

# The Role of Hospitals in Promoting Breastfeeding – No Free Lunch

CleanMed 2009

Chicago, IL

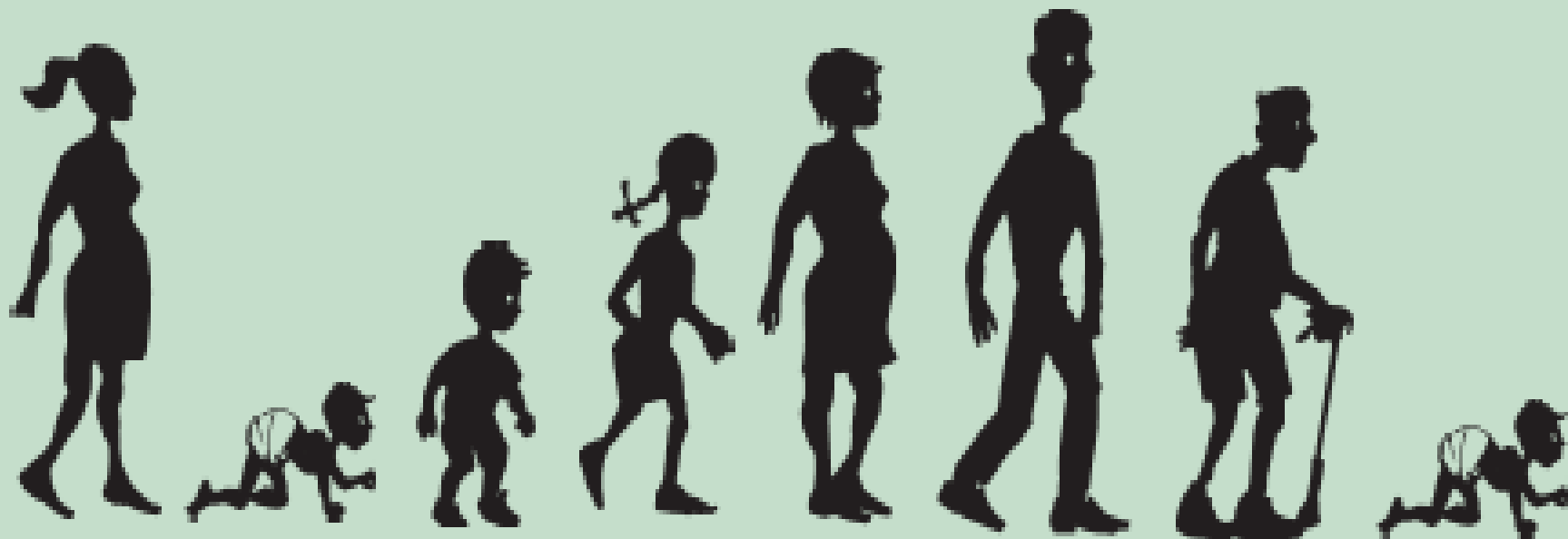
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# Arc of life



**Early life experiences can influence diseases of aging**

# Bartels Lutheran Retirement Community – aging facilities engage in sustainability





# The Influence of Marketing on Children

“When it comes to targeting kid consumers, we at General Mills follow the Proctor and Gamble model of ‘cradle to grave’... We believe in getting them early and having them for life.”

-Wayne Chilickie, General Mills



*Campaign for a Commercial-Free Childhood*



**“It is unreasonable to expect that people will change their behavior easily when so many forces in the social, cultural, and physical environment conspire against such change”**

*Institutes of Medicine*

# How do we set the Stage for Healthy Babies? Healthy Families? Healthy Aging? What is the Role of Hospitals?



# The importance of early nutrition: in the womb, infancy

- Growth
- Developmental programming
  - Epigenetic: DNA methylation, histone modification, RNA interference
  - Establish “set points” of various phenotypic traits; program immune system, etc.
  - Influence susceptibility to adult disease; e.g. obesity, metabolic syndrome, diabetes, cancer, neurodegenerative disease, etc.

