The Business Case for Exclusive Breastfeeding

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6 for ME: Breastfeeding Learning Collaborative
June 1, 2016

Objectives

- ***The participant will be able to:***
  - Discuss national breastfeeding benchmarks
  - Describe one key piece of evidence in support of exclusive breastfeeding and each of the Ten Steps
  - Explain to another provider why implementing evidence-based steps in combination improves breastfeeding and health outcomes, and health care costs

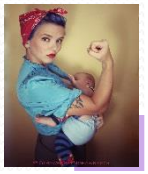
Overview

Expert Recommendations

- Expert Recommendations, Evidence and Benchmarks for Exclusive Breastfeeding
- Current rates of Exclusive Breastfeeding in the US and Maine

Evidence-based Best Practices

- Evidence in Support of The Ten Steps to Successful Breastfeeding and the Baby-Friendly Hospital Initiative (BFHI)
- Where Maine is in implementation of the Ten Steps and BFHI



Ten Steps in Action

- Putting the Ten Steps in Action Back Home
  - Best practice recommendations
  - Evidence in support of steps

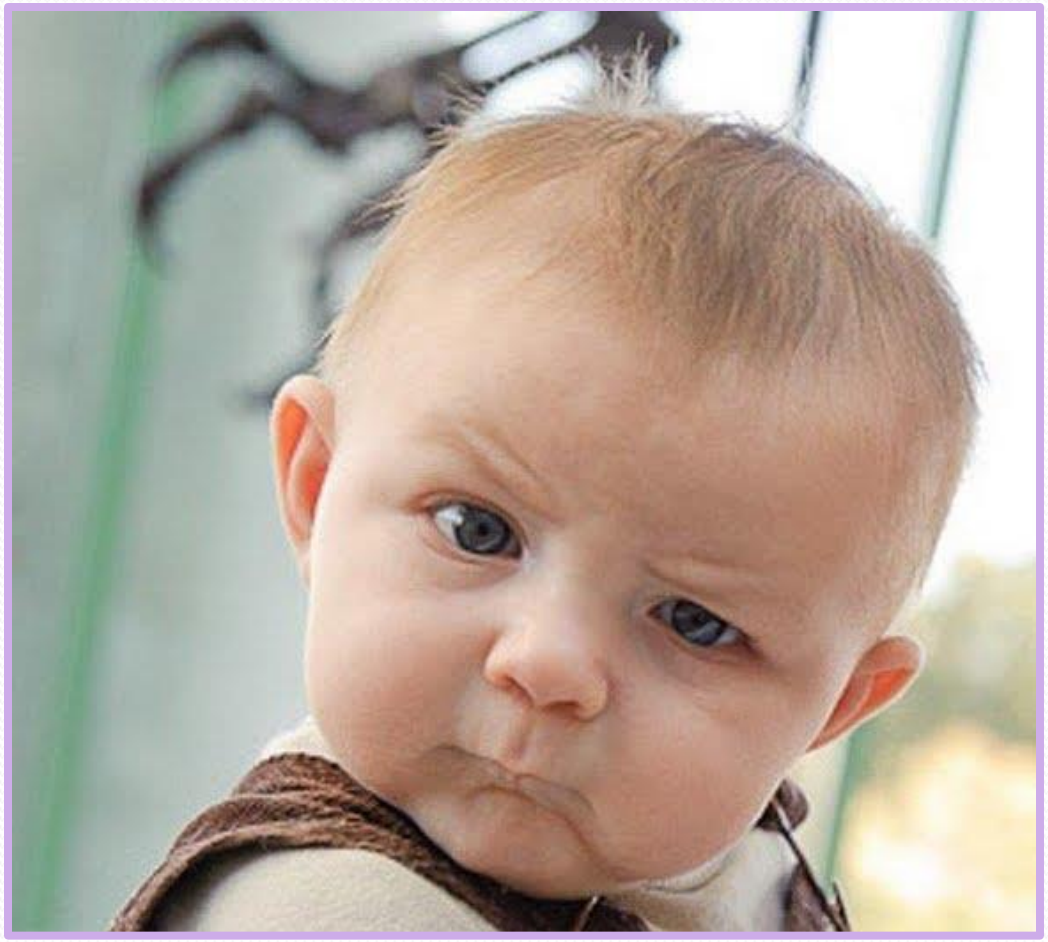
Expert Recommendations and Benchmarks for Exclusive Breastfeeding and Evidence-based Perinatal Best Practices

Maternal-Child Health Expert Recommendations for Breastfeeding?

Maternal-Child Health Expert Recommendations for Breastfeeding

- Exclusive breastfeeding for the first 6 months
- Continued breastfeeding for *at least* the first year

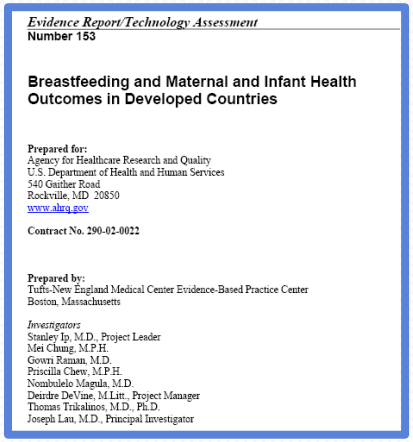
So Why Should We Promote Exclusive Breastfeeding?



AHRQ Review

- **Review of published literature in 2005**
- **Definitions**
  - Exclusive vs. partial
  - At breast vs. breastmilk fed
- **Data combined from different studies**
  - Studies predominately observational in nature
  - Focused on high level studies and meta analyses
  - Required comparison arm
  - Screened 9000 abstracts:
    - 43 studies primarily infant and 43 primarily mother
    - 29 systematic reviews that included 400 studies

Ip *et al*. *Evid Rep Technol Assess.* 2007.



Evidence Report/Technology Assessment
Number 153

Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries

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Benefits for Mothers and Infants

Infant

- Acute otitis media
- Atopic dermatitis
- Asthma
- Diabetes - Type 1 and 2
- NEC
- Non-specific gastroenteritis
- Obesity
- Severe LRIs
- SIDS

Mother

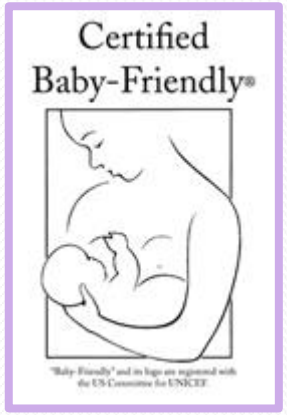
- Breast cancer
- Type 2 diabetes
- Ovarian cancer
- Postpartum depression

Ip *et al*. Breastfeeding and maternal and infant health outcomes in developed countries. *Evid Rep Technol Assess.* 2007.

PROBIT

Promotion of Breastfeeding Intervention Trial

- **Effects of BF promotion on BF duration & health outcomes**
- **Republic of Belarus**
- **Cluster RCT 6/96-12/97**
  - BFHI vs non-BFHI hospital
- **31 maternity hospitals and f/u clinics**
- **17,046 healthy mother-infant dyads**
  - 12 mo f/u: 16,491 (96.7%)
  - 6.5 yr f/u: 13,889 (81.5%)
  - 13.5 yr f/u: 13,879 (81.4%)



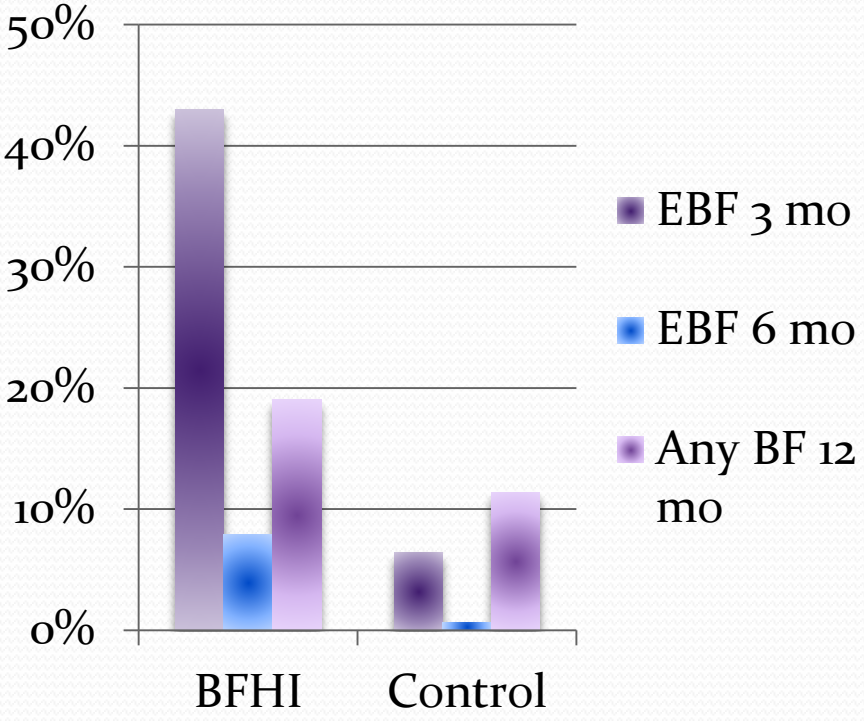
Kramer, *et al.* *JAMA.* 2001.

Impact of BFHI on Breastfeeding Exclusivity and Duration

Babies born in BFHs achieved significant increases in BF exclusivity and duration during first year of life

- **EBF at 3 and 6 mo**
  - 3 mo: 43.3% vs 6.4%
  - 6 mo: 7.9% vs 0.6%
- **Any BF at 12 mo**

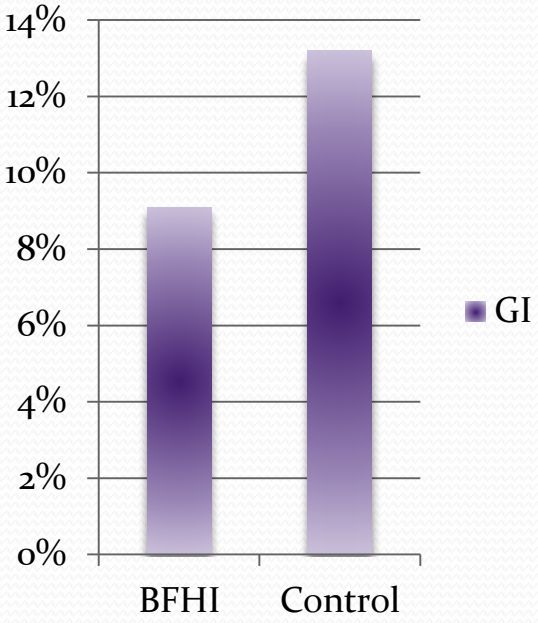
  19.7% vs 11.4%



Kramer, *et al.* *JAMA.* 2001.

PROBIT and Health Outcomes

- **Gastroenteritis**
  - 9.1% (exp) vs 13.2% (control)
  - OR 0.60 (0.40-0.91)
- **Atopic dermatitis**
  - 3.3% (exp) vs 6.3% (control)
  - OR 0.54 (0.31-0.95)
- **LRTI / Allergy / Blood Pressure**
  - No significant differences seen



PROBIT and Cognitive Outcomes

- **Higher means on all Wechsler abbreviated scales of intelligence and teacher academic ratings for reading and writing**
  - Verbal IQ +7.5 (+0.8 to +14.3)
  - Performance IQ +2.9 (-3.3 to +90.1)
  - Full Scale +5.9 (-1.0 to +12.8)

Kramer MS. *Arch Gen Psychiatry*. 2008.

PROBIT and Obesity

- 6.5 yr: No differences in body mass index, waist or hip circumference, triceps or subscapular skinfold thickness
- 11.5 yr: No differences in overweight or obesity, or IGF-I levels

Limited by low rates of obesity in Belarus as compared to US

Kramer MS. *Arch Gen Psychiatry*. 2008.

Benefits of Any and Exclusive BF

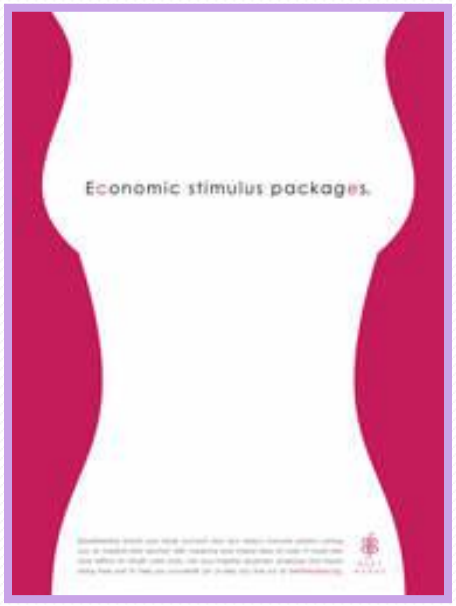
Any Breastfeeding	Risk Reduction	Exclusive Breastfeeding	Risk Reduction
Acute Otitis Media (AOM)	23%	AOM [> 3 mo EBF]	50%
Asthma [>3 mo +FH]	40%	Atopic Dermatitis [> 3 mo EBF]	32% 42% [+FHx]
Gastroenteritis	65%	LRTI Hospital Admission [> 4 mo EBF]	72%
Obesity	4% *per mo*	SIDS	73%
Leukemia [6 mo]	20%		
Type 1 Diabetes	60%		
Type 2 Diabetes	40%		
SIDS	36-45%		

Kramer *et al.* *JAMA.* 2001.
Ip *et al*. *Evid Rep Technol Assess.* 2007.
Kramer *et al.* *Arch Gen Pyschiatry.* 2008.
Hauck *et al.* *Pediatrics.* 2011.

Decreased US health care & life costs

- **If 90% families breastfeed exclusively for the 1st 6 months:**
  - Would save $ 13 billion dollars in US childhood health care costs and prevent 911 infant/child deaths per year
- **If 80% families breastfeed exclusively for the 1st 6 months:**
  - Would save $ 10.5 billion dollars and prevent 741 deaths per year

Bartick *et al.* *Pediatrics.* 2010.



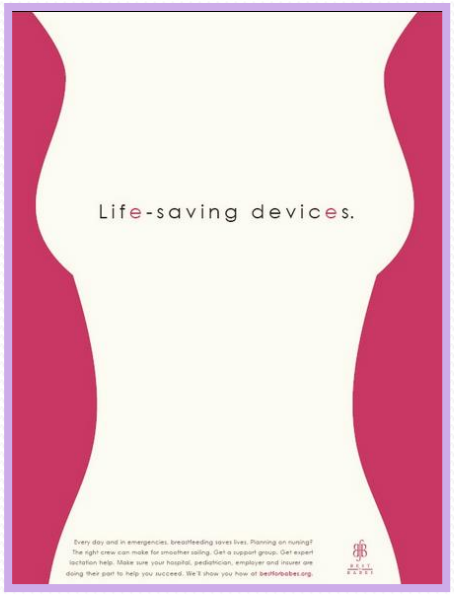
Decreased US health care & life costs

- **If 90% mothers breastfed for at least one year (vs current rate of 23%)**

  - would prevent:
  - 4,981 cases of breast cancers
  - 13,946 cases of MI
  - 53,847 cases of HTN

  - would save:
  - $17.4 billion dollars in premature deaths
  - $733.7 million in direct costs
  - $126.1 million in indirect morbidity costs

Bartick *et al, Obstet Gynecol.* 2013.



Lancet Breastfeeding Series - 2016

- **Systematic reviews: Published & unpublished studies**
- **28 meta-analyses for outcomes associated w/ BF**
- **National surveys & administrative data to help determine breastfeeding rates**
- **Lives Saved Tool to predict # preventable deaths in children < 5 yr from infxn disease & that due to prematurity** (and breast cancer in women) **if BF patterns were scaled up in 75 countries to:**
  - 95% EBF in babies < 1 month
  - 90% EBF in babies < 6 months
  - 90% partly BF in children 6-23 months

Victora CG, et al. *Lancet*. 2016;387:475-490.

Decreased Mortality

- **Low-Middle Income Countries:**
  - **Infants never BF** (vs ever BF):
    - <6 mo: 3.5-4.1x (F) mortality
    - 6-23 mo: 2x mortality
  - **Exclusively BF infants & deaths from infxn:**
    - 41% fewer deaths c/w those predominantly BF
    - 78% fewer deaths c/w those partially BF
    - 88% fewer deaths c/w never BF
- **High Income Countries:**
  - Infants ever BF: 36% reduction in SIDs, 58% reduction in NEC, 19% reduction in childhood leukemia

Victora CG, et al. *Lancet*. 2016;387:475-490.

Decreased Diarrheal Illness

Comparing more vs less BF (e.g,. EBF vs non-exclusive BF; predominant vs partial; partial vs none; any BF vs no BF)

- **Reduced diarrheal illness**
  - <6 mo: 63% decreased risk
  - 6 mo - 5 yr: 54% decreased risk
- **Reduced admissions 2/2 diarrhea**
  - < 5 yr: 72% decreased risk

Victora CG, et al. *Lancet.* 2016;387:475-490.

Decreased Respiratory Infections

Comparing more vs less BF (e.g,. EBF vs non-exclusive BF; predominant vs partial; partial vs none; any BF vs no BF)

- **Reduced respiratory tract infections**
  - <2 yr: 32% decreased risk
- **Reduced admissions 2/2 resp. tract infxn**
  - < 2 yr: 57% decreased risk
- **Reduced otitis media**
  - ≤ 2 yr: 33% reduced risk
  - > 2 yr: no difference

Victora CG, et al. *Lancet*. 2016;387:475-490.

Atopic Disorders

Comparing more vs less BF (e.g,. Ever vs never; EBF at 6 mo vs non-exclusive BF; predominant vs partial; any BF for ≥ 3-4 mo vs < 3-4 mo)

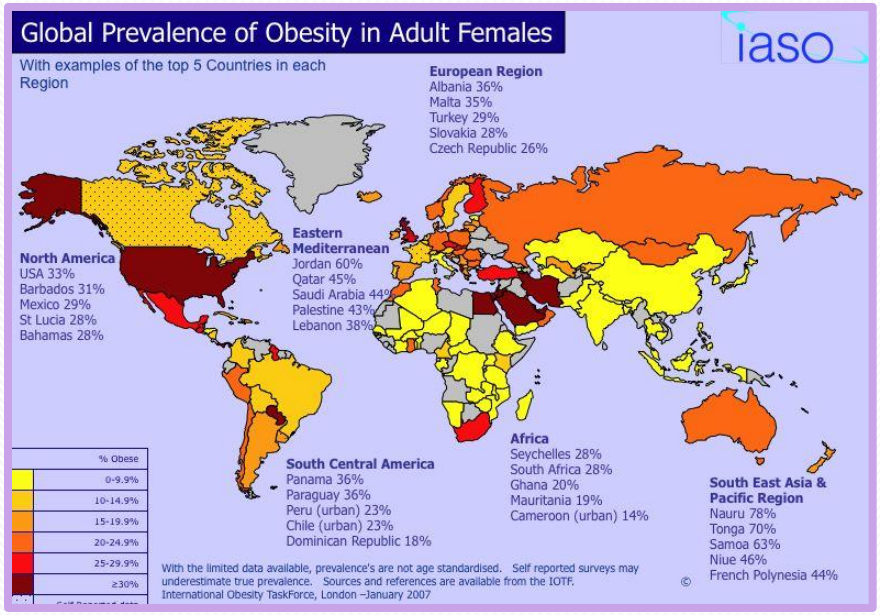
- **No significant differences seen for: Eczema or food allergies**
- **Allergic rhinitis:**
  - ≤ 5 yr: 21% decreased risk
- **Asthma or wheezing**
  - 5-18 yr: 9% decreased risk

Victora CG, et al. *Lancet*. 2016;387:475-490.

Overweight or Obesity

Never vs ever BF, longer vs shorter duration of EBF or longer vs shorter duration of any BF

- **Childhood, Adolescence, and Adulthood Overweight and Obesity**: 13-26% decreased risk



Victora CG, et al. *Lancet*. 2016;387:475-490.

