

LACTATION CARE IN THE NICU

OU Medical Center
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RECEIPT OF BREASTMILK BY GESTATIONAL AGE CDC MMWR 2019

Term Status	Gestational Age in Completed Weeks	Receipt of Any Breastmilk
Extremely Preterm	20-27	71.3%
Early Preterm	28-33	76.0%
Late Preterm	34-36	77.3%
Term	≥ 37	84.6%
All		83.9%

- Birth certificate data from 48 states and DC in 2017
- California and Michigan n/a (about 15% of births)
- Receipt of any breastmilk from birth to hospital discharge or filing of birth certificate
- Includes mother's own and donor milk

RECEIPT OF BREASTMILK BY GESTATIONAL AGE AND RACE/ETHNICITY, CDC MMWR 2019

Race/Ethnicity	Extremely Preterm	Early Preterm	Late Preterm
Native American	60.7%	68.3%	67.2%
African American	67.1%	68.8%	66.3%
All Others	73.3-76.1%	76.1-82.1%	75.6-87.8%

- All Others:
 - Hispanic
 - White
 - Asian
 - Native Hawaiian/Other Pacific Islander
 - Multiracial

RECEIPT OF BREASTMILK BY GESTATIONAL AGE AND OTHER FACTORS CDC MMWR 2019

- Mothers of infants less likely to receive breastmilk at any GA:
 - younger
 - less educated
 - Unmarried
 - Medicaid recipient
 - WIC enrollee

Late preterm and term infants admitted to NICU less likely to receive any breastmilk vs those who were not

CDC RECOMMENDATIONS WHAT CAN HOSPITALS DO???

- Implement evidence-based policies and practices
- Prenatal breastfeeding education
- Increase access to donor milk for preterm infants
- Help mothers prepare for long-term pumping
- **Provide f/u lactation consults throughout the infant's hospitalization**

OMMB

Association of Pre-pregnancy Health Conditions and Select Birth Outcomes among Oklahoma Mothers (OK PRAMS REPORT, FEBRUARY 2023)

Oklahoma mothers prior to pregnancy:
33% were obese
27% were overweight

Pre-Pregnancy Body Mass Index of Mothers

Category	Percentage
Underweight	3%
Normal	37%
Overweight	27%
Obese	33%

Mothers who were obese had a **significantly higher prevalence of preterm births and newborns admitted to the newborn intensive care unit (NICU)**. However, being obese did not significantly impact whether the babies were born at low birthweight or not (**Figure 3**).

Figure 3. Prevalence of Select Birth Outcomes by Maternal Obesity Status – PRAMS 2016 – 2019

Outcome	Non-Obese	Obese
Infant admitted to ICU *	7.8	11.2
Low birth weight	7.1	7.5
Preterm*	8.8	13.0

** * p < 0.05

Impact of pre-pregnancy maternal health conditions

Chronic conditions	Mothers with either hypertension or diabetes had:
Type 1 or Type 2 diabetes	<ul style="list-style-type: none"> 89% (almost 2 times) higher risk of NICU admission 155% (2.55 times) higher risk of preterm birth 146% (2.46 times) higher risk of low birthweight baby
High blood pressure	Mothers with ANY of these pre-pregnancy health conditions had: <ul style="list-style-type: none"> 38% higher risk of NICU admission 54% higher risk of preterm birth 52% higher risk of low birthweight baby
Depression	
Asthma	
Anemia	
Heart problems	
Thyroid problems	
PCOS (polycystic ovarian syndrome)	
Diabetes or Hypertension	
Any of the conditions	

CHALLENGES MOTHERS FACE IN BREASTFEEDING NICU INFANTS

(AAP CLINICAL REPORT, 2021)

- Maternal morbidities impacting milk production
- Prolonged separation of mother and baby
- Dependence on pumping vs direct breastfeeding
- Competing time demands that interfere with pumping and visiting

SOLUTIONS:

- Provide education
- Institutional support for milk provision
- Medical practices that support lactation

WHAT DO WE KNOW ABOUT LACTATION SUPPORT IN NICUS?

Barriers reported by mothers:

- Not enough time with an LC**
- Availability of breast pumps
- Separation from infant
- Length of hospital stay
- Returning to work

Barriers reported by NICU staff:

- Inadequate lactation help**
- Availability of breast pumps
- Separation of mothers and infants
- Nurse discomfort
- Prescribed feeding volumes

<50% of NICUs staff an IBCLC dedicated to the NICU

Mercado et al, 2019

WHICH NICU WOULD YOU CHOOSE?