# What is in human milk?

- Protein, fat (2-5%; average 4%), carbohydrates
- IgA, lactoferrin comprise about 30% of milk protein
- Other nutrients; e.g vitamins; trace elements
- Antibodies (IgA > IgG, IgM)
- Hormones, growth factors—role not well understood
- Anti-oxidants (> total antioxidant capacity than in formula)
- Contaminants

# Compounds in milk with anti-microbial properties

**TABLE 2.2** Compounds in milk with antimicrobial properties

Immunoglobulins	Free secretory component
Lysozyme	Oligosaccharides
Lactoperoxidase	Fatty acids
Nucleotide-hydrolyzing antibodies	Maternal leukocytes and cytokines
$\kappa$ -casein	sCD14
$\alpha$ -lactoglobulin	Complement and complement receptors
Haptocorrin	$\beta$ -defensin-1
Mucins	Toll-like receptors
Lactadherin	Bifidus factor
Anti-secretory lectins	Prebiotics

# Iron

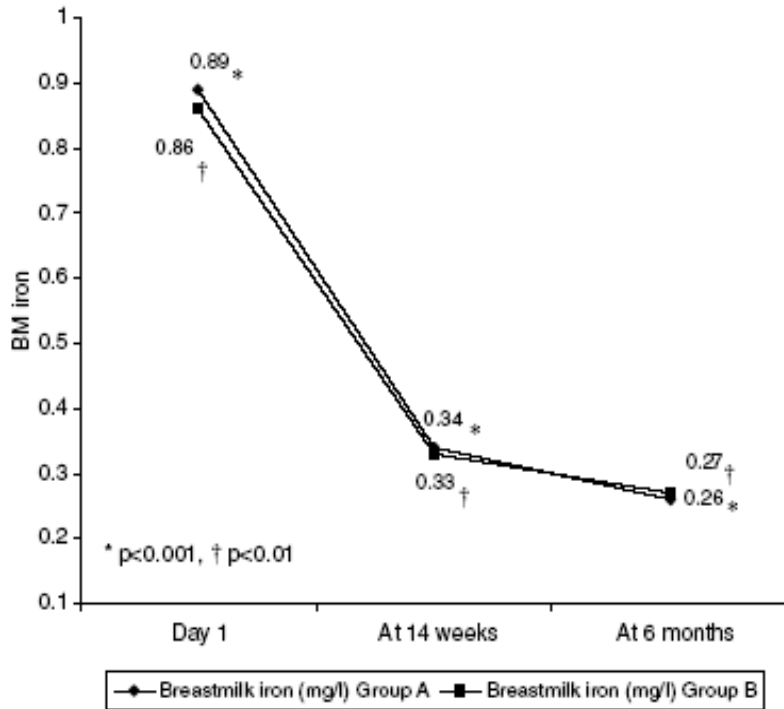


Figure 1 Mean breastmilk iron concentration (mg/l) on day 1, 14 weeks and 6 months in nonanemic (Group A) and anemic mothers (Group B).

