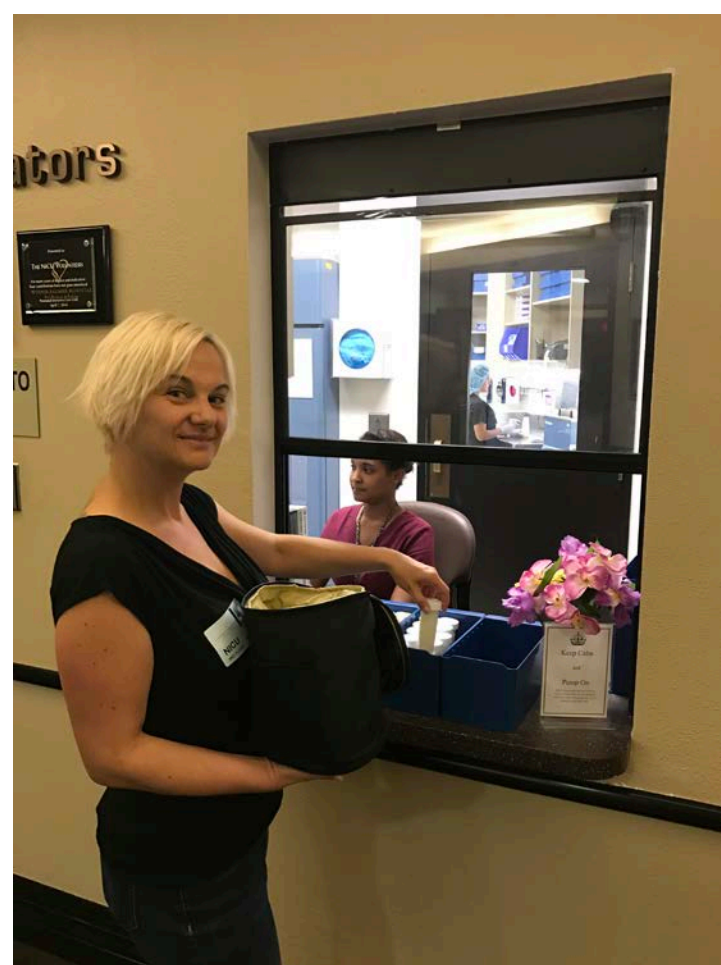


Background

- Milk preparation has traditionally been the responsibility of the bedside nurse.
- Evidence supports human milk feedings for the infants less than 1500 grams.
- NICUs have seen a surge in the number of babies getting human milk.
- Preterm infants require more protein and minerals such as calcium and phosphorous than what is found in human milk.
- Human milk needs additional fortification to meet the essentials for the VLBW population.
- The process of fortifying human milk requires mathematical equations, mixing of 1 or more additives, and specialized equipment for larger volumes.
- The complexity of adding multiple ingredients to human milk results in what we call Lacto-Manufacturing.

Purpose of the Project

- The aim of this project was to determine if having a dedicated milk room and staff prepare feedings for the NICU was more cost effective in comparison to feedings being prepared at the bedside by the nurse.
- The average nurse's wage for this project was calculated to be \$30/hr.



Design and Methods

- A literature search was conducted to establish what space requirements, personnel, and processes were needed.
- Best practices were reviewed by the Academy of Nutrition and Dietetics, the American Society of Parenteral and Enteral Nutrition, and the Human Milk Banking Association of North America.
- These were the guidelines that were utilized when operating the NICU Milk Room and employing Milk Room Technicians.
- A baseline assessment was performed.
- After completion of the baseline assessment, a timed study was conducted with nurses at the bedside preparing feedings.
- The results are as follows:
 - 1.4 minutes/feeding to prepare at time of administration
 - 12 minutes when needed to thaw milk
 - 3,700 infant feedings were prepared and administered in a 24 hour period

Results and Outcomes

Reviewing the 700 feedings per 24 hours it was determined:

1. 4 minutes x 700 aliquots = 2800 minutes/60min = 47 hours (47 hrs. x \$30 = \$1450 daily)
 - a. 700 aliquots = 87 babies
 - b. 1/3 of these infant feedings were frozen and needed to be thawed
 - i. 29 babies/24 hrs.
2. 12 minutes X 29 babies = 348 minutes/60min = 5.8hrs
 - a. Nurses thawed enough at one time only for their shift
 - b. 2 shifts/day=11.6hrs (11.6 hrs. x 29 patients = \$348 daily)
3. Total cost daily = \$1798 in nursing salaries
4. Total yearly cost = \$656,270 in nursing salaries

Implications and Conclusions

- The cost analysis and time study resulted in a decision to staff the Milk Room with specialized personnel titled Milk Room Technicians.
- NICU "Milk Techs" are high school graduates who receive focused training in the process of preparing human milk.
- Ten "Milk Techs" are now employed and work 40 hours per week.
- Personnel costs = \$12.00 per hour = \$249,600/year.
- Utilizing "Milk Techs" resulted in a savings of \$ 406,670.00



Lessons Learned

- The intent of this project was to determine if having a dedicated Milk Room was fiscally feasible for the NICU.
- This project successfully demonstrated that the Milk Room and "Milk Techs" are necessary for cost saving and to manage all NICU feedings in the most safe and hygienic way possible.
- We believe other NICUs can use the information we delineated with this project to decide if they can achieve similar results.

