

“I Pump for My  
Neonatal Intensive Care Unit  
(NICU) Baby”

# DISCLOSURE

Presented By:

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**I HAVE NO CONFLICT OF INTEREST TO DISCLOSURE.**



# INTRODUCTION

Human milk is the "gold standard" for infant nutrition with specific benefits of human milk to premature and late premature infants. These benefits have led to the recommendation of an exclusive human milk diet by the *World Health Organization* (2011) and the *American Academy of Pediatrics* (AAP, 2012). "The potent benefits of human milk are such that all infants should receive human milk." AAP.

# WHY THE CAMPAIGN?

- Describe nutritional benefits for premature (NICU) infants when using human milk as the "gold standard" in the absence of mother's own milk.



## WHY THE CAMPAIGN? –Cont.

- Review the timeline and infant feeding guidelines of the BayCare Health System in establishing the Donor Milk Program.
- Evaluate clinical outcomes resulting from an exclusive human milk feeding diet, compare the clinical outcomes with baseline group who did not receive donor milk to those who received donor milk according to guidelines

## OUTCOME BEFORE AND AFTER DONOR MILK PROGRAM INITIATION (<1500 GRAMS AND OR < 32 WEEKS)

GROUP	PERCENTAGE OF ELIGIBLE INFANTS RECEIVING HUMAN MILK IN THEIR FIRST WEEK OF LIFE (n=60)	ELIGIBLE INFANTS BREASTMILK FEEDING RATE AT DISCHARGE (n=112)
<b>BASELINE</b> January 2012 through September 2013	<b>60%</b>	<b>60%</b>
<b>RECIPIENTS</b> November 2014 through November 2015 *Discharges as of 12/30/2015	<b>92%</b>	<b>75%</b>

Both recipients percentages went up, respectively by:  
**32% and 15%**  
 which was expected but impressive.

	Baseline (n = 181) January 2012 through Sept 13	Donor Milk (n = 236) Oct 2013 through Discharges as of 12/20/2015	Donor Milk (n = 112) Nov 2014 through Discharges as of 12/30/2015**	P values with Alpha @ 0.05 Control and Nov 2014-discharges	Calculated t stat Control and Nov 2014-discharges	Critical t two-tailed hypothesis with Alpha @ 0.05
Average TPN DAYS	18.1 (N = 179)	15.1	13.5	0.0012	-3.274	± 1.968
Average DAYS to Full Feeds <sup>1</sup>	21.2 (N = 179)	16.1	15.2	0.000003	-4.742	± 1.968
Average Length of Central Line Days	18	14.0	12.3	0.0089	-3.36	± 1.968
Average LOS	65.7	64.2	61.7	0.273	-1.097	± 1.968

4 major accomplishments in clinical outcomes in the NICU using exclusive human milk feeding practices:

1. Decrease in LOS by 4 days  
(from 65.7 to 61.7 days)
2. Decrease the average of Central Lines days by 5.7 days  
(from 18.0 to 12.3 days)
3. Decrease the average of days to full feeds by 6 days  
(from 21.2 to 15.2 days)
3. Decrease the TPN days by 4.6 days  
(from 18.1 to 13.5 days)

# WHY THE CAMPAIGN? –Cont.

- The purpose of the donor milk program is to provide human milk nutrition for proper growth and development when mother's milk is not available to fulfill her infant's nutrition requirements and to BRIDGE THE GAP until her milk comes in.
- Use of specific feeding protocol with inclusion criteria:  
“MOTHER IS PUMPING 8-12 TIMES/DAY  
AND/OR PROVIDING  
HALF OF INFANT'S DAILY INTAKE”
- Discuss next steps and future growth opportunities to expand the donor milk program.

# BACKGROUND

- NICU Lactation Committee:

“I Pump for my NICU Baby”

Breast pumping kit

- Expressed Breast Milk (EBM) is the gold standard for infant nutrition (American Academy of Pediatrics, 2012)

- Studies have shown specific benefits of EBM for the premature infant (Lucas, Paquette, Briere, & McGrath, 2014)



# PURPOSE

➤ Benefits for premature infants receiving EBM:

\* To reduce:

\*\* Rates of Sepsis, Necrotizing Enterocolitis (NEC), Metabolic Syndromes, Retinopathy of Prematurity (ROP)

\* To improve:

\*\* Neurodevelopmental Outcomes



➤ This campaign assisted breastfeeding NICU mothers:

