Newborn Critical Care Center (NCCC) Clinical Guidelines

Nasal Cannula Guidelines

Introduction:

Use of the nasal cannula is intended for non-invasive oxygen delivery via variable liter flow and fractions of inspired oxygen.

- **Low flow nasal cannula** delivers a fraction of inspired oxygen by variable flow of 100% oxygen (FiO2 1.0), typically with flow rates up to one liter.
- **High flow nasal cannula** delivers a variable fraction of inspired oxygen at a fixed flow rate in order to generate positive airway pressure, (typically ≥ 1.5 LPM, as lower flows do not exceed the patient's maximum inspiratory demand, which in neonates is ~2 LPM). The amount of flow necessary to provide various levels of positive airway pressure is related to the infant's body weight in a linear fashion. Higher flow produces increased (but variable and unpredictable) positive end-expiratory pressure.

	High Flow Nasal Cannula	Low Flow Nasal Cannula
Definition	***≥ 1.5 liters per minute (LPM)***	***≤ 1 liter per minute (LPM)***
Equipment	Nasal cannula is attached to heater & humidifier, flow meter, and oxygen blender.	Nasal cannula is attached to a humidifier and flow meter which then attaches directly to oxygen source from the wall.
Initial Settings	**Flow:** Set liter flow to provide positive pressure for improvement in work of breathing and estimated end-expiratory lung volume. **Oxygen:** Set the blended oxygen level to achieve desired saturation levels.	**Flow:** Initial flow should be set to achieve the desired oxygen saturation levels.
Adjusting Settings	**Flow:** Titrate flow based on work of breathing and oxygen requirement. The rate of weaning is dependent on patient characteristics and the underlying disease process. **Oxygen:** Titrate to maintain goal saturations per EPIC orders.	**Flow:** Titrate flow to maintain goal saturations per EPIC orders. **Oxygen:** The FiO2 is set and fixed at 1.0. * * *Blended oxygen on LFNC can be utilized at the provider's discretion in select circumstances (i.e. cardiac patients)*

See BCPAP Guidelines for assistance in determining whether BCPAP is required or nasal cannula may be utilized.

Reviewed October 2018 – LeBlanc / Norwood RT / Patterson