

Title of Abstract:

The Team Approach To Improving Respiratory Related Outcomes: A Culture Change Story

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Abstract Description:

Background: Non-invasive respiratory support and reduced time on mechanical ventilation are widely reported effective strategies in preventing and managing lung disease in preterm neonates. Compared to similar level regional NICUs in California Perinatal Quality Care Collaborative, the rates of Chronic Lung Disease (CLD) and home on oxygen in our NICU were in upper quartile for years ending in 2015. Implementing an approach with strict adherence to these best practice strategies in a large tertiary care NICU with over 300 members of the care team can be challenging, particularly as it relates to maintenance of consistent care delivery leading to improved outcomes.

Objectives: To decrease ventilatory days, CLD and home on oxygen in very low birth weight (VLBW) infants by creating a culture change based on empowering a dedicated care team, with strict adherence to use of early nasal Bubble CPAP.

Methods: Following attendance of respiratory care conference at Columbia University NICU in 2014, a team of dedicated nurses and respiratory care practitioners (BCPAP Champions, became Small Baby Team) was recruited and trained, with the goal of implementing early BCPAP use and changing the culture in the NICU at Miller Children's & Women's Hospital Long Beach (MCWHLB). Staff training and care guidelines were completed by December 2014. A system of scheduled audits to adherence of guidelines was implemented. Ongoing quarterly update team meetings were established to continue education, review data, maintain competency and enhance exchange of ideas. Data was collected and analyzed for the two-year period following formation of the team.

Results: From January 1, 2015 to December 31, 2016, there were 314 VLBW infants admitted to MCWHLB NICU. With a change in culture over time, an increase in early BCPAP support was

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demonstrated and decreases in time on mechanical ventilation. Ventilator time of 1 day or less increased to 52% (2016) vs 29% (2015). Reduced CLD rate of 21% (2016) vs 36% (2015), 35% (1998-2015) was achieved. Home on oxygen decreased to 7% (2016) vs 21% (2015), 17.5% (1998-2015). Interestingly, patent ductus arteriosus surgical ligation rate was also noted to decrease 4% (2016) vs 17% (2015), 17.5% (1998-2015), as did severe retinopathy of prematurity 5.7% (2016) vs 8.5% (2015), 13% (1998-2015).

Conclusions: A dedicated team-based model of care delivery in a large tertiary NICU was shown to significantly improve multiple respiratory related short-term outcomes in VLBW infants. Empowerment of such a team led to demonstrable positive change in NICU culture.

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