

# **Decrease in Central Line Utilization with Improved Growth in VLBW Newborns Following Feeding Roadmap Implementation**

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Nothing to Disclose

## Introduction

- Early enteral nutrition in very low birth weight (VLBW) newborns has been shown to be protective against common neonatal morbidities.
- Central line associated blood stream infections are also of concern in immunocompromised preterm newborns

## Introduction

The objectives of this quality improvement project were:

- Implement standardization of feeding products and advancements.
- Decrease time to start and reach goal feedings.
- Decrease central line utilization.
- Improve growth.

## Methods

A retrospective analysis of two cohorts

**1. Group A:** consisting of six months prior to first roadmap implementation

- October 1, 2012 – March 31, 2013

**2. Group B:** consisting of six months after final roadmap implementation

- January 1, 2017 – June 30, 2017

# Unified Quality Improvement Symposium

## February 5, 2020



| Feeding Day | Feeding Volume mL/kg/day | Feed Frequency | HMF  | IV Lipids |                         |
|-------------|--------------------------|----------------|------|-----------|-------------------------|
| 1           | 20                       | Every 3 hours  |      | 1 g/kg    |                         |
| 2           | 20                       | Every 3 hours  |      | 2 g/kg    |                         |
| 3           | 20                       | Every 3 hours  |      | 3 g/kg    |                         |
| 4           | 40                       | Every 3 hours  |      | 3 g/kg    |                         |
| 5           | 60                       | Every 3 hours  |      | 2 g/kg    |                         |
| 6           | 80                       | Every 3 hours  | 1:50 | 1 g/kg    |                         |
| 7           | 100                      | Every 3 hours  | 1:25 | 0 g/kg    |                         |
| 8           | 120                      | Every 3 hours  | 1:25 | d/c TPN   | **Remove Central Line** |
| 9           | 140                      | Every 3 hours  | 1:25 |           |                         |
| 10          | 150                      | Every 3 hours  | 1:25 |           | Start Vitamin D         |
| 11          | 150                      | Every 3 hours  | 1:25 |           |                         |
| 12          | 150-160                  | Every 3 hours  | 1:25 |           |                         |
| 13          | 150-160                  | Every 3 hours  | 1:25 |           |                         |
| 14          | 150-160                  | Every 3 hours  | 1:25 |           | Start Iron              |

# Results

|   | Group A | Group B | <i>p</i>          |
|---|---------|---------|-------------------|
| n   | 80      | 82      |                   |
| Days to initiation of feeds (days, median, IQR) | 3 (1)   | 1 (1)   | <b>&lt;0.0001</b> |
| Days to full feeds (days, median, IQR)          | 12 (9)  | 10 (2)  | <b>0.002</b>      |
| PICC line utilization (n, %)                    | 28 (35) | 10 (12) | <b>0.0005</b>     |
| Weight gain (grams/day, mean, SD)               | 21 (5)  | 24 (4)  | <b>&lt;0.0001</b> |
| Human milk at first feed (n, %)                 | 57 (71) | 75 (91) | <b>0.0007</b>     |
| CLABSI <sup>1</sup> (n, %)                      | 2 (3)   | 1 (1)   | 0.54              |
| NEC <sup>2</sup> (n, %)                         | 3 (4)   | 1 (1)   | 0.29              |

## Conclusion

Implementation of a feeding roadmap was associated with significant **reductions in:**

- Timing of initiation of enteral feedings
- Days to goal enteral feeds
- Second central line utilization (PICC)

**And improvement in:**

- Weight gain
- Use of human milk as first enteral feed