\* To promote, support, and maintain breastfeeding in the NICU (McGee, 2016)

\* To improve pumping and breastfeeding rates (Wu B, 2015)

# OBJECTIVES

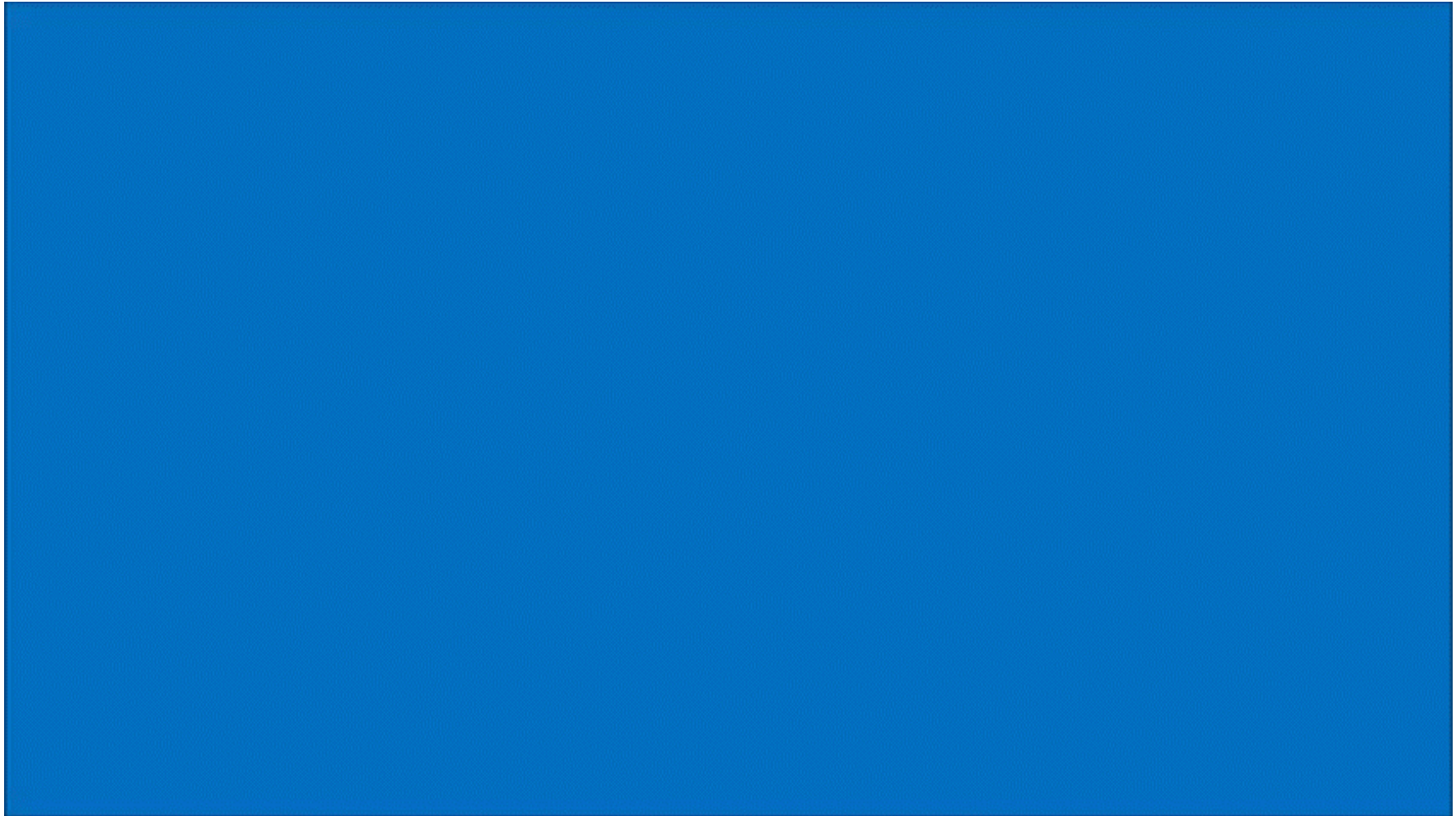
- Provide breastfeeding mothers with a keepsake kit as an intervention containing:
  - \* Promise Letter
  - \* EBM Passport
  - \* NICU Pumping Log
  - \* Tumbler
  - \* Transport Bag
  - \* Colostrum Bottles and Patient Labels
  