Benefits for Women

Highest vs lowest duration of breastfeeding:

- **Lactational amenorrhea:** 1.17x more effective than not BF, esp for exclusive or predominant BF
- **Breast cancer**: 19% decreased risk
  - Each 12-mo increase in lifetime BF = 4.3% reduction
- **Ovarian cancer:** 30% decreased risk
- **Type 2 DM:** 32% decreased risk
- **Osteoporosis:** Insufficient evidence

  (not assessed due to low number of studies)

Victora CG, et al. *Lancet*. 2016;387:475-490.

Costs & Lives Saved Globally

- **If BF was scaled up to near universal levels in 75 high-mortality low-middle income countries in 2015, could prevent:**
  - 18.8% or 823,000 deaths in children < 2 yr annually
  - 87% preventable deaths in infants < 6 mo
  - 19,464 breast cancer deaths annually
- **Could prevent additional 22,216 deaths annually, if increased BF duration from present levels to:**
  - 12 months in high-income countries
  - 2 years in low- to middle-income countries

More Benefits for Babies

- **Early life immune modulation**
- **Promotion of healthy bacteria in the GI tract → imprinting, decreased inflammation and disease**
- **Possible lower risk of other childhood / adulthood illnesses such as:**
  - Bacterial infections in the blood, urine and spinal fluid
  - Celiac disease
  - High blood pressure
  - High cholesterol

Benefits for Families

- Mom's breastmilk is always available & ready to feed
- Families are healthier
- More time spent with each other
- Parents miss less work
- More $ for fun and college

Benefits for Communities

- **Improves health of communities**
- **Benefits employers / companies**
  - Decreased employee absenteeism
  - Increased employee retention
  - Increased loyalty/satisfaction
- **Decreases health care & life costs**

Benefits to the Environment

Saves following related to formula production:

- **Energy & products to manufacture formula**
- **Cost of packaging formula & disposal of manufacturing waste** - *Rolling 2016*
  - 550 million cans
  - 86,000 tons of metal
  - 364,000 tons of paper
- **Water, fuel and cleaning agents for daily preparation and use**
  - 4000 L of water to produce just 1 kg of powdered formula - *Linnecar 2014*
- **Energy to transport formula to stores**
- **Greenhouse gas industrial byproducts**

Exclusive BF: The Reality

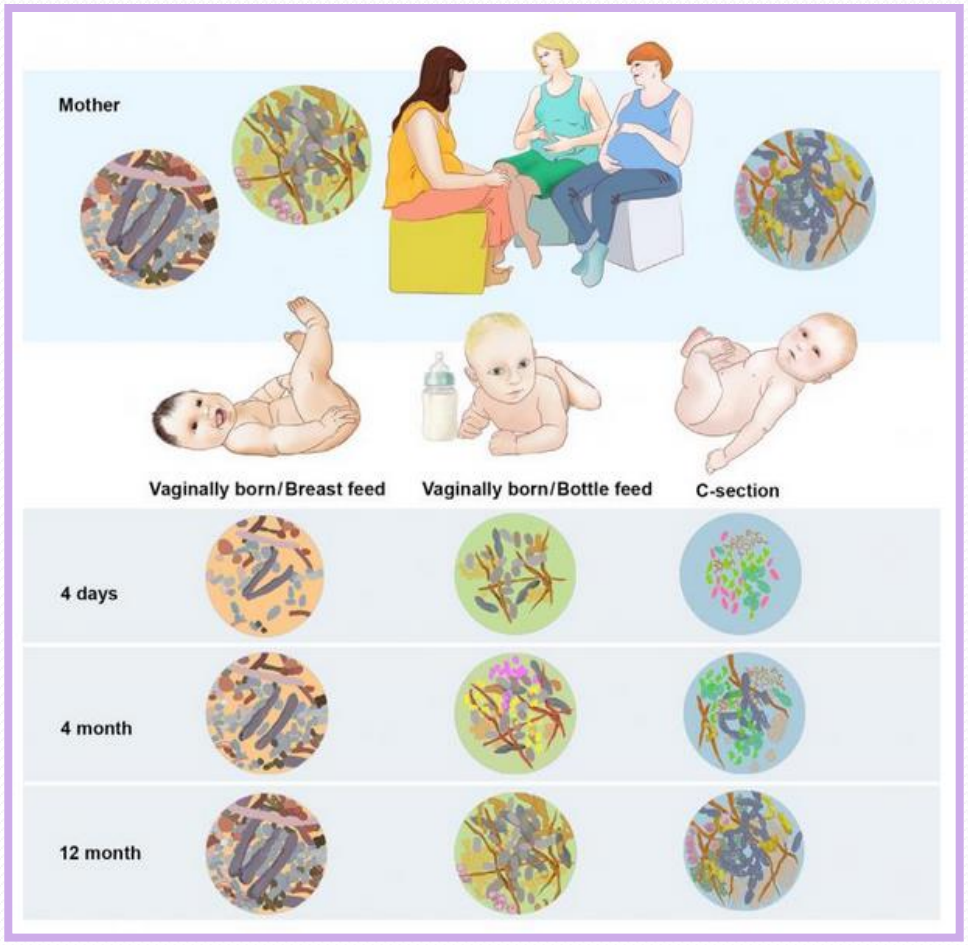
- **In some settings, ~25-42% U.S. newborns receive formula before hospital d/c**

  Grummer-Strawn *et al*. *Pediatrics*. 2008.

- **Formula supplementation carries health risks including change in neonate's gut microbiome**

  Holscher, *et al* . *J Parenter Enter Nutr.* 2012. Wang, *et al. J Clin All Imunol.* 2008; Bisgaard H, *et al.* *J Allergy Clin Immunol.* 2011. Sepp, *et al. Clin Exp Allergy.* 2005.

Gut Microbiome … Say What?!?



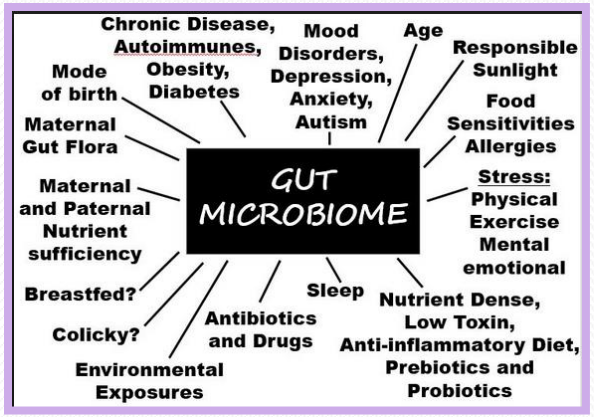
The Gut Microbiome and Breastfeeding

- **Breastfed infants have:**
  - **Lower levels of potential pathogens** (e.g., *Clostridium difficile* associated with early onset allergy / atopy)

    Sepp, *et al. Clin Exp Allergy.* 2005.
  - **Higher levels of oligosaccharides that promote growth of healthy bacteria** (e.g., *bifidobacterium)*

    Zivkovik AM, *et al . PNAS.* 2011.
  - **Lower risk of childhood and adult onset obesity**

    Thompson AL, *et al. Am J Hum Biol.* 2012.



The Gut Microbiome and Formula …

- **Formula fed infants have:**
  - **Less diversity in gut flora**
    - Potentially altered gut epithelialization & immune function
    - Decreased microbial diversity in the first weeks of life related to allergy at school age

    Wang *et al. J Clin All Imunol.* 2008; Bisgaard *et al. J Allergy Clin Immunol.* 2011.
  - **Specific bacteria in the gut associated with early onset allergy and atopy** (e.g., *C diff and E coli)*

    Sepp *et al. Clin Exp Allergy.* 2005.
  - **Higher proportions of potentially pathogenic bacteria** (e.g., *Bacteroides, C. diff, Prevotella)*

    Holscher *et al . J Parenter Enter Nutr.* 2012.

Impact of mixed feedings on the intestinal microbiome

In a prospective study of 102 AGA >37 week infants:

- 70 exclusively BF (EBF), 26 combination BF+FF, 6 exclusively FF (EFF)
- **Independent associations between microbial community composition and infant feeding method, demonstrated through rRNA gene sequencing, found at 6 weeks:**
  - Bacterial communities of combination fed-infants were more similar to those of EFF-infants than to EBF-infants

Table 2. Relative Abundance of the 10 Most Abundant Bacterial Genera Identified for All Infants Overall and for Individual Delivery Mode and Feeding Groups

	Group, %					
		Delivery Type		Feeding Type		
Genus	Overall (N = 102)	Vaginal (n = 70)	Cesarean (n = 32)	Exclusively Breastfed (n = 70)	Combination Fed (n = 26)	Exclusively Formula Fed (n = 6)
Bacteroides	26.4	34.6	20.7	27.9	22.1	28.8
Bifidobacterium	22.5	23.3	17.4	25.5	16.8	11.4
Streptococcus	13.8	12.1	14.0	11.7	18.7	16.9
Clostridium	7.9	5.1	8.8	6.8	11.9	2.4
Enterococcus	5.7	4.3	8.7	4.8	6.1	14.6
Blautia	3.6	2.7	5.5	1.8	7.1	9.4
Veillonella	3.4	3.6	4.6	3.5	3.2	2.9
Lactobacillus	3.0	2.5	4.2	3.4	2.8	0
Staphylococcus	2.6	1.6	3.4	3.3	1.2	0.1
Planococcus	2.0	1.4	2.9	1.5	3.3	2.6
Other genera	9.1	8.8	9.8	9.8	6.8	10.9

Madan JC, *et al.* *JAMA.* 2016.

What other Risks Does Formula Carry?

Potential Risks of Formula Supplementation in Infants

Risks in the Newborn / Early Infancy	Risks in Infancy and Childhood
Change to neonatal microbiome	Acute otitis media
Difficulty digesting formula / feeding intolerance	Allergy
Delay in mother's milk production	Asthma
Decreased milk supply	Atopic dermatitis / Eczema
Acute otitis media	Diabetes -Type 1 and 2
Gastrointestinal (GI) infections	Gastrointestinal (GI) infections
Severe lower respiratory tract infections	Immune-mediated illnesses
NEC	Leukemia
Death	NEC
DeCarvalho *et al*. *Arch Dis Child*. 1981. Herrera. *Perinatol/Neonatol.* 1984. McNiel ME *et al. Birth.* 2010. Nylander *et al*. *Acta Ob/Gyn Scand.* 1991. DiGirolamo *et al. Pediatrics.* 2008. Seminic *et al*. *Res Nurs Health*. 2008.	Obesity
	Severe lower respiratory tract infections
	Death

Exclusive BF: The Reality

- **↓ BF duration / exclusivity more likely in face of:**
  - **Early formula supplementation**

    McNiel ME, *et al*. *Birth*. 2010. Tarrant, *et al*. *Birth*. 2011. Perrine, *et al*. *Pediatrics*. 2012. Nickel, *et al*. *J Hum Lact*. 2013.
  - **Breastfeeding difficulties**

    Murray *et al*. *Birth*. 2007. Santo *et al*. *Birth*. 2007. DiGirolamo *et al*. *Pediatrics*. 2008.

Only ~ 1/3 of Mothers are able to Meet their EBF Goals of ≥ 1 month

Perrine *et al. Pediatrics.* 2012.

Intended Duration, mo	%	Achieved Duration					Met Goal, %
		<1 mo	1–2 mo	3–4 mo	5–6 mo	≥ 7 mo	
<1	1.1	93.8	6.3	0.0	0.0	0.0	100.0
1–2	11.9	61.3	23.1	11.0	4.6	0.0	38.7
3–4	29.2	47.7	15.3	22.5	14.1	0.5	37.1
5–6	40.6	33.1	10.3	22.5	30.4	3.7	34.1
≥7	17.2	34.4	9.6	19.6	24.8	11.6	11.6
Total	100.0	41.6	13.1	20.4	21.3	3.6	32.4

Impact of Exclusive BF in Hospital

- **In-hospital exclusive BF is protective against BF cessation ≤ 8 wk** OR: 0.61 (95% CI: 0.42 to 0.88)

  Tarrant *et al. Birth.* 2011.

- **Mothers > 2x more likely to meet personal EBF goals if they exclusively BF in hospital**

  Perrine *et al. Pediatrics.* 2012.

- **Lack of exposure to Step 6 → 10.52 week shorter BF duration**

  Nickel *et al. J Hum Lact.* 2013.

What are the main *perinatal* barriers to exclusive breastfeeding?

The main *perinatal* barriers to exclusive breastfeeding

- **Perinatal / hospital practices not supportive of breastfeeding**
  - Lack of provider knowledge
  - Non-evidence based guidance
  - Lack of provider skill to assist breastfeeding mothers
- **In-hospital / early supplementation with formula**

Bolton TA, *et al. J Hum Lact;* 2009.
Agboado G, *et al. BMC Pediatr.* 2010;
Hauck YL, *et al. Matern Child Health J.* 2010.

Optimizing Breastfeeding Outcomes

- **Evidence-based breastfeeding practices / policies**
- **Accurate and consistent advice**
- **Implemented by trained staff**

Bystrova *et al*. *Int Breastfeed J.* 2007.
DiGirolamo *et al*. *Pediatrics*. 2008
Rosenberg *et al*. *Breastfeed Med.* 2008.

Exclusive Breastfeeding Benchmarks

National Benchmark	Healthy People 2020	CDC Breastfeeding Report Card	CDC mPINC Survey	Joint Commission PCCM*
↑ exclusive breastmilk feeding (EBF) at discharge	x	x	x	x
↓ use of non-medically indicated formula supplementation in first few days of life	x	x		x
↑ evidence-based BF support provided in all birthing hospitals	x	x	x	
↑ BF initiation, duration & exclusivity (birth, 3 mo, 6 mo)	x	x		EBF initiation

Joint Commission & EBF

- **Performance Measure:**
  - **Exclusive breast milk feeding** = newborn receiving only breast milk and no other liquids or solids except for drops or syrups consisting of vitamins, mineral, or medicines.
  - **Breast milk feeding** includes expressed mother's milk and donor human milk, both of which may be fed to the infant by means other than suckling at the breast.
- **PC-05** Exclusive breast milk feeding during the newborn's entire hospitalization
- **PC-05a** Exclusive breast milk feeding during the newborn's entire hospitalization considering mother's choice

Joint Commission & EBF

- **Numerator Statement:**
  - PC-05 Newborns that were fed breast milk only since birth
  - PC-05a Newborns that were fed breast milk only since birth considering mother's choice
- **Denominator Statement:**
  - **PC-05** Single term newborns discharged alive from the hospital
  - **PC-05a** Single term newborns discharged alive from the hospital excluding those whose mothers chose not to breast feed

Joint Commission & EBF

Excluded Populations:

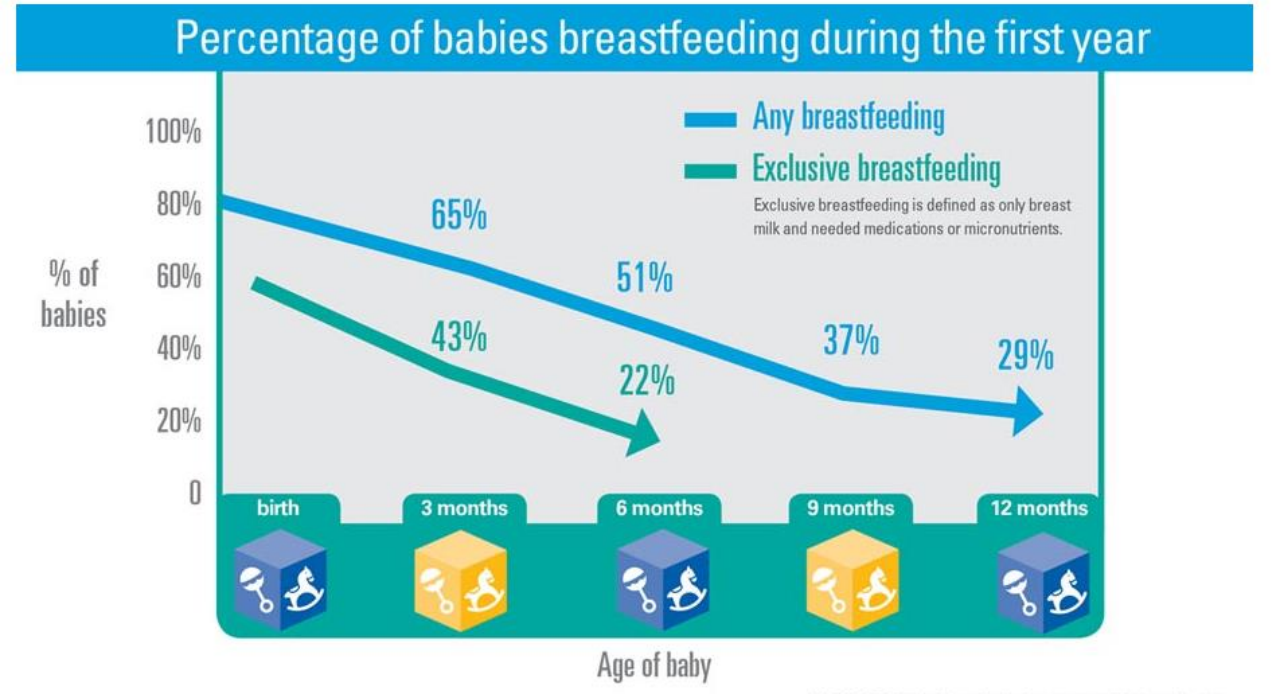
- Admitted to the Neonatal Intensive Care Unit (NICU) at this hospital during the hospitalization
- *ICD-9-CM Other Diagnosis Codes*
  - Premature newborn
  - Galactosemia
  - Parenteral infusion
- Length of Stay >120 days
- Enrolled in clinical trials
- Documented *Reason for Not Exclusively Feeding Breast Milk*
- Patients transferred to another hospital
- Experienced death

Healthy People 2020

Healthy People 2020 Objectives	Target
MICH*-21: Increase the proportion of infants who are breastfed	
MICH-21.1: Ever	81.9%
MICH-21.2: At 6 months	60.6%
MICH-21.3: At 1 year	34.1%
MICH-21.4: Exclusively through 3 months	46.2%
MICH-21.5: Exclusively through 6 months	25.5%
MICH-22: Increase the proportion of employers that have worksite lactation support programs.	38%
MICH-23: Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life.	14.2%
MICH-24: Increase the proportion of live births that occur in facilities that provide recommended care for lactating mothers and their babies.	8.1%

*Maternal Infant and Child Health

How are moms in the US doing?



Healthy People 2020	Any Breastfeeding			Exclusive BF	
	Ever	At 6 mo	At 1 yr	Thru 3 mo	Thru 6 mo
2020 HP goals	81.9%	60.6%	34.1%	46.2%	25.5%

http://www.cdc.gov/nccdphp/DNPAO/index.html

How are we doing?

Healthy People 2020	Any Breastfeeding			Exclusive BF	
	Ever	At 6 mo	At 1 yr	Thru 3 mo	Thru 6 mo
2020 HP goals	81.9%	60.6%	34.1%	46.2%	25.5%
National	80%	51.4%	29.2%	43.3%	21.9%
ME - 2012	81.6%	55.7%	30.9%	46.8%	16.6%
NH - 2012	82.4%	60.2%	40.0%	55.8%	30.8%
VT - 2012	81.5%	58.7%	39.8%	47.6%	29.3%

2014 data	2020 goals	US	ME	NH	VT
% BF infants receiving formula < 2 d of age	14.2%	19.1%	14.5%	12.2%	9.0%

http://www.cdc.gov/nccdphp/DNPAO/index.html

Evidence in Support of The Ten Steps to Successful Breastfeeding and the Baby-Friendly Hospital Initiative

BFHI = Baby-Friendly Hospital Initiative

- Established in 1991
- Coordinated through UNICEF and WHO
- Global formal intervention to facilitate BF initiation, duration, and exclusivity
- Goal = Decrease infant morbidity/mortality through increased BF support

What is a Baby-Friendly Hospital?

- Focuses on baby's needs
- Empowers mothers to believe in ability to care for infant
- Evidence-based perinatal and postnatal care
- Adapts routines to support mother-infant dyads
- Abides by the Ten Steps to Successful Breastfeeding

Ten Steps to Successful Breastfeeding?

