

Improving CPAP Before Endotracheal Intubation in VLBW Infants



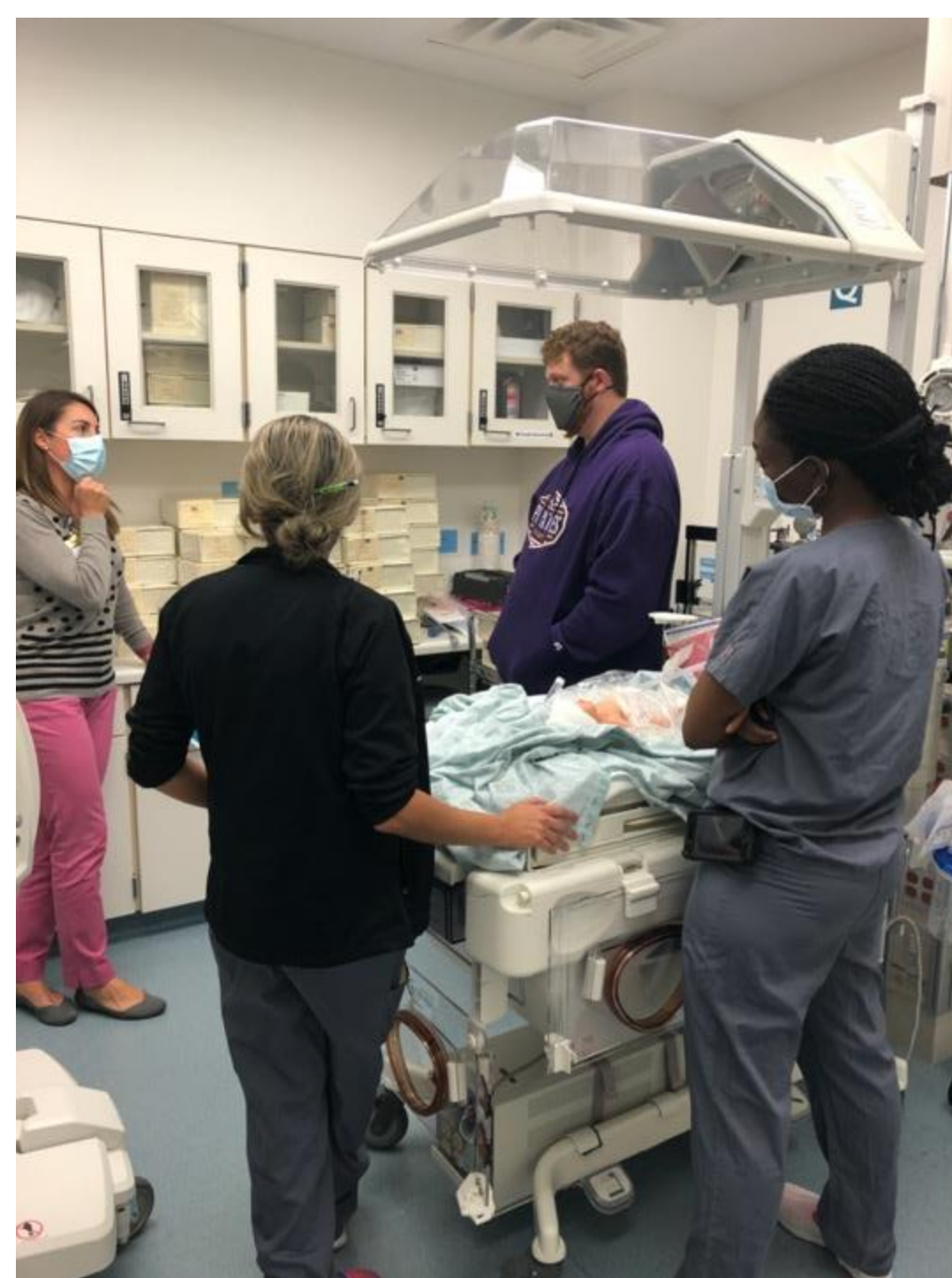
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BACKGROUND

- Bronchopulmonary dysplasia (BPD) remains a significant morbidity related to premature birth.
- Risk of BPD increases with decreasing gestational age.
- It is important to put into place any measures that will decrease risk of BPD in the preterm infant.
- Evidence shows that early CPAP may decrease the incidence and severity of BPD.