- Compare the Pre and Post Interventions:
  - \* Sufficient information and education
  - \* Adequate support from nursing
  - \* Breast pump for home use
  - \* Ratings and suggestions of lactation experience

# BREAST PUMPING KIT



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# PILOT: PATIENT EDUCATION VIDEO



# PROPOSED IMPROVEMENTS

- Assure mother her breastmilk is “liquid gold” and only she can provide it
- Affirm value and importance of providing breastmilk as best nutrition
- Uniform information and education
- Consistent support from nursing team and lactation consultants
- Achieve goals for pumping and breastmilk production
  - \* Milestones reached at birth, day 7, day 14 and at discharge
- Safe EBM transport
- Overall improved mother-baby experience

# METHODOLOGY

- “I Pump for my NICU Baby” pilot was from April 17, 2017 to July 20, 2017. Pre and post data were collected and analyzed to examine the effect of the interventions. Surveys were conducted to mothers pre-intervention and post-intervention. The pre-intervention group did not receive the keepsake kit and were interviewed at the time of discharge. The post-intervention group received the keepsake kit and were interviewed at the time of discharge as well.
- The “I Pump for my NICU Baby” intervention is a keepsake kit provided to breastfeeding moms to facilitate and encourage breast feeding and pumping while infants are in the NICU.
- Self-report measures in a form of pre and post surveys were used to assess mother’s breastfeeding and pumping experience in the NICU. The survey instruments for gathering the quantitative data consisted of two types of questions. The first type of question asked mothers to answer using yes or no responses. The second type of question consisted of asking mothers to answer using a Likert 5-point scale; extremely dissatisfied, dissatisfied, neutral, satisfied, and extremely satisfied.
- Exclusions included infants of mothers choosing not to breast feed or not to pump for their infant while in the NICU.

# BREASTMILK PUMPING KIT DISPERSAL INSTRUCTIONS

- 1) Retrieve Breastmilk Pumping Kit from Clean Supply Room.
- 2) Kits are numbered and the following information should be entered on the log:
  - a) Kit number, Infant Name, FIN number, and the name of the nurse delivering the kit.
  - b) The log is located in the yellow folder next to the kits.
- 3) Retrieve patient labels which should accompany the “I Pump For My NICU Baby” pumping kit.
- 4) Deliver the kit to the mother as soon as possible.
  - a) This may be during her first visit to baby’s bedside or in mom’s room if she is on bedrest and unable to visit.
  - b) Our goal is to have mom pumping by 6 hours post-delivery, and even sooner if possible. Ideally the breastfeeding kit will be given to mom by the bedside nurse during her first visit to the NICU.
  - c) If mom is unable to visit within a few hours, Lactation will deliver the box to mom’s room. This may also be done by a NICU nurse if time allows and they wish to do so.
- 5) Only one box should be given to each mother. Additional supplies should be replenished from general stock.
- 6) Please call NICU Lactation for any questions or concerns .



Thank you for all of your help!



# MOTHER'S LETTER OF COMMITMENT

Welcome Letter

A PROMISE TO MY BABY  
I PUMP FOR MY NICU BABY



Dear Baby \_\_\_\_\_,

We are so excited to finally meet you!

I will always do my very best to be with you and offer the best nutrition possible so that you grow healthy and strong. I will be here for you while you are in the NICU getting stronger, and I will do my best to provide you with my milk for as long as possible. I will begin pumping within the first hours of your life and will be offering you the expressed breast milk until you are ready to breastfeed and come home with your family.

With love,

\_\_\_\_\_  
(Mother's signature)

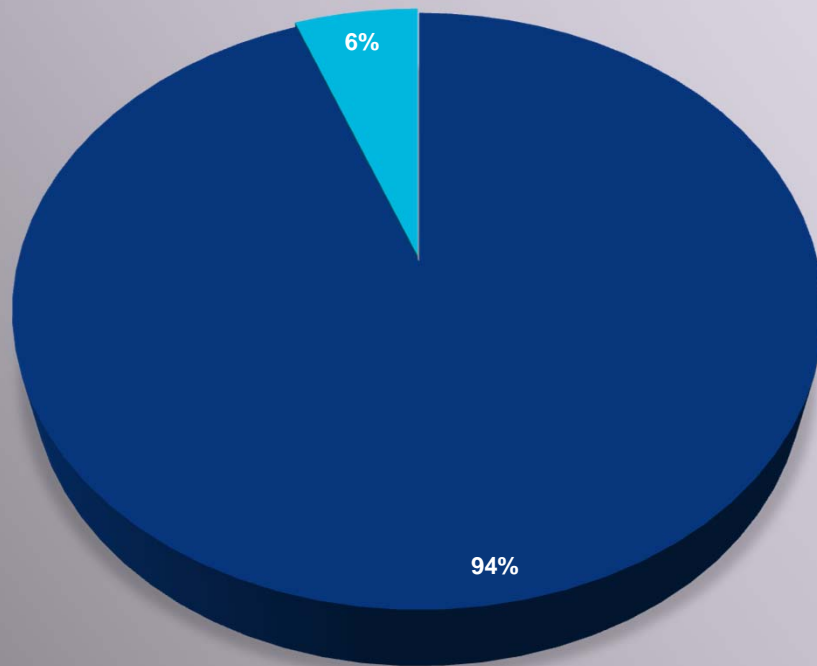
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Today's Date