Ten Steps to Successful Breastfeeding

1. **Written BF policy** communicated to all staff
2. **Train all staff** in breastfeeding support
3. **Prenatal education** – benefits / mgmt
4. **Skin-to-skin and early suckling**
5. **Help with BF** & maintaining lactation
6. **Breastmilk only** (no formula supplementation)
7. **Rooming-in**
8. **Breastfeeding "on demand"**
9. **No pacifiers/artificial nipples**
10. **Breastfeeding support** with early follow-up

Ten Step Key Supporting Evidence

Step	Key Supporting Evidence	Reference
1: Written BF Policy	Formal implementation of a written BF policy is associated with higher BF rates at discharge	Lillehoj and Dobson. *JOGNN.* 2012.
2: Staff Education	Staff training significantly increased rate of exclusive BF (EBF) from 41% to 77%	Cattaneo & Buzzetti. *BMJ.* 2001.
3: Prenatal Education	Women encouraged to BF: 4x more likely to initiate BF with even greater increases seen for those traditionally less likely to BF (11x for single women)	Lu M. *Obstetr and Gynecol.* 2001.
4. Early Skin-to-Skin (STS) & First BF	Randomized controlled trial (RCT) of first-time mother-infant dyads revealed very early STS → effective breastfeeding almost twice as soon as control dyads	Moore ER, Anderson GC. *J Midwifery Women's Health.* 2007.

Ten Step Key Supporting Evidence

Step	Key Supporting Evidence	Reference
5. Show Moms How To Breastfeed	Infants demonstrate significantly more innate BF behaviors, aiding in latching-on and sustained feeding, when placed prone on their mother's abdomen with mother in semi-reclined position; mothers demonstrate more affectionate mothering behaviors in this position as well	Colson SD *et al. Early Hum Dev.* 2008.
6.Breastmilk Only	Mothers > 2x more likely to meet personal EBF goals if they exclusively BF in hospital	Perrine, *et al. Pediatrics.* 2012.
7. Rooming-in	Significantly ↑ milk volumes on day 4 for mothers rooming-in with their infants	Bystrova K *et al. Int Breastfeed J.* 2007.

Ten Step Key Supporting Evidence

Step	Key Supporting Evidence	Reference
8. Feeding on Cue	Infants who breastfeed on demand experience significantly ↑ exclusive BF duration than those who feed on a schedule	Koosha A *et al. Singapore Med J.* 2008.
9. No Artificial Nipples	Daily pacifier use starting < 4–6 wk of age associated with: • ↓ duration of full breastfeeding • ↓ maternal BF confidence • maternal concern about poor milk supply	Vogel AM *et al. J Paediatr Child Health.* 2001.
10. Support Post-DC	Mothers breastfeed significantly longer and with more exclusivity when they receive combined lay & professional breastfeeding support	Britton C *et al. Cochrane Database Syst Rev.* 2007.

Impact of Implementing the Ten Steps together as the BFHI

- **Increased BF initiation**

  Phillip *et al*. *Pediatrics*. 2003.
  Merewood *et al*. *J Hum Lact.* 2003.
  Merewood, *et al.* *Pediatrics.* 2005.
  Venancio, *et al*. J Epidemiol Community Health. 2012.

- **Increased BF duration**

  Caldeira & Goncalves. *J Pediatr (Rio J).* 2007.
  Cardoso *et al*. *J Pediatr (Rio J).* 2008.
  DiGirolamo *et al*. *Pediatrics.* 2008.

- **Increased BF exclusivity**

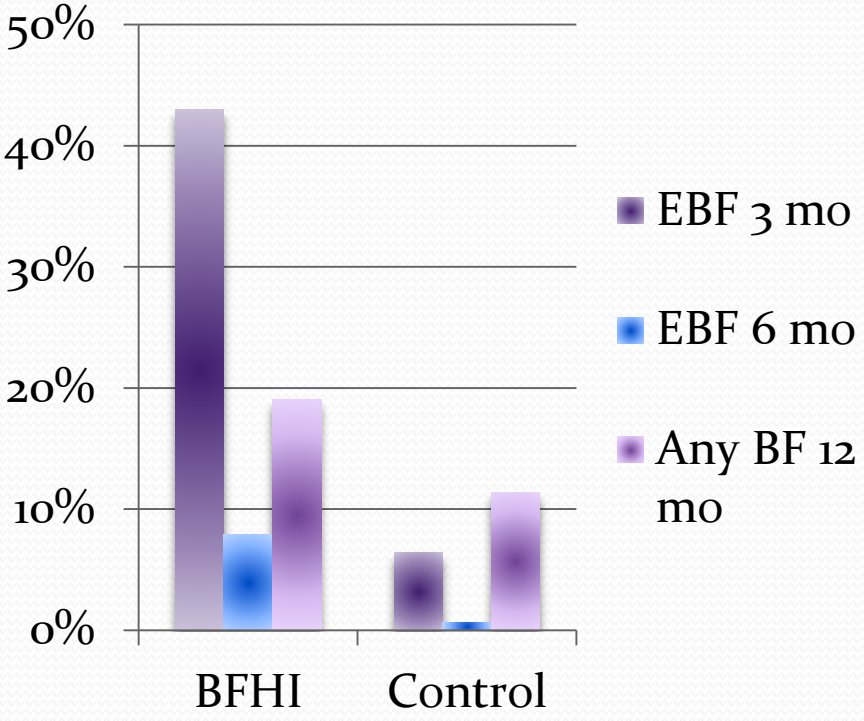
  Caldeira & Goncalves. *J Pediatr (Rio J).* 2007.
  Rivera-Lugo *et al.* *Breastfeed Med.* 2007.
  Cardoso *et al*. *J Pediatr (Rio J).* 2008.
  Merewood, *et al.* *Pediatrics.* 2005.
  Venancio, *et al.* *J Epidemiol Community Health.* 2012.

Impact of BFHI on Breastfeeding Exclusivity and Duration

PROBIT: Babies born in BFHs achieved significant increases in BF exclusivity and duration during first year of life

- **EBF at 3 and 6 mo**
  - 3 mo: 43.3% vs 6.4%
  - 6 mo: 7.9% vs 0.6%
- **Any BF at 12 mo**

  19.7% vs 11.4%



Kramer, *et al.* *JAMA.* 2001.

Birth in Baby-Friendly Hospital (BFH) & Effect on BF Duration and Exclusivity

Venancio, *et al. J Epidemiol Community Health.* 2012.

Median Duration of EBF	
Birth at BFH	**60.2 days (95% CI: 56.5 to 64.2)**
Birth elsewhere	**48.1 days (95% CI: 45.3 to 50.8)**

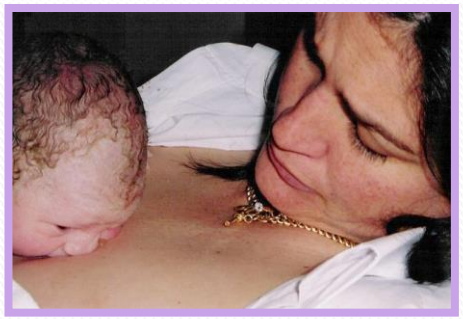
- **Infants delivered in BFHs:**
  - **Significantly more likely to initiate BF at birth and be BF at d/c:**
    - 9% more likely to be BF in first hour of life
    - 6% more likely to be BF at one day post-discharge
  - **Significantly more likely to be EBF at each of following time points:**
    - 13% more likely in infants < 2 mo
    - 8% more likely in infants < 3 mo
    - 6% more likely in infants < 6 mo

Impact of delivering in an BFHI-accredited hospital

Brodribb W, *et al. Pediatrics.* 2013.

- **4 baby-friendly practices** (rooming-in, skin-to-skin at 1st contact, time to 1st attempted BF within 60 min of delivery, no supplementation) **were experienced more frequently by women birthing in BFHI hospitals**

- **Women in BFHI hospitals had significantly higher odds of experiencing 2, 3, or 4 of these practices than those in non-BFHI hospitals**



Baby-Friendly Practices & Breastfeeding Duration

Brodribb W, *et al. Pediatrics.* 2013.

Compared with mothers who experienced none of these practices, those exposed to all 4 were:

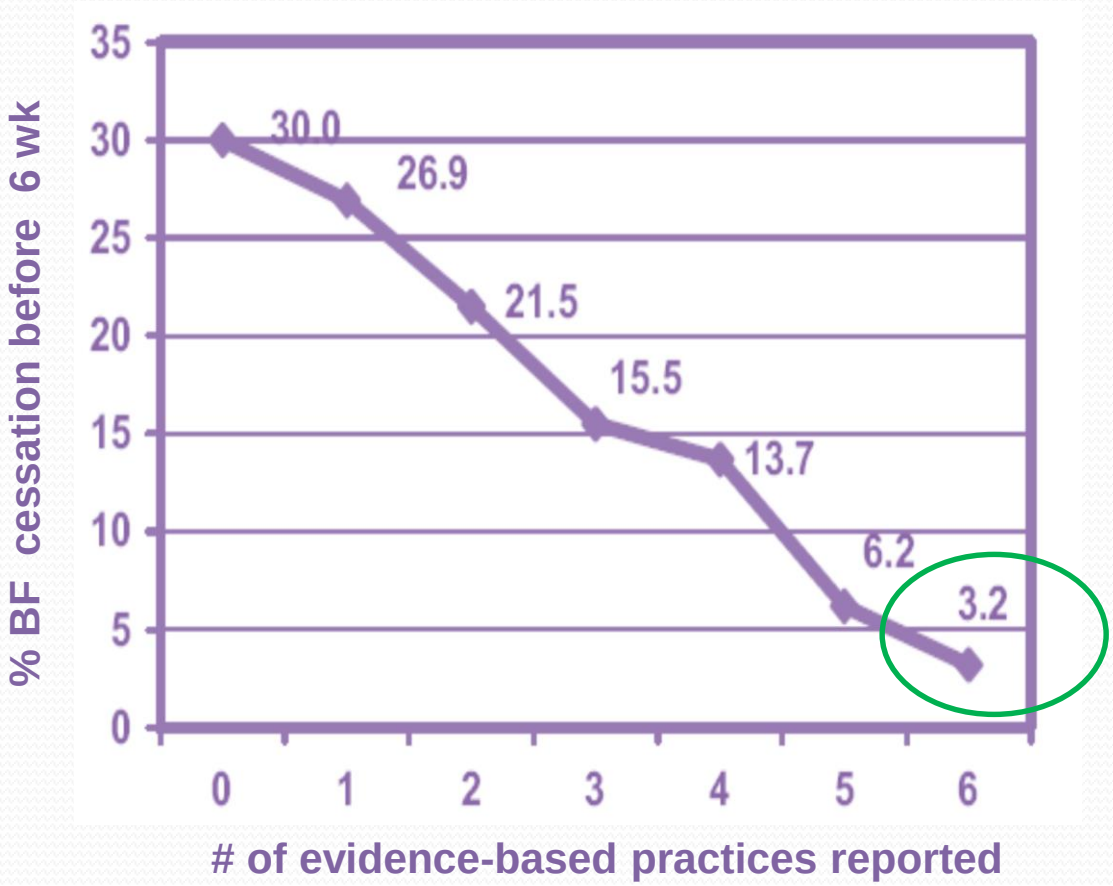
- **2.2 x** more likely to be BF at 1 mo
- **~3x** more likely to be BF at 4 mo

# Practices	BF at 1 mo AOR (95%)	BF at 4 mo AOR (95%)
0	1	1
1	1.23 (0.77-1.97)	1.36 (0.93-2.00)
2	1.09 (0.79-1.49)	1.56 (1.20-2.05)
3	1.20 (0.94-1.53)	1.64 (1.31-2.05)
4	2.20 (1.78-2.71)	2.93 (2.40-3.60)

Mothers exposed to 2-3 baby-friendly practices:

- > 1.5 x more likely to be BF at 4 mo

Impact of Steps in Combination



DiGirolamo *et al*. *Pediatrics*. 2008.

Ten Step Practices & ↓BF Cessation

Mothers who experienced ≤ 1 Ten Step practice were > 3x more likely to stop BF before 8 wk as compared with mothers who experienced 6 practices

Tarrant, *et al. Birth.* 2011.

Likelihood of discontinuing breastfeeding < 8 wk

# Steps	OR (95% CI)*
0-1	3.13 (1.41 to 6.95)
2	2.03 (1.05 to 3.94)
3	2.31 (1.21 to 4.42)
4	2.08 (1.08 to 4.00)
5	1.45 (0.70 to 2.99)
6	1.00

6 for ME: How ME came to choose the 6

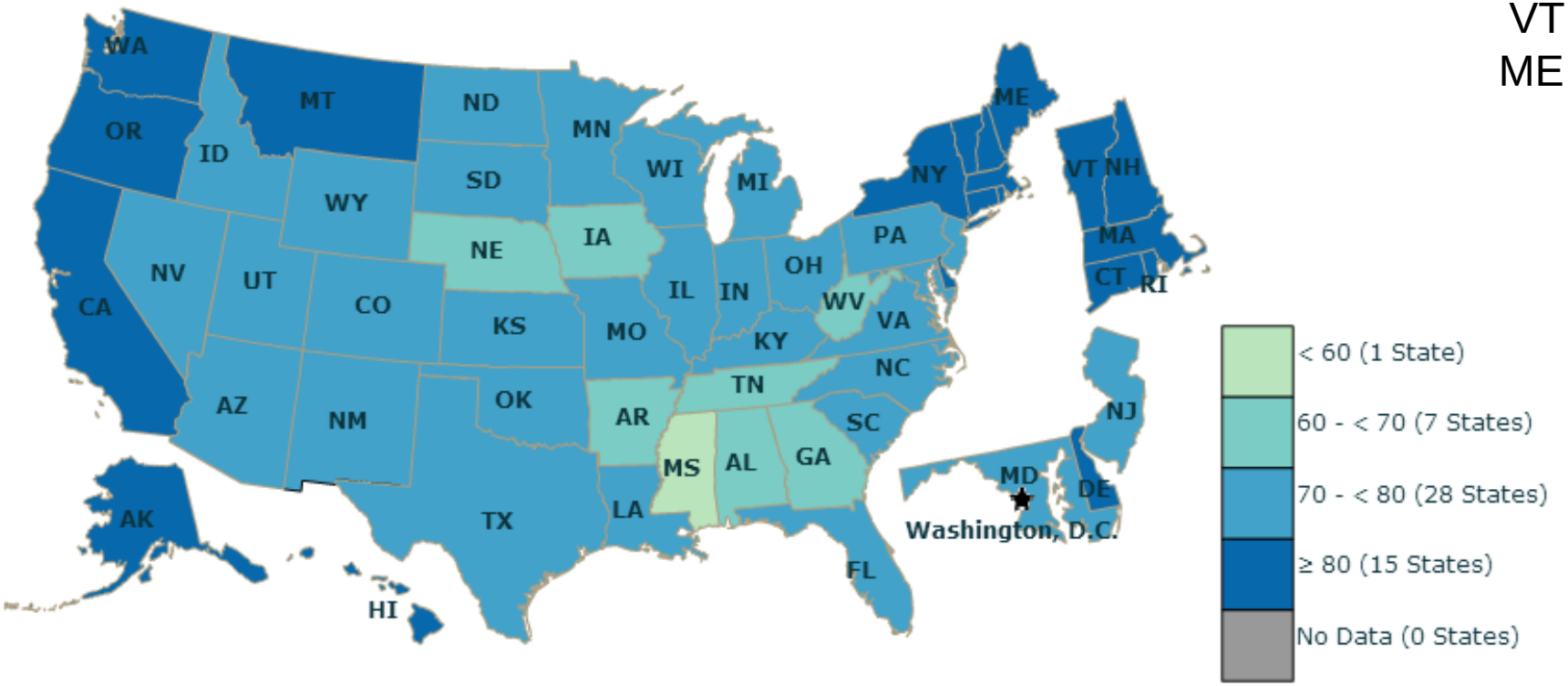
2011 mPINC and % Maine hospitals with recommended Ten Step policies and practices

	Model policy	Assess staff competency	Prenatal BF education	Early initiation	Teach BF technique	Limit supplements	Rooming -in	Teach feeding cues	Limit pacifiers	Discharge support
All	19.3	54.9	92.8	56.5	90.8	23.0	37.0	84.8	36.3	28.4
ME	44.0	65.4	100.0*	73.1	96.2	48.1	44.4	100.0	81.5	59.3
NH	38.1	66.7	100.0	90.5	100.0	52.4	52.4	90.5	61.9	71.4
VT	30.0	10.0	90.0	70.0	80.0	70.0	30.0	80.0	70.0	40.0

* **Prenatal provider and maternal education = key**
  * Though prenatal education is offered by all hospitals / clinics, not all pregnant women attend / access education
  * One-to-one individualized prenatal + postnatal counseling and support = most effective
  * Educating all providers re: their impact and providing with current evidence re: benefits / importance of EBF will help to inform effective education / support for pregnant women

mPINC Survey

2013: Average Maternity Practice in Infant Nutrition and Care (mPINC) score among hospitals and birthing facilities †



