

# Sweet Dreams in the NICU

## Increasing Quality & Duration of Sleep Using an Evidence-based Approach to Positioning

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### Background/Significance

The Newborn Individualized Developmental Care Assessment Program (NIDCAP) Federation, National Association of Neonatal Therapists (NANT) and National Association of Neonatal Nurses (NANN) all identify sleep and body posture as integral components of care needed for optimizing developmental outcomes.

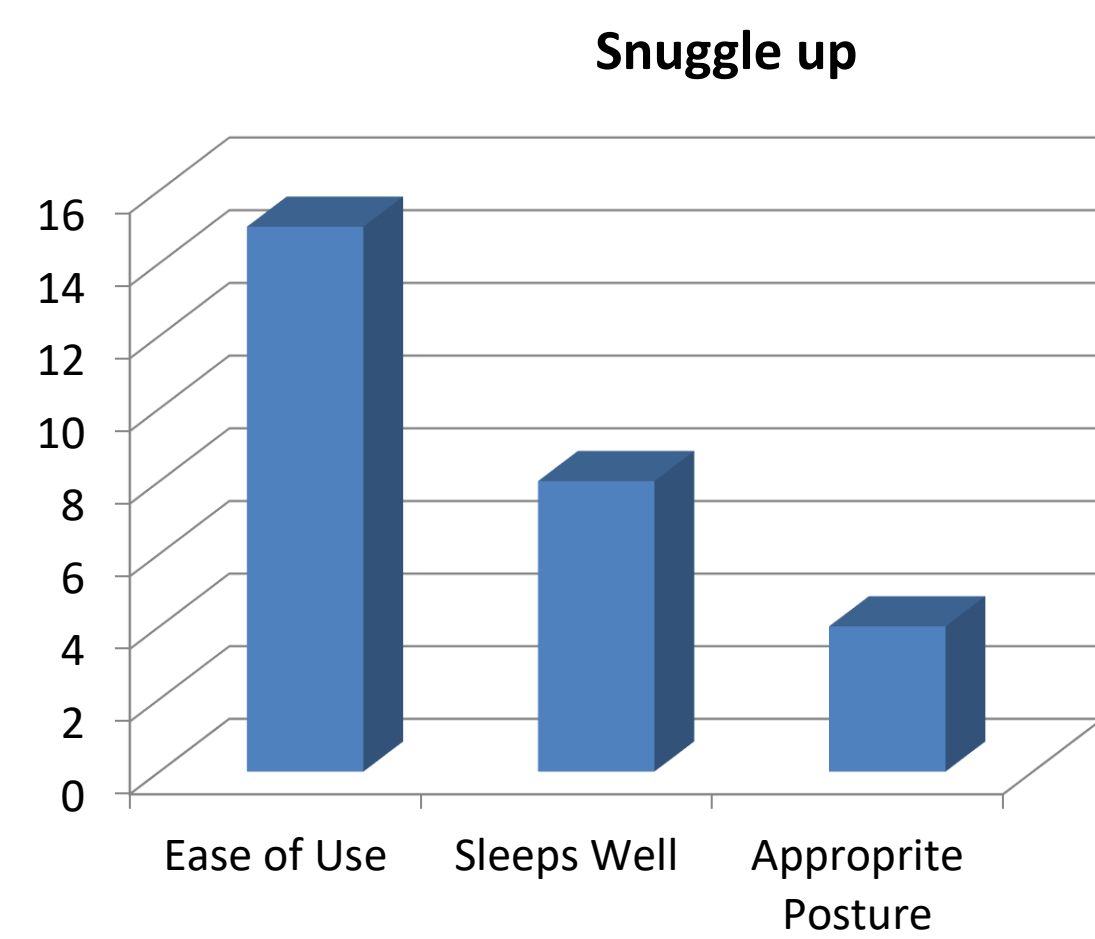
Sleep is crucial to improve health and vitality of infants born prematurely. Premature infants lack the ability to maintain a comfortable, age-appropriate resting posture. External positional support is needed to maintain a restful comfortable position.

Proprioceptive input provided to premature ones, allows them to fall asleep faster and stay asleep longer. Providing appropriate positional support is integral to the developmental outcomes of premature infants.

In this project, a regional Level 4 NICU utilized QI to evaluate, implement and measure success of a neurodevelopmental supportive positing system for improving sleep, posture and parental perception of infant comfort. Interventions included education, usage protocols and structured measurement of effect.



### Plan



Pre-intervention positioning analysis in NICU, using the Individualized Positioning Assessment Tool (IPAT), identified that the current positioning equipment was not consistently providing the necessary support for sleep and body posture mandated by neurodevelopmental care standards. With the goal of improved duration of sleep with proper posture, a trial of new positioning equipment was proposed. The DandleLion trial included nurse education, usage protocol, and data collection regarding ease of use, sleep quality, postural integrity, and parent perception of infant comfort. The results of this short cycle performance improvement project are reported here.