# lactoferrin

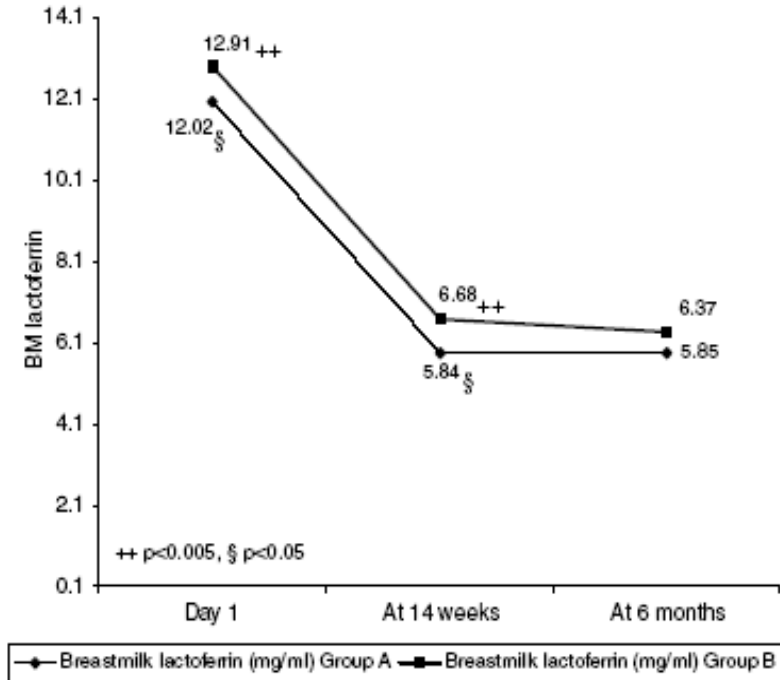


Figure 2 Mean breastmilk lactoferrin concentration (mg/ml) on day 1, 14 weeks and 6 months in nonanemic (Group A) and anemic mothers (Group B).

Iron and lactoferrin levels in BM of anemic and non-anemic mothers

Shashiraj. Eur J Clin Nutr, 2006

# Lactoferrin

- Mediates iron absorption/status
- Promotes healthy gut
  - Epidermal maturation and differentiation
- Antimicrobial properties: bacteria, viruses, fungi
- Anti-inflammatory properties

# **Breast feeding advantages— infant/child**

- **Provides nutrition and developmental guidance**
- **Reduces morbidity and mortality in all settings**
- **Reduces infections, including pneumonia, infectious diarrhea and other GI infections, ear infections, bacteremia, urinary tract infections**
- **Improves neurological development (inconsistent)**
- **Decreases risk of asthma, bronchitis (inconsistent)**
- **Decreases risk of obesity, type 2 diabetes (may not be true if mother has obesity/diabetes)**

# Breast feeding advantages

- Lower risk of type 1 diabetes (Rosenbauer, 2008)
- Less DNA damage than in formula fed infants (as measured by DNA adducts in urine; comet assay in lymphocytes)
- > 6 months decreases the risk of cancer in children under 15 years of age. (leukemia, Hodgkins, neuroblastoma)
- Lower risk of inflammatory bowel disease
- Heart disease is less likely to develop in adults who were breast-fed in infancy.

See Agency for Healthcare Research and Quality 2007

<http://www.ahrq.gov/downloads/pub/evidence/pdf/brfout/brfout.pdf>

# Breast feeding advantages-- maternal

- Less postpartum bleeding
- Earlier return to pre-pregnancy weight
- Improved bone strength; decreased risk of hip fracture later in life
- Reduced ovarian and pre-menopausal breast cancer
- Birth control

# Manganese—exposure

- Essential nutrient at low doses
- Adults respond to dietary variations via mechanisms poorly developed in infant
- Sources: human milk (~ 10 ug/L); infant formula (77-100 ug/L, dep. on supplementation; soy formula 200-300 ug/L)

# Manganese-neurodevelopmental toxicity

- Animal studies—increased activity after developmental exposures
- Human studies—known neurotoxin in adults (manganism, behavioral, emotional effects, response speed, motor fx, memory)
- Three studies show correlation between Mn hair levels and hyperactivity (n=16-30 plus controls)

# Formula/Bottles

- Bisphenol A:  
can linings, baby bottles



# BPA and Baby bottle makers

washingtonpost.com

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## Speeding Up Safety

*With the government slow to act and consumers quick to mobilize, companies have learned to take swift action on potentially dangerous products.*

By Anny Shin  
Washington Post Staff Writer  
Saturday, May 3, 2008; D01

After a government panel said there was "some concern" that the chemical bisphenol A could be harmful to infants and small children, it took less than a week for [Wal-Mart](#) and [Toys R Us](#) to announce that they would stop selling baby bottles that were made with it.