Ave mPINC score

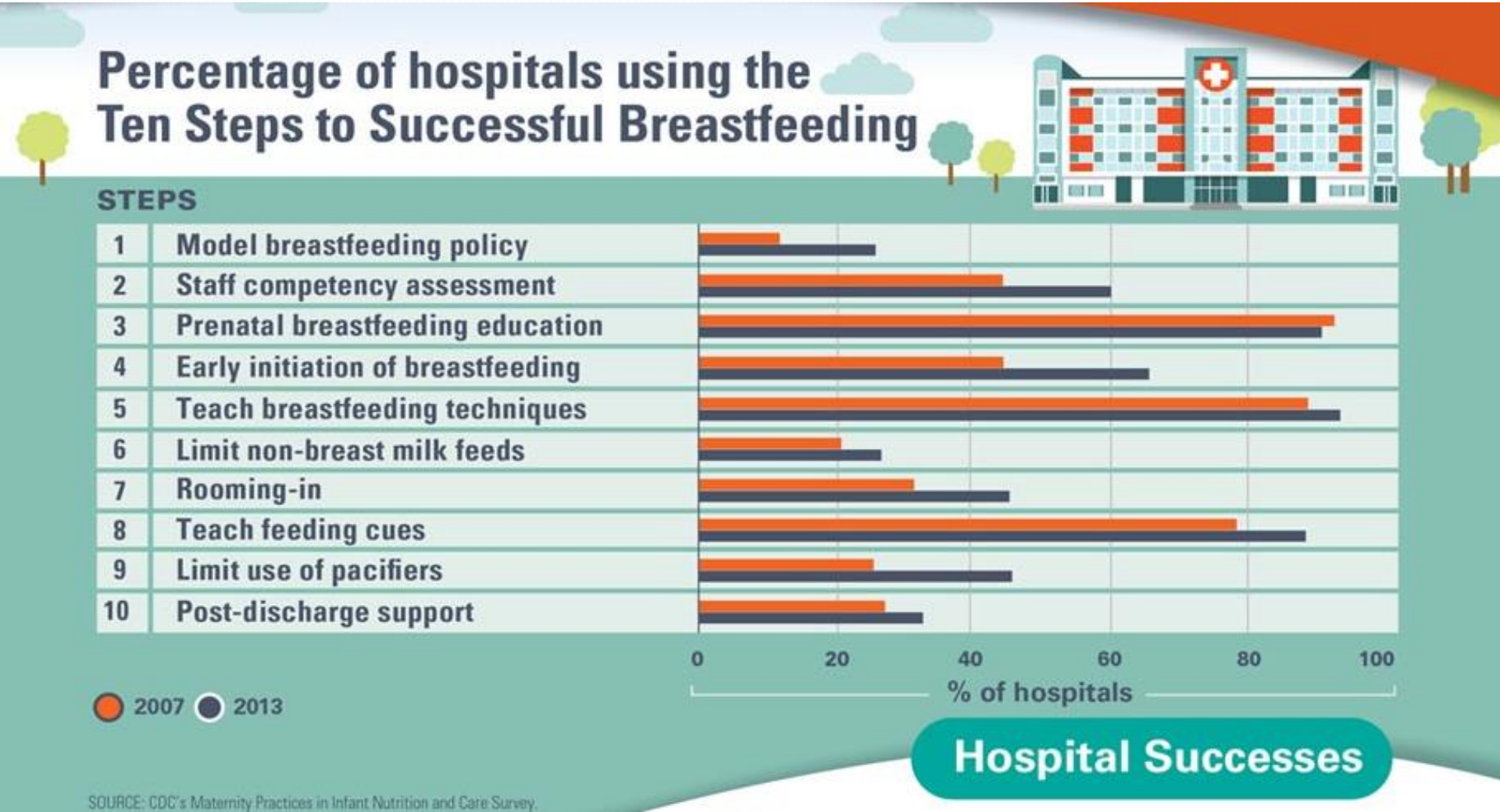
National 75

NH 91

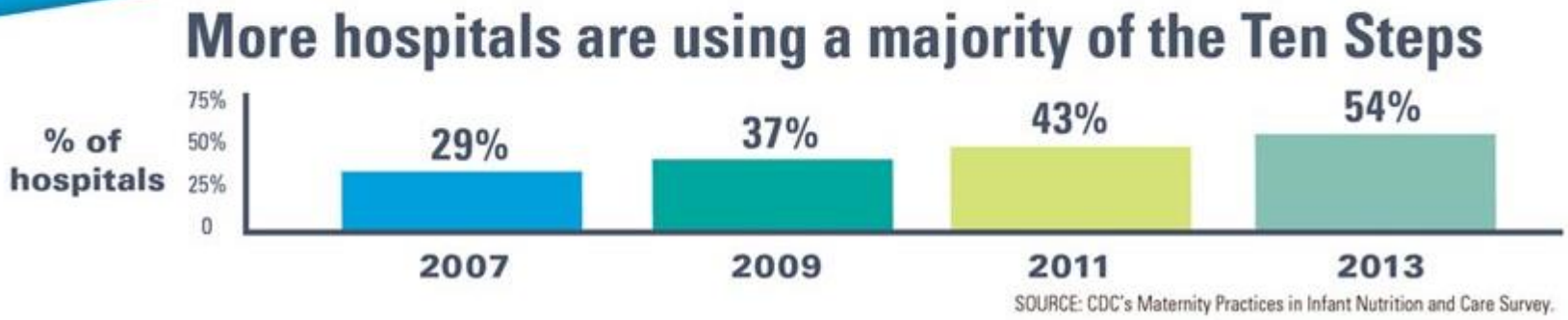
VT 88

ME 82

US Hospitals and the Ten Steps

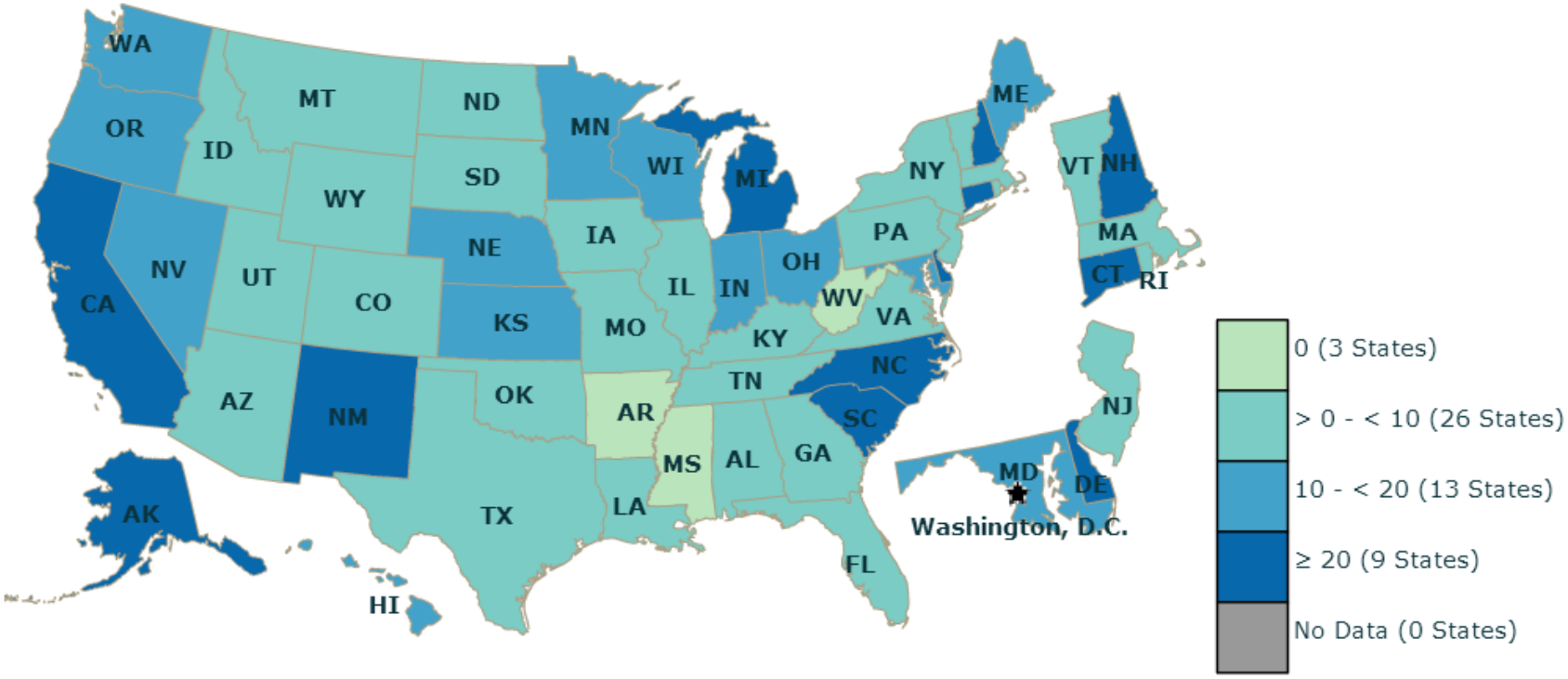


The US and the Ten Steps/BFHI



BFHI in the United States

2015: Percent of live births occurring at facilities designated as "baby friendly" by the Baby Friendly Hospital Initiative (BFHI) †



BFHI in ME, NH, VT

MAINE – 22% hospitals, 15% births

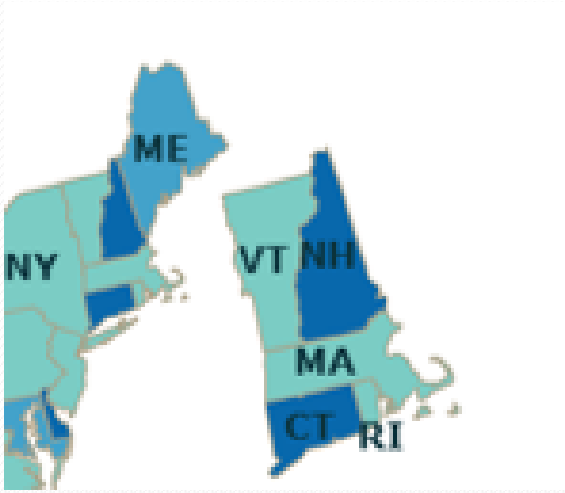
Bridgton Hospital, Bridgton – 2011
Central Maine Medical Center, Lewiston - 2006
LincolnHealth, Damariscotta - 1997
Maine General Medical Center, Waterville - 2007
Stephens Memorial Hospital, Norway – 2015
York Hospital, York- 2008

NEW HAMPSHIRE – 37% hospitals, 47% births

Alice Peck Day Memorial Hospital, Lebanon – 1997
Catholic Medical Center, Manchester – 2014
Concord Hospital, Concord – 2010
Mary-Hitchcock Medical Center, Lebanon – 2012
Monadnock Community Hospital, Peterborough – 2014
St. Joseph Hospital, Nashua – 2005
Wentworth-Douglass Hospital, Dover – 2013
Cheshire Medical Center, Keene - 2015

VERMONT – 8% hospitals, 3% births

Northeastern Vermont Regional Hospital, St. Johnsbury – 1999



Baby-Friendly USA
The gold standard of care

http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf
https://www.babyfriendlyusa.org/find-facilities/designated-facilities--by-state

Cost-comparison of BFHI- vs non-BFHI accredited hospitals

(for those worried about cost of formula purchasing)

DelliFraine *et al. Pediatrics.* 2011.

	BFHI Hospital	Similarly Matched Non-BFHI Hospital	Cost Variance $ / %
Average Nursery + L&D Costs (combining vaginal & c-section delivery)	**$2,205/delivery** Ave = 256 beds Ave = 4.75 births/day	**$2,170/delivery** Ave = 293 beds Ave = 6.2 births/day	**$35 / 1.6% (P=.928)**
Average Nursery + L&D Costs (comparing 6 L&D diagnosis- related codes)	**$3688/delivery**	**$3510/delivery**	**$178 / 5% (P=.839)**

Costs of Formula in NH BFHI hospital?

Costs of Formula in NH BFHI hospital

- DHMC Birthing Pavilion Annual costs (4/15-3/16)
  - Cost of formula = $1802.80 (for ~ 1300 births)
  - Cost of Donor Human Milk = $5845.50

FORMU,SMLC,ADV,20,CALR,2OZ	36290	BIRTHING PAVILION	511	PK	4	2044	$ 0.60	$ 306.60
FORMULA,ISOML,W,IRON,2OZ,BTL	36290	BIRTHING PAVILION	18	PK	4	72	$ 0.60	$ 10.80
FORMU,NEOSR,LUTN,2OZ,XP,NHWIC	36290	BIRTHING PAVILION	4	PK	4	16	$ 0.60	$ 2.40
FORMU,ENFAMIL,PREM,2OZ	36290	BIRTHING PAVILION	2966	EA	1	2966	$ 0.50	$1,483.00
FORMU,MILK,BRST,DNR,TEMP,SENS	36290	BIRTHING PAVILION	433	BT	1	433	$ 13.50	$5,845.50

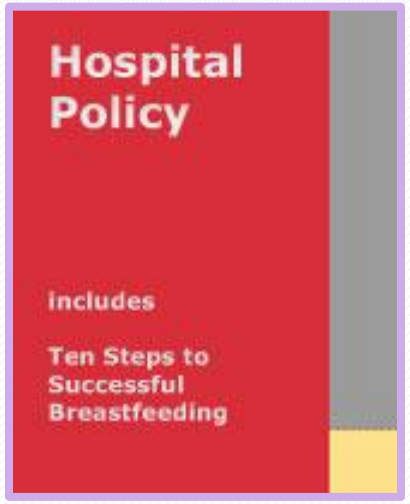
Putting the Ten Steps in Action

1. **Present best practice recommendations**
2. **Review evidence in support of step**

Step 1: Breastfeeding Policy

Have a written breastfeeding policy that is routinely communicated to all health care staff and is in accordance with the Ten Steps to Successful Breastfeeding.

- **Develop written BF policy that:**
  - establishes BF as standard for infant feeding
  - is evidence-based
  - addresses each of the *Ten Steps*
  - contains language that protects BF
  - prohibits distribution of gift packs with commercial samples that promote use of formula, bottles, and/or pacifiers to pregnant women and new mothers



Impact of Having a Formal Policy

(based upon Ten Steps)

Existence of model written BF policy alone associated with:

- **Increased breastfeeding initiation**

  Fairbank L *et al*. *Health Technol Access*. 2004.

- **Higher breastfeeding rates at discharge**

  Lillehoj and Dobson. *JOGNN*. 2012.

- **Continued breastfeeding -** Better BF outcomes for hospitals with more comprehensive policies

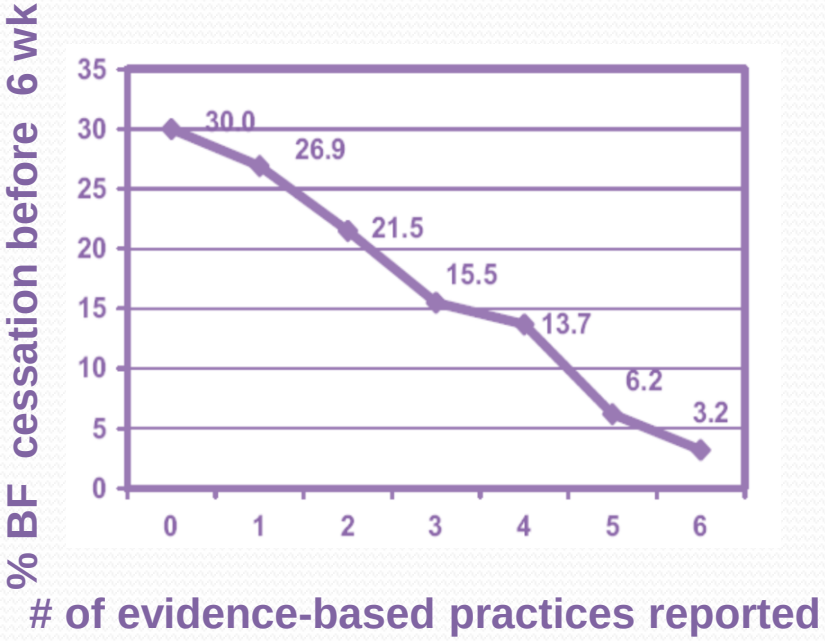
  Rosenberg KD *et al*. *Breastfeeding Med*. 2008.

Written Policy Enforces Steps

- **Significantly lower rates of early cessation in hospitals with greater # of steps implemented**
  - Conversely, significantly higher rates of continued BF
- **Dose-response relationship**

DiGirolamo, *et al. Pediatrics*. 2008.
Tarrant, *et al. Birth*. 2011.
Perrine, *et al. Pediatrics*. 2012.
Brodribb, *et al. Pediatrics*. 2013.

DiGirolamo *et al. Pediatrics*. 2008.



Only ~ 1/3 of Mothers are able to Meet their EBF Goals of ≥ 1 month

Perrine *et al. Pediatrics.* 2012.

Intended Duration, mo	%	Achieved Duration					Met Goal, %
		<1 mo	1–2 mo	3–4 mo	5–6 mo	≥ 7 mo	
<1	1.1	93.8	6.3	0.0	0.0	0.0	100.0
1–2	11.9	61.3	23.1	11.0	4.6	0.0	38.7
3–4	29.2	47.7	15.3	22.5	14.1	0.5	37.1
5–6	40.6	33.1	10.3	22.5	30.4	3.7	34.1
≥7	17.2	34.4	9.6	19.6	24.8	11.6	11.6
Total	100.0	41.6	13.1	20.4	21.3	3.6	32.4

Ten Step Practices & Likelihood of Meeting Personal EBF Goal

However, mothers who experience 5 - 6 Ten Step practices are > 2x more likely to meet their EBF goals than mothers who experience 0-1 practices

# Steps	% Met Goal	aOR (95% CI)
0-1	23.4	1.0
2	26.0	0.9 (0.5 to 1.6)
3	26.6	1.1 (0.7 to 1.8)
4	32.7	1.5 (0.9 to 2.5)
5	40.6	2.1 (1.3 to 3.5)
6	46.9	2.7 (1.5 to 4.8)

Perrine *et al. Pediatrics.* 2012.

Practices Assessed = **Step 4** (STS / BF within 1 hr), **6** (breastmilk only), **7** (rooming-in), **8** (BF on demand); **9** (no pacifiers), and **10** (BF support at d/c)

In Summary

- **Breastfeeding significantly reduces morbidity, mortality, and health care costs**
- **Ten Steps to Successful Breastfeeding = evidence-based foundation for successful breastfeeding**
- **Greater # of steps in combination associated with best outcomes**

Bringing the Ten Steps Back Home

- **See end of slide set for Formal Recommendations and Evidence in Support of Steps 2-10**
- **Share knowledge widely with your colleagues and administrators**
- **Improve health of moms, babies, families, communities, and environment**

Step 2: Train Health Care Staff

Train all health care staff in skills necessary to implement facility's breastfeeding and infant feeding policies.

Step 2: Train Health Care Staff

- **Ensure that all staff members who directly care for pregnant women, mothers & infants receive *and* document 20 hr of training including:**
  - 15 hr of education on lactation, BF management & support
  - 5 hr of supervised clinical experience

- **Ensure that this training occurs within 6 months of hire, includes clinical competency verification, and covers the:**
  - *Ten Steps to Successful Breastfeeding*
  - *International Code of Breastmilk Substitute*
  - Safe preparation of infant formula

Step 2: Train Health Care Staff

- **Ensure that all Physicians, Midwives, Physician Assistants, and Advanced Practice Registered Nurses (APRNs) who have labor, delivery, maternity &/or nursery privileges:**
  - Receive *and* document 3 hr of breastfeeding education, pertinent to their roles in the care of mothers and infants, including:
    - **Benefits of breastfeeding**
    - **Management of breastfeeding**
    - **Support of breastfeeding**

Need for Provider Education

- **Physicians lack training and knowledge about clinical management of breastfeeding and about benefits of breastmilk over formula feeding**

  Freed *JAMA* 1995, Freed *Pediatrics* 1995, Howard *Birth* 1997, Schanler *Pediatrics* 1999. Feldman-Winter *et al*. *Arch Pediatr Adolesc Med*. 2008.

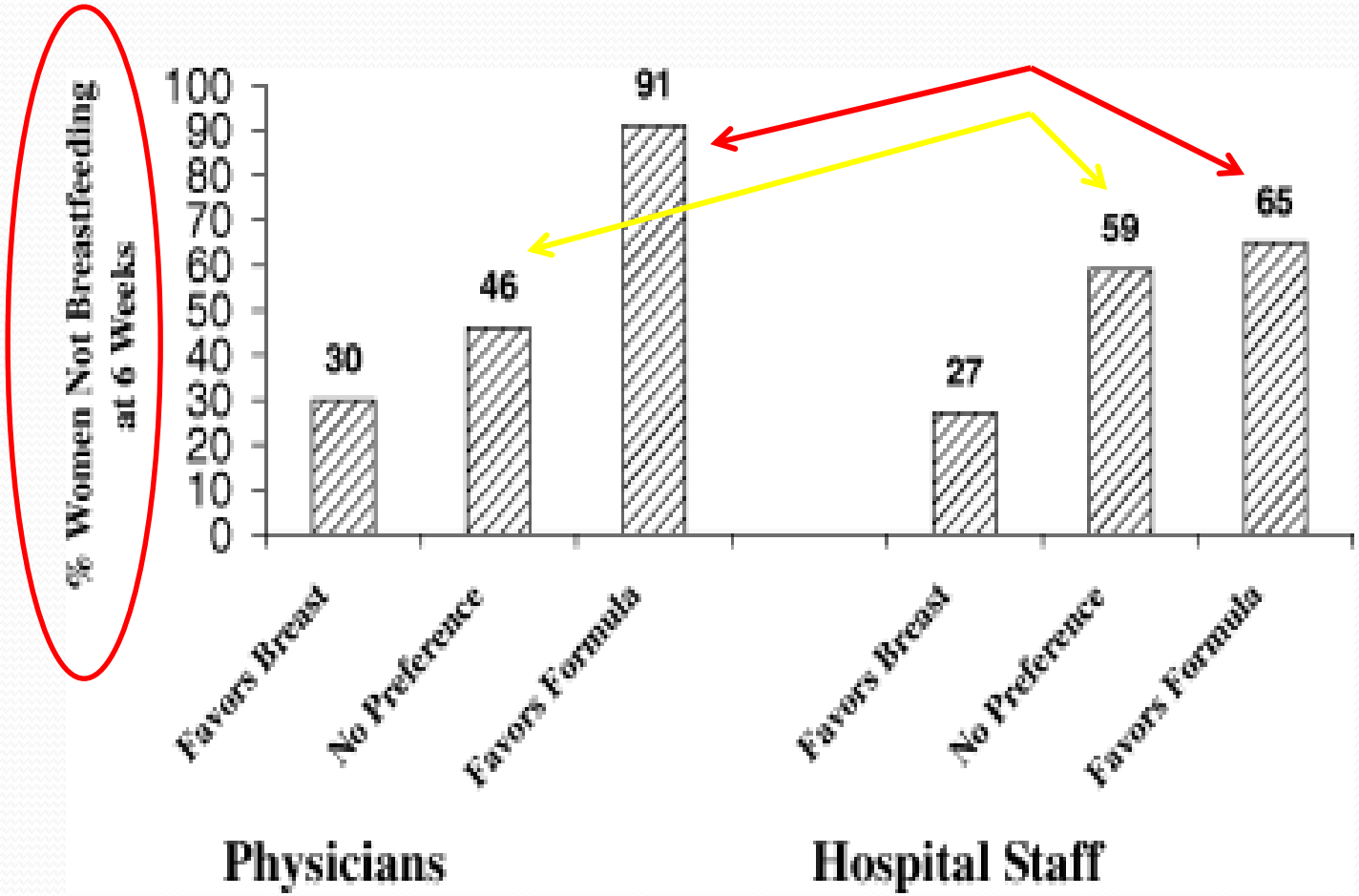
- **Despite lack of physician education, most women look to their physician for information or when experiencing a breastfeeding problem**

  Ertem *et al*. *Pediatrics*. 2001.

