Preterm Babies: Going Home Breastfeeding

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Objectives

Following the session, the learner will be able to:

• Identify 3 barriers to initiating and maintaining milk expression in the preterm population

• Identify 3 strategies to increase milk availability in the preterm population

• Identify 3 barriers primary care providers face in providing lactation support of the preterm infant after discharge

• Develop 3 strategies to address barriers mothers face in providing breastmilk to their preterm infants after discharge
PART 1: Pumping Our Way to Excellence!

A Multidisciplinary Approach Increases Breastmilk at Discharge for VLBW Infants

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Why Breastfeed?
Benefits of Breastfeeding

- BF infants have lower illness & mortality rates compared to formula fed infants even in developed countries

- Breastmilk provides:
  - Optimal nutrition
  - Key digestive enzymes
  - Direct immunologic protective factors, immunomodulators, anti-inflammatory factors, anti-oxidants
  - Growth factors
  - Hormones & other bioactive factors
  - New components and interactions being discovered daily!

- Economic benefits (family and society)
  - No cost for formula
  - Reduced healthcare costs
  - Reduced employee absenteeism
Risk reduction associated with any BF for:

- NEC
- Otitis media
- Gastroenteritis
- Hospitalization for lower respiratory tract infections during infancy
- SIDS
- Childhood leukemia
- Childhood asthma
- Type I DM
- Obesity
Immunological Benefits of BF

• Better utilize immunizations

• Reduction in fever rate following immunizations
  o 53% fever rate among formula fed
  o 31% fever rate among partially BF
  o 25% fever rate among exclusively BF

• Protective against bacterial infections, infections of the gut (NEC), & respiratory infections.

• BF decreases risk of RSV or RSV hospitalizations

Allergy, Autoimmunity, & BF

- Meta-analysis of 6 studies:
  - BF for first 3 months was protective against allergic rhinitis

- Review of 56 published articles: BF was protective for atopic allergies

- May ↓ future risk of autoimmune disorders
  - May be due to the fact that BF facilitates increased immunologic tolerance
  - Higher risk of Crohn’s Disease and Ulcerative Colitis in formula fed vs. BF

Healthy People 2010

- **Goals:**
  - 75% of US women initiate breastfeeding
  - 50% continue at 6 months
  - 25% continue at 1 year

- **Actual:**
  - 71% initiation
  - 36% continue at 6 months
  - 17% continue at 1 year

Women Most Likely to Breastfeed

- Older maternal age
- Married
- Higher education
- More affluent
- Non-smoking

Barriers to Breastfeeding

- Employment status/return to work
  - Socioeconomic status

- Culture/attitudes
  - Bottle culture
  - Lack of family support (bottle-feeding for decades)

- BF confidence/self-efficacy

- Many factors addressing BF duration (maternal age, education level, income, stability of marital status) not likely affected by professional support.

- Hospital practices and delivery of a premature infant

Lactation and the Preterm Infant
Brain Growth

- Brain grows 260% in the 3\textsuperscript{rd} trimester.
- Prematurity results in need for catch up.
- Even as late as 35 weeks, the brain weighs only 65% of what it will weigh at 40 weeks.

Benefits to the VLBW Infant

• GI benefits
  – Empties from stomach faster
    ▪ Fewer residuals
    ▪ Faster progression to full enteral feedings; fewer days of parenteral nutrition
  – Factors may stimulate GI growth, motility, & maturation
  – Enzymes improve absorption and utilization of nutrients in the immature gut
  – Decreased risk of NEC

• Decreased risk of infection
  – Sepsis
  – UTIs

• Neurodevelopmental
  – Higher IQ
  – Improved visual development & reduced ROP
Targeting the VLBW Population for Intervention

- Breastmilk with the proper fortification is the standard
  - Ideally initiated on DOL 1 as trophic feedings
  - Pasteurized donor milk should be considered if mother’s own milk is not immediately available

- Mothers of preterm infants have lower BF initiation rates

- VLBW mothers are least likely to initiate & maintain lactation
  - Depends on ability to initiate and maintain supply via pumping
  - Mechanically expressing for a prolonged period makes it difficult to achieve and maintain an adequate volume
  - Volumes of mothers of preterm infants often decline at ~2-6 weeks
  - Disproportionately born to socioeconomically disadvantaged mothers

CPQCC Toolkit 2008
Barriers to Breastmilk Expression for the Preterm Infant

• Barriers to Initiation
  - Pregnancy related maternal medical complication (IVF, PIH, etc.)
  - Lack of privacy within the unit
  - Frequent interruptions from staff, family, friends
  - Inadequate pump after mother discharged home
  - Stress of having a baby in the NICU

