Yukon-Kuskokwim HEALTH CORPORATION

Clinical Guideline

High-Flow Nasal Cannula for Pediatric Patients

REMEMBER:
- Any pediatric patient on HFNC must be transferred to the ER except for newborns, who may stay in the nursery.
- Maintain patient on HFNC until medevac crew arrives.
- No pediatric patient may be kept at YKDRH on HFNC unless medevac is on weather-hold.

Patient with moderate to severe sustained retractions or sustained hypoxia <88% not improved with SUPPORTIVE MEASURES (see box) and 2 LPM conventional nasal cannula or infant with apnea responsive to stimulation

↓

Page respiratory therapist.

↓

Page pediatrician on-call.

↓

- Transfer to ER.
- Activate medevac.
- PREPARE PATIENT (see box).

↓

RT to start high-flow nasal cannula with pediatrician consultation.

↓

Initial Settings
See Flow Rates box to left.
FiO2 50%, 37°C.
For newborns, consult neonatologist.

↓

Titrate flow by 1 LPM increments over first 3 minutes until improvement in WOB.
If patient is worsening on high flow rates, consider a lower flow rate.

↓

Titrate FiO2 to maintain sats >92%.

↓

Frequent gentle nasal suction as needed.

↓

Reassess at least Q20-30 minutes.

↓

Signs of Clinical Improvement
- ↓RR
- ↓retractions
- ↓irritability
- improved air movement

↓

Maintain current settings until medevac arrives.

If no improvement, consider obtaining ANMC PICU consult, checking blood gas, increasing supportive measures, intubation, etc.

SUPPORTIVE MEASURES
- Control fever, as it can be an independent cause of respiratory distress.
- Nasal suction.
- IV hydration.
- Back-to-back nebs with albuterol or normal saline.
- Consider phenylephrine ophthalmic form 1-2 drops to each nostril once.
- Consider hypertonic saline nebs q6h.

PREPARE PATIENT
- Make patient NPO.
- Ensure reliable IV access.
- Suction nares well.
- Choose a nasal cannula with prongs that do not occlude more than 50% of the nares.
- Position patient: optimal patient position is semi-recumbent, not supine or upright. Consider using special blue seat (found in ER storage between trauma and ambulance bays) with adjustable angle. Use blanket rolls to support position and ensure patient is not slumping over. Caregivers may hold the child if it helps keep him/her calm as long as the child is at a ~45 degree angle.
- To prevent condensation causing problems, place patient at a higher level than unit and clip tubing to patient's clothing.

NOTE:
- Low-flow cartridge to be used with neonatal/ infant cannula and produces flow rates of 1-8 LPM. This should only be used in the nursery.
- High-flow cartridge to be used with larger cannula and produces flow rates of 5-40 LPM. In the ER, always start with the high-flow cartridge.

Flow Rates
Titrate flow to 0.5-2 LPM/kg.
Younger patients often require higher flow rates per kilogram.
Consult the PICU for any patient requiring >1 LPM/kg.
Listen to lungs with each adjustment. If child is unable to easily exhale or complete an expiration, decrease flow rate until expiration is adequate.

Troubleshooting
- Consider NG/OG-tube for decompression.
- Use a pacifier to keep the patient's mouth closed and prevent loss of pressure.
- Consider mild sedation in consultation with medical control.
- Consider higher levels of flow to improve washout.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Approved by MSEC 8/1/18.
If comments about this guideline, please contact Leslie_Herrmann@ykhc.org.