- **The provider's attitude & advice play a powerful role in family's decision and manner of how BF is practiced**

  Lu MC, *et al*. *Obstet Gynecol*. 2001. DiGirolamo *et al*. *Birth*. 2003.. Taveras *et al*. *Pediatrics*. 2004.

Effect of Provider Attitudes



DiGirolamo *et al. Birth.* 2003.

Provider Impact on Mothers

- **Many mothers perceive their / baby's provider favors mixed feedings or are neutral about feeding type**

Perceived Attitude	% Mothers Reporting	
	OB	Pedi
No feeding preference	60.4%	42.4%
Favors mixed feeding	6.1%	11.6%

Ramakrishnan *et al. J Hum Lact.* 2014.

- **Mothers ~ 2 x more likely to not initiate BF if believe doctor has no feeding preference**
- **Mothers > 2.5 x more likely to not initiate BF if believe doctor prefers mixed feedings**

Odom *et al. J Acad Nutr Diet.* 2014.

Provider Impact!

- **Mothers who perceive OB or pediatric provider favors mixed feeding are ~ 2/3 less likely to be exclusively BF (EBF) at 1 & 3 mo**
  - **but ~ 1.5 x more likely to EBF if they perceive provider favors this**

Ramakrishnan *et al. J Hum Lact*. 2014.

Provider Impact!

- **Women encouraged to breastfeed are > 4x more likely to initiate breastfeeding than those who do not receive encouragement**
  - **Among those traditionally less likely to BF, MD encouragement significantly ↑ BF initiation by:**
    - **> 3x** Low-income, young, less-educated women
    - **~ 5x** African American women
    - **~11x** Single women

Lu. *Obstetrics and Gynecol.* 2001.

Impact of Provider Education

- **Implementation of curriculum to support resident & faculty education in BF management associated with significant improvements in BF knowledge, attitudes, & beliefs**

  Holmes *et al. Breastfeeding Medicine.* 2012.

- **Formal implementation of Step 2 (Provider Education) positively associated with higher BF rates at newborn d/c**

  Lillehoj and Dobson. *JOGNN.* 2012.

Whalen B, Kelly J, Holmes AV. *Hospital Pediatrics.* June 2015.

RESEARCH ARTICLE

The New Hampshire Ten Steps to Successful Breastfeeding Collaborative: A Statewide QI Initiative

AUTHORS

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KEY WORDS

breastfeeding, exclusive breastfeeding, infant feeding, baby friendly, baby-friendly, Baby-Friendly Hospital Initiative, BFHI, Ten Steps to Successful Breastfeeding

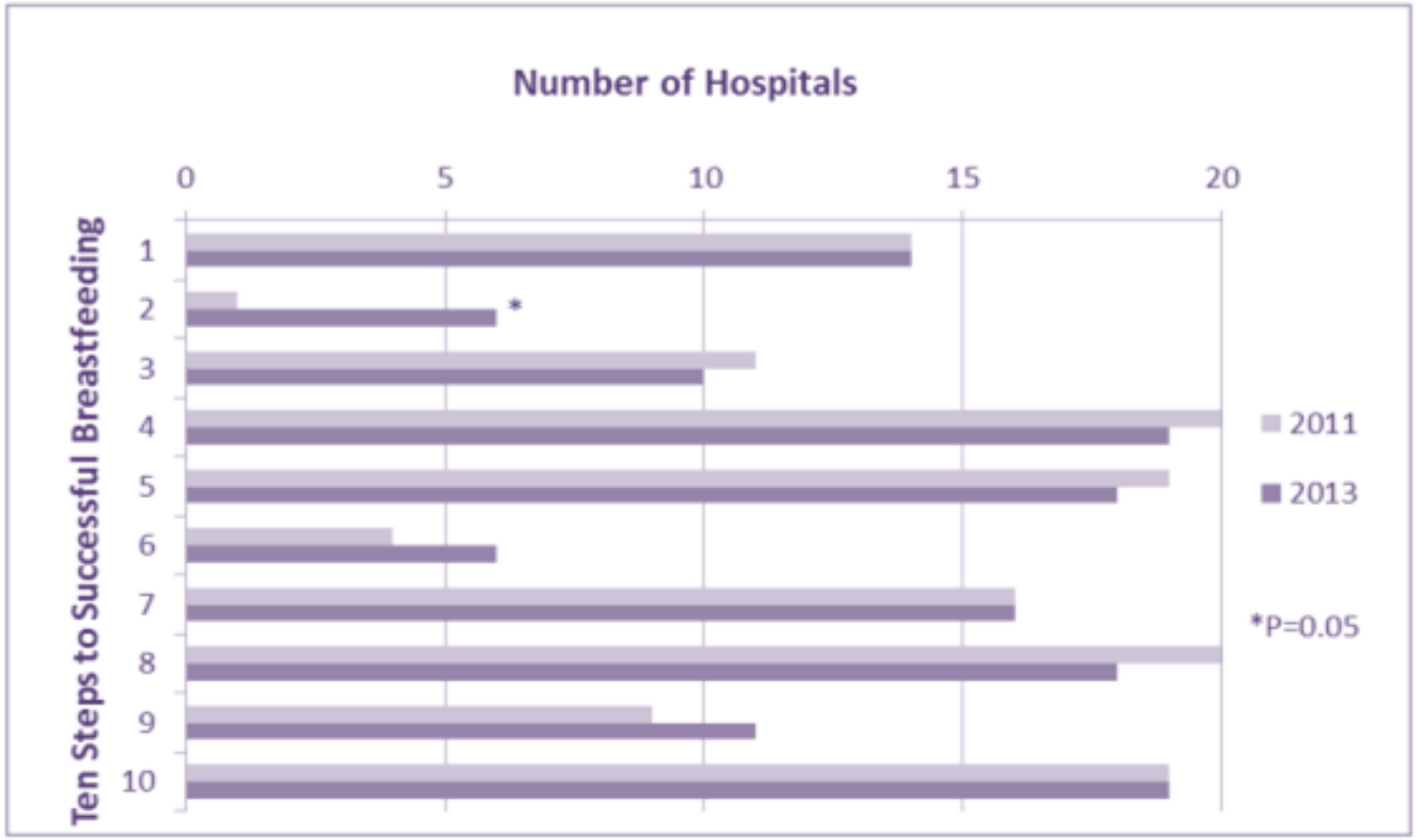
ABBREVIATIONS

abstract

BACKGROUND AND OBJECTIVE: Despite national recognition for their breastfeeding-friendly practices, many New Hampshire hospitals are still not achieving the Ten Steps to Successful Breastfeeding. To increase achievement of the Ten Steps in New Hampshire's birthing hospitals, facilitate Baby-Friendly Hospital Initiative (BFHI) designation for interested hospitals, and improve rates of in-hospital any and exclusive breastfeeding.

METHODS: After a 2010 needs assessment, we conducted 2 statewide workshops targeting 6 of the Ten Steps found to be most deficient among New Hampshire birthing hospitals. Eighteen of 20 hospitals attended at least 1 workshop, and 6 participated in an intensive collaborative. In 2013, we analyzed interval Ten Step achievement and in-hospital breastfeeding trends.

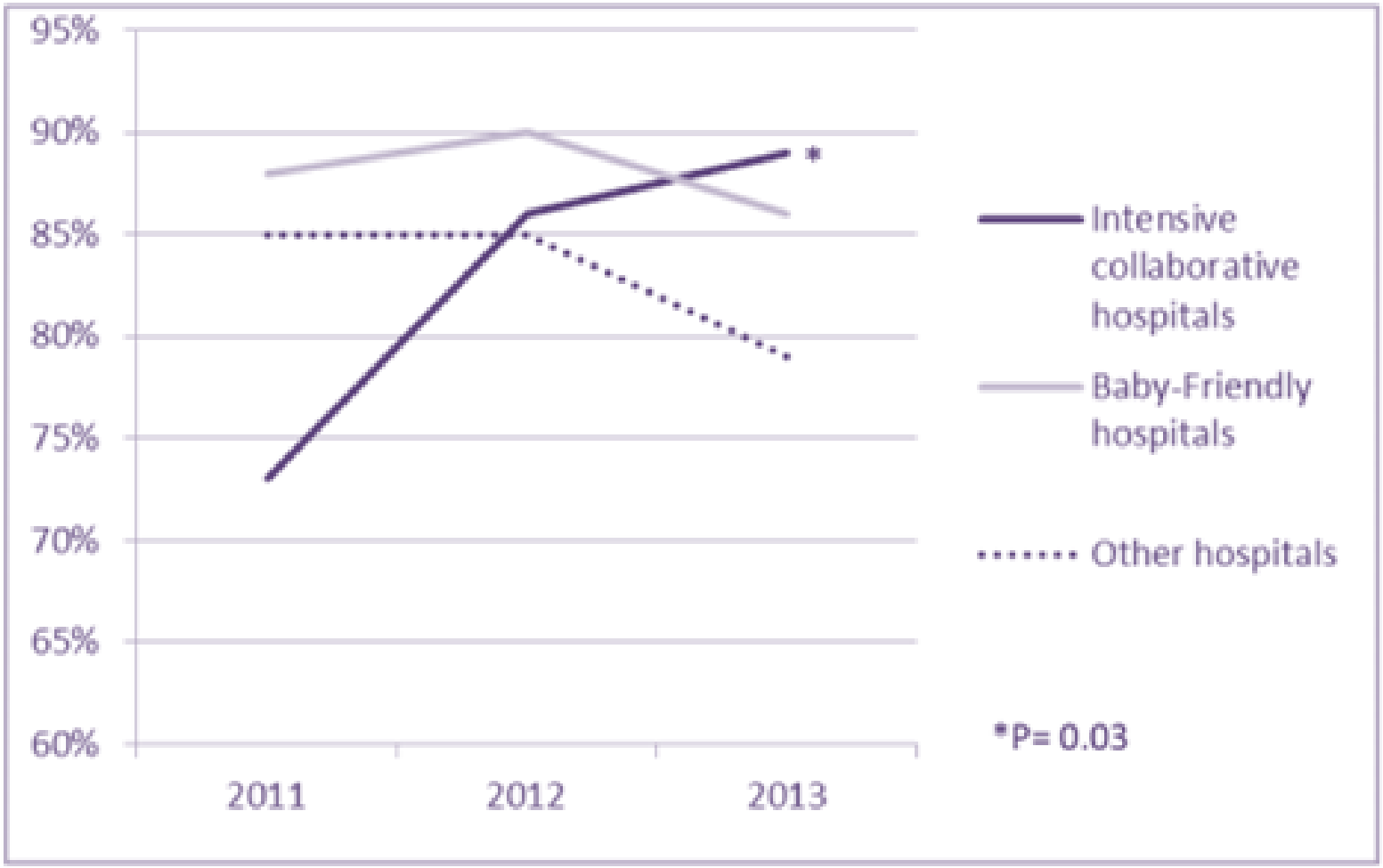
Ten Step Achievement at Baseline and Post-Intervention



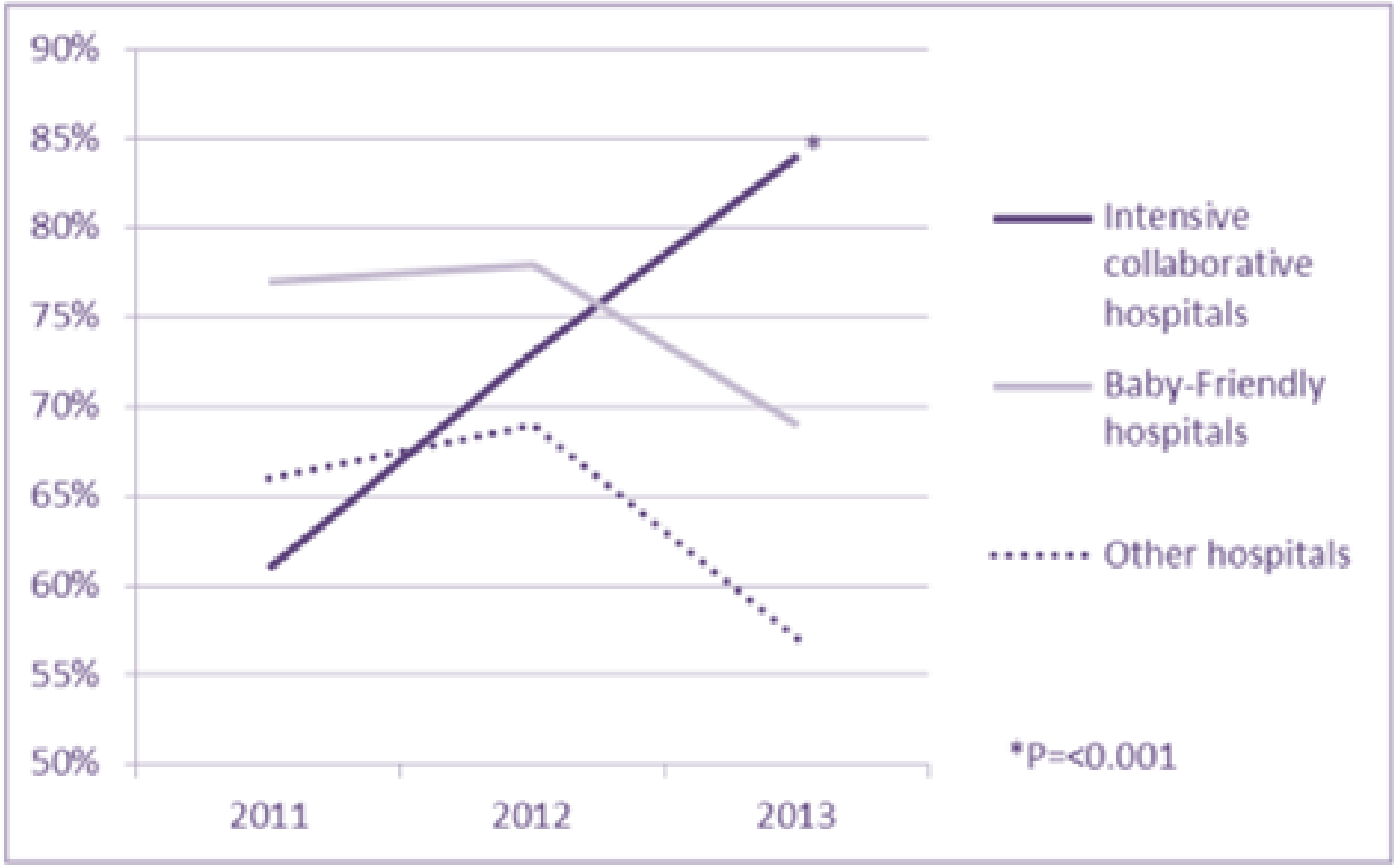
Hospital Group	2011 (average steps achieved)	2013 (average steps achieved)	Step Change
Intensive collaborative	5.67	7.17	↑ 1.5 steps*
Baby-Friendly	7.75	8.25	↑ 0.5 steps
Other	6.80	6.10	↓ 0.7 steps

*P=0.05

Comparison of Any In-hospital Breastfeeding



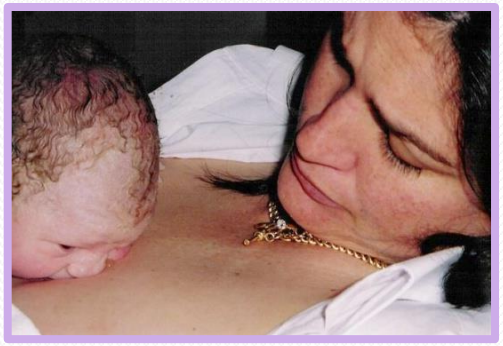
Comparison of Exclusive In-hospital Breastfeeding



Impact of Staff Education

- **Following education of ≥ 80% medical / nursing staff with 20-hr UNICEF/WHO course, significant improvements noted in:**
  - Duration of early mother-infant contact (Step 4)
  - Rooming-in (Step 7)
  - Recommendations for "on demand" feedings (Step 8)
  - Rate of exclusive breastfeeding in 1st 48 hr

Zakarija-Grkovic *et al.* *J Hum Lact.* 2012.



Impact of Staff Education & Training

- **WHO/UNICEF breastfeeding counseling and lactation management training course = effective model**

  Britton *et al. Cochrane Database Syst Rev.* 2007.

- **Staff training → Increased rate of exclusive BF from 41% → 77%**

  Cattaneo & Buzzetti. *BMJ.* 2001.

Step 3: Prenatal Education

Inform all pregnant women about the benefits and management of breastfeeding.

- **Ensure all pregnant women attending facility's prenatal care & education settings are informed about benefits and management of breastfeeding, and risks of formula feeding.**
- **Education should begin in first trimester, whenever possible.**
- **Provide education to women through prenatal patient education materials, one-on-one counseling with a prenatal healthcare provider, prenatal breastfeeding education class.**

Step 3: Prenatal Education

- **Ensure pregnant woman understands benefits of breastfeeding and basics of breastfeeding management by asking her to describe at least 2 of the following:**
  - importance of skin-to-skin contact
  - importance of rooming-in
  - risks of supplementing with formula while breastfeeding in first 6 months
- **Ensure that pregnant women are protected from promotion of formula feeding in either oral or written form, or through group instruction, in *all* perinatal settings**

Benefits of Any and Exclusive BF

Any Breastfeeding	Risk Reduction	Exclusive Breastfeeding	Risk Reduction
Acute Otitis Media (AOM)	23%	AOM [> 3 mo EBF]	50%
Asthma [>3 mo +FH]	40%	Atopic Dermatitis [> 3 mo EBF]	32% 42% [+FHx]
Gastroenteritis	65%	LRTI Hospital Admission [> 4 mo EBF]	72%
Obesity	4% *per mo*	SIDS	73%
Leukemia [6 mo]	20%		
Type 1 Diabetes	60%		
Type 2 Diabetes	40%		
SIDS	36-45%		

Kramer *et al.* *JAMA.* 2001.
Ip *et al*. *Evid Rep Technol Assess.* 2007.
Kramer *et al.* *Arch Gen Pyschiatry.* 2008.
Hauck *et al.* *Pediatrics.* 2011.

Prenatal Education: The Evidence

- **Existence of prenatal education associated *with:***
  - **Increased initiation**

    Chung *et al*. *Ann Intern Med*. 2008.
  - **Increased duration**

    Dennis & Kingston. *J Obstet Gynecol Neonatal Nurs.* 2008.

    Murray *et al.* *Birth.* 2007.
  - **Increased exclusivity**

    Su *et al. BMJ.* 2007.

Early Discussions are Important

- **Many decisions about feeding are made early in pregnancy with > 50% of some mothers deciding even before pregnancy**

  Earle. *Health Promot Int*. 2002. Rivera-Lugo, *et al*. *Breastfeed Med*. 2007.

- **Clinician's attitude plays powerful role in woman's decision to breastfeed and in manner breastfeeding is practiced**

  Lu MC, *et al*. *Obstet Gynecol*. 2001. DiGirolamo AM, *et al*. *Birth*. 2003.
  Raj VJ, Plichta S. *J Hum Lact*. 1998.

How should we provide education?

- **Written materials alone do not significantly increase breastfeeding**
  Guise *et al.* *Ann Fam Med.* 2003.
- **Provide written materials to enforce informed discussion regarding benefits of breastfeeding and note significant health benefits of exclusive breastfeeding**
- **Remember, mothers are significantly more likely to initiate and continue any exclusive breastfeeding, if they perceive that their health care provider favors this**

  Lu. *Obstetrics and Gynecol.* 2001.
  Ramakrishnan *et al. J Hum Lact.* 2014.