# RESULTS

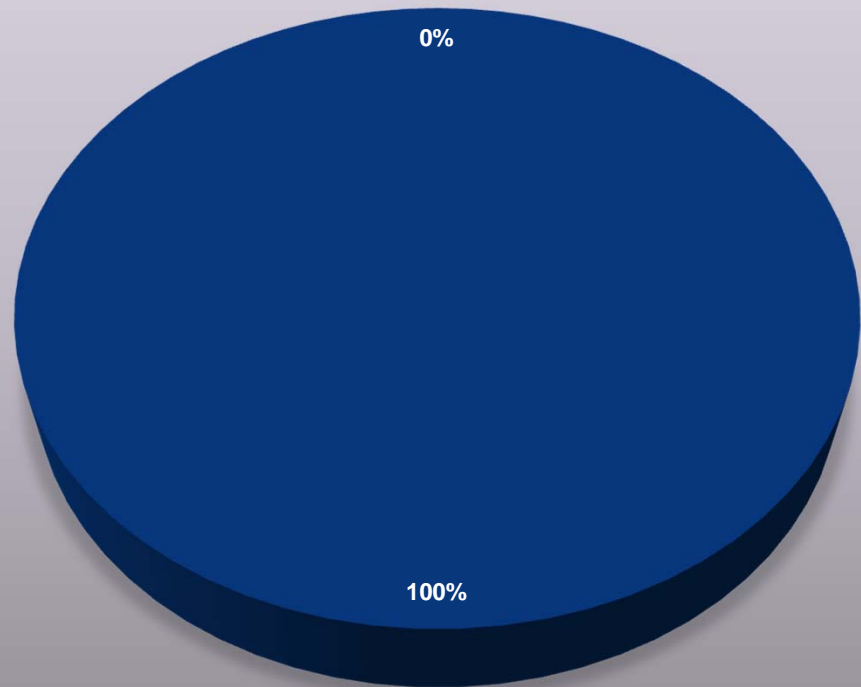
- Major accomplishments in the “I Pump for My NICU Baby” project revealed the following outcomes for mothers of infants in the NICU:
  - Increase in breast feeding mothers obtaining adequate support from Nursing by 12.2% (from 86.5% to 97.1%)
  - Increase in mothers obtaining breast pump for home use by 6.3% (from 94.1% to 100%)
  - Increase in mothers being provided with information and education on pumping and breastfeeding by 6.1% (from 94.2% to 100%)
  - Increase in satisfaction with pumping and breastfeeding experience in the NICU by 3% (from 94.2% to 97.1% being satisfied or extremely satisfied)
  - Increase in infants receiving breast milk from mothers who received interventions by 4 % (from 92% to 96%)

Pre-Intervention  
Jan - Apr 2017  
Was there enough  
information/education to facilitate  
pumping/breast feeding?