### Implementation Planning March/August 2018

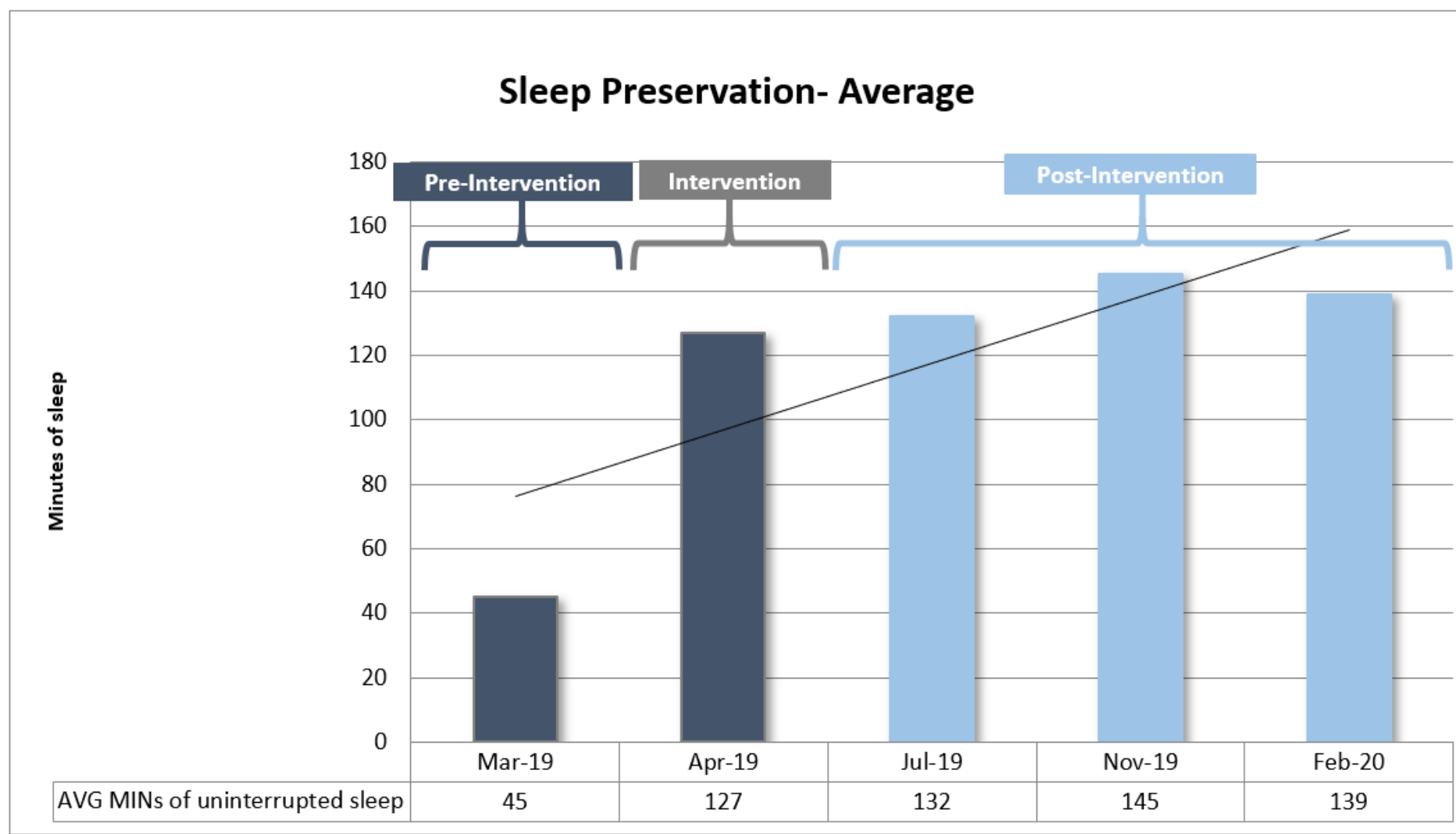
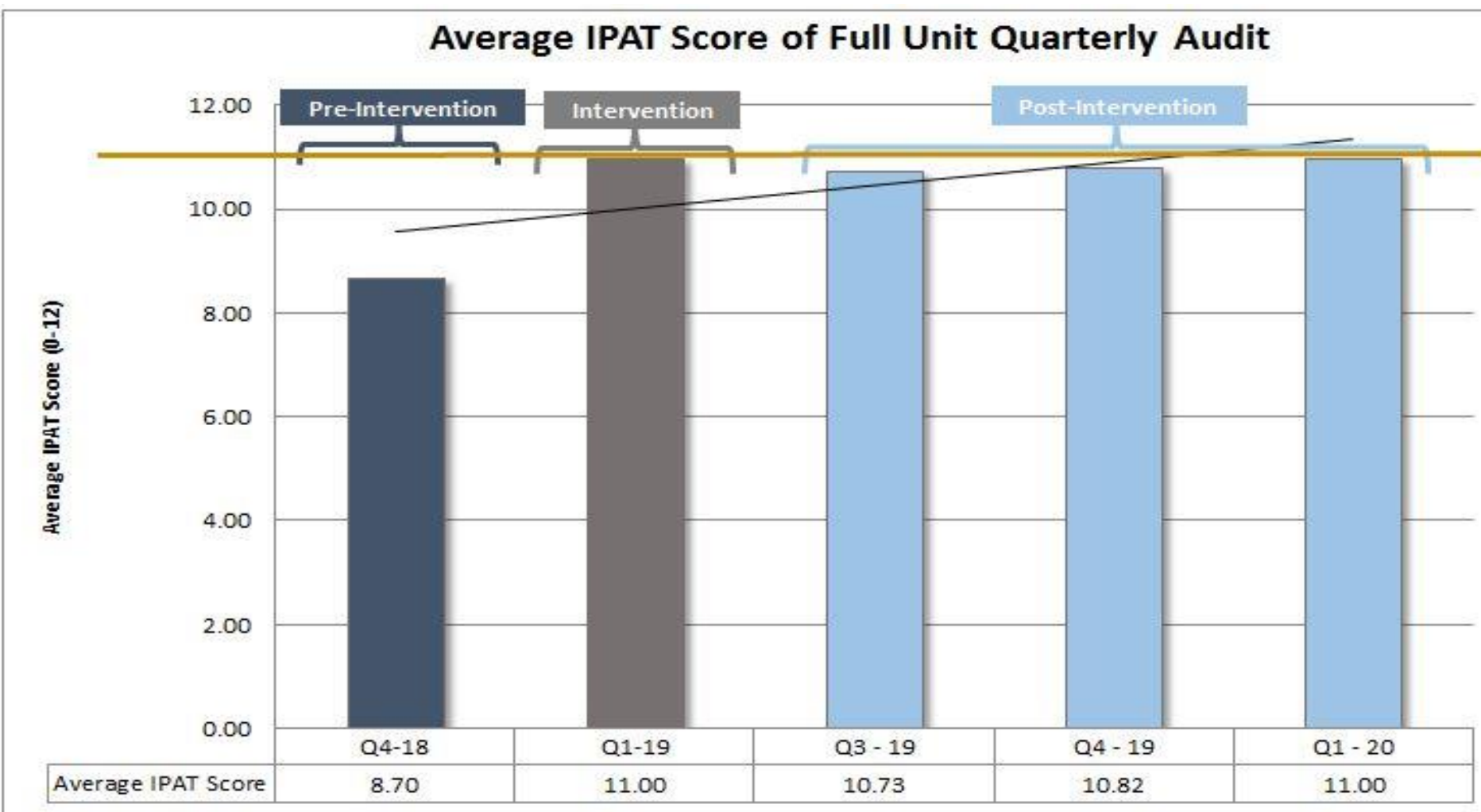
3/29/18 Review of Dandelion product line  
4/11/18 Cost analysis performed  
5/7/18 Introduced product line to NICU nurse management  
7/19/18 SVAT new product trial request and approval  
7/26/18 Education of core NICU staff positioning champions  
8/2/18 Bedside education NICU Staff