Effective Prenatal Education Strategies

- **Most effective = Repeated needs-based, one-on-one, informal education**

  Dyson *et al*. *Cochrane Database of Systematic Reviews.* 2005.

- **Share knowledge re: BF benefits & management and incorporate empowerment strategies into prenatal education**

  Kupratakul *et al. J Med Assoc Thai.* 2010.

- **Encourage structured breastfeeding education and behavioral counseling programs to promote breastfeeding, and provide ongoing support to sustain breastfeeding**

- USPTF. *Ann Intern Med;*2008.

Impact of Individualized Antenatal & Postnatal Consultation

- **Mothers participating in an individual one-to-one BF consultation/discussion with any HCP antenatally were:**
  - 56% less likely to cease fully BF before 6 mo
  - 49% less likely to cease any BF before 12 mo
- **Women who received info on positioning and attachment in the immediate postpartum period were ~ 1/3 less likely to cease fully breastfeeding before 6 mo**

Pannu *et al*. *Acta Paediatr.* 2011.

Step 4: Help moms initiate BF

Help Mothers Initiate Breastfeeding Within One Hour of Birth and encourage skin-to-skin contact in the first 1/2 hour.

- **Ensure that all mothers who deliver vaginally are given their babies to hold with uninterrupted and continuous STS contact immediately after birth** (or as soon as they are physicially / physiologically able to) **and allowed to remain there together until completion of 1st feeding** (or for at least one hour if not breastfeeding)

  unless medically justifiable reasons for delayed contact exist

Step 4: Help moms initiate BF

- **Ensure that all mothers receive assistance with initiating breastfeeding during this first hour**
- **In the event of medically indicated separation, ensure that skin-to-skin contact is initiated as soon as mothers and infants are reunited**
  - Encourage mothers to remain in skin-to-skin contact together with their infant thereafter, whenever possible

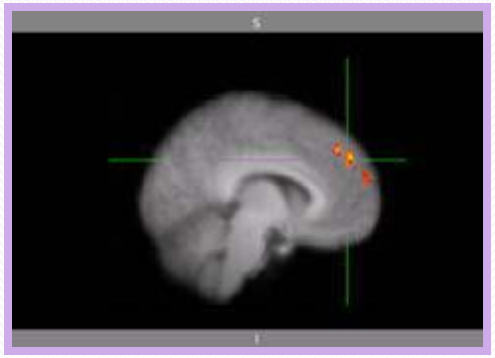
STS Benefits for Babies

- **Improved physiologic stability**
  - Thermoregulation
  - Glucose regulation
  - Lower / more stable heart rate
  - Less apnea/bradycardia
  - Improved oxygenation
  - Faster growth rates
  - Improved analgesia for painful procedures
- **Improved neurobehavioral organization**
  - More time in calm, organized state
  - More time in quiet sleep
  - Less crying / agitation

Begum *et al. BMC Pediatr.* 2009.
Curan *et al. Infant.* 2008, Ferber. *Pediatrics.* 2004.
Kashaninia *et al. J Spec Pediatr Nurs.* 2009.
Moore *et al. Cochrane Database Syst Rev.* 2007.
Moore & Anderson. *J Midwifery Women's Health.* 2007.

STS Benefits for Moms

- ↓ postpartum bleeding
- ↑ positive feelings towards infant
- ↑ responsiveness to infant
- ↑ maternal affectionate behaviors
- ↑ parenting confidence / empowers mother
- ↓ state anxiety / maternal stress
- ↓ symptoms of depression
- ↑ milk supply in first few days of life



Curan *et al.* *Infant.* 2008.
Bystrova *et al*. *Int Breastfeed J.* 2007.
Moore *et al*. *Cochrane Database Syst Rev*. 2007.
Moore & Anderson. *J Midwifery Women's Health.* 2007.
Neumann ID. *of Neuroendocrinology*. 2008.

Benefits of STS and Early BF

- 2x as likely to BF successfully at 1st feeding
- ↑ suckling efficacy & achieve effective BF 2 x sooner
- ↓ breast engorgement pain
- ↑ BF duration (↑ BF at 1 - 4 months; breastfeed on average ~ 43 days longer)
  - ½ x as likely to stop BF before 6 weeks

Colson *et al*. *Early Hum Dev.* 2008., Curan *et al*. *Infant*. 2008.
DiGirolamo *et al*. *Pediatrics* 2008. Moore *et al*. *Cochrane Database Syst Rev*. 2007.
Moore & Anderson. *J Midwifery Women's Health*. 2007.
Righard & Aladade. *Lancet*. 1990.

How soon are infants in your institution placed skin-to-skin with their mothers and how long do they remain there?

Impact of Early Suckling

- **Early suckling associated with:**
  - Encouraging / empowering mothers
  - Increased oxytocin levels
  - More effective BF behaviors
  - Earlier meconium output
  - Increased milk supply in first few days of life

Bystrova *et al*. *Int Breastfeed J.* 2007.

Additional Benefits of Early Suckling

- Intake of colostrum w/ antibodies and anti-inflammatory mediators
- Colonization of gut with mother's bacteria
- Priming of gut epithelium / growth factors / immune system

Step 5: Show Moms How

Show mothers how to breastfeed and how to maintain lactation, even if separated from infant.

- **Ensure nursing staff offer all mothers further assistance with breastfeeding within 3 hr** (& no more than 6) **of delivery**
- **Have mothers demonstrate to nursing staff how to correctly position and attach their baby to their breast without pain**

Step 5: Show Moms How

- **Educate breastfeeding mothers on basic BF management & practices prior to discharge**
  - Criteria to assess if baby is getting enough breastmilk
  - How to express, handle, and store breastmilk including manual expression
  - How to sustain lactation if separated from infant or will not be exclusively breastfeeding after d/c
  - Importance of exclusive breastfeeding

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Maternal-Infant Separation …

- **Teach mothers to maintain lactation**
  - Importance of frequent and effective milk expression
    - Hand expression/ pumping
  - Breastmilk storage

    http://www.cdc.gov/breastfeeding/recommendations/handling_breastmilk.htm

- **Identify feeding issues of baby**
  - Prematurity
  - Nipple preference
  - Maternal medications

- **Maintain and promote bonding**
  - Skin-to-skin

Step 6: Give breastfed infants breastmilk only - unless medically indicated

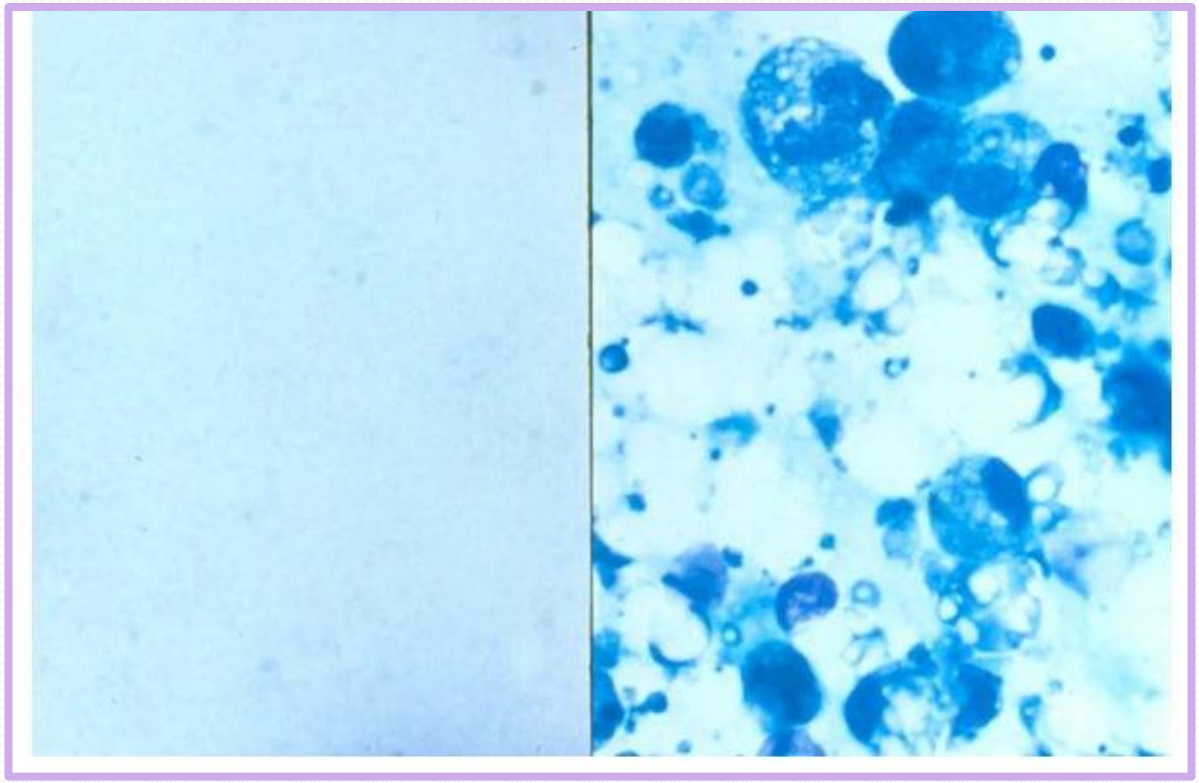
Step 6: Breastmilk Only

Give newborn infants no food or drink other than breastmilk, unless medically indicated.

- **When mother specifically states that she has no plans to breastfeed, or requests that her breastfeeding baby be given a breastmilk substitute, health care staff should:**
  - explore reasons for request
  - address concerns raised
  - educate about possible consequences to health of baby and/or the success of breastfeeding
- **Any other decisions to give breastfeeding babies food or drink other than breastmilk should be for acceptable medical reasons and require a written order documenting when and why supplement is indicated**

Why breastmilk only?

What do you see here?

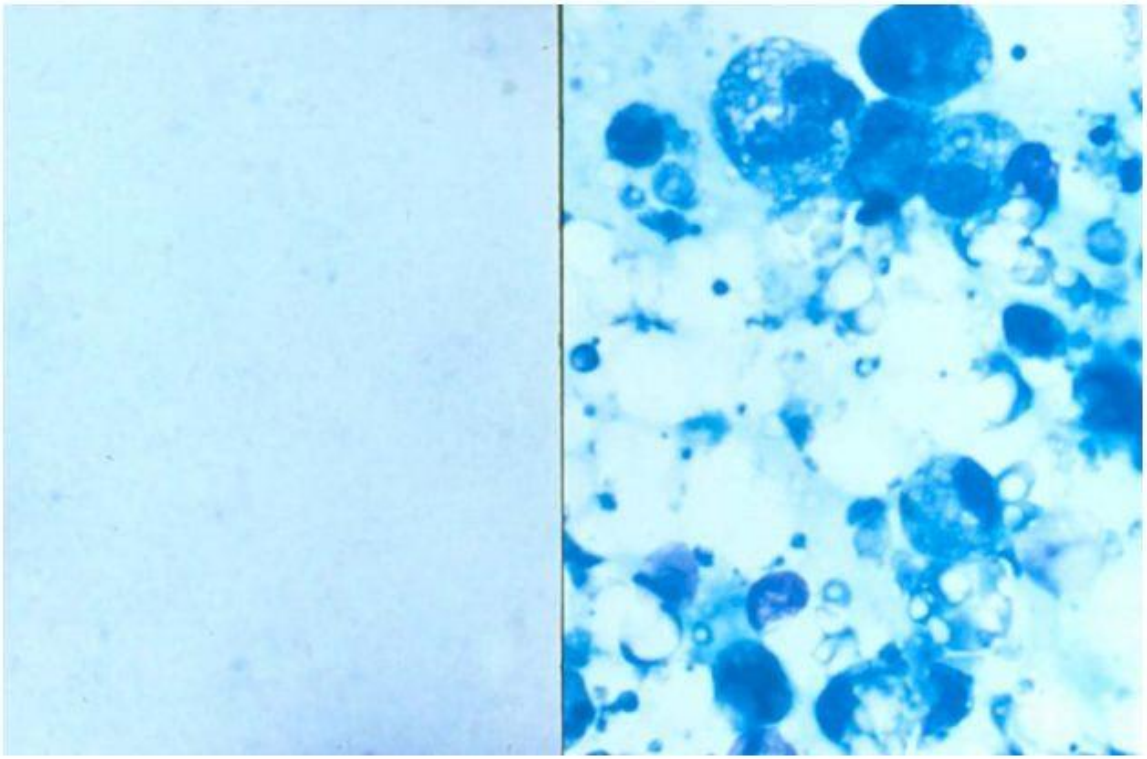


A microscopic comparison

- Formula vs Breastmilk -

A drop of formula

A drop of breast milk:
-White blood cells protect against infection
-Fat globules help eyes and brain grow faster



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Kramer *et al.* *JAMA.* 2001.
Ip *et al*. *Evid Rep Technol Assess.* 2007.
Kramer *et al.* *Arch Gen Pyschiatry.* 2008.
Hauck *et al.* *Pediatrics.* 2011.

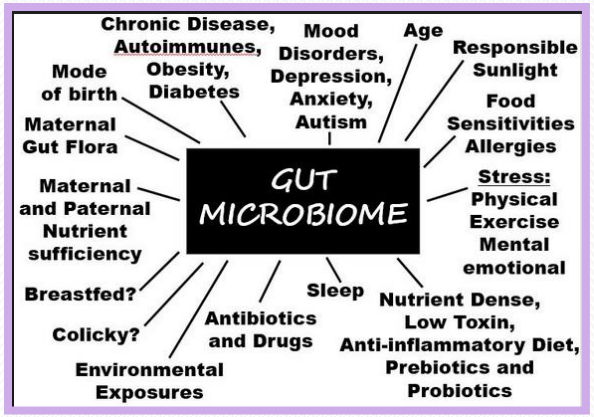
The Gut Microbiome and Breastfeeding

- **Breastfed infants have:**
  - **Lower levels of potential pathogens** (e.g., *Clostridium difficile* associated with early onset allergy / atopy)

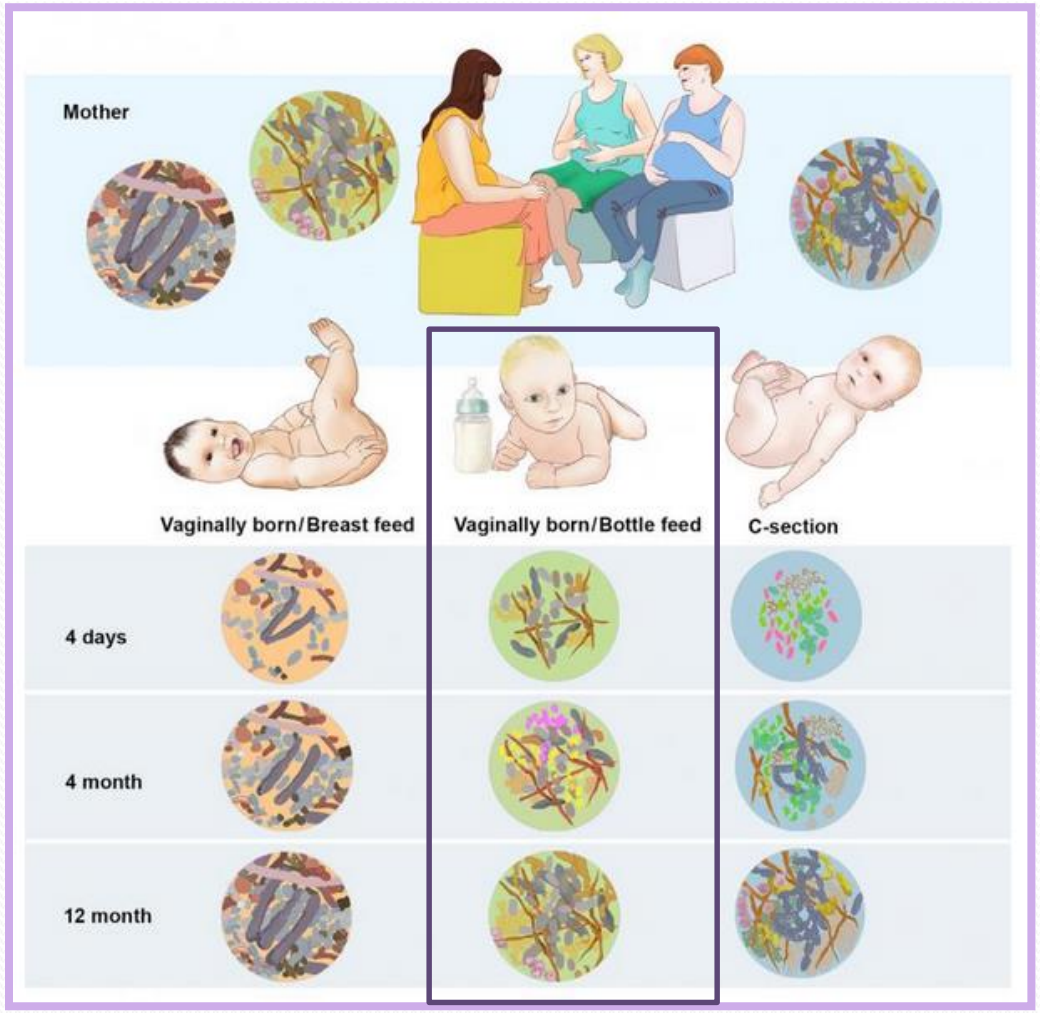
    Sepp, *et al. Clin Exp Allergy.* 2005.
  - **Higher levels of oligosaccharides that promote growth of healthy bacteria** (e.g., *bifidobacterium)*

    Zivkovik AM, *et al . PNAS.* 2011.
  - **Lower risk of childhood and adult onset obesity**

    Thompson AL, *et al. Am J Hum Biol.* 2012.



The Gut Microbiome and Formula?



The Gut Microbiome and Formula …

- **Formula fed infants have:**
  - **Less diversity in gut flora**
    - Potentially altered gut epithelialization & immune function
    - Decreased microbial diversity in the first weeks of life related to allergy at school age

    Wang *et al. J Clin All Imunol.* 2008; Bisgaard *et al. J Allergy Clin Immunol.* 2011.
  - **Specific bacteria in the gut associated with early onset allergy and atopy** (e.g., *C diff and E coli)*

    Sepp *et al. Clin Exp Allergy.* 2005.
  - **Higher proportions of potentially pathogenic bacteria** (e.g., *Bacteroides, C. diff, Prevotella)*

    Holscher *et al . J Parenter Enter Nutr.* 2012.

Impact of mixed feedings on the intestinal microbiome

In a prospective study of 102 AGA >37 week infants:

- 70 exclusively BF (EBF), 26 combination BF+FF, 6 exclusively FF (EFF)
- Independent associations between microbial community composition and infant feeding method, demonstrated through rRNA gene sequencing, found at 6 weeks:
  - Bacterial communities of combination fed-infants were more similar to those of EFF-infants than to EBF-infants

Will insert table here of different bacterial compositions

Madan JC, *et al.* *JAMA*. 2016.

Effect of Routine Supplementation

Up to 42% American newborns given formula

Grummer-Strawn *et al*. *Pediatrics*. 2008.

Supplementation associated with:

- Fewer breastfeeds each day
- Decreased milk production
- Earlier breastfeeding cessation
- Risks of not breastfeeding
- No significant ↓ in jaundice
- Changes in gut flora

DeCarvalho *et al*. *Arch Dis Child*. 1981. Herrera. *Perinatol/Neonatol*. 1984.
McNiel ME *et al*. *Birth*. 2010. Nylander *et al*. *Acta Ob/Gyn Scand*. 1991.
DiGirolamo *et al*. *Pediatrics*. 2008. Seminic *et al*. *Res Nurs Health*. 2008.

Impact of Exclusive BF in Hospital

- **In-hospital exclusive BF is protective against BF cessation ≤ 8 wk** OR: 0.61 (95% CI: 0.42 to 0.88)

  Tarrant *et al. Birth.* 2011.

- **Mothers > 2x more likely to meet personal EBF goals if they exclusively BF in hospital**

  Perrine *et al. Pediatrics.* 2012.

- **Lack of exposure to Step 6 → 10.52 week shorter BF duration**

  Nickel *et al. J Hum Lact.* 2013.