"They definitely encouraged pumping and wanted us to provide breast milk, but when it came to breastfeeding, actually - you know, latching and nursing - I don't think that they were as welcoming of that."

"I had one neonatologist tell me not to even bother trying to breastfeed, that it would be way too difficult."

"...never really offered breastfeeding early in the NICU stay."

"My plan was to breastfeed, and it was heartbreaking not to be able to do it right away."

"I think a lot of parents take for granted the firsts, like the first feedings at birth. And for us, it was all taken away."

Palmquist et al, 2020

WHICH NICU WOULD YOU CHOOSE?

"Every time they did rounds, they'd be like, 'How's the breastfeeding going? And they had not just lactation consultants, but physical therapists, occupational therapists to help with the feeding as well. They'd come around and help."

"They were very pro-breastfeeding. I mean, they would have me take the baby to breast before I could necessarily breastfeed, just to kind of help them, and work on anything to be like really orally stimulating."

"I felt very supported, actually. They kept encouraging me. Her [the infant's] primary doctor - actually, when she was still on CPAP - was like, 'Well, she can't breastfeed yet, but you can try taking her to a dry breast so she can just get the feel for it, which for me - just being able to do that at all - being able to do any sort of normal mom thing was really, really amazing.'"

Palmquist et al. 2020

IMPORTANCE OF PROVIDING MILK FOR YOUR NICU BABY

- How it impacts baby's health, growth and development
 - Especially brain development
- How it impacts baby's length of stay in the NICU
- Importance of skin to skin contact
- Oral colostrum care
- Early initiation of hand expression, mechanical pumping
- Milk storage and transport
- **It's one thing she can do for her baby that no one else can!**

TRANSITIONING TO DIRECT TO BREASTFEEDING: WHY BOTHER? AS LONG AS BABY IS HUMAN MILK FED?

Lactahub

CPQCC

DIRECT FEEDING AT THE BREAST IS ASSOCIATED WITH BREAST MILK FEEDING DURATION AMONG PRETERM INFANTS

Table 4. Comparison between mothers who fed directly at the breast (any or only) vs. those who exclusively expressed breast milk.

	Directly Feeding at the Breast (Any or Only) n = 58	Expressed Breast Milk n = 71	p *
Duration of BMF (month)	11.8 ± 7.9	4.5 ± 2.8	<0.001
Duration of EBMF (month)	5.6 ± 6.5	2.5 ± 2.7	<0.001
Planned to feed directly at the breast	50 (87.7)	57 (82.6)	0.294
BMF of previous child	24 (42.9)	20 (28.6)	0.069
Reason for discontinuation ¹			
Maternal	23 (39.7)	23 (32.4)	0.0251
Infant	31 (53.4)	7 (9.9)	<0.001
Failure to supply	15 (28.3)	43 (60.6)	<0.001

Pinchevski-Kadir et al. Nutrients 2017

WHO IS RESPONSIBLE FOR NICU LACTATION CARE?

<50% of NICUs staff an IBCLC dedicated to the NICU

- Bedside nurses? Physicians?
Nurse practitioners? Therapists?

- Frequently cited missed care:
 - Human milk expression
 - Breastfeeding support

Mercado et al, 2019

OUMC

COST OF IBCLC CARE IN THE NICU

20% of spending in NICUs = NEC associated costs

- Total direct medical costs of NEC = \$27 million
- Increased MOM feedings significantly decreases NEC rates
- Increased risk of NEC for:
 - Exclusively formula fed ELBW infants = 12%
 - ELBW infants fed a mix of formula and MOM = 9%

Cost of one case of non-surgical NEC = one IBCLC's salary

Colaizy et al, 2016; Mercado et al, 2019

IMPACT OF DEDICATED IBCLC LACTATION CARE IN THE NICU

INCREASED:

- Number of infants who receive any Mother's Own Milk (MOM) during hospitalization
- MOM received at discharge
- Breastfeeding initiation rates
- Number of infants that directly breastfeed as first oral feed
- Exclusive breastfeeding



Mannel, OU Medical Center

Mercado et al, 2019

MARCH 1, 2023 = IBCLC DAY!



EVALUATION TIME!

