Overview for Today
- Infant Feeding Decisions in the Hospital
- Baby Behavior Basics and Newborn Behavior
  - Infant States
  - Cues and Crying
  - Sleep states
- Sharing Newborn Behavior Messages

In-Hospital Supplementation is Being Monitored
- Joint Commission
- CDC
- Surgeon General
- Baby Friendly
- Comparison websites
- CWA/UCD Report

Common Reasons for In-Hospital Supplementation
- Medical issues
- Early clinical challenges
- Maternal request
  - Cultural practice?

Maternal Request for Supplementation of Healthy Breastfed Newborns
- 14 focus groups in English- and Spanish-speaking WIC participants (N=97)
- Study of maternal request for hospital formula for healthy breastfed infants

Infant Feeding Decisions in the Hospital

DaMota et al. JHL 2012
Maternal Request for Supplementation of Healthy Breastfed Newborns

- 3 Major Themes
  - Unrealistic expectations about newborns and parenting
  - Lack of preparation for breastfeeding
  - Formula seen as the “solution”

Parents’ Unrealistic Expectations

- “The Imagined Baby”
  - Parents’ prenatal construct of the baby
  - Will be in conflict with the real baby
  - Parents and other caregivers have idealized the “quiet, full, sleeping” baby

Unrealistic Expectations about Newborns

- Newborns expected to be quiet
  - “Every time that I tried to breastfeed, he would have a tantrum, become really angry. So then I thought ‘Why? Why should I make him suffer?’”
  - “We started the formula on the 2nd day…since he never stopped crying.”

- Newborns expected to sleep
  - “I guess she wasn’t getting enough from me…they brought me the milk and after she ate, she slept.”
  - “She wouldn’t go to sleep but I knew she was still hungry, and then I would feed her a little bit [formula] and then she would go to sleep.”

Day 1: The “Good” Baby

- Heightened alert state in the first 2 hours, followed by longer periods of sleep (over next 24 hours)
- Parents will think:
  - What a “good” quiet, sleeping baby!
- And then...

Days 2 & 3: Everything Changes

- Reality sets in! There is a sudden change in the baby’s behavior
- Baby is expected to be quiet and sleeping, but now...SOMETHING IS WRONG!
- Parents ask for formula and the frantic baby falls asleep
Lack of Preparation for Breastfeeding

• Onset of Milk Production
• The Perfect Latch
• Frequency of Feeds

The Facts: Milk Onset

• 85% of mothers - milk comes in at 24-72 hours pp (bulk of additional 15% are after 72 hours)
  ○ First time moms’ milk comes in later (avg. 70 hrs pp) than moms who have BF before (avg. 56 hrs pp)


Lack of Preparation for Breastfeeding: The Perfect Latch

• Mothers expected their infants to latch perfectly the first time they attempted to feed
  ○ “He didn’t suck well, he rejected it right away.”
  ○ “I gave her formula, I would put her close but she would barely latch on. It was if she wanted everything to be easy and for everything to be fast. And I would say ‘I can’t do it either.’”

DaMota et al. JHL 2012

The Facts: Percentage of Infants with Initial Poor Suck

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Day 3</th>
<th>Day 7</th>
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</thead>
<tbody>
<tr>
<td>49</td>
<td>22</td>
<td>14</td>
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% of infants


Lack of Preparation for Breastfeeding: Frequency of Feeds

• Mothers had no idea how frequently newborns would need to be fed – expected them to need larger volumes
  ○ “She was a big baby. She would wake up every 3 hours like clockwork wanting to be fed.”
  ○ “He was constantly eating like every 45 minutes to 1 hour, I just couldn’t sit there and feed him so I moved him to a bottle.”

DaMota et al. JHL 2012
The Facts: Early Breast Milk Volumes

- **Day 1**
  - 13 ± 6 g/kg (range 3 – 32 g/kg)
  - ~50 mL (1.8 oz) for a 3.6 kg newborn
- **Day 3**
  - 98 ± 47 g/kg (range 50 – 163 g/kg)
  - ~350 mL (12.5 oz) for a 3.6 kg newborn
- **Day 5**
  - 155 ± 20 g/kg (range 110 – 196 g/kg)
  - ~560 mL for a 3.6 kg (20 oz) newborn


Formula as the Solution

- **Formula perceived as a “solution” to breastfeeding problems or challenging infant behavior**
  - “He wouldn’t stop crying so the nurse gave him a bottle. He latches fine to a bottle so I said ‘okay.’”
  - “I just wanted to give him formula because he was crying and always awake.”

DaMota et al. JHL 2012

Coping with Stress

- If people believe there is a solution – **Problem Management**
  - Seek information
  - Identify solutions
  - Attempt and evaluate solutions

- If people don’t believe there is a solution – **Emotional Regulation**
  - Reinterpret goals
  - Disengage, detach
  - Denial of consequences
  - Anger, aggression


Infant Behavior Research

- Infant behavior has been explored and documented for more than 30 years
  - Brazelton, 1973
  - Infant-feeding outcomes have not been investigated
- Current education is excellent but complex and time consuming
- The UCD work is translational

USDA WIC Special Projects Grant

- 3-year quasi-randomized educational intervention (8 sites in CA)
  - 1 year intervention period
- Concept: Create a clinic environment supporting positive caregiver-infant interactions
  - Training, social marketing, handouts, classes, activities
  - Effort to create messaging that can be delivered quickly, effectively, and inoffensively

http://www.nal.usda.gov/wicworks/Sharing_Center/statedev_FIT.html
Exclusive BF Food Package by Age

http://www.nal.usda.gov/wicworks/Sharing_Center/statdowns_FIT.html

Infants >95th percentile wt/age

- Attained weight-for-age > 95th percentile (5-7 months-of-age)
  - Baseline: N = 339
  - Post: N = 411
  - * P < .01

California Baby Behavior Campaign

- USDA WIC Special Projects Grant 2006-2009
- Statewide training in CA WIC 2010
- Roll out of statewide campaign 2011

Breastfeeding Rates CA WIC Infants 0-2 mos.