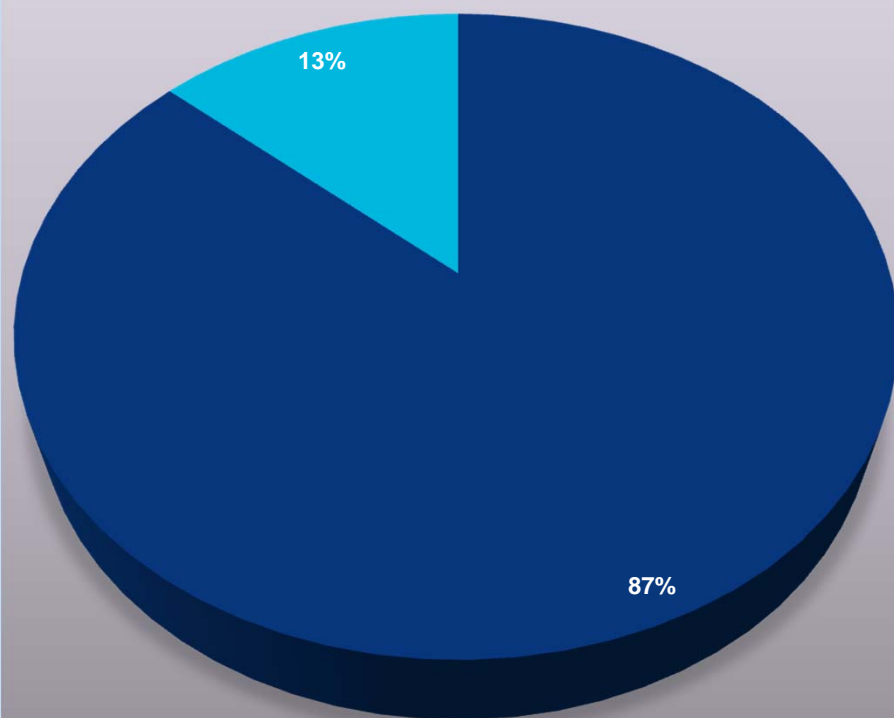
■ Yes ■ No

Post-Intervention  
May - Jun 2017  
Was there enough  
information/education to facilitate  
pumping/breast feeding?