The swift response stood in stark contrast to the drawn-out reaction to concerns about another



News from

Office of the Attorney General  
55 Elm Street  
Hartford, Connecticut 06106

Attorney General

Richard Blumenthal

For  
Immediate  
Release

THURSDAY, MARCH 5, 2009

### ATTORNEY GENERAL ANNOUNCES BABY BOTTLE MAKERS AGREE TO STOP USING BPA; CALLS FOR LEGISLATIVE BAN

Attorney General Richard Blumenthal today announced that the nation's six major baby bottle companies have agreed to stop using the toxic chemical Bisphenol-A (BPA) in baby bottles -- a significant public health step that he asked them to take.

Last October, Blumenthal, joined by attorneys general of Delaware and New Jersey, wrote to the baby bottle companies urging them to stop using BPA because studies have linked the chemical to health problems in infants, including damage to reproductive, neurological and immune systems.

Blumenthal said, "All six major baby bottle companies -- Avent, Disney First Years, Gerber, Dr. Brown, Playtex and Evenflow -- have agreed to voluntarily ban BPA from bottles in a major public health victory."

Blumenthal said the continued threat of BPA in other products, particularly those used by infants and children, warrants immediate legislative action to completely ban BPA from certain children's products.

"This prompt positive response sends a profoundly significant message that baby bottle manufacturers respect the science showing BPA health dangers - and will do the right thing," Blumenthal said. "Hopefully other industries will heed our plea, and a broader legislative ban will be approved this session."

"Voluntary BPA bans from baby bottles are good, but not good enough -- and must lead to complete prohibition. BPA in baby products can perilously leach into liquid, threatening pernicious and lasting health damage to infants."

"There is no excuse for this avoidable and unconscionable threat to continue. I am pleased that all baby bottle makers that I contacted have agreed to abandon BPA in baby bottles, but we must do more to protect our children. I am calling for a complete ban against BPA in baby products to stop this needless and negligent public health threat."

"Growing scientific evidence shows that even small amounts of BPA damages reproductive, neurological and immune systems. Experiments have

**February 2008.** Letter sent to baby bottle mfgs demanding they make bottles w/o BPA

# Communities reap the benefits of breastfeeding

- Less absenteeism from work among families
- Communities can leverage resources for those in need
- Resources flow to local economy
- Lower health care costs – reduced burden on governmental programs

# Healthy Baby, Healthy Planet

The environment benefits when babies are breastfed:

- No packaging, no energy necessary for preparing, packaging, and transporting artificial milk
- Waste Reduction
- Spacing of pregnancies

# Pre-natal vs. post-natal exposures

## Breast vs. formula feeding

- For POPs, most data available on PCBs/dioxins
- For most effects, pre-natal exposures have greater consequences than post-natal exposures
- Breast feeding superior to formula feeding for infant development despite presence of contaminants

# Despite Proven Benefits, Breastfeeding Rates are Low

2006 CDC breastfeeding surveillance study:

- 2004 births - nationwide only 74% of women initiated breastfeeding
- only 11% exclusively breastfed through 6 months.

Centers for Disease Control and Prevention. Breastfeeding Practices—Results from the 2005 National Immunization Survey. [http://www.cdc.gov/breastfeeding/data/NIS\\_data/data\\_2004.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/data_2004.htm)

# Healthy People 2010 Breastfeeding Goals

## **Any breastfeeding**

- At birth: 75% of infants
- 6 months: 50% of infants
- 12 months: 25% of infants

## **Exclusive breastfeeding**

- 3 months: 60% of infants
- 6 months: 25% of infants

# The Role of the Hospital in Promoting Breastfeeding Or Undermining Breastfeeding Success...



# Formula Marketing

- Infant formula market—
  - > over \$1.5 billion market in US alone
  - Women who receive hospital discharge packs containing formula less likely to exclusively breast feed beyond 10 weeks
- The U.S. would save at least \$3.6 billion in direct and indirect health care costs if breastfeeding rates met federal Healthy People goals (USDA).

...the Ross training manual says, "Never underestimate the importance of nurses. If they are sold and serviced properly, they can be strong allies. A nurse who supports Ross is like an extra salesperson." (Abbott Labs v. Segura, 1995)

# This “free” bag comes with a \$700 price tag. So why does your hospital want to hand it out?



This “free” bag comes courtesy of big drug companies. They want to start babies on their expensive brands of infant formula.

