HIGH-FLOW NASAL CANNULA (HFNC) FOR BRONCHIOBITIS

Protocol Exclusion Criteria

- > 36 months of age
- Primary diagnosis other than bronchiolitis or viral pneumonia such as bacterial pneumonia or being treated for asthma (steroids)
- Apnea or bradycardia requiring intervention
- Co-morbid conditions:
  - Air leak/pneumothorax
  - Anatomic or acquired airway defects (i.e. croup, stenosis)
  - Neuromuscular disease
  - Chronic lung disease with chronic O2 need
  - Abnormal respiratory status at baseline
  - Hemodynamically significant cardiac condition (e.g. unrepaired VSD, need cardiac meds, complex congenital heart disease)

LOCATION

- Admitted to Davis 7 can initiate there and remain if meeting criteria
- Transfers and ED: admit to ICU for HFNC

CRITERIA for INITIATING HFNC

- No exclusion criteria
- RAC severe (consider for RAC moderate)
- Requires >2L/min NC at 100% fiO2

**CRITERIA for HFNC OUTSIDE of ICU**

- 4 months old
- Requires suctioning every 2 hours or less frequent
- FiO2 weaned to < 0.5 within 1 hour of initiation of HFNC
- Flow < 2 L/kg/min (MAX 20L/min)
- Resolution of SEVERE work of breathing component of RAC within 1 hour of initiation of HFNC

**CRITERIA for TRANSFERING out of ICU on HFNC**

- Improving or stable RAC – recommend minimum of 6 hours in the ICU, unless comes off HFNC then no minimum
- Meets above criteria for remaining on HFNC outside of ICU

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**RESPIRATORY ASSESSMENT CLASSIFICATION (RAC)**

Can be used on patients on and off HFNC. If patient requires suctioning, use post-suctioning classification. Preferably classify when the child is calm unless child is inconsolable.

<table>
<thead>
<tr>
<th>ASSESSMENT COMPONENTS</th>
<th>CLASSIFICATION</th>
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<tbody>
<tr>
<td></td>
<td>Mild</td>
</tr>
<tr>
<td><strong>AGE-BASED RR</strong></td>
<td></td>
</tr>
<tr>
<td>≤ 3 months</td>
<td>≤ 60</td>
</tr>
<tr>
<td>4 – 12 months</td>
<td>≤ 50</td>
</tr>
<tr>
<td>&gt; 12 months</td>
<td>≤ 40</td>
</tr>
<tr>
<td><strong>WORK OF BREATHING</strong></td>
<td>Normal OR mild retractions</td>
</tr>
<tr>
<td><strong>MENTAL STATUS</strong></td>
<td>Baseline</td>
</tr>
</tbody>
</table>

The HIGHEST score for any component determines the patient’s classification. A severe rating in any component would indicate a SEVERE classification. A mix of mild and moderate ratings would indicate a MODERATE classification. When in doubt, err on the side classifying a patient as more severe.
**RT or RN ASSESSMENT TIMELINE per RESPIRATORY CLASSIFICATION**

- Can be assessed more frequently, and may be more frequent after HFNC initiation
  - Initiation huddle (RN/RT/MD) and reassess within 1 hour for meeting criteria to remain out of ICU if initiated on Davis 7.
  - Moderate or Severe RAC - every 2 hours (RN/RT shared responsibility).
  - Mild RAC – every 4 hours

**Nutrition Considerations (Goal to start within 6 hrs)**

- Oral feeds for all of the following:
  - RR < 70 for age < 3 mo
  - RR < 60 for 4-12 mo
  - RR < 50 for age > 12 mo
  - HFNC < 2 L/kg/min or per MD discretion
  - RAC mild or moderate or MD discretion

- Consider continuous/bolus NG feeds if:
  - Poor PO intake
  - Concerns for aspiration

- Trial ND if not tolerating continuous NG
### WEIGHT BASED FLOW RATES

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>FLOW</th>
<th>FIO2</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 kg</td>
<td>2 L/kg/min</td>
<td>Initiate at 0.5</td>
</tr>
<tr>
<td>≥ 10 kg</td>
<td>20 L/min</td>
<td>Titrate for SpO2 90-95% awake ≥ 88% asleep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>That doesn’t improve with suctioning</td>
</tr>
</tbody>
</table>

Round to nearest whole number flow for weight-based flows. Examples: 4.6 kg x 2 L/kg/min = 9 L/min 12.5 kg = 20 L/min.

Titrated FiO2 to target SpO2 90-95%. Consider escalation of flow rate if FiO2 > 0.5.

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Other resources
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