Source: CA State WIC EIS Data

Baby Behavior Promotes Breastfeeding

- Baby Behavior is just another tool for BF promotion – does not address clinical issues
- Addresses perceived insufficient milk and promotes maternal confidence

Baby Behavior Basics
Infant behavior is organized into 6 “states.”

- Crying
- Irritable
- Quiet Alert
- Drowsy
- Active Sleep

Baby Basics #1
Quiet Sleep

Caregiver Actions Influence State

Variety to Waken
- Different sights, sounds, motions stimulate babies
- Many newborns have difficulty staying alert
- May need to take several minutes for newborns to wake enough to feed

Repetition to Soothe
- First, address cause of distress
- Sustained repetitious movement, sounds, sensations calm babies
- May take several minutes to calm a baby who is very overstimulated

Key Messages for Parents

- Sleepy babies need lots of stimulation
- After addressing the reason for crying, using repetitive actions and sounds will calm crying babies
- Parents should be patient and listen for a change in the cry for a few minutes before trying something else

Types of Infant Cues

- Young infants try to tell caregivers when they want to interact (engagement cues)
- Young infants try to tell caregivers when they need something to be different (disengagement cues)

Engagement Cues

- Obvious
  - Looking intently at faces
  - Rooting
  - Feeding sounds
  - Smiling
  - Smooth body movements

- Subtle
  - Eyes open
  - Face relaxed
  - Feeding posture
  - Raising head
  - Following voices and faces

Kelly et al. Promoting First Relationships, NCAST Pub 2003
Disengagement Cues

- Obvious
  - Turns away
  - Pushes, arches away
  - Crying
  - Choking, coughing
  - Extending fingers, stiff hand
  - Falling asleep

- Subtle
  - Looks away
  - Faster breathing
  - Yawning
  - Hand to ear
  - Grimace
  - Glazed look

Key Messages for Parents

- Cues are simplistic and NOT specific
  - Parents may need to "play detective" to figure out what their babies are trying to tell them
  - Babies get better at cues by practicing with responsive caregivers
- For most healthy term babies, feeding cues are obvious

Baby Basics #3

Crying is a vital "talent" used by infants to indicate distress.

Crying: Babies’ “Super Power”

- Crying affects the nervous system in most adults
  - Drives adult activity!
  - Must be loud to rouse sleeping caregivers
  - Prompt response to cues can reduce crying

Understanding Newborn Crying

- Healthy newborns cry
- Hungry babies use hunger cues
- Newborns may cry more often than older babies
  - Still learning cues
  - Cues are hard to read
  - Sensitive to stimulation

Calming Crying Babies

- Address the cause of distress – look for cues!
  - Not all crying babies are hungry
- Babies respond well to faces, touch, sucking
- Reduce varied stimulation
- Introduce repetitive, sustained stimulation (repetition to soothe)
  - Listen for changes in cry

Kelly et al. Promoting First Relationships, NCAST Pub 2003

Key Messages for Parents

• Crying doesn’t always mean hunger – look for hunger cues
• Respond to cues as much as possible – learn along the way
• Use repetition to soothe after cause is addressed

Infant Sleep Cycles

• Infant sleep cycles are 60 minutes long (adult cycles are 90 minutes long)
• Infants sleep 13-14 hours per day from 2-12 months – but not all at once!
• Initially, newborns will wake with each cycle (every 1-2 hours)

Infant Sleep States

• Active sleep (REM) is light sleep - important for brain development
  o Babies dream and blood flow increases to the brain bringing nutrients to active brain cells
  o Images stimulate brain development
  o Easy to wake

• Quiet sleep is deep sleep
  o No dreaming
  o Little or no movement
  o Important for the brain to rest and recover
  o Growth hormones
  o Difficult to wake

Newborn Sleep/Wake Cycle

Newborns start sleep in Active Sleep (AS) (dreaming for 20-30 mins) and move to Quiet Sleep (QS)

Infants in active sleep may wake up easily when put down, because active sleep is a light sleep

Sleep Changes As Babies Get Older

• Active sleep periods shorten
• Quiet sleep gets longer period at night
• Older babies fall asleep in deep sleep
• Babies link cycles and sleep longer stretches
Key Messages for Parents

• Dreaming/light sleep are good for baby's development and safety
• Newborns may wake when laid down while dreaming
• As they get older, babies sleep longer and more at night

The First 72 Hours

Cues – Crying – Sleep

Key Messages About Babies’ First Days

• Babies and moms recover a few hours after birth and then the baby will wake and demand feeds
• Latching takes practice for both mom and baby – expect quick improvement
• Moms feel changes in breasts after discharge from hospital
• Babies and parents learn to communicate from birth

Simplify

• Parents are easily overwhelmed
• Identify cues/signs that the baby is already exhibiting
  - Every contact can be a “teaching moment”
• Promote and support interaction
• Newborn period likely to be misunderstood (provide warning on day 1)
• Consistent messaging is important

Baby Behavior Team

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• Jennifer Bañuelos
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• Luz Vera Becera
• Karolina Gonzalez
• Taryn Barrette
• Kerri Moore
• And many students

California WIC
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  Thank you!!