PROJECT AIM

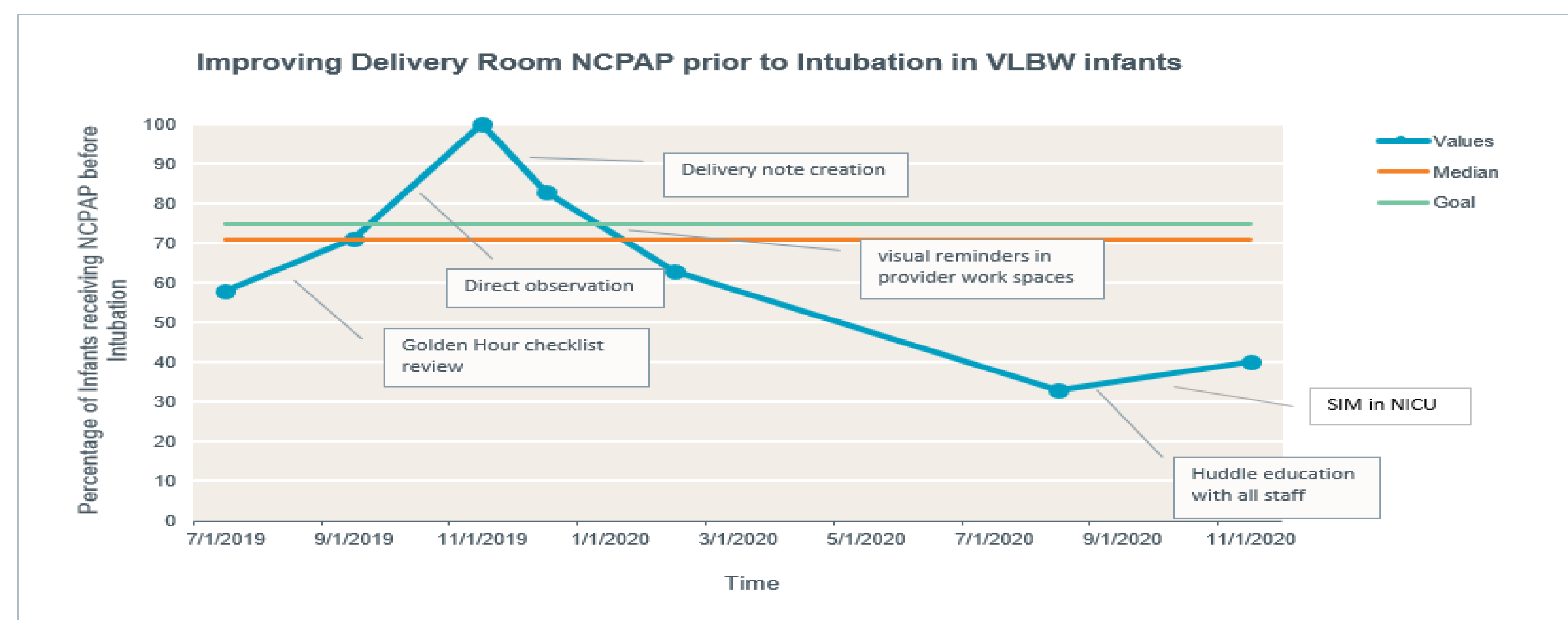
- Our project's aim was to improve the use of a nasal CPAP trial before endotracheal intubation from 57% to 75% in very low birth weight infant VLBW infants (<1500 grams) within one year.
- National benchmark rates published by Vermont Oxford Network (VON) are 65.5%.



CHANGES MADE (PDSA CYCLES)

