**Solution:** How Sweet It Is: Solutions and Strategies to Reduce Adverse Outcomes Related to Neonatal Hypoglycemia

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**IDENTIFICATION:**

Problem: Does EVERY infant need to be screened for blood glucose in the first hours of life or just those identified as at-risk?

The problem was two-fold; first, by screening all infants we were possibly causing over-treatment and over-diagnosis of low blood glucose, especially if they were screened at 2-3 hours of life, during the natural nadir of neonatal glucose homeostasis. Second, we were facilitating low blood glucose by separating mother/baby possibly causing hypothermia and delayed or poor feedings.

The problem was identified by a performance improvement (PI) study and anecdotal reports:

1. Physician concern regarding natural nadir of low blood glucose in the 2-3 hour period after birth and treating the infant aggressively when they had no symptoms or risk factors
2. Separation of mother/infant dyad as a factor contributing to lower glucose levels due to interruption of normal bonding and feeding process
3. Separation of mother/baby contributed to issues with thermoregulation, poor feeding and low blood glucose
4. PI study as demonstrated by report below prior to instituting new process

**Baseline Data: PI report**

1. High risk newborns identified and blood glucose done within 30-60 minutes following birth (50%)
2. Low risk newborns identified and blood glucose done within 60-90 minutes following birth (67%)
3. Specimen being sent to lab stat for glucose values <34 mg/dL (33%)
4. Low risk infants being treated with early feeding protocol (89%)
5. Infants’ blood glucose rechecked within 30 minutes post treatment (70%)
6. Physician notified for blood glucose <34 mg/dL (75%)
7. Infants symptomatic or blood glucose <25 mg/dL sent to NICU immediately (0%)
8. In absence of physician, urgent treatment followed per protocol by NICU RN for symptomatic infants or blood glucose <25 mg/dL (100%)
9. Neonatal low blood glucose algorithm protocol followed correctly (100%)

**PROCESS:**

1. Benchmarking with other similar hospitals
2. Extensive literature reviews
3. Researched existing Perinatal Standards and Practices
4. Team collaboration and networking
5. Consulted American Academy of Breastfeeding and Barbara Bush Children’s Hospital where evidence-based practice guideline was developed and has conducted clinical trials
6. Perinatal list-serve survey

**SOLUTION:**
1. New Policy and Procedure using evidenced-based practice model, standards and algorithms
2. Extensive education of staff and physicians
   a. Physician buy-in
   b. Staff buy-in
   c. Team meetings
   d. Self-learning packet with post-test
   e. Bedside algorithms and at-risk list for easy reference
   f. Competency checklist
   g. Performance Improvement Study
3. Performance Improvement Study data and results showing reduction of over-treatment, less hypothermia, more mother/infant satisfaction and improved identification of the at-risk infant
4. Staff, physician and patient satisfaction
5. Team feedback of successes, monthly reporting of improved PI results, continued education and reinforcement, addressing barriers in a timely manner, facilitating staff involvement, emphasis during orientation
6. Standardizing at-risk identifiers & treatment for neonatal low blood glucose using evidence-based practice
7. Simplifying the low blood glucose algorithms for physicians and staff so they would be consistently followed