Clinical Practice Policy:	Target O2 Sats for Infants in the Neonatal Intensive Care Unit
Effective Date:	July 2, 2018

I. Purpose

To provide a clinical practice policy (CPP) for optimal oxygen saturation targets for babies in the Newborn Intensive Care Unit.

II.

All CPPs reflect the NICU Nursing Standards of Care. All relevant nursing policies, procedures, and guidelines (PPGs) are listed below.

WNH O.2 Emergency Administration of O2 to Infants
NICU O.4 High Flow and Low Flow O2 Administration via Nasal Cannula
NICU M.2 Monitoring

III. Exclusions

Babies with persistent pulmonary hypertension, congenital heart disease of the newborn, or on inhaled nitric oxide therapy.

IV. Summary

Oxygen can be a life saving therapy for sick and preterm newborns in the intensive care unit. Five large multi center trials aiming to define optimal SpO2 targets in preterm babies have shown that targeting SpO2 in the low range (85-89%) is associated with an increase in mortality and NEC compared to the higher range (91-95%). Although babies maintained in the lower range of SpO2 had a lower incidence of severe ROP there were no significant differences in the incidence of blindness. There was also no major difference in the combined outcomes of death or major disability. Based on this data the European consensus data recommends target O2 sats of 90-95% in preterm babies. In order to provide the best care to our babies it is important to define a target O2 sat range that limits morbidity while not causing any increase in mortality. We also want to provide realistic monitor sat limits that will be practical and minimize undue alarms. Based on the best available evidence the recommended target O2 sats/monitor limits are as follows

Gestational age	Target O2 sats/sat limit when on O2	Target O2 sats/sat limit when off O2
Gestational age <32 weeks	**90-95% / 89-96%**	**90-100%/ 89-100%**
Gestational age >32 weeks	**92-97% / 91-98%**	**92-100%/ 91-100%**

V. Points of Emphasis

- The oximeter must be able to detect an adequate pulse rate and waveform.
- Conditions that can interfere with the monitor's ability to detect arterial pulsations include: compromised cardiac output, hypotension, marked edema, motion artifact, poor cable connection, phototherapy lights, poor disposable probe sensor (may need to be replaced), or the probe site may need to be changed.
- Infants with congenital heart disease may need individualized goal SpO_2 ranges based on their anatomy and physiology. The physician orders should reflect this after discussion with Pediatric Cardiology.
- If the infant's SpO_2 reading is consistently in the high range, the FiO_2 should be weaned.
- Infants receiving supplemental oxygen (CPAP, ventilator) who have an oxygen requirement which increases by 10% should be re-assessed by the medical staff.
- The infant receiving supplemental oxygen via a nasal cannula, whose oxygen requirement increases significantly beyond their baseline, should be reassessed by the medical or NNP staff.

- **Strategies to limit oxygen toxicity**
  - Ensure monitor alarm limits are set for ranges per policy
  - If a baby previously in RA FiO2 needs additional O_2 the sat limits should be changed to the age appropriate ranges
  - Daily attending progress note should include:
    a) Diagnosis
    b) FiO_2
    c) If any reason to deviate from target O_2 sat limits.

VI. References

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