UCDAVIS HEALTH | CHILDREN'S HOSPITAL

# HIGH FLOW NASAL CANNULA (HFNC) FOR PRIMARY BRONCHIOLITIS / VIRAL PNEUMONIA

## Protocol Exclusion Criteria

- > 36 months of age
- Apnea or bradycardia requiring intervention
- Co-morbid conditions:
    - Air leak/pneumothorax
    - Anatomic or acquired airway defects (i.e. stenosis)
    - Neuromuscular disease
    - Chronic lung disease with chronic O2 need
    - Hemodynamically significant cardiac condition (e.g. unrepaired VSD, need cardiac meds, complex congenital heart disease)

**LOCATION**

- Admit to Davis 7 if no severe work of breathing after HFNC initiated
- Admit to ICU if having severe work of breathing despite HFNC

**CRITERIA for INITIATING HFNC**

- No exclusion criteria
- RAC severe – **Focus on work of breathing and mental status**, i.e., tachypnea alone may not need HFNC
- 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 TRANSFERRING 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

| **RESPIRATORY ASSSESSMENT CLASSIFICATION (RAC)**<br>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. | | | | |
|---|---|---|---|---|
| **ASSESSMENT COMPONENTS** | | **CLASSIFICATION** | | |
| | | **Mild** | **Moderate** | **Severe** |
| **AGE-BASED RR** | ≤ 3 months | ≤ 60 | 61-69 | ≥ 70 |
| | 4 – 12 months | ≤ 50 | 51-59 | ≥ 60 |
| | > 12 months | ≤ 40 | 41-44 | ≥ 45 |
| **WORK OF BREATHING** | | Normal OR mild retractions | Moderate retractions | Severe retractions, head bobbing, OR grunting |
| **MENTAL STATUS** | | Baseline | Fussy, anxious, OR sleepy | Lethargic (not just sleepy), OR inconsolable |
| 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. | | | | |

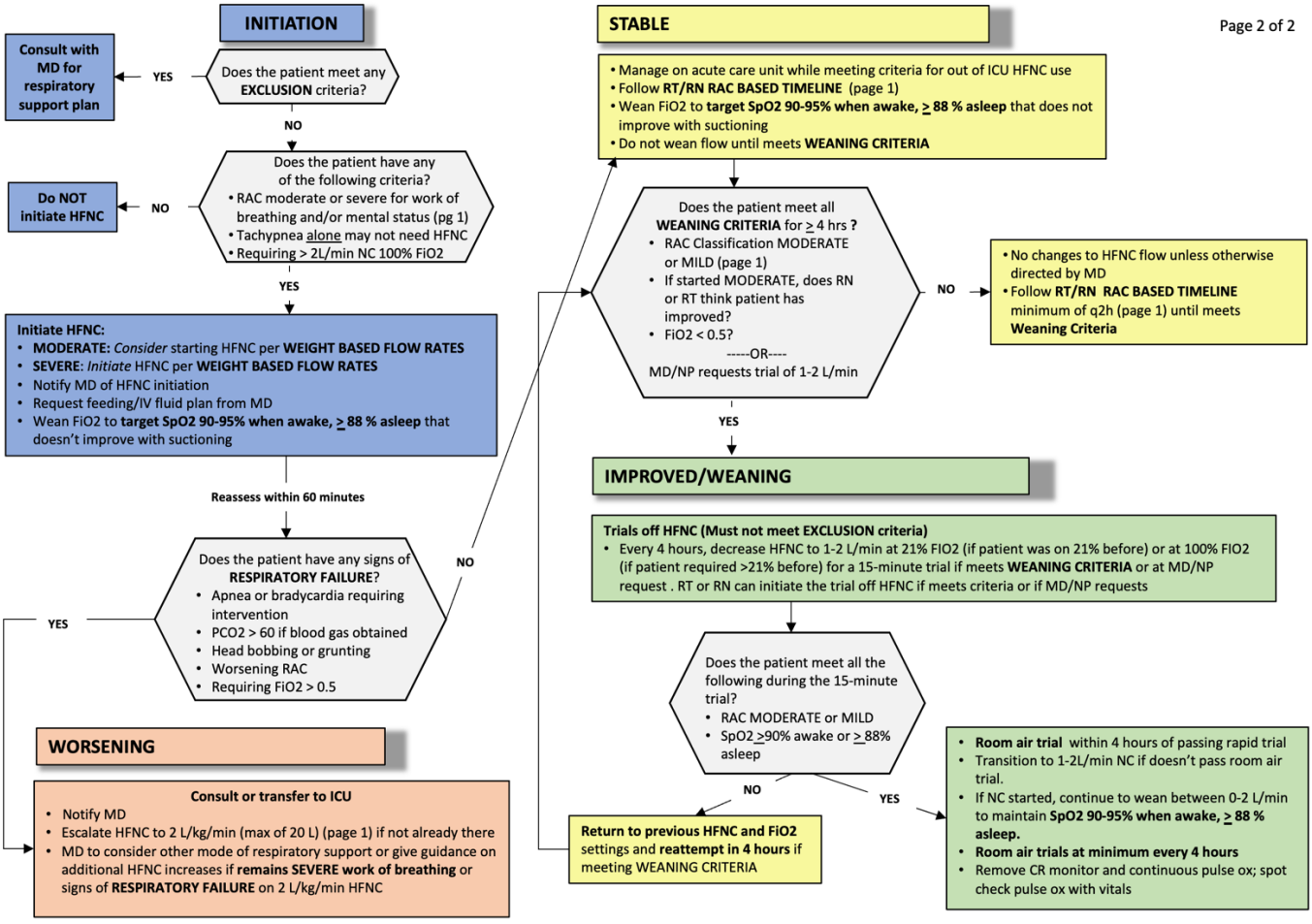
**RT or RN ASSESSMENT TIMELINE per RESPIRATORY CLASSIFICATION**

- 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 – at least every 2 hours (RN/RT shared responsibility)
    - Mild RAC – at least 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 | | |
|---|---|---|
| **WEIGHT** | **FLOW** | **FIO2** |
| **< 10 kg** | 2 L/kg/min | Initiate at 0.5<br><br>Titrate for SpO2<br>90-95% awake and ≥ 88% asleep<br>That doesn't improve with suctioning |
| **≥ 10 kg** | 20 L/min | |
| Round to nearest whole number flow for weight-based flows.<br>Examples 4.6 kg x 2 L/kg/min = 9 L/min  12. 5 kg = 20 L/min<br>Titrate FiO2 to **target SpO2 90-95%.** Consider escalation of flow rate if FiO2 > 0.5 | | |



**NOTE: This guide does not replace independent professional judgement. Deviations from the protocol may be appropriate at times, based on the assessment and agreement of the attending physician, nurse, and RT teams. If patient care will deviate from the protocol, consider implementing a mutually agreeable follow-up plan to ensure ongoing evaluation of the patient and appropriate support of staff, and document care plan in a progress note.**

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