Spring 5-22-2021

Implementing EBP Guidelines to Optimize Human Donor Milk Usage in the Hospital Setting

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Final Manuscript

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Abstract for Journal *Nursing for Women's Health*

Purpose statement and rationale: The purpose of the project was to implement a donor milk workflow for an academic hospital so that babies who qualify for donor milk receive it instead of formula. It aimed to improve adherence to the protocol and increase the percentage of babies who received breastmilk in the hospital setting and followed The Iowa Model for implementation.

Synthesis of evidence: Top regulating agencies and healthcare entities all support breastfeeding and breastmilk use. Studies have been performed to address formula use versus human milk use in infants and show that babies have better outcomes when given human milk and as such, human milk has become the minimum standard.

Practice change and implementation strategies: To ensure best practice, hospital protocols and guidelines were updated to incorporate utilizing human donor milk for well newborns in Labor and Delivery (L&D) and Postpartum. Updating unit processes such as implementing a baby nurse in L&D and ensuring donor milk implementation supplies were readily accessible were crucial to success. Incorporating interdisciplinary teams that included bedside nurses, L&D baby nurses, milk technicians, lactation consultants, Pediatric nurse practitioners, Pediatricians and leadership helped achieve the goal.

Evaluation: To evaluate the practice change, measuring human donor milk usage in the hospital setting was a key metric. Measuring increased usage of donor milk with up to eighty-nine babies and implementing a baby RN during the transition period in L&D allowed for adherence to protocols, increased infant safety, as well as implementing donor milk.

Conclusions and implications for practice: The implications for practice are that all babies will have access to donor milk whether they are premature or normal newborns. The project helped

develop team goals and achieve breastfeeding metrics and quality outcomes as well as allowing for all babies to have access to donor milk.

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Setting/Problem Description

Top regulating agencies and healthcare entities all support breastfeeding and breastmilk use. Human donor milk is the standard for babies. When there is a need for human milk that cannot be completed through breastfeeding or using the milk from the mother, utilizing donor milk (DM) that is screened and is safe is a valid alternative (Rosenbaum, 2012). Looking at the evidence, we can see that using nurses dedicated to the baby during the Labor and Delivery (L&D) recovery and transition period can improve patient safety and increase adherence to protocols such as using human and donor milk (Guidelines for Professional Registered Nurse Staffing [Guidelines], 2011).

Available Knowledge

The American Academy of Pediatrics (AAP) recommends exclusively breastfeeding until one year of life (American Academy of Pediatrics [AAP], 2012). The health benefits supporting breast milk include benefits to both the mother and the infant as well as disease prevention, decreases in Sudden Infant Death Syndrome (SIDS), and decreases in obesity, allergies, and childhood cancer (AAP, 2012).

The World Health Organization (WHO), United Nations Children's Fund (UNICEF), American College of Obstetricians and Gynecologists (ACOG), The Centers for Disease Control (CDC) and The Joint Commission (TJC) all support breastfeeding and breastmilk use (Cristofalo et al., 2013). There are few reasons where using breastmilk would not be the best scenario for the mom or baby (Miracle et.al, 2011). Studies show that preterm babies have better outcomes when given human milk and as such, human donor milk has become the standard in neonatal intensive care units (NICU) (Cristofalo et al., 2013). For hospitals, this means using donor human milk in