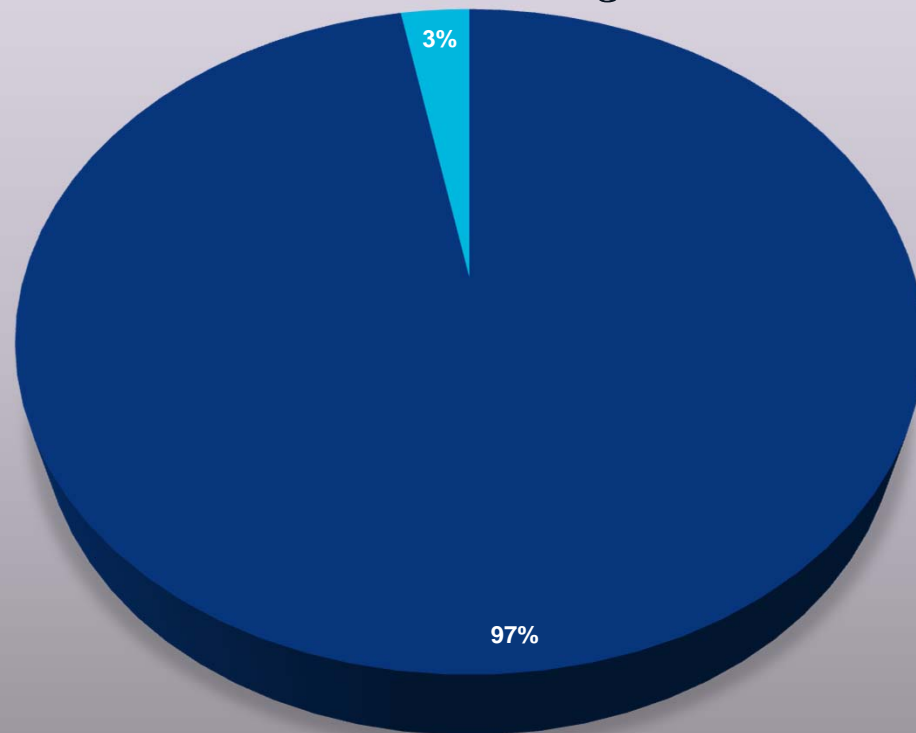
■ Yes ■ No

**Pre-Intervention**  
**Jan - Apr 2017**  
**Did you receive adequate support**  
**from Nursing?**



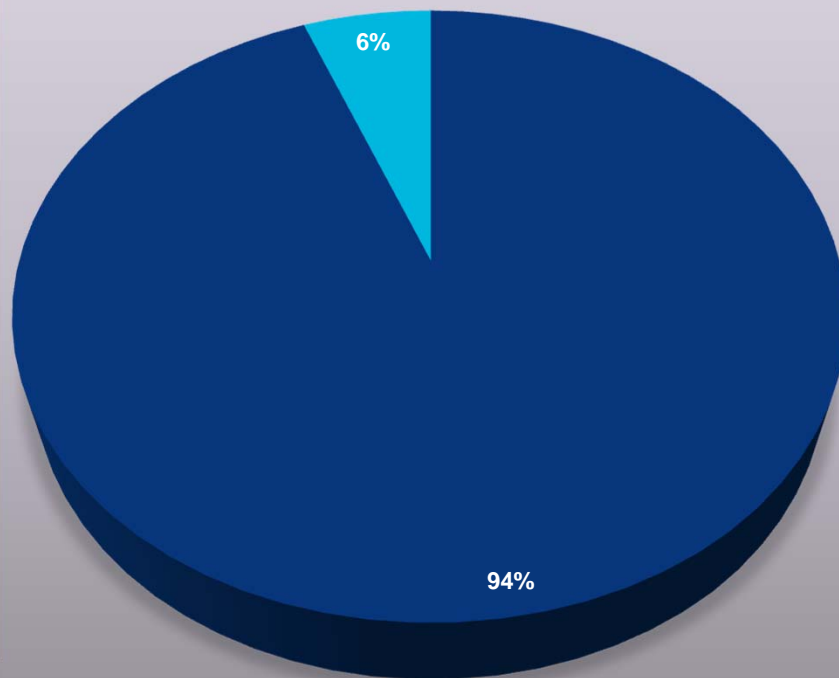
■ Yes ■ No

**Post-Intervention**  
**May - Jun 2017**  
**Did you receive adequate support**  
**from Nursing?**



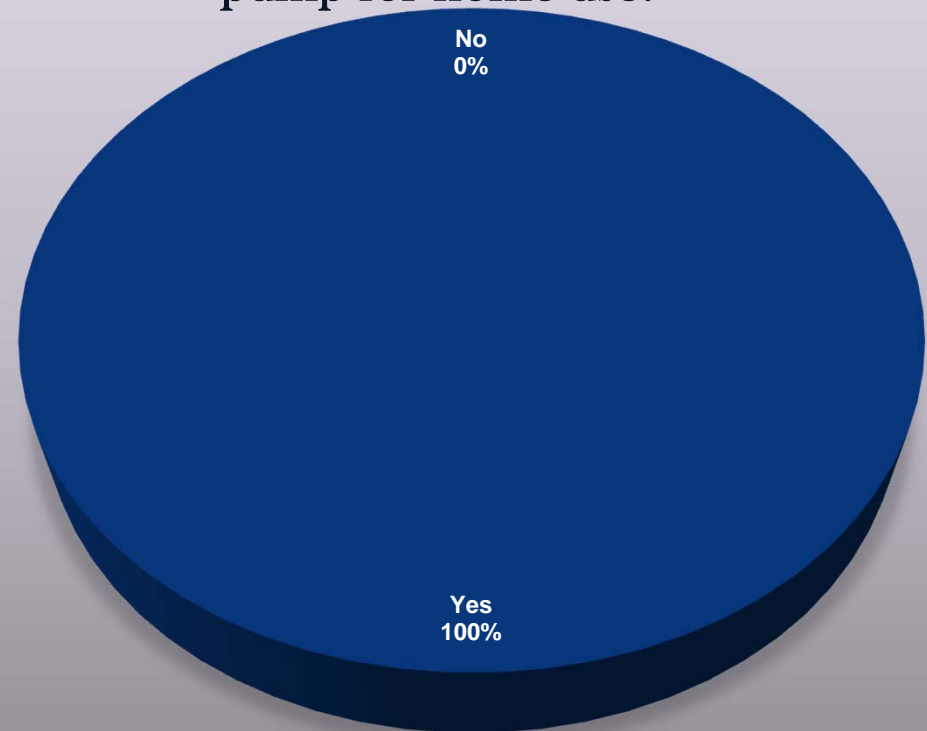
■ Yes ■ No

**Pre-Intervention**  
**Jan - Apr 2017**  
**Were you able to obtain breast pump for home use?**



■ Yes ■ No

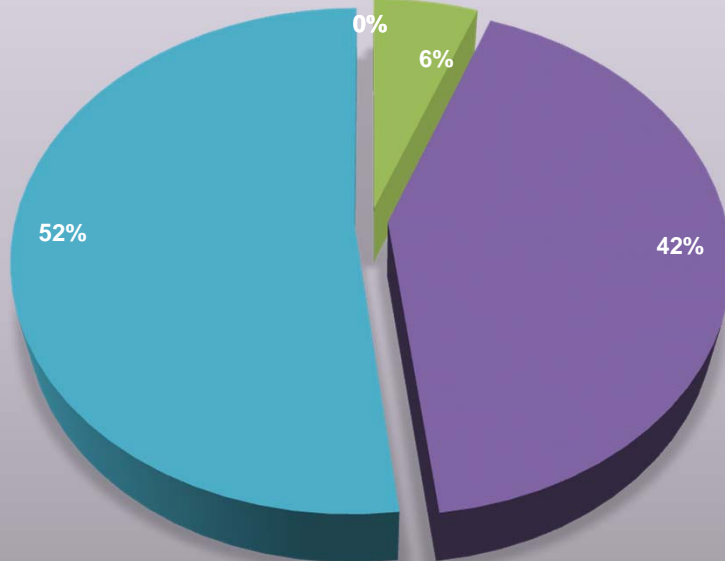