**\$\$\$** ➤ If a mom chooses to formula-feed, that “gift” starts her baby on a brand that costs \$700 more a year than store brands.\*

**\$\$\$** ➤ If a mom chooses to breastfeed, research shows she is more likely to start using formula if she takes home a bag.\*\*

**\$\$\$** ➤ Health professionals want hospitals to stop marketing formula to new mothers. This practice is opposed by the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists, the CDC, the American Public Health Association, and the World Health Organization.

Visit [www.BantheBags.org](http://www.BantheBags.org) for more information. Tell your hospital that you don't want drug companies to profit at the expense of mothers and babies.

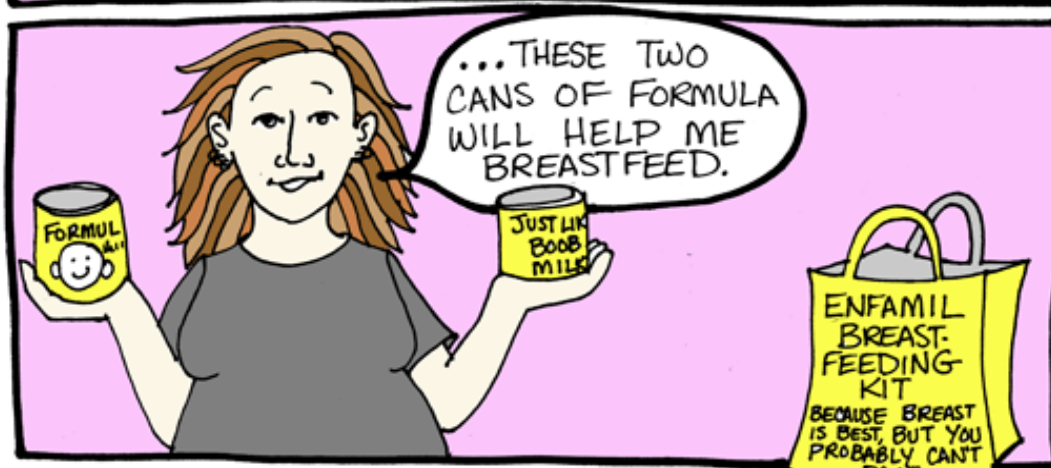
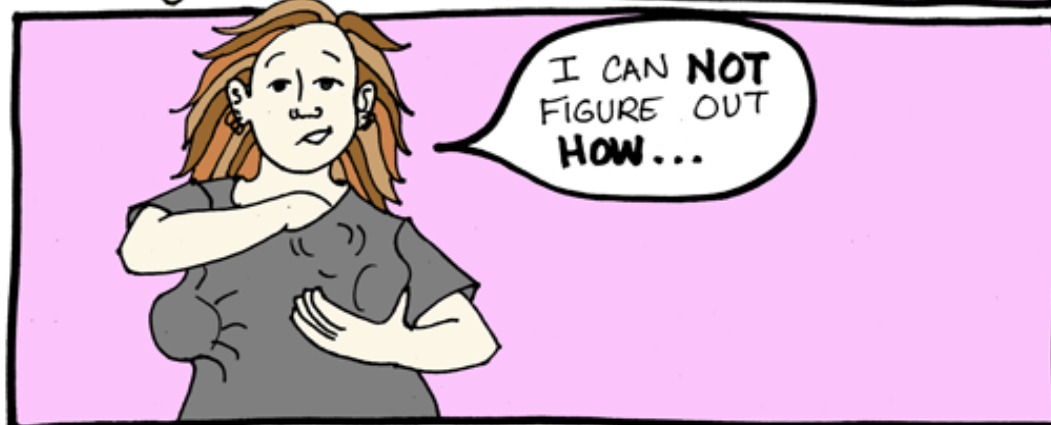
**Hospitals should market health, and nothing else.**



Massachusetts  
Breastfeeding  
Coalition

[www.BantheBags.org](http://www.BantheBags.org)

\* O'Brien et al. *WIC and the Social Price of Infant Formula: Food Assistance and Nutrition Research Report No. 18* (FANRR-11), June 2004. \*\* Cochran *Don't Feed Your Mom: Breast, 2002* (CD002074)



# The Baby Friendly Hospital

## The Ten Steps To Successful Breastfeeding

The BFHI promotes, protects, and supports breastfeeding through The Ten Steps to Successful Breastfeeding for Hospitals, as outlined by UNICEF/WHO.