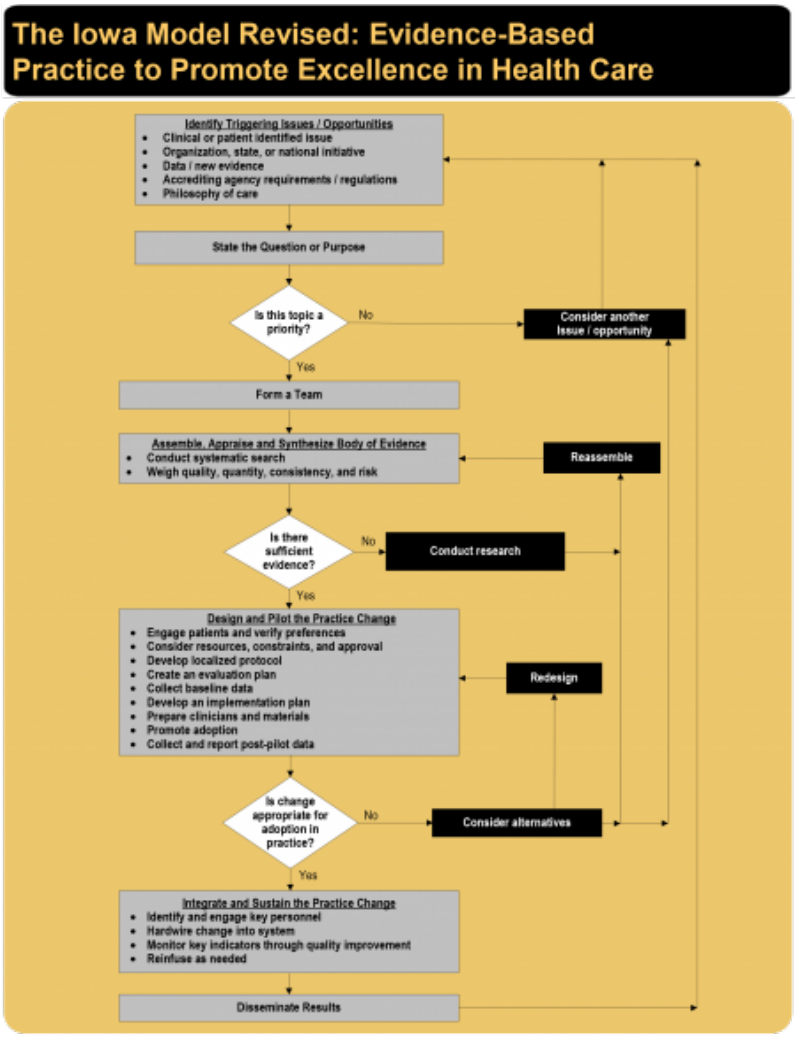
instances where the mothers do not have enough milk, there are medical contraindications, or there are other reasons why they cannot use the milk from the birth mother. We also know that parents prefer to give DM to their babies when possible, instead of formula (Rabinowitz, 2018). Being able to support maternal preferences surrounding breastmilk and DM was an important factor in project design, motivation, and implementation.

Using nurse-driven protocols to adhere to donor milk processes can be beneficial in the hospital setting (Ferrarello et al., 2019). It is also known that including well-newborns in DM implementation and not just NICU babies is valuable (Belfort et.al, 2018) (Kair et al., 2014). Implementing nurses dedicated to the baby during the recovery period in L&D can help focus on safety, protocol enforcement and quality outcomes and was the focus of the Evidence Based Practice (EBP) Project (Guidelines, 2011).

Rationale

Utilizing an interdisciplinary team to implement processes that allowed for adherence to protocols and usage of donor milk was the main aim of the project. Establishing clear roles, expectations and defining outcomes improved compliance (Drouin et al., 2019). Ensuring there were processes for deciding eligibility criteria for DM was key for project success (Drouin et al., 2019). One of the limitations shown was the need for staff education. A large part of implementing any new program is ensuring the policies and procedures that will guide it are in place. Having the support of the evidence to implement the program, the next step was to build a program using an EBP model (Melnyk & Fineout-Overholt, 2019). The Iowa model for implementing EBP to promote excellence in healthcare was the model of choice for the implementation of this project as seen in figure 1 (Iowa Model Collaborative, 2017).

Figure 1 Iowa Model for EBP



(Iowa Model Collaborative, 2017)

Aim

Implementing a DM workflow for qualified babies to receive DM instead of formula was the goal. Including the interdisciplinary team during the project development was key to ensure success. Aiming to improve adherence to the protocol and increase the percentage of babies who receive breastmilk in the hospital setting was completed through implementing a baby nurse in L&D focused on newborn recovery and DM implementation.

Methods

The methods of implementation included using an EBP conceptual model to implement the project. The Iowa model for implementing EBP to promote excellence in healthcare was the model of choice for the implementation. It allowed for staff involvement and ideas. When implementing the baby nurse and focusing on DM implementation, it was important to track metrics and data. We looked at current DM usage to help guide program outcomes.

Intervention

The first part of the process was to gain approval from interdisciplinary team members. After approval, the next step was to update policies and procedures and hospital protocols to incorporate utilizing DM for well newborns in L&D and Postpartum.