**Post-Intervention**  
**May - Jun 2017**  
**Were you able to obtain breast pump for home use?**



■ Yes ■ No

**Pre-Intervention  
Jan - Apr 2017**

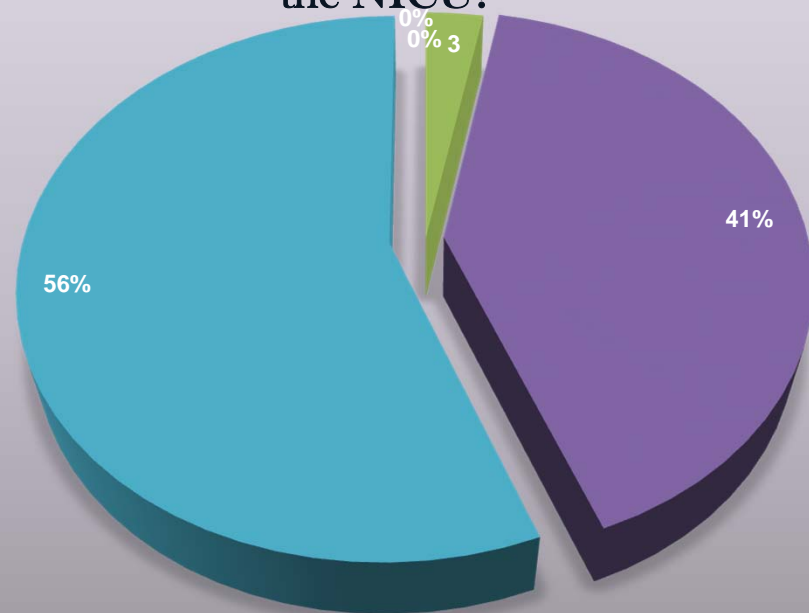
**How would you rate your  
pumping/breastfeeding experience  
in the NICU?**



- 1. Extremely Dissatisfied
- 2. Dissatisfied
- 3. Neutral
- 4. Satisfied
- 5. Extremely Satisfied

**Post Intervention  
May - June 2017**

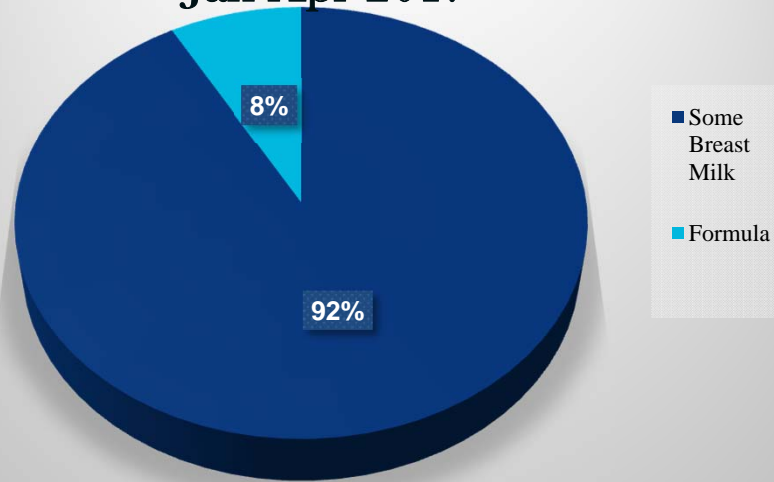
**How would you rate your  
pumping/breastfeeding experience in  
the NICU?**



