Tummy Time in the NICU: Beyond the Isolette
A Quality Improvement Project

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Introduction

Background

- CPD is, “an asymmetrical flattening or deformity of the skull,” and can occur in up to 50% of infants (Dudzinski, 2012). Laufer et al., 2011; (Maewi, Vollman, Hatfield, McNeil, & Sauvé, 2013).

- The “Back to Sleep” program implemented by the AAP in 1992 significantly reduced the incidence of SIDS (Mollier, Johnson, Duggan, & Bahm, 2011).

- The downside of “Back to Sleep” is lower tummy time with roughly 25% of infants not receiving TT despite the AAP recommendation due to a lack of infant tolerance (AAP, 2011; Miller et al., 2011; Wen, Baur, Simpson, Rissel, & Flood, 2011; Zachy & Kitzmann, 2011).

- CPD has significantly increased, reported as much as 60%, since the implementation of “Back to Sleep” (Graham, 2006; Laufer et al., 2011; Looman & Kiek Flannery, 2012; Miller et al., 2011).

- Strategies for the treatment of CPD are grounded in prevention and positioning, with parental participation essential (Laufer et al., 2011).

- TT is defined as kangafoo care or awake prone positioning and is important for developmental gross motor milestone achievement (Miller et al., 2011).

- Safe demonstration of TT in the NICU has the potential to increase tolerance of TT after discharge and allows opportunity for parental education about the importance of TT beyond the NICU (Koren, Reis, Kahn-Dangelo, & Medeiros, 2010).

Purpose Statement

The purpose of this project was to identify the effect of the implementation of a TT algorithm on the incidence of CPD in NICU patients. A TT algorithm provides guidance to the caregivers and the family in the NICU regarding the importance of TT and serves as a guide to make TT part of daily NICU care activities.

Objectives

1) 75% of NICU caregivers will receive TT education prior to program initiation.

2) 75% of parents will receive education on TT.

3) A 50% increase in charting of TT in the EMR.

4) A 2% decrease in CPD at discharge in the EMR.

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Materials and Methods

Baseline Chart Review

- Chart review from convenience sample with sampling from every 4th NICU admission (n = 100)
- Variables
  - Infant
  - Gender
  - Maternal
  - Pregnancy
  - Birth Weight
  - Infant Mortalities
  - Tummy Time

Follow-up Chart Review

- Chart review from all NICU admissions (n = 150)
- Variables
  - Same as baseline
  - Group addition of support for NICU caregivers education and parent TT tip sheet.

Results

Mode of Delivery

- Predominant mode of delivery was vaginal (49%, n = 78), followed by urgent cesarean section (34%, n = 34), elective cesarean section (11%, n = 11), and emergent cesarean section (8%, n = 12) with no statistically significant difference between groups for mode of delivery, χ² (3) = .22, p = .97.

- Assisted delivery occurred in 10% (n = 16) of deliveries with no statistically significant difference between groups, χ² (1) = 1.25, p = .26.

Crib to Discharge

- Substantially fewer subjects in the follow-up group with the LOS varying between baseline (M = 17, SD = 23.77) and follow-up (M = 5, SD = 3.13). As such, LOS between groups was statistically significant, t(161) = 4.83, p = .00.

- However, the mean GA at discharge was 38 weeks at baseline (SD = 2.61) and follow-up (SD = 1.85), indicating no statistically significant difference between groups, t(161) = .02, p = .98.

Conclusions

1) Objective Not Met – 72% of NICU caregiver education was complete prior to project implementation, falling just short of the 75% completion goal.

2) Objective Not Met – After a change in TT tip sheet process, the percentage of parents educated about TT increased 50%, but still fell short of the 75% goal.

3) Objective Met – The implementation of the TT algorithm decreased the number of infants who did not receive TT by 50%, meeting the goal for an increase in charting of TT in the EMR by 50%.

Objective Met – The 2% decrease in CPD at discharge goal was exceeded with no CPD present at discharge at follow-up compared to 4% at baseline.

The implementation of an evidence-based algorithm for TT in the NICU reduced the incidence of CPD and contributed to the expansion of knowledge of TT to reduce CPD.

References