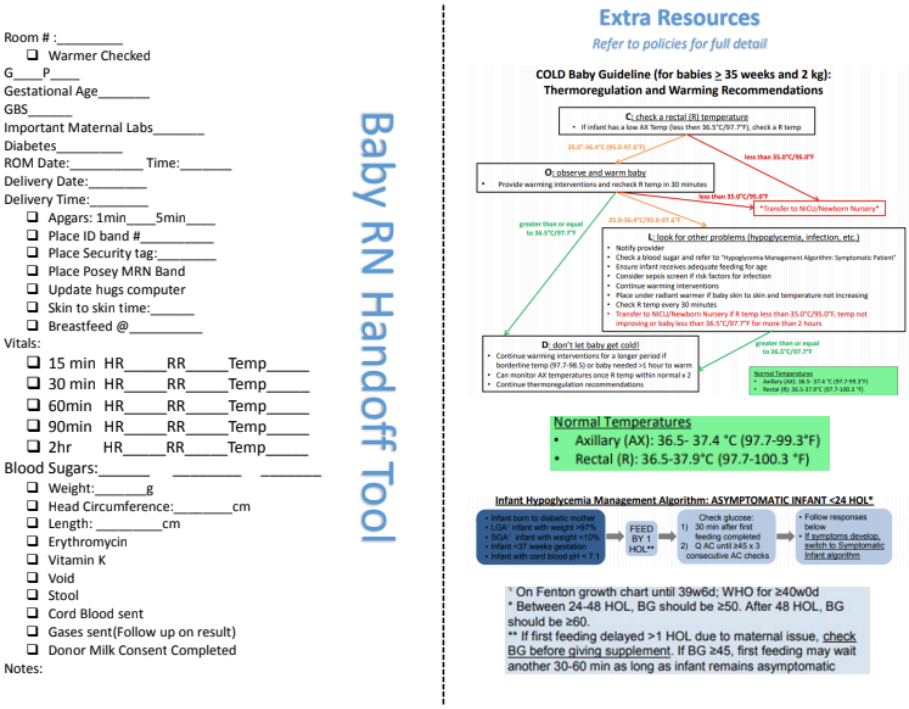
A virtual workgroup then met to update processes and improve the current workflow. The group focused on developing a tool for L&D baby nurses, organizing supplies and handouts, deciding roles of each team member, and rolling out education. The key individuals were: Nursing, Lactation Consultants, Physicians, Nurse Practitioners, Clinical Nurse Specialist/ Unit Educators, Dietary/ Milk Technicians who focus on milk preparation, Regulatory team members who focus on consents and risk management, and Supply Chain team members who focus on supplies and equipment.

Before the workgroup, a survey was distributed to team members to gather information about using a baby RN in other organizations. Decisions were made in the workgroup about the roles of the RN. Roles were clarified such as who completes documentation, APGAR scores, collecting cord blood, running cord gases, inputting admission orders, completing infant vital signs, administering medications, and completing measurements. The process was also clarified for who places identification bands and infant security tags on the infant. One of the key roles of

the baby RN was determined to be assisting with skin-to-skin implementation and breastfeeding. This then allowed a specific person, the baby RN, to initiate feeding and implement DM if indicated. Other duties and roles for the baby RN were clarified such as duties in the operating room, as well as other duties on the unit if the nurse was not busy with baby care.

The workgroup also updated break sheets and charge nurse resources as well as created a handoff tool for the baby RNs (see figure 2).

Figure 2 Baby RN Handoff Tool



Another key step in the process was to organize supplies needed to initiate DM to simplify where to obtain DM on the unit (Lewis et. al, 2018). Handouts for parents and educational information were also made easier to obtain. This allowed for quick and easy DM implementation.

Education about the DM process was then completed on the unit with the rest of the nursing staff through champions from the workgroup. The champions were also pre-assigned on the schedule and were advocates for change.

Approval was granted from the Institutional Review Board at both the hospital and the School of Nursing where the project was completed. A go-live date was decided and communicated to the team.

Outcome/Measurements

The outcome of the project was to implement a baby RN in L&D, simplify the process for initiating DM when needed and to measure DM usage for newborns in L&D and Postpartum. Measuring this metric allowed for tracking DM usage as well as overall breastmilk usage in the hospital. Quality metrics in the organization were focused on achieving key goals surrounding breastmilk usage.

Results

The project implementation month, July 2020, displayed the highest number of babies who received DM on record. Eighty-nine babies were started on DM in a month of three hundred and ten deliveries. Post implementation, the number of babies who receive donor milk stays high (See table 1 and 2).