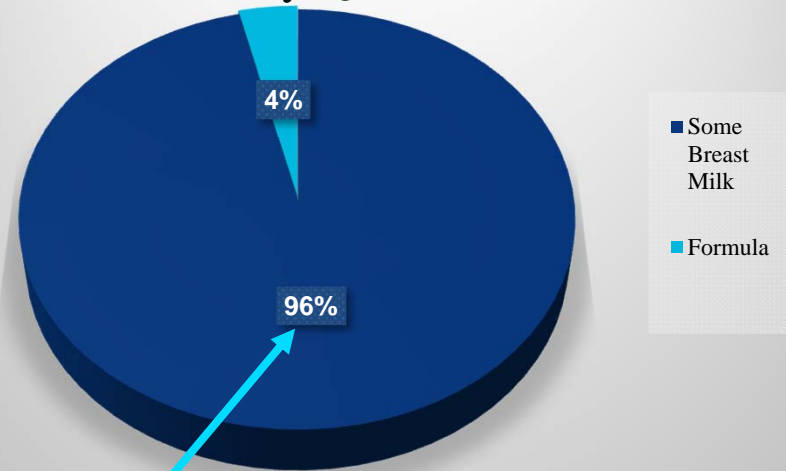
- 1. Extremely Dissatisfied
- 2. Dissatisfied
- 3. Neutral
- 4. Satisfied
- 5. Extremely Satisfied

## BREAST FEEDING AT DISCHARGE PRE AND POST INTERVENTION

Pre-Intervention  
Jan-Apr 2017



Post - Intervention  
May - Jun 2017



Increase in infants receiving breast milk from mothers who received interventions by 4 %

# CONCLUSION

**This study demonstrated an enhancement of clinical outcomes in this population and an increase in volume of mother's own milk due to the support provided by lactation services for early pumping and enrollment of antepartum patients prior to delivery. This has led to improved patient outcomes and greater overall patient satisfaction.**

# CONCLUSION - Cont.

This study demonstrated there has been remarkable enhancements in promoting breastfeeding in the NICU.

Mothers reported improvement in:

- Support from the nurses
  - Obtaining breast pump
  - Facilitate pumping in the hospital
  - Tracking their progress
  - Satisfaction with pumping and breastfeeding experience in the NICU
- 
- The printed material provided to NICU mothers was very helpful.
- 
- **PROCESS IMPROVEMENT AND ITS RELEVANCE TO BAYCARE**
    - \* With the “I Pump for my NICU Baby” kits, we were able to create an environment where mothers of NICU babies would be able to not only maintain or increase their milk supply, but offer education and support as well. We were able to target our process improvement goals of increasing breastfeeding at discharge and patient satisfaction.



# NEXT STEPS

- Additional growth opportunities have been identified:
  - \* Mothers prefer APPs on their cell phones to track their pumping and breastfeeding routines.
  - \* A list of suggested Apps is planned to be given the mothers.
  - \* Team education video to transform into parent education video
  - \* Consolidate all written handouts into one card
  - \* Reminder signage of daily pumping frequency in a visible high traffic area for mothers
  - \* Continue to maintain the quality of lactation services to NICU mothers and infants

ONGOING EDUCATION ALONG WITH KEEPSAKE KIT  
WILL CONTINUE TO BE PROVIDED

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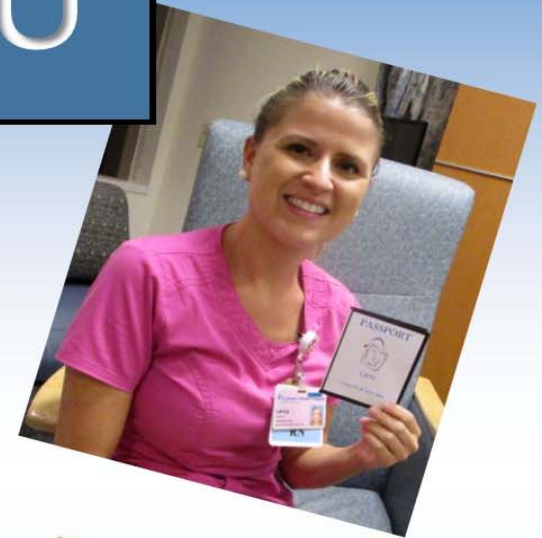
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Love what you do,  
Do what you love!

# THANK YOU



## I Pump For My NICU Baby



“It is not how much we do  
It is how much love we put into  
the doing”  
~Mother Teresa