• Barriers to Maintenance
  - Separation
  - Distance to the NICU
  - Return to work
  - Time management
  - Maternal disappointment over small expressed volumes
  - Attitudes
  - Stress of having a baby in the NICU

CPQCC Toolkit 2008
Other Barriers to Pumping & Direct BF in the Preterm Infant

- Balancing need for nutritional support with promotion of BF
- Need (or perceived need) to “measure” intake
- First feeding at bottle vs. at breast
- Culture of bottle feeding “to discharge sooner”
Interventions Enhancing Breastmilk Expression & Maintenance

- Increased maternal support directed at behavioral factors
- Lactation consultants
- Immediate access to hospital-grade pump
  - Assistance in obtaining pump for home or loaner pump
- Educational sessions for mothers
  - During antenatal period regarding role of breastmilk
  - Clarity of message of importance of providing milk
  - Pumping instructions provided in AV format
- Peer counselors/peer support programs

Our Journey at CHOC

• Internal data at CHOC Children’s showed:
  − Total NICU breastmilk availability at D/C constant 2005-2011
  − However, availability for the VLBW had decreased

• Bedside staff had begun to view all aspects of lactation as the responsibility of the lactation consultant
  − Not realistic for LC to do all feedings at breast for all of the babies
  − Mothers needed assistance with pumping at all hours of the day
CHOC Lactation Quality Improvement (QI) Team

- Formed September 2013
- Goals:
  - Identifying barriers to lactation
  - Identifying best practices to improve breastfeeding rates
  - Optimize available resources
  - Improve staff education
  - Improve patient/family education

- Structure
  - Monthly meetings to review progress and work on initiatives
  - Initial team members included lactation medical director (neonatologist), lactation consultants, and NICU dietitians
  - Expanded to include NICU CNS and feeding therapists (OT & SLP)
Initial QI Team Efforts

• Staffing Adjustments (Nov 2012)
  − Staffing shifted to provide 2 lactation FTEs for the NICU.

• ELBW Lactation Intervention Study (May 2013)
  − ELBW mothers meeting study criteria receiving hands free pumping bra, lactation videos, and targeted lactation education.

• Lactation Rounds (June 2013)
  − Twice weekly with LCs and attending neonatologist initiated.

• Loaner Pump Program Enhancements (July 2013)
  − Delegated loaner pump program to the dietetic technicians to streamline the check out process & ensure proper paperwork allowing the program to continue.
Staff Education

• Research suggests nursing knowledge or attitudes can influence mothers’ BF decisions in the NICU

• Mandatory Online Lactation Module for NICU RNs (Oct 2012)
  − Emphasized lactation basics including pumping & initiating BF.

• Wellstart Modules made available to all staff

• UCSD Lactation Educator Counselor Course
  − Offered yearly since 2011
  − YTD 11 RDs, 7 DTRs, 6 Feeding Therapists, and dozens of RNs
  − 2015: 3 RDs, 2 DTRs already scheduled!

• NICU RN Lactation Super User Team Identified
  − 18 NICU RNs initially volunteered for additional training
    • 8 hr didactic course 6/2013, 5/2014, 1/2015
    • 4 hr skills class 10/2013, 11/2013
Physician and NP Education and Focus

• All providers completed online lactation module
  – University of Virginia online Baby Friendly module
• Current lactation status added to daily physician note
• Lactation discussed during daily bedside rounds
• Twice weekly lactation rounds with Lactation Consultants
• Emphasis on skin-to-skin in the delivery room in >1500 g
  – Neonatologists attend deliveries at delivery hospital next door
• Emphasis on initiating pumping in the recovery room
  – At delivery hospital next door
Care Mapping of Lactation Care

• Outlined key points of lactation care to be provided by the bedside RN and the Lactation Consultant.

• Goal to improve lactation care and rates through:
  − Consistent messaging among all healthcare providers.
  − Ensuring around the clock availability of information.
  − Promote early and timely initiation of milk expression.
  − Properly utilize the limited hours of the lactation consultants.

• Created algorithm of basic care and delineation of duties.
Algorithm for Lactation Care

**NICU Admit**
1. All receive 2 page lactation handout in Welcome Packet.
2. BF preference identified by admit RN/transport RN.
3. Lactation care is initiated by the bedside nurse as outlined below for all patients (regardless of lactation consultant involvement).

**RN LACTATION ADMIT CARE**
(All pts)

**SUPPLIES (<24 h):**
1. Pump kit
2. Snappies
3. Basin/soap
4. Cooler

**EDUCATION (<24 h):**
Highlight items in Welcome Pkt:
1. Pumping
2. Milk storage
3. Flange fit
4. Point out Self Assessment
5. Lactation Meal Vouchers

**PUMP REFERRAL (<72 h):**
1. Point out pump resources (including insurance & Medi-Cal forms) in Welcome Pkt.
2. Check out CHOC Loaner Pump if needed.

**ONGOING RN BEDSIDE LACTATION SUPPORT**
(All pts)

**PUMPING:**
1. Frequency
2. Hands on pumping
3. Demand/Supply
4. Maternal Meds
5. Freezer space @ home for d/c.

**EDUCATION/ISSUES:**
1. Video resources-how to pump for optimal results (hands on pumping)
2. Handouts by topic in pump room.
3. Referral to LC for issues unresolved by bedside RN (Examples)
4. Self Assessment Tool in Welcome Pkt

**PRE-FEEDING/FEEDING:**
1. STS
2. Non-nutritive
3. 1st feed at breast (goal-start w/Super Users)
4. Assistance w/BF
5. Pre/post wts prn

**LACTATION CONSULTANT SUPPORT**
Provided in addition to bedside support:
1. All infants ≤1500 g BW
2. Hyperbilirubinosis
3. Issues identified during bedside lactation support that the RN cannot address.
Outcomes in the CHOC VLBW Population

• Breastmilk availability at discharge for the VLBW was evaluated and compared to historical data.

• Breastmilk availability at project initiation = 58.7%

• Breastmilk availability at discharge increased by 38% to final rate of 81%
% of VLBW Infants with Breastmilk Available at Hospital D/C

- 66.7% in 2009
- 62.3% in 2010
- 58.7% in 2011
- 61.5% in 2012
- 82% in 2013
- 81% in 2014*

*2014 Data = January through November 2014

Unpublished QI team data for 2014.
Donor Milk Usage

• Concern from some facilities that offering donor milk will remove “motivation” for mothers to provide their own milk

• Literature indicates that use of donor milk reduces exposure to formula, but does not change proportion of diet from mothers’ own milk

• CHOC’s donor milk usage:
  − FY 13 = 11,000 oz
  − FY 14 = 4,500 oz
  − Correlated with increased % of diet from mothers’ own milk rather than formula usage

Direct Breastfeeding

• Some data suggests that < half of mothers of VLBW infants who provide expressed milk go on to direct BF

• Admission to the NICU may result in hospital practices that don’t promote direct BF term or late preterm infants

• CHOC initiatives in progress to increase direct BF:
  − Breastfeeding Guidelines for the term infant admitted to the NICU
  − Emphasizing first feed at breast with all patients
  − Evaluation of optimal fortification at discharge to optimize direct BF while considering nutritional needs
  − Use of SNS to promote more direct BF

Next Steps: Other Initiatives in Progress!

- Human milk analysis study

- Evaluation of feasibility of exclusive human milk based diet
  - Cost, Duration, Population (ie, <1250 g or <1500 g)

- Reminders within the EMR
  - RN task list
  - Automatic physician order for case management to arrange for breast pump for home upon NICU admission

- Evaluation of current practices and perceptions
  - Survey Monkey to query RN practices and beliefs
  - Educational updates on basic concepts to reinforce
Vermont Oxford Network (VON) NICQ Nutrition Next Project

- Multidisciplinary team from 2 CHOC campuses
  - CHOC Children’s Mission Hospital and CHOC Children’s Orange

- Goals:
  - Increase use of mother’s own milk
  - Increase direct breastfeeding near discharge
  - Refinement of current feeding guidelines
VON NICQ—Increasing Initiation & Maintenance Interventions

- **Antenatal/Peripartum**
  - Scripting/consistent message for antenatal consults (MD & RN)
  - Loaner Pump program (increased from 14 to 20 pumps)
  - Collaborate with primary birthing hospital to ↓ time to first pump

- **Establishing Milk Supply**
  - Manual expression education (videos available to staff & families)
  - Skin to Skin
  - Define target volumes and utilize pumping log for tracking

- **Maintenance**
  - 1st feed at the breast
  - Increased milk storage at CHOC
  - Parent/Peer Support Group
  - Increased SNS use to facilitate direct breastfeeding
Our Team

- Lactation Medical Director
  - Christine Bixby, MD, FAAP

- Director, Clinical Nutrition & Lactation
  - Caroline Steele, MS, RD, CSP, IBCLC

- NICU Lactation Consultants
  - Cindy Baker Fox, RN, IBCLC & Crystal Deming, RN, IBCLC

- NICU Dietitians
  - Sue Freck, RD, CSP, CNSC, CLEC & Gina O’Toole, RD, MPH, CLEC

- Feeding Therapists
  - Kathy Ramirez, OT & Karin Mitchell, MA, CCC-SLP

- NICU CNS
  - Beverly Walti, RNC-NIC, MSN, CPNP, CNS

- RN Super Users
What We Eat May Determine Who We Can Be!
Questions?