# 10 Steps

- Maintain a written breastfeeding policy that is routinely communicated to all health care staff.
- Train all health care staff in skills necessary to implement this policy.
- Inform all pregnant women about the benefits and management of breastfeeding.
- Help mothers initiate breastfeeding within one hour of birth.
- Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.

# 10 Steps Cont....

- Give infants no food or drink other than breastmilk, unless medically indicated.
- Practice “rooming in”-- allow mothers and infants to remain together 24 hours a day.
- Encourage unrestricted breastfeeding.
- Give no pacifiers or artificial nipples to breastfeeding infants.
- Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic

# Baby Friendly Hospitals Succeed in Breastfeeding Promotion

- Researchers at Boston Medical Center, the nation's 22nd Baby-Friendly hospital, have reported that during the implementation of the BFHI, breastfeeding rates rose from 58 percent to 87 percent, including an increase among US-born African-American mothers from 34 percent to 74 percent in 1999.



Philipp BL et al. 2001. Baby-Friendly Hospital Initiative Improves Breastfeeding Initiation Rates in a US Hospital Setting. *Pediatrics* 108(3):677-681.

- Rosenberg, Eastham, Kasehagen, and Sandoval (2008) demonstrated the association between commercial discharge bags and the decreased amount of exclusive breastfeeding

## ■ Food Service Credits

- FS Credit 1: Sustainable Food Policy and Plan
- FS Credit 1.2: Nutrition
- FS Credit 2: Sustainable Food Education and Promotion
- FS Credit 3: Local, Sustainably Produced Food Purchasing
- FS Credit 4: Reusable & Non-Reusable Products
- FS Credit 5: Hospital Supported Agriculture: Food and Farm Linkages
- FS Credit 6.1: Food Donation and Composting
- FS Credit 6.2: Food Services Recycling
- FS Credit 7: Food Vendors
- FS Credit 8: Chemical Management for Food Services



## Intent

Create, promote and implement sustainable food purchasing policies and plans that support human and ecological health.

Achieve FS Credit 1.1: Sustainable Food Policy and Plan

AND

- minimum of one fresh fruit option at each patient meal and at lunch and dinner, provide a fresh green salad and a minimum of one non-starch fresh vegetable option.
- whole grain options for minimum 50% of grains and breads
- one protein-balanced vegetarian menu option



# **Breastfeeding Promotion – GGHC Nutrition Credit 2.1**

**Promote Breast Feeding: Develop and implement a breastfeeding program as outlined in the UNICEF/WHO’s document “The Ten Steps to Successful Breastfeeding for Hospitals” and eliminate the standard practice of free formula giveaways.**

# Healthy food for mom and baby...

## Policies that promote ease of nursing

**“I eat locally”**



# Resources

- [www.healthyfoodinhealthcare.org](http://www.healthyfoodinhealthcare.org)
- [www.gghc.org](http://www.gghc.org)
- [www.babyfriendlyusa.org](http://www.babyfriendlyusa.org)
- [www.cdc.gov/breastfeeding/resources/guide.htm](http://www.cdc.gov/breastfeeding/resources/guide.htm)
- [www.banthebags.org](http://www.banthebags.org)
- [www.nrdc.org/breastmilk](http://www.nrdc.org/breastmilk)
- [www.igc.org/psr](http://www.igc.org/psr)
- [www.waba.org](http://www.waba.org)
- [www.lalecheleague.org](http://www.lalecheleague.org)