34 weeks or until infant tolerates initiation of bottle feeding.
- Skin to Skin contact and Non-nutritive breastfeeding are crucial to the success.
  - NNS there is no flow of nutrients and consequently the movement is quicker (two sucks per second). NNS may be used to satisfy an infant's basic sucking urge or as a state regulatory mechanism.
  - NNBF builds confidence, muscle memory, promotes bonding and increases milk supply.

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- Limiting Factors in Achieving Full Feeds at Breast
  - Preterm Gestational Age
  - Late Pre-term have unique differences
  - Low or High Tone
  - Oral Structure (ankyloglossia, cleft palate, micrognathia)
  - Respiratory Status

Transitioning to Direct Breastfeeding

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Transitioning to Direct Breastfeeding

- Setting realistic expectations and goals for introducing breastfeeding -1-2 times per day, use of supplement by NG, bottle, spoon or cup. Assess infant at breast for active feeding.
  - It may not be realistic to have late term/near term baby exclusively breastfeeding prior to discharge. Use lactation to help set up plan for home that can be advanced outpatient or with PCP.
  - It is not about short-term success at breast before discharge, it is about setting up a long-term plan to help mother meet her goals.
- Use of SNS
- Appropriate use of AC/PC weights
- Semi demand breastfeed schedule

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Multidisciplinary Team Involvement to Support Beast Feeding in the NICU

- Provider awareness of breastmilk availability and protocols designed to advance feeds faster than biological normal progression of milk supply.
  - Provider preference to start with bottle vs. breastfeeding.
  - Lack of confidence in BF or lack of concrete numbers to validate feeding success.
  - Lack of nursing education to provide adequate support to initiate pumping or support uncomplicated breastfeeding situations (ie, nipple shield given in first day of life, education on pumping not given upon maternal infant separation).
  - Direct breastfeeding observations not occurring or education not sufficient for bedside RN to confidently assess milk transfer.
  - Obstacles with obtaining breastmilk (delay in receiving milk from milk rooms, mother not at bedside when milk is needed).

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Resources

- Medications and Mother's Milk, Thomas J Hale MD https://www.halesmeds.com/
- Drugs and Lactation (Lact-Med) National Library of Medicine https://www.ncbi.nlm.nih.gov/books/NBK501922/
- Academy of Breastfeeding Medicine – Protocols https://www.bfmed.org/protocols
- Break Time for Nursing Mothers Fact Sheet https://www.dol.gov/agencies/whd/fact-sheets/73-flsa-break-time-nursing-mothers
- Human Milk Banking Association of North America www.hmbana.org

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12. Lucas, R., Smith, R. (2015) When Is It Safe to Initiate Breastfeeding for Preterm Infants? Advances in Neonatal Care, 15 (2), 134-141.
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Questions?

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