High Flow Nasal Cannula (HFNC) Pathway

3/2023 Update

Prior to HFNC Initiation

- Assess for work of breathing/FiO2 requirement
- Trial Low Flow Nasal Cannula to minimize work of breathing and achieve goal saturation >90%
  - Infant nasal cannula up to 3L/min
  - Pediatric nasal cannula up to 6L./min for patients older than 24 months
- Continuous reassessment to determine tolerance (stable or improved). If not showing tolerance of LFNC → Initiate HFNC per Acute Care Parameters

Criteria for Admission from ED to Acute Care

No clinical worsening after 1 hour on stable HFNC flow rate, at or below the "Huddle Threshold," with FiO2<50%.

Criteria for Transfer from PICU to Acute Care

Stable on flow rate below "Huddle Threshold" for >4 hours, FiO2 <50%.

Acute Care Parameters

Age range	Start at:	Increase up to:	"Huddle Threshold":
<2 yrs	1L/kg/min	2L/kg/min	12L/min / 50% FiO2
2-5yrs	1L/kg/min	2L/kg/min	15L/min / 50% FiO2
6-12 yrs	0.5L/kg/min	1L/kg/min	20L/min / 50% FiO2
>12yrs	0.5L/kg/min	1L/kg/min	30L/min / 50% FiO2

Signs of Clinical Worsening:

- Increased respiratory rate
- Increased work of breathing
- Increased tiredness
- Worsening mental status

Titrate FiO2 to maintain saturations (90-95% asleep, 92-95% awake). Titrate flow rate to minimize respiratory effort

Signs of Clinical Improvement:

- Decreased respiratory rate
- Decreased work of breathing
- Improved comfort

If Clinically Worsening OR no Signs of improvement:

- Notify Respiratory Therapist
- Assess for interventions (suction, nebulizer treatment, pulmonary toilet, etc)
- Increase HFNC per Acute Care Parameters
- Reassess for clinical response to interventions

If acutely or rapidly worsening, call Rapid Response Team (RRT)

- If reaching Huddle Threshold, and NOT acutely or rapidly worsening, activate **Interdisciplinary Huddle** (Nurse, Respiratory Therapist, Physician/APP) to determine further interventions.
- **PICU consult** can be initiated at any time to discuss patient management, or as part of Interdisciplinary Huddle, to determine further disposition.
- Following PICU consult and response to interventions, patient may be:
  - Transferred to PICU
  - Initiated on interventions in Acute Care setting and reevaluated with PICU team for further disposition within 2 hours.
  - Remain in Acute Care setting with HFNC Flow/FiO2 settings greater than the "Huddle Threshold", with PICU re-consulted as needed.

If Clinically Improving:

- Wean FiO2 to keep sats 90-95%
- Wean flow rate by 1-2 L/min every 2- 4 hours (see below).

Weaning HFNC

- RT/RN/Physician/APP to assess patient at least every 4 hours for signs of clinical improvement for readiness to wean.
- Wean the flow rate by 1-2L/min every 2-4 hours when patient is clinically improving, including at night.
- Assess within 15 minutes of weaning to determine tolerance of the wean. Return to prior settings if not tolerating well.
- When HFNC flow rate is 4L/min, transition to room air if FiO2=21% and 4L/min LFNC if FiO2>21%
- If patient is <24 months, transition to LFNC as age appropriate

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