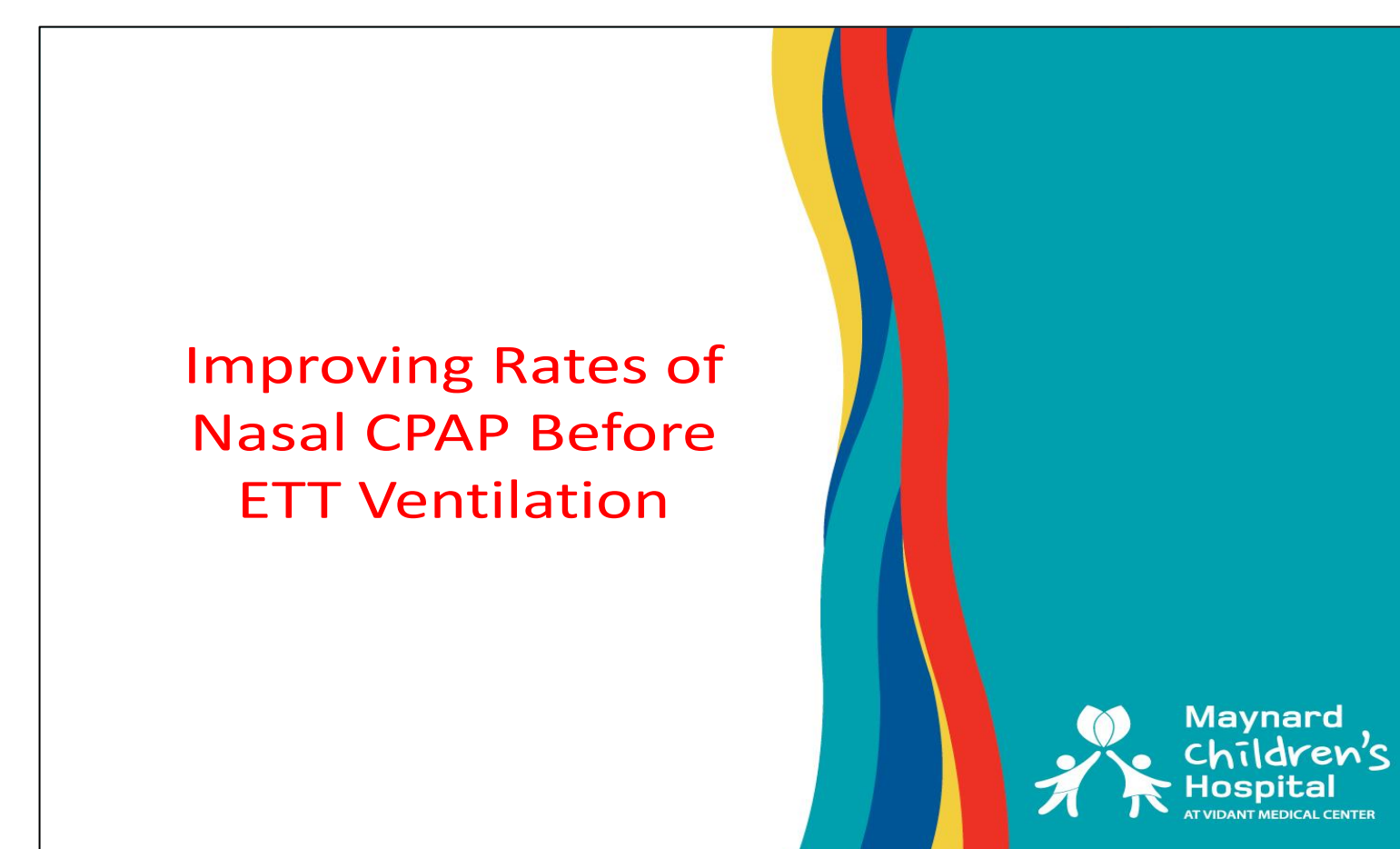
- 1) **PDSA CYCLE 1- Improving our data collection**
 - We found the data related to the documentation of CPAP trial before endotracheal intubation in the delivery room to often be poor or incomplete in EPIC.
 - We instead used our "Golden Hour checklist " which is completed for every admission of a VLBW infant.
 - We also did direct observation of our teams in the delivery room setting for the period of ~30 days.
- 2) **PDSA CYCLE 2- Improving documentation**
 - A new delivery note template was created for providers to use to document the delivery of every VLBW infant. Specifically, the writer clicked through and answered if NCPAP was used prior to intubation.
 - Email and visual reminders were placed near workstations to help prompt the providers to use the new template.
- 3) **PDSA CYCLE 3- Education and simulation**
 - A 7-slide educational PowerPoint with audio was created and shared with the interprofessional team to provide education and gain acceptance.
 - Simulation scenarios were then provided. Various nurses, APPs, fellows, residents, and RTs participated and practiced providing CPAP to VLBW infants in realistic scenarios.

RESULTS/OUTCOMES



BALANCING MEASURES

- Increased frequency of pneumothorax
- Inappropriate use of CPAP before intubation when not indicated (not anticipated).



LESSONS LEARNED

- When looking at our data, it appears that we showed no improvement in improving rates of NCPAP prior to intubation.
- This data point is collected by VON and compared against other like institutions.
- The more clinically important and useful question is how many VLBW infants left the delivery without requiring intubation?
- This data would more accurately reflect overall delivery room management as well as have more important implications for decreasing BPD.

NEXT STEPS

- Evaluate the percentage of these babies leaving the delivery room without getting intubated.
- Continue to work on a respiratory bundle to decrease the rates of BPD.
- Evaluate percentage of VLBW infants who never required intubation during their NICU stay.

ACKNOWLEDGEMENTS

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