### PDSA CYCLE August/December 2018

Plan: Introduce new positioning equipment  
Do: Department wide education  
Study: Audit positioning with IPAT  
Act: Improve equipment availability

### PDSA CYCLE April - June 2019

Plan: Audit positioning equipment use consistency  
DO: Share point education update  
Study: Audit positioning With IPAT  
Act: Improve consistency over acuity of patients



### PDSA CYCLE July - September 2019

Plan: Sustain proper positioning equipment use  
Do: Change laundry cycle to improve availability  
Study: Audit positioning with IPAT  
Act: Improve consistency over census variability

### PDSA CYCLE October – December 2020

Plan: Sustain proper positioning equipment use  
Do: Create and distribute positioning reference to each patient room  
Study: Audit positioning with IPAT  
Act: Present results at 2020 QI fair

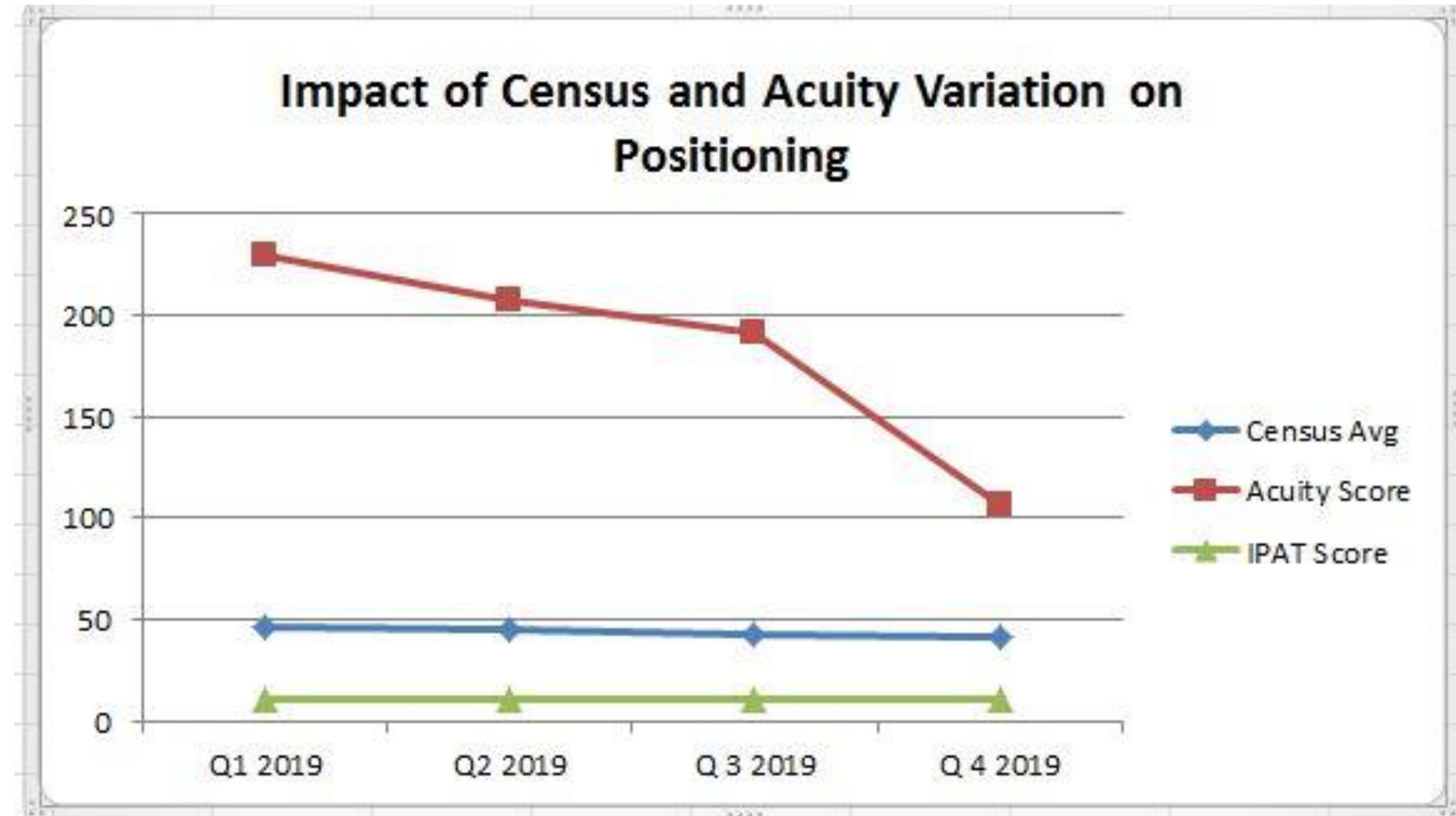
### Study

Cost analysis revealed comparable cost between Phillips and Dandelion products. Expanded product availability from new vendor allowed individualized postural support at comparable cost.

Industrial laundry revealed Dandlelion products maintained structural integrity longer than the Phillips products. Factory supplied laundering recommendations were followed.

Acuity of infant and variation in census had no significant impact on IPAT scores or sleep duration.

Feedback was provided over a variety of days and shifts for each product trialed. Parents, therapy team members and nurses provided feedback. Analysis of feedback demonstrated that the new products supported sleep and proper posture well. Parental perception of infant comfort increased significantly. Parent comments included, "My baby sleeps so much longer." "He looks so comfortable." "Looks like he did on my ultrasounds."



### Act

PDSA cycles were completed quarterly to evaluate continued sleep and posture benefits.

Continued staff education and audit will be completed initially quarterly progressing to yearly review.

Efforts to create developmental care standardization across the enterprise have begun. This positioning and sleep project has excellent potential to be generalized across the Sanford Enterprise footprint.