Risk Factors for Reduced Breastfeeding

- **Maternal Factors**
  - Primiparity
  - Age > 35 years
  - Born abroad & non-English speaking
  - Smoked during pregnancy
  - BMI < 20 or > 25
- **Infant Factors**
  - < 2500 grams or ≥ 4000 grams
  - Admitted to SCN
- **Other Factors**
  - ***Delivery in non-BFHI facility***
  - Operative vaginal or C-section delivery

Of 4,085 eligible mother-baby dyads, 23% reported their baby received formula while in-hospital

Biro *et al. Birth.* 2011.

Exclusive Breastfeeding Benchmarks

National Benchmark	Healthy People 2020	CDC Breastfeeding Report Card	CDC mPINC Survey	Joint Commission PCCM*
↑ exclusive breastmilk feeding (EBF) at discharge	x	x	x	x
↓ use of non-medically indicated formula supplementation in first few days of life	x	x		x
↑ evidence-based BF support provided in all birthing hospitals	x	x	x	
↑ BF initiation, duration & exclusivity (birth, 3 mo, 6 mo)	x	x		EBF initiation

Step 6: Formal Recommendations

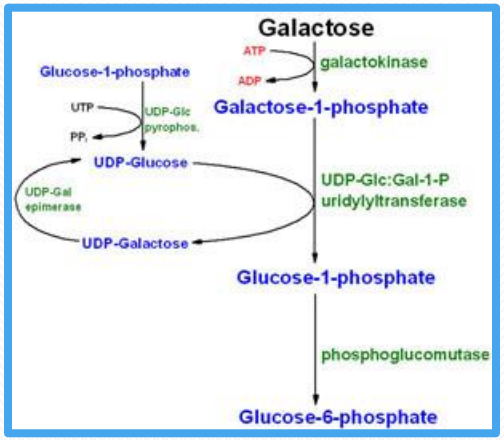
- **Ensure that breastfeeding babies receive no food or drink** (other than breastmilk) **unless medically indicated**
- **Ensure that staff have a clear understanding of what the few acceptable reasons are for prescribing food or drink other than breastmilk for breastfeeding babies including:**
  - maternal or infant contraindication to breastfeeding or medical indication for supplementation*
  - maternal request despite education about benefits of exclusive breastmilk feeding and risks of formula supplementation

What are the indications for supplementation in a BF infant?

Breastfeeding Contraindications?

- **Mother with any of following:**
  - HIV
  - HTLV
  - Active substance/alcohol abuse
  - Active, untreated TB*
  - Active radiation Rx to breasts
  - Active untreated varicella*
  - Active HSV lesion on breast*
- **Infant with any of following:**
  - Galactosemia
  - PKU*

**In these conditions, partial or non-direct breastmilk-feeding may be allowed*



http://www.cdc.gov/breastfeeding/disease/index.htm

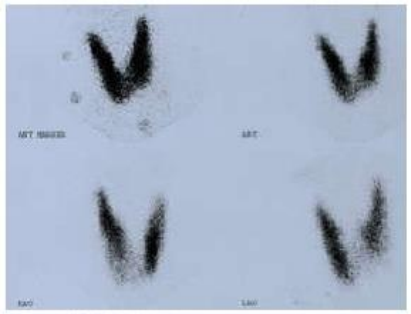
Medication Contraindications?

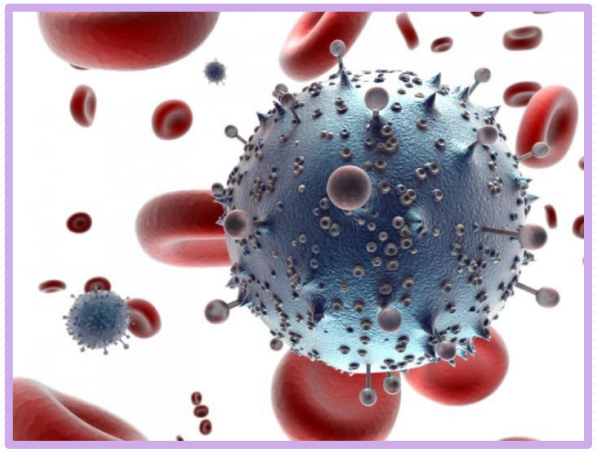
Medication Contraindications

- Cancer chemotherapy agents
- Radioactive isotopes
- Antimetabolites
- Antiretroviral medications

Iodine-123 scan

- Radioactive iodine uptake scan showing normal condition in a 30-year-old woman with postpartum thyroiditis (subacute lymphocytic thyroiditis).





Medications and Lactation

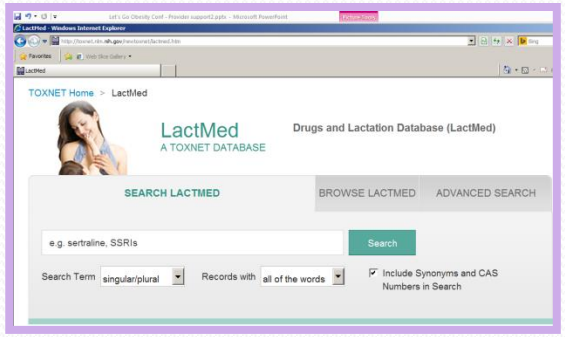
- **AAP's Committee on Drugs**
  - Transfer of drugs and other chemicals into human milk. *Pediatrics.* 2001.
  - The Transfer of Drugs and Therapeutics Into Human Breast Milk: An Update on Selected Topics. *Pediatrics.* 2013.

American Academy of Pediatrics

- **Thomas Hale's Medications and Mothers' Milk**
  - Lactation Risk Categories
    - L1: Safest
    - L2: Safer
    - L3: Moderately safe
    - L4: Possibly hazardous
    - L5: Contraindicated

- **NIH's LactMed**

http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT



Medical Conditions of Concern

- **Mom undergoing radiation therapy**
- **Substance abuse and/or alcohol abuse**
- **Active, untreated tuberculosis**
  - May BF after 2 wk of Rx
- **Active, untreated varicella** (5d before - 2d after birth)
  - Mom should be separated from infant, but breastmilk may be used
- **Active herpes simplex virus with breast lesions**
  - May BF from unaffected breast
- **Hepatitis C**
  - Pump / dump if nipples bleeding

- **Infant PKU or Maple Syrup Urine Disease**

AAP Section on Breastfeeding. *Pediatrics*. 2012. AAP Committee on Infectious Diseases – Red Book. 2015.

Possible Infant Indications

- **Asymptomatic hypoglycemia** unresponsive to frequent BF and skin-to-skin
- **Clinical and lab evidence of significant dehydration** (e.g., high sodium, poor feeding, lethargy, etc.) not improved with skilled assessment and proper BF
- **Weight loss of 8–10% on day 5** and mom with **delayed lactogenesis II**
- **Neonatal jaundice associated with poor breastmilk intake** despite appropriate intervention
- **Breastmilk jaundice when levels reach 20–25 mg/dL** in an otherwise thriving infant and where a diagnostic and/or therapeutic interruption of breastfeeding may be helpful

Academy of Breastfeeding Medicine. Protocol #3. 2009.

Possible Maternal Indications

- **Delayed lactogenesis II (day 3–5 or later)** and inadequate intake by the infant
  - Retained placenta
  - Sheehan's syndrome
- **Primary glandular insufficiency** as evidenced by poor breast growth during pregnancy and minimal indications of lactogenesis
- **Breast pathology or prior breast surgery** resulting in poor milk production
- **Maternal illness resulting in separation of infant and mother** (e.g., shock or psychosis) or mother not at the same hospital
- **Intolerable pain during feedings** unrelieved by interventions

Academy of Breastfeeding Medicine. Protocol #3. 2009.

Step 6: Formal Recommendations

- **In the setting of a breastfeeding mother who requests supplementation with formula, ensure that staff:**
  - explore reasons for request
  - address concerns raised
  - provide education on potential risks of formula supplementation* (e.g., risk of allergies / eczema) to baby and breastfeeding success (e.g., establishing an adequate milk supply)
  - help mother decide what is suitable in her situation
- **If mother still requests to feed infant formula after informed discussion, allow mother to do so and document maternal request & counseling provided in infant's medical record**

Step 6: Breastmilk Only

- Attempts to obtain mother's milk through hand expression and/or breastpump should be made prior to supplementation.
- Ensure facility has adequate space away from breastfeeding mothers, & necessary equipment & supplies for teaching mothers how to properly prepare formula.
- Ensure all feeding-related clinical protocols are current and evidence-based.
- Track exclusive breastmilk feeding according to Joint Commission's definition.
- Compare facility's annual supplementation rate of breastfed babies to that reported by CDC's National Immunization Survey for facility's geographic region.

Cost-comparison of BFHI- vs non-BFHI accredited hospitals

(for those worried about cost of formula purchasing)

DelliFraine *et al. Pediatrics.* 2011.

	BFHI Hospital	Similarly Matched Non-BFHI Hospital	Cost Variance $ / %
Average Nursery + L&D Costs (combining vaginal & c-section delivery)	**$2,205/delivery** Ave = 256 beds Ave = 4.75 births/day	**$2,170/delivery** Ave = 293 beds Ave = 6.2 births/day	**$35 / 1.6% (P=.928)**
Average Nursery + L&D Costs (comparing 6 L&D diagnosis- related codes)	**$3688/delivery**	**$3510/delivery**	**$178 / 5% (P=.839)**

Costs of Formula in NH BFHI hospital

- DHMC Birthing Pavilion Annual costs (4/15-3/16)
  - Cost of formula = $1802.80 (for ~ 1300 births)
  - Cost of Donor Human Milk = $5845.50

FORMU,SMLC,ADV,20,CALR,2OZ	36290	BIRTHING PAVILION	511	PK	4	2044	$ 0.60	$ 306.60
FORMULA,ISOML,W,IRON,2OZ,BTL	36290	BIRTHING PAVILION	18	PK	4	72	$ 0.60	$ 10.80
FORMU,NEOSR,LUTN,2OZ,XP,NHWIC	36290	BIRTHING PAVILION	4	PK	4	16	$ 0.60	$ 2.40
FORMU,ENFAMIL,PREM,2OZ	36290	BIRTHING PAVILION	2966	EA	1	2966	$ 0.50	$1,483.00
FORMU,MILK,BRST,DNR,TEMP,SENS	36290	BIRTHING PAVILION	433	BT	1	433	$ 13.50	$5,845.50

Step 7: Practice “rooming in” - allow mothers and infants to remain together 24 hr/day

Step 7: Rooming-in

Practice rooming-in: Allow mothers and infants to remain together 24 hours a day.

- **Rooming-in 24 hr/day = standard for mother-baby care for healthy, full-term infants, regardless of feeding choice.**
- **Policy should encourage & allow moms/babies to room-in together from birth through hospital stay regardless of delivery method.**
- **Medical/nursing staff should conduct newborn procedures in room whenever possible, and should avoid frequent maternal-infant separation and/or absences of newborn from mother for more than an hour.**

Step 7: Rooming-in

- **If baby is kept in nursery for medical reasons, mother should be provided access to calm and feed her baby at any time.**
- **When mother requests baby to be cared for in nursery, health care staff should explore reasons for request, and educate mother about advantages of having infant stay with her 24 hr/day.**
- **If mother still requests baby to be cared for in nursery, process and informed decision should be documented.**

Benefits of Keeping Moms & Babies Together

Baby benefits

- Improved infant sleep
- Earlier id of feeding cues
- ↑ opportunity for suckling
- ↑ breastfeeding frequency
- ↓ infant crying
- ↑ breastmilk intake day 3
- ↓ maximum wt loss
- ↓ need for supplementation
- ↑ weight gain by day 7
- ↑ BF duration through 16 wk

Mom benefits

- Earlier lactogenesis
- ↑ milk volumes
- ↑ maternal-infant bonding
- ↑ maternal confidence

Keefe. *Nurs Res.* 1987. Keefe. *JOGNN.* 1988. Yamauchi & Yamanouchi. *Acta Paediatr Scand.* 1990. Prodromidis *et al. Birth.* 1995. Bystrova *et al. Int BF Journal.* 2007. Murray *et al. Birth.* 2007.

Impact of Step 7 Implementation

- **Lack of exposure to Step 7 and Step 8 (BF on demand) associated with 5.7 week ↓ in BF duration in study evaluating impact of steps on own and in combination**

Nickel *et al.* *J Hum Lact.* 2013.

Rooming-in and Milk Volume

Bystrova *et al. Int Breastfeed J.* 2007.

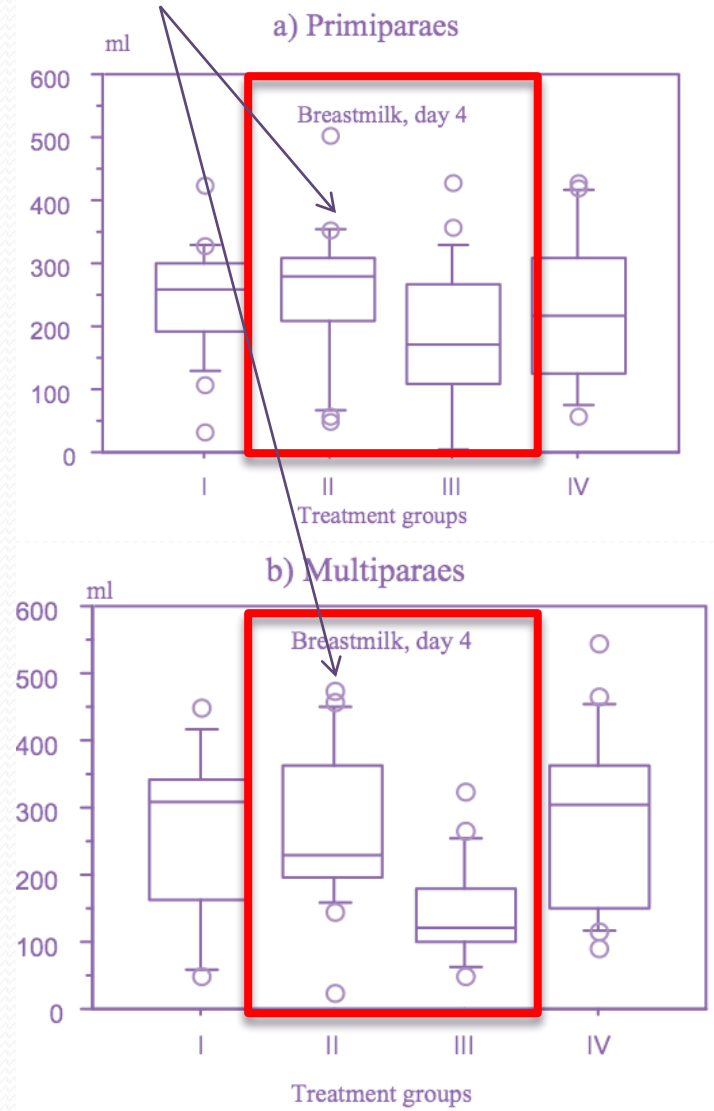
176 healthy term dyads randomized to 4 groups:

I. Infants placed STS w/ mothers after birth & roomed-in
II. Infants dressed, placed in mother's arms after birth & **roomed-in**
III. Infants kept in nursery after birth & while mothers in maternity ward **(maternal-infant separation)**
IV. Infants in nursery after birth but then roomed-in with mothers in maternity ward

Effect of Rooming-In

- **Significantly ↑ milk volumes seen on day 4 for mothers allowed to room-in with their infants and BF on demand**
  - Regardless of parity

- **Notably, primiparous study mothers experienced significantly higher milk volumes than multiparous mothers whose infants were kept in the nursery and brought to their rooms for feedings (7x/day)**



Bystrova *et al. Int Breastfeed J.* 2007.

What if a mom insists on sending her baby to the Nursery at night?

Recommendations for Mothers who Request Baby to be Sent to Nursery

- **Explore reasons for request with mother, regardless of feeding choice**
- **Address maternal concerns raised**
- **Provide education on advantages of rooming in**
  - e.g., earlier identification of & response to infant feeding and stress cues, infant calmer, earlier lactogenesis
- **Explore if there is a support person that can help care for baby in room while mother sleeps**
- **Help mother decide what is suitable in her situation**
- **Document informed decision in infant's medical record**

Step 8: Encourage unrestricted BF

Encourage breastfeeding on cue / demand.

- **Instruct and help *all* mothers to:**
  - understand that no restrictions should be placed on frequency or length of feedings
  - understand that newborns usually feed at least 8x/24 hr
  - recognize infant's hunger cues
  - recognize infant's cues that indicate when they are done feeding
  - understand that *both* physical contact and nourishment are important to their infant's health

Step 8: Encourage unrestricted BF

- **Feed babies as often and for as long as they want, without any restrictions on length or frequency of feeding**

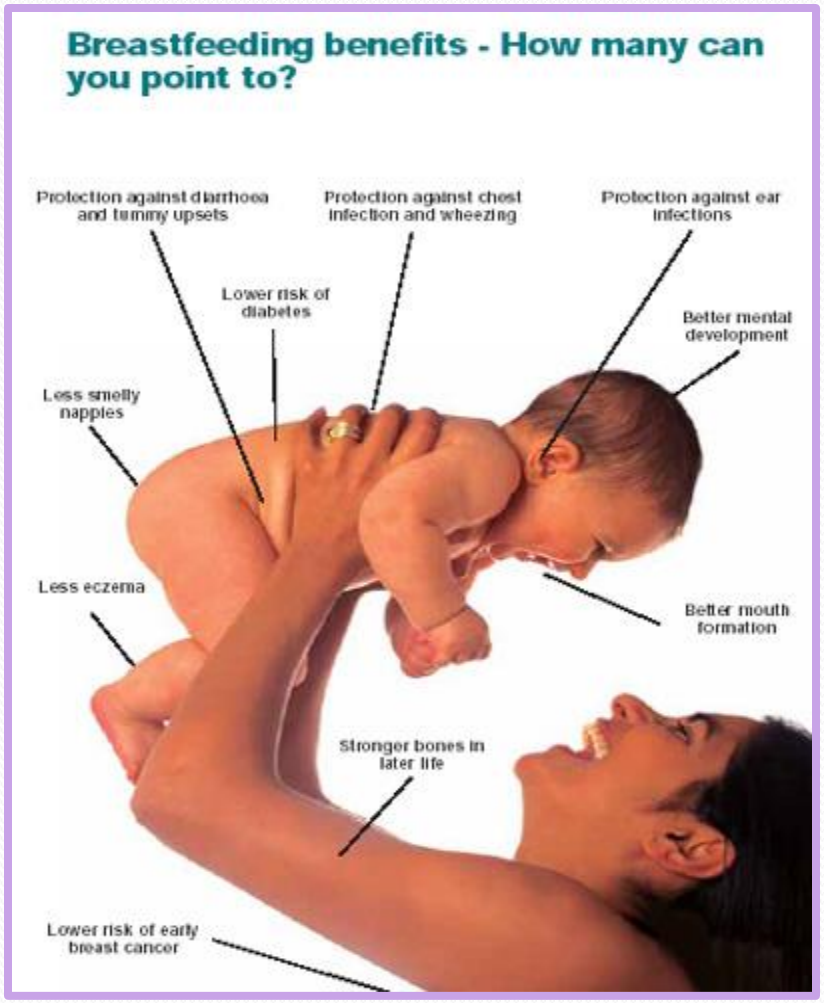
"Feed when hungry, and until content"

Allowing baby to feed ad lib …

- **Improved/Increased:**
  - More stable neonatal blood glucose levels
  - Pass meconium earlier
  - Earlier lactogenesis / higher milk volumes
  - Breastmilk intake on day 3
  - Rate of weight gain
- **Decreased:**
  - Need for supplementation
  - Maximum weight loss
  - Hyperbilirubinemia
  - Pathologic breast engorgement

De Carvalho *et al*. 1983.
Yamauchi & Yamanouchi. 1990.
Hawdon *et al*. 1992.
Hill & Humenick. 1994.
Bystrova *et al*. 2007.
DiGirolamo *et al*. 2008.

