

Clinical Guideline

 This guideline should not replace clinical judgment.

High-flow nasal cannula use for bronchiolitis in ≤ 2 years of age (for stepdown bed)

Pediatric Emergency and Hospital Medicine

If considering a trial of HFNC, please conduct a "Pause" of 15-30 minutes to attempt supportive care first:

1. Antipyretics if needed
2. Nasopharyngeal suctioning as per medical team
3. Consider fluid bolus (or increasing fluids) only in the setting of hypovolemia
4. NC oxygen support if with hypoxia and/or distress

Exclusion criteria:

- Ages <2 months or >24 months
- Premature birth (<38 weeks gestational age)
- BPD, chronic lung disease, cardiac disease, CP, etc.
- History of prior intubation for respiratory failure
Impending respiratory failure
- Diagnosis other than bronchiolitis

*Consider alternative diagnoses if any features may not support bronchiolitis (e.g. without hypoxia)

Consider spot ETCO₂ or VBG prior to starting HFNC

Does the patient have any of the following after supportive management?

1. Severe respiratory distress
AND/OR

Age	Significant hypoxia if NC flow rate is greater than
30 to 90 days	1 L/min
91 days to ≤ 6 months	1.5 L/min
6 months to 2 years	2 L/min

No

Return to bronchiolitis guideline

Stepdown maximum FiO₂ is 50%

Yes

Discuss with attending and consider initiation of HFNC::

1. Medical team to consult and discuss with Respiratory Therapy
2. Hold feeds until HFNC is established and patient is stabilized
3. Suction well prior to and after initiation
4. Hydrate well prior and after initiation of HFNC via IV or NG
5. Consider starting at HFNC Maximum: 2L/kg/min, weight-based
6. *MD and nursing team to re-assess at regular intervals until stable* (RN to re-assess starting with 15 min x 2)

Goal within 30-90 minutes to reassess

- **In the ED: consider huddle with ED and admitting senior resident team with RT and nursing, or ICU if needed**
- **After admission: Primary team at bedside with RT and nursing**

Improvement on HFNC?

Assess for changes in work of breathing, tachypnea, SpO₂, or other signs/symptoms based on clinical judgment

No

Discontinue HFNC and consider other modes of support and/or intervention, discuss need for ICU

Yes

Once on HFNC, how to decrease:

1. RN/RT to assess readiness to decrease flow every 4 hours and prompt medical team
2. Twice daily, conduct a "Holiday" whereby the HFNC is removed from patient to assess whether or not there is benefit.
3. Decrease flow from Maximum \rightarrow Minimum \rightarrow OFF (may consider trial of decreasing Maximum \rightarrow OFF, if appropriate)
4. Re-assess after decrease at regular intervals until stable. Monitor for increased work of breathing that will be difficult to sustain and resolved with reversal of flow decrease.
5. FiO₂ to be decreased by RN/RT for O₂ saturations $>96\%$ while asleep or awake (for a goal of $>90\%$). Flow must be decreased by medical team provider order.

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Considerations for transfer to the PICU:

1. Signs and symptoms of respiratory distress and/or persistent desaturations **despite** maximal oxygen support at 2L/kg/min or FiO₂ >50%
2. Concern for trajectory of patient illness and course despite increase in support
3. Any concern based on clinical judgment

Once on HFNC - feeding recommendations as per provider discretion:

1. Consider starting enteral nutrition based in clinical status, IVF optional
2. For enteral nutrition, consider NG placement and continuous feeds for patients to remain NPO for greater than 24 hours after admission. May also consider ND tube placement.

OR

Per provider discretion, may attempt to oral feeding when patient has stabilized, the flow is at least HFNC minimum or less, and with no respiratory distress.

3. First oral feeding should be supervised by medical provider, RN or SLP
4. Discontinue oral feeding if with increased coughