Getting Breastfeeding Right from the Start: Enhancing Maternal and Newborn Competence

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Disclosures

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I do not intend to discuss the use of unapproved or investigational products or devices in this presentation.

All patient photos are used with consent and permission.
Arizona BF Report Card 2016

<table>
<thead>
<tr>
<th></th>
<th>Ever Bf</th>
<th>Bf 6 mo</th>
<th>Bf 12 mo</th>
<th>Excl 3 mo</th>
<th>Excl 6 mo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>85.0</td>
<td>54.8</td>
<td>30.0</td>
<td>46.3</td>
<td>23.8</td>
</tr>
</tbody>
</table>

% live births occurring at Baby-Friendly Facilities  2.2

% breastfed infants receiving formula before 2 days of age  18

# La Leche League Leaders per 1,000 live births  0.82
# CLCs per 1,000 live births  2.19
# IBCLCs per 1,000 live births  3.75

State’s child care regulation supports onsite breastfeeding  YES
Arizona BF Report Card 2016 (cont.)
What You Say Matters!

• Neutral is perceived as negative toward bf.

• Unsure mothers/ shorter bf goals most vulnerable to non-positive staff attitudes.

Best Start 3-Step Counseling Method

Open ended questions to identify concern, then:
  • Affirmation (That’s a common concern)
  • Emotional Support/Empathy (I can see why that would be scary)
  • Education (Give the facts now!)
Prenatal Education and Support

Intention to BF

- Educational interventions most effective prenatally
- Perinatal support helpful for learning to breastfeed

BF Self Efficacy

44% of variance:
• Intention
• Partner support
• HCP support
• Prenatal education
• Early bf initiation
• Previous experience

Education

• 5 minute prenatal education on maternal health effects of bf increased knowledge, perception of importance of bf, intention & desire to bf

• Minority, HS education & low income population, including mothers who did not bf previous infant.

Education (cont.)

• Education and support at multiple time points most effective
• No evidence for guilt, little anxiety
• Vulnerable populations – teen, low income – prenatal intervention effective
• There is adequate evidence that interventions to support breast-feeding change behavior and that the harms of these interventions are no greater than small. Therefore, the USPSTF concludes with moderate certainty that interventions to support breastfeeding have a moderate net benefit.

Positive Messages

• Breastfeeding is important for your health too
• Your breasts are developing milk glands already to feed your baby
• Your breasts are preparing to make milk for ALL your twins/triplets/quads
Barriers

Women interpret formula advertising (especially when distributed by health system) as predicting breastfeeding failure.

Systemic Barriers

“CONCLUSION: Most U.S. hospitals have policies and practices that do not conform to international recommendations for best practices in maternity care and interfere with mothers' abilities to breastfeed.”

Feeding Method by Birth Type

Reason for Stopping BF

Before 1 week
- Sore nipples
- Milk production problems
- Infant latch and bf problems

2-6 months
- Life conflicts
- Milk production problems
- Prescription medications

Help Moms Develop Good Supply

- Initiation at birth (2 good feeds on day 1)
- Prolactin receptors up-regulate with more breastfeeding (day 2 through 14)
- Remove colostrum often
- PREVENT Engorgement
  - Treat with massage to lymphatics, cool compresses, manual expression

Breastfeeding Initiation in 1st 2 Hours = Greater % Full BF at 4 Months

Calibration – First Feeding

• Babies consumed more milk on day 4 when they bf in the first 2 hours after birth. (284 vs 184 ml, p= .0006) 54%!

• Primips made more milk when bf more frequently on day 3

Frequent Early Breastfeeding Drives Subsequent Milk Production (multips)

<table>
<thead>
<tr>
<th>Bf freq on day 2</th>
<th>Supply day 5</th>
<th>Supply day 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.9 +/- 2.2</td>
<td>679 +/- 147 g/day</td>
<td>901 +/- 125 g/day</td>
</tr>
<tr>
<td>13.4 +/- 3.0</td>
<td>892 +/- 306 g/day</td>
<td>1079 +/- 185 g/day</td>
</tr>
</tbody>
</table>

Hand Expression Beats Pumping for Transient Problems

• Mothers of poorly feeding newborns: > comfort & more likely to be bf at 2 mo. if taught hand expression vs. breast pumping. (97.1% vs. 72.7%) (p=0.02).

• RR = 1.32 (1.01–1.73)

Early Control of Milk Synthesis

• Progesterone blocks catalytic function of prolactin, but not trophic functions
• Progesterone receptors downregulate in breast 3 days before labor
• Birth of placenta removes progesterone from system
• Copious milk production (secretory activation) begins as progesterone leaves body (36-72 hours) and infant breastfeeds
Later Control of Milk Synthesis

• Autocrine control – milk in breast slows production
  • Multiple proteins and growth factors

• Pressure
  • Reduces prolactin circulation
  • Interferes with 3 dimensional structure of organelles
  • Overfull lactocytes release integrins and apoptose
10 Steps to Successful BF

1. BF Policy – routinely communicated
2. Staff education to implement policy
3. *Inform ALL pregnant women – benefits & management of bf*
4. *Help initiate bf within ½ hour of birth*
5. *BF or milk expression assistance if separated*
6. *NO food or drink but human milk (medical except)*
7. 24/7 rooming in
8. *Encourage bf on demand*
9. *No pacifiers or artificial nipples*
10. *Refer to support groups*
More of 10 Steps = Fewer Mothers Quit BF

Lack of Steps = Shorter Duration

<table>
<thead>
<tr>
<th>Lack of Step Exposure</th>
<th>Prevalence in Analytic Sample, %</th>
<th>Duration Ratios (95% confidence interval)</th>
<th>Predicted Duration of Breastfeeding at the Breast for Lacking a Step or Combination of Steps, Wk(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Step 4 (initiation delayed)</td>
<td>33.1</td>
<td>0.88 (0.75, 1.01)</td>
<td>36.05</td>
</tr>
<tr>
<td>Lack of Step 6(^g) (formula and/or formula bags provided)</td>
<td>89.5</td>
<td>0.79 (0.69, 0.90)</td>
<td>39.08</td>
</tr>
<tr>
<td>Lack of Step 7 (mother–infant separated)</td>
<td>43.6</td>
<td>0.99 (0.86, 1.14)</td>
<td>42.32</td>
</tr>
</tbody>
</table>

Difference in Duration Attributable to Lacking a Step or Combination of Steps Compared with Receiving the Step or Combination of Steps, Wk\(^d\)

<table>
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<tr>
<th></th>
<th>(\Delta)</th>
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<tbody>
<tr>
<td>-5.17</td>
<td>(\delta)</td>
</tr>
<tr>
<td>-10.52</td>
<td>3.40-3.41</td>
</tr>
<tr>
<td>-0.39</td>
<td>(\delta)</td>
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</table>

Importance of Skin to Skin Contact from Birth

Dose-response relationship to exclusive bf.

Bramson L et al. Effect of Early Skin-to-Skin Mother Infant Contact During the First 3 Hours Following Birth on Exclusive Breastfeeding During the Maternity Hospital Stay J Hum Lact 2010; 26: 130-137

Immediate skin to skin did not add to staff workload.

Immediate and Continuous

• Maternal self efficacy (bf is easy, confident I can bf, I know how to bf, I can make enough milk for baby) significantly higher in s2s
• Time to first bf shorter
• Success of first bf: 56.6% s2s vs 34.6% standard care

Aghdas et al 2014 Women
Early S2S for 2+ hours vs Clothed

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Intervention group (mean ± SD)</th>
<th>Control group (mean ± SD)</th>
<th>$P$ value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBFAT score</td>
<td>9.55±1.143</td>
<td>6.71±1.895</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Infants exclusively breastfed at 6 weeks*</td>
<td>85.2%</td>
<td>63.6%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Axillary temperature after 2 h (in degree celsius)</td>
<td>36.95±0.174</td>
<td>36.72±0.248</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Weight loss at discharge (as percentage of birth weight)</td>
<td>4.009±1.988</td>
<td>6.122±2.593</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Significant morbidity*</td>
<td>0.0%</td>
<td>5.9%</td>
<td>0.006</td>
</tr>
</tbody>
</table>

*Srivasatava et al. Effect of very early skin to skin contact on success at breastfeeding and preventing early hypothermia in neonates. Indian J Public Health 2014;58:22-26 (n=240 dyads)*
Don’t Rush the Baby

• Birth cry
• Relaxation
• Awakening
• Activity
• Crawling
• Resting
• Familiarization
• Suckling
• Sleeping

Widstrom et al 2011
Newborn behaviour to locate the breast when skin-to-skin: a possible method for enabling early self-regulation
Acta Paed 100 (1) pp. 79-85

Photo courtesy of Stacy Kucharczk
Exogenous Oxytocin & Epidural

Fernandez 2012 – Dose response relationship between oxytocin in labor and poorer feeding related reflexes in newborns on day 2

• High dose – least likely to suck or swallow
• Only low dose oxytocin moms ebf at 3 mos
Labor Medications - Epidural

Cessation of bf < 1 month:

1.67 for Non-baby friendly hospital

1.26 in Baby-friendly hospital

Labor Medications

• Odds of suckling in 1st hour vs fentanyl or OT


• Vaginal births only
• Labor medication (including spinal/epidural or opioids) doubled risk of delayed lactogenesis II (> day 3)

Cesarean Birth Associated with Low Intraoral Vacuum

...a trend toward less suckling in first 24 hours, and later secretory activation.

Give Medicated Babies More Time Skin to Skin (2+ hours)

Spoon Seeding Colostrum Raised Blood Sugar in LGA Infant

Blood glucose raised from 28 to 52 after spoon feeding 35ml of hand expressed colostrum.


Photo courtesy of Esther Grunis
Milk Expression - Best practices:

• Begin within an hour of birth (Parker 2012, Larkin 2013)
• Use manual expression instead of or in addition to electric pump (Flaherman 2011, Morton 2009)
• Massage breast briefly (Jones 2001)
• Simultaneous expression (Hill 1986, Jones 2001, Prime 2012)
• Add manual expression (5x/d first 3 days) Morton 2009
Parry et al JHL 29(4) 2013

![Graph showing the proportion of children still breastfeeding over time for different categories of breastfeeding, including exclusive breastfeeding, high-partial breastfeeding, medium-partial breastfeeding, low-partial breastfeeding, and no breastfeeding.](image)
Data analysis showed that supplemented infants are substantially less likely at any time point to be breastfed compared to their exclusively breastfed counterparts. The lack of a dose-response effect between the amounts of infant formula received early in the post-partum period and the duration of breastfeeding suggests that there isn’t any threshold below which formula supplementation can be considered safe. Thus, protecting infants from exposure to formula in the hospital could go a long way toward improving early breastfeeding success and subsequent breastfeeding duration...
Early Supplementation Associated with BF Failure

• Formula supplementation for poor bf (day 0-3):
  • aOR 1.8 for NOT fully bf at 30-60 d
  • aOR 2.7 for bf cessation < 60 d

• Earlier bf cessation with:
  • Passive feeding (# bottle/syringe feedings)
  • number of formula feeds

Exclusive BF in Hospital

Bottles Interfere with Breastfeeding Success


“Lactastrophe”

Emotional distress due to disrupted lactation:
• pain
• difficulty latching
• low milk production

Higher risk dyads – refer to IBCLC early
Sleepy Baby/Drugged Baby

Photos courtesy of Esther Grunis
Overweight - DM, PCOS or CAH

Delayed lactogenesis II risks:
(Nommsen-Rivers 2010)
Primips > 30 yrs
Overweight or obese
Infant > 3800 g
BMI Affects Staff Behavior

• Prepregnant BMI >30 = less likely to: bf baby first hour, bf exclusively, get bf support number. Pacifier use more likely.

• Underweight mothers more likely to get formula marketing pack (“gift” pack)

• PRAMS data VT, IL, ME

C-section: Preventing Delayed Secretory Activation

• Skin to skin during repair
• Initiate bf while regional anesthesia still effective
• Manual expression of colostrum if separated.
• Oral care, spoon, cup, syringe feed
Preventing Mastitis

Avoid Milk Stasis
- Frequent breast emptying, massage for plugged ducts
- Avoid constricting bra/bag/carrier

WASH injured nipples with soap 2-3x/day

Wash uninjured nipples daily


Staph most common organism in unilateral mastitis
Multiple Birth Interventions

Induction, Cesarean, Opioid, Epidural (any combination) decreased median bf duration to 5 weeks vs 9 weeks.

Give additional support in postpartum unit.


- Radial incisions are less destructive
PCOS – acanthosis nigricans, hirsuitism, acne, mild hypoplasia
Mammary Hypoplasia (IGT)

- Intramammary space > 1.5-2”
- High inframammary fold
- Constricted base
- Lack of veining
- Stretch marks (insulin resistance – rapid growth)

Potential Markers for IGT

Asymmetry

Persistent Tanner Stage 4

Courtesy of Amy Kotler
Supplement at Breast
Excess Blood Loss

• Intrapartum hemorrhage can injure pituitary, affecting prolactin secretion
  • Pituitary shock may be reversible
  • Sheehan’s syndrome – pituitary necrosis with loss of all pituitary hormones. NO MILK
Retained Placenta

• Risk factors:
  • Fundal pressure
  • cord traction

• Progesterone from placenta blocks catalytic function of prolactin

• One report of hyperlactation
Injured Infants Need Additional Support

Ventouse Injury

Amnihook Injury

Photo courtesy of Esther Grunis
Changes in Practice

• Positive bf messages prenatally
• No industry-sponsored materials/formula
• Low intervention births = better infant competence
• Immediate and continuous skin to skin contact after birth (2+ hours)
• Manual expression of colostrum if infant separated from mother before bf well
• Support rooming in and bf on cue
Resources

https://themilkmob.org/lgb

Also available: Online BF Medicine Course for physicians (7-8 hours)
Questions?