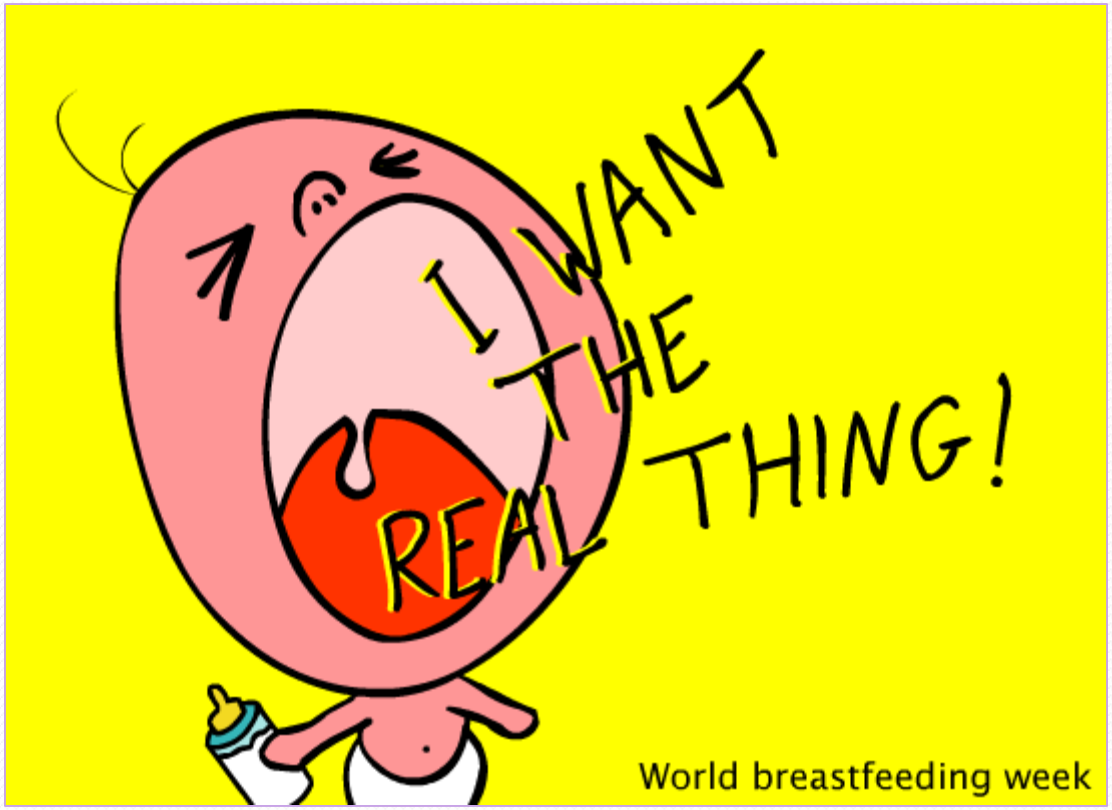
Long-term Impact!



- **↑ BF duration and exclusivity**

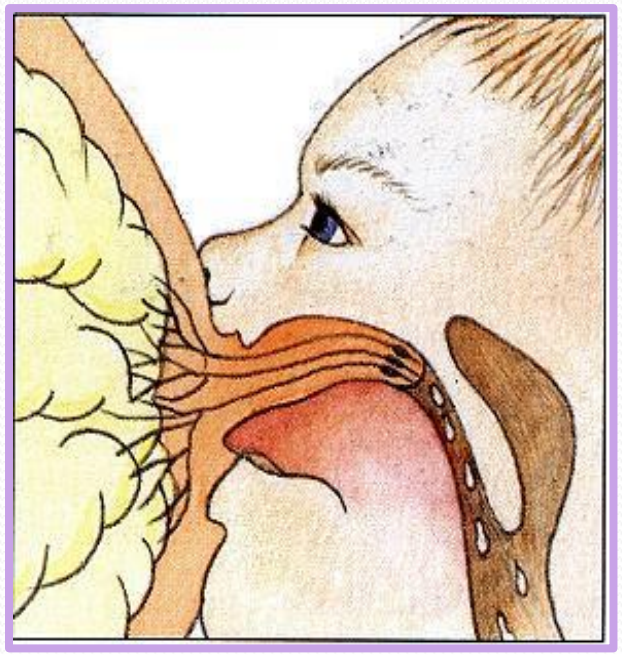
  Bystrova *et al.* *Int BF Journal.* 2007.
  DiGirolamo *et al.* *Pediatrics.* 2008.
  Koosha *et al.* *Singapore Med J.* 2008.

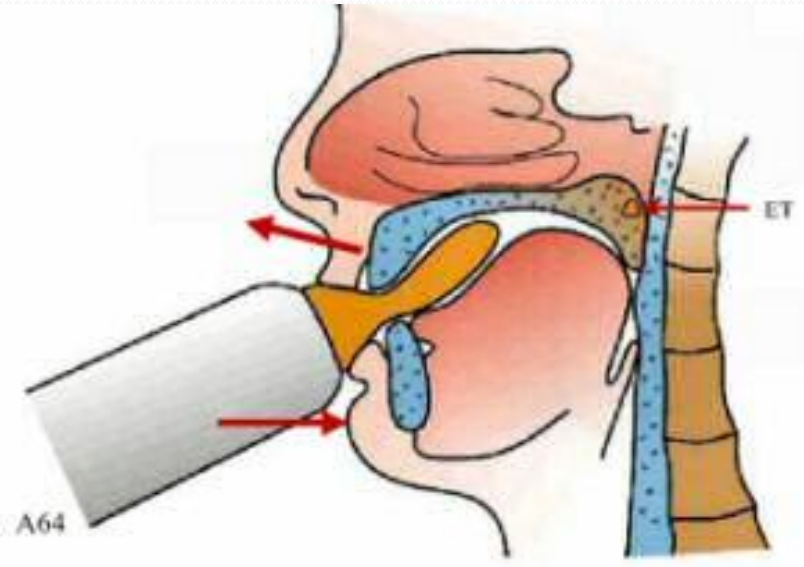
Step 9: Give no pacifiers or artificial nipples to BF infants



Step 9: No Artificial Nipples

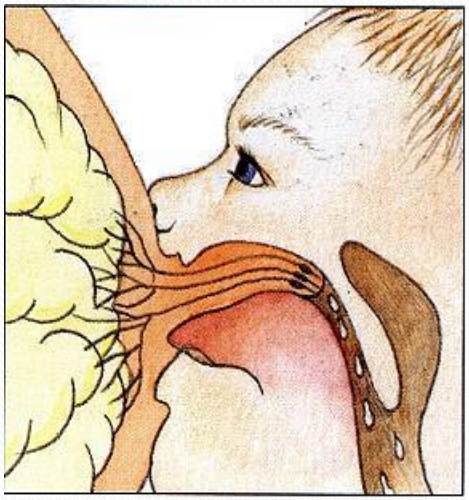
- **Educate all mothers about how use of bottles and artificial nipples may interfere with development of optimal breastfeeding**

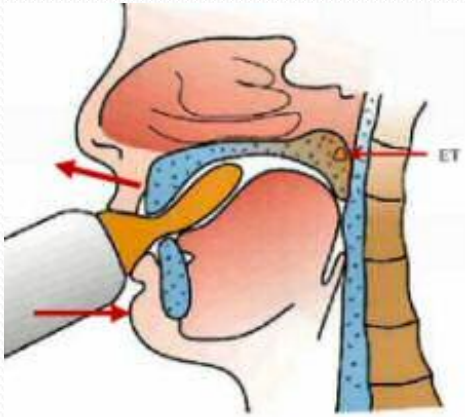




Different suck / swallow dynamics

- **Unique characteristics of newborns' oral structures and mom's nipples/breasts**
- **Artificial nipples do not feel/function like the breast**
- **Suck / swallow dynamics different**
  - Milk extraction occurs during negative intra-oral pressure with BF and positive pressure with bottlefeeding
- **Flow different with bottle feeding**





Step 9: No Artificial Nipples

Give no pacifiers or artificial nipples to BF infants.

- **When mother requests her breastfeeding baby be given a bottle or pacifier:**
  - explore reasons for request
  - address concerns raised
  - educate on possible consequences to success of breastfeeding
  - discuss alternative methods for soothing and feeding baby

If a baby requires supplementation, what are the non-bottle feeding methods available that may have less impact on breastfeeding?

Step 9: Formal Recs

- **Develop a breastfeeding policy that specifically states that all breastfed infants should be cared for without the use of bottle feedings**
- **Specify within this policy that BF infants who require any fluid supplementation are given supplementation by tube, syringe, spoon, or cup in preference to a bottle**

Evidence for Pacifier Impact?

- **Most observational studies report association b/w pacifier use and shortened BF duration**
  - Marker of BF difficulties or intent to wean?

- **No difference in BF outcomes in RCTs**
  - However, high degree of crossover occurred b/w pacifier & non-pacifier arms of studies (e.g., high degree of pacifier use seen in non-pacifier arm)

O'Connor *et al*. *Arch Pediatr Adolesc Med.* 2009.

Step 9: The Evidence?

Jaafar SH *et al. Cochrane Database Syst Rev.* 2012.

- **Pacifier use in infants of mothers highly motivated to breastfeed was not associated with significant differences in proportion of infants exclusively or partially breastfed at 3 & 4 mo**

- **Caveats: Only 2 RCTs reviewed** (Jenik 2009, Kramer 2001)
  - Only looked at 3 & 4 mo BF outcomes
  - Research RN and outcomes assessors were blinded, but unclear if infant caregivers were
  - Rate of pacifier use in control groups (restricted pacifier use) was ~40% in both studies and therefore could have diluting effect on summary estimates

Impact of Step 9 Implementation

- **Lack of Step 4** (early skin-to-skin & 1st breastfeed) **and <u>Step 9</u>** (no artificial nipples) **together associated with largest decrease in BF duration (11.8 weeks)**
- **Lack of Step 8** (BF on demand) **and Step 9 associated with 6.3 week reduction in BF duration**

Nickel *et al.* *J Hum Lact.* 2013.

When May Pacifiers Be OK?

- **Maternal-infant separation**
- **Prematurity**
- **Stressful/painful events**
- **Neonatal withdrawal**
- **At sleep times after breastfeeding is well-established**
  - Pacifier use reduces SIDS risk?
- **Overactive let-down**

Step 10: Provide and Refer Mothers to BF Support at Discharge

BF Support at Discharge

- **US birthing facilities score lowest on BF support referrals**

  www.cdc.gov/mpinc

- **Combined lay + professional BF support:**
  ↑ BF duration and exclusivity

  Renfrew *et al.* *Cochrane Database Syst Rev.* 2012.

- **Prenatal and postpartum education increase BF exclusivity**

  Su *et al. BMJ.* 2007.

- **Trained health visitor program:**
  ↓ BF cessation in 1st 6 months

  Kronborg *et al.* *Acta Paediatr.* 2007.

- **Proactive prenatal/postnatal phone support:**
  ↑ BF duration + exclusivity

  Dennis & Kingston. *J Obstet Gynecol Neonatal Nurs.* 2008.

  Murray *et al.* *Birth.* 2007.

Step 10: BF support at Discharge

- **Foster establishment of breastfeeding support groups *and/or* coordinate with community support to provide support to breastfeeding mothers after d/c**
- **Establish in-house breastfeeding support services if no adequate source of support is available for referral (e.g., support group, lactation clinic, home health services, help line, etc)**

Community BF Support

- **Lactation Consultants**
  - Hospital- or clinic-based LCs
  - Private LCs
- **WIC peer counselors**
- **Home visiting programs**
  - Visiting nurse programs
  - Lactation support providers
- **Professional breastfeeding support groups**
  - e.g., Fourth Trimester Parent Group
- **Lay breastfeeding support groups**
  - e.g., La Leche League / peer counselors
- **Breast pump rental/sales outlets**
- **Breastfeeding-supportive providers**

Supports Available for Your Moms?

Supports Available for Your Moms?

- Lactation Consultants
- WIC peer counselors
- Home visiting programs
- Professional support groups
- Lay support groups
- Pump rental/sales outlets
- BF-supportive providers

Step 10: BF support at Discharge

- **Discuss at-home feeding plans with mothers prior to d/c**
- **Provide written d/c info for mothers reviewing:**
  - How and where to find BF help after d/c
  - Reinforcement of feeding baby on cue till content
  - Problem-solving common breastfeeding challenges
  - Reasons to call for evaluation / help
  - Importance of exclusive breastfeeding for ~ 6 months

Breastfeeding Support

- **Encourage mothers to see a health care worker soon after discharge who can assess breastfeeding and provide any needed support**

- **F/u by DOL 3- 5 for all newborns** (AAP. *Pediatrics. 2012.*)
  - Check weight, voiding/stooling pattern, feeding & jaundice assessment
  - Promote breastfeeding supports
  - Refer to lactation consultant if difficulties present

- **Develop individual care plans for f/u when risk factors are identified**

Login | Request Login

USBC United States Breastfeeding Committee

Protecting, Promoting and Supporting Breastfeeding: A Public Health Imperative

About Us | News & Info | Legislation & Policy | Mothers & Families | Communities | Health Care | Employment | Research | Coalitions

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Coalitions

COALITIONS

- Breastfeeding Coalition Directory
- Coalitions Learning Connection
- Regions & Regional Representatives
- National Conference
- CDC-USBC Bi-Monthly Webinars
- Power Tools Webinars
- Collective Impact Webinars
- Racial Equity Webinars
- Action 20: National Leadership

Coalitions Directory

The USBC maintains this directory with information provided by breastfeeding coalitions from across the country. Note that there is only one official state-level coalition in each state (or U.S. territory). In order to register as such, the state/territorial coalitions shown have agreed to abide by the USBC's Guidelines, Roles and Responsibilities for breastfeeding coalitions.

New Listings: To add your tribal, cultural, or local/community coalition to this directory, request a Group Profile.

Updating Listings: To update/change your listing, please login to update your coalition's Group Profile record in the site. (Note: You must have Group Administrator access rights to update your coalition's profile.)

Jump to Tribal Coalitions

Jump to Cultural Coalitions

Jump to Local/Community Coalitions

State/Territorial Coalitions

www.nhbreastfeedingtaskforce.org

NEW HAMPSHIRE Breastfeeding Task Force

COMMUNITY | FAMILIES | HEALTHCARE PROVIDERS | EMPLOYERS

HOME | ABOUT US | ACCOMPLISHMENTS | MEMBERS | BREASTFEEDING LEGISLATION | RESOURCE GUIDE | HELPFUL ARTICLES | CONTACT US

For the children of New Hampshire to be healthy and strong, they must receive the best possible nutrition when they are infants

LEGISLATION UPDATES

United States Breastfeeding Committee (great source for details on new federal breastfeeding legislation - plus many other current breastfeeding topics)

New Hampshire Breastfeeding Legislation House Bill 441 - This bill sets forth the right of a mother to breastfeed her child in public.

OWH OFFICE ON WOMEN'S HEALTH — *Supporting Nursing Moms at Work: Employer Solutions*

NEW BREASTFEEDING FRIENDLY EMPLOYER AWARD

Exclusive breastfeeding for at least 6 months after birth is optimal for the health of a

BABY-FRIENDLY™ HOSPITALS

Currently, 290 U.S. hospitals and birthing centers in 47 states and the District of Columbia hold the Baby-Friendly™ designation. Every hospital that attains the Baby-Friendly™ designation moves us closer to meeting important public health goals of increasing the proportion of live births that occur in facilities that provide

Strategies to Prevent Obesity and Other Chronic Diseases

The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies

CDC

AAP and ABM

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN

Everyday Resources for the Office or Hospital

- AAP Endorsement of the WHO/UNICEF Ten Steps to Successful Breastfeeding
  The AAP has endorsed these steps to encourage the optimal care for mothers and their infants in maternity care facilities.
- BiliTool
  BiliTool is designed to help clinicians assess the risks toward the development of hyperbilirubinemia or "jaundice" in newborns.
- Breastfeeding and Lactation: The Pediatrician's Guide to Coding
  This coding document was designed to help you get paid for your breastfeeding and lactation support.
- Clinical Protocols, Academy of Breastfeeding Medicine, various publication dates
  Breastfeeding protocols, developed by the Academy of Breastfeeding Medicine, that are useful when creating protocols for a hospital or practice.
- How To Have A Breastfeeding Friendly Practice
  As the breastfeeding rates in the US increase, there is now, more than ever, a need for health professionals who are able to care for and support breastfeeding families in their practice. This guideline provides you with suggestions on how to have a breastfeeding friendly practice.
- National Library of Medicine Drugs and Lactation Database (LactMed)
  This online database, provided by the National Library of Medicine, is a quick reference for anyone looking for information on medications for the lactating mother. It is helpful for physicians in making decisions pertaining to medication use.
- Safe and Healthy Beginnings Toolkit
  The AAP has developed and tested a variety of tools to help you to make sure that infants in your practice or hospital get off to the best start in life. The tools specifically relate to hyperbilirubinemia and jaundice prevention and treatment and breastfeeding support.
- Sample Hospital Breastfeeding Policy for Newborns
  Many hospitals have practices that are detrimental to breastfeeding including the routine use of formula supplementation and free samples, pacifier use, and the separation of mother and infant. The AAP Section on Breastfeeding and the Section on Perinatal Pediatrics has written a sample breastfeeding hospital policy that outlines the policies and procedures that hospitals should take to support breastfeeding.
- Ten Steps to Support Parents' Choice to Breastfeed Their Infant
  The free internet-based pamphlet was developed by the AAP Section on Breastfeeding to help physicians make their practice breastfeeding friendly. AAP members can use this tool to better support parents' choice to breastfeed their baby.

BREASTFEEDING MEDICINE
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ABM Protocol

ABM Clinical Protocol #2: Guidelines for Hospital Discharge of the Breastfeeding Term Newborn and Mother: "The Going Home Protocol," Revised 2014

Amy Evans,[1,2] Kathleen A. Marinelli,[3,4] Julie Scott Taylor,[5] and The Academy of Breastfeeding Medicine

A central goal of The Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient.

Background

THE ULTIMATE SUCCESS of breastfeeding is measured in part by both the duration of and the exclusivity of breastfeeding. Anticipatory attention to the needs of the mother and infant at the time of discharge from the hospital is crucial to ensure successful, long-term breastfeeding. The following principles and practices are recommended for consideration prior to sending a mother and her full-term infant home.

Clinical Guidelines

1. A health professional trained in formal assessment of

need to be checked frequently. For example, in Australia, infants are weighed at birth and at discharge or on Day 3 of life, whichever comes first. All concerns raised by the mother such as nipple pain, inability to hand express, perception of inadequate supply, and any perceived need to supplement must also be addressed.[1–7] (I; II-3; III) (Quality of evidence [levels of evidence I, II-1, II-2, II-3, and III] for each recommendation as defined in the U.S. Preventive Services Task Force Appendix A Task Force Ratings[8] is noted in parentheses.) It is important to ask detailed questions—many mothers may not bring up these concerns if not directly questioned.

2. Prior to discharge, anticipation of breastfeeding prob-

www.bfmed.org

14. The Breastfeeding-Friendly Physicians' Office Part 1: Optimizing Care for Infants and Children

English

PDF

HTML

Korean

This protocol has been removed from the website because it has expired. It is currently under revision and will be replaced when the revision is approved and published in Breastfeeding Medicine.

Chinese

This protocol has been removed from the website because it has expired. It is currently under revision and will be replaced when the revision is approved and published in Breastfeeding Medicine.

Spanish

PDF

15. Analgesia and Anesthesia for the Breastfeeding Mother

English

PDF

The InfantRisk Center has recently launced its sister site MommyMeds.com! MommyMeds.com is based upon the same rigorous research, studies, and experience of the InfantRisk Center and Dr. Thomas Hale, but is much more friendly to the everyday mom. The vision of MommyMeds is to provide up-to-date, evidence-based information on the use of medications, and the effect of some disease conditions, during pregnancy and breastfeeding. Its goal is to provide accurate information regarding the risks of exposure to mothers and their babies in a way that is friendly to the everyday mother.

The InfantRisk Center is open to answer calls Monday-Friday 8am-5pm Central Standard Time.

Please contact us at **(806)-352-2519**.

In Summary

- **Breastfeeding significantly reduces morbidity, mortality, and health care costs**
- **Provider education and support are essential in ensuring optimal BF outcomes for mothers and babies**
- **Ten Steps to Successful Breastfeeding = evidence-based foundation for successful breastfeeding**
- **Greater # of steps in combination associated with best outcomes**