Table 1 Donor Milk vs. Live Births

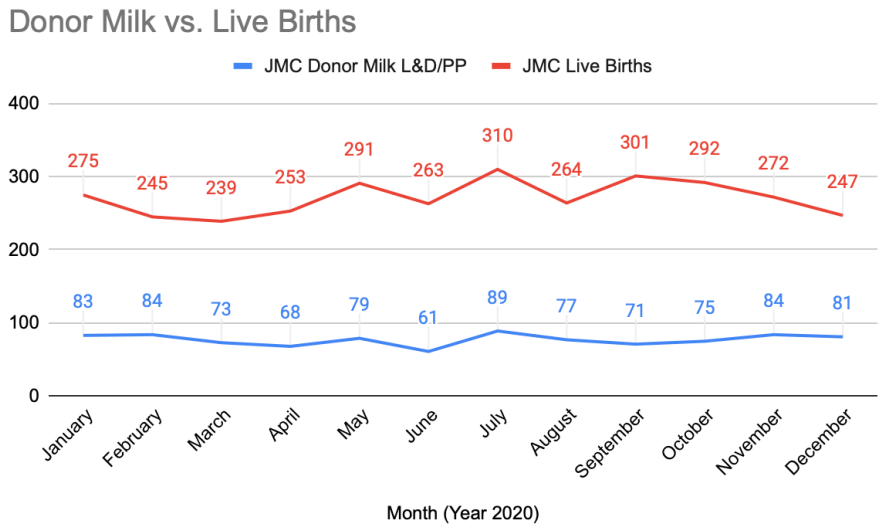
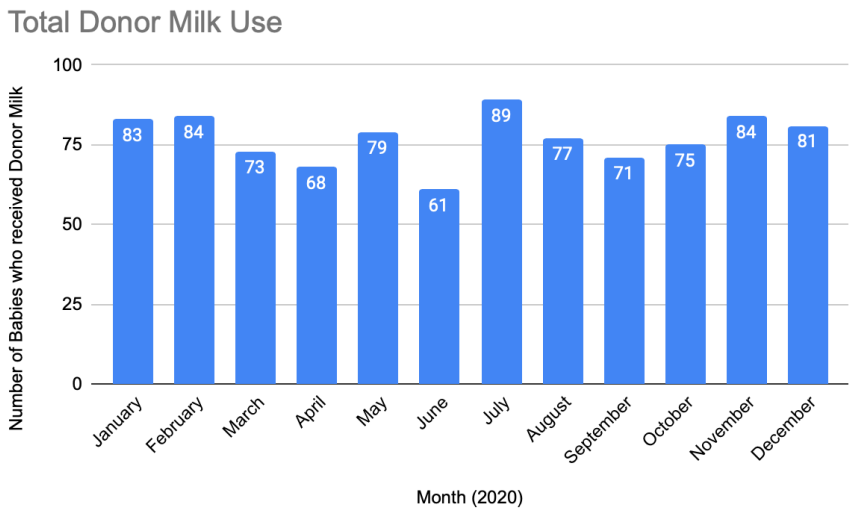


Table 2 Total Donor Milk Use



Discussion and Limitations

Before research was available regarding milk safety during the covid-19 pandemic, there was hesitance from patients regarding use of DM (Centers for Disease Control and Prevention [CDC], 2020). There were also barriers to implementing the baby RN due to staffing on the unit during high volume in the summer months.

When looking at the cost benefit analysis, hitting hospital target quality metrics will increase return on investment. The initial costs to implement DM in the hospital setting may be high, but subsequent years reveal benefits to hospital quality exclusive breastfeeding rates and quality data metrics (figure 3).

Figure 3 Cost-Benefit Analysis

Item	Amount	Quantity	Total in $
Training hours- super users	$45 per hour for 12hrs	10 employees	5,400
Training hours- staff	$45 per hour for 4 hours	100 employees	18,000
Milk Tech Salary	50,000	1	50,000
Supplies/Equipment			
Milk Warmers	$2,000 each	5	10,000
Donor milk	$4 per oz	10,000 oz	40,000
Milk Fridge	$5,000	2	10,000
Milk Freezer	$10,000	1	10,000

Total Costs= $143,400 First Year

Subsequent years= $113,400

Some are one-time costs, so for future years we will not need to buy milk warmers, fridge, or freezers

Benefit= Patient satisfaction and PRIME Exclusive Breastfeeding Metric ($180,000)

Cost-Benefit Analysis (CBA) calculation

CBA First Year Benefits 180,000/Costs 143,400= 1.26 benefit for every dollar spent

CBA Subsequent years 180,000/113,400= 1.59 benefit for every dollar spent

Return on Investment (ROI) calculation

ROI First Year 180,000-143,400/143,400*100= **25.5%**

ROI Subsequent Years 180,000-113,400/113,400*100= **58.7%**

Implications for Practice

Including interdisciplinary teams in protocol development is beneficial and can improve access to DM. By creating a process and protocol for a nurse focused on post-delivery care can improve adherence to evidence-based protocols and can provide more babies access to DM. Project replication can be easily completed at other healthcare organizations. Hospitals already use many of the supplies and equipment that are needed for implementation and the cost-benefit analysis shows remarkable return on investment.

Conclusion

Optimizing workflow surrounding DM in L&D and Postpartum through EBP can improve adherence to protocols. Increasing access to DM can improve quality outcomes and can improve key hospital metrics. Implementing practices starting in L&D that allow for adherence to protocols, increased infant safety, as well as implementing DM supported project success. Providing all babies with access to DM and including all members of the L&D healthcare team in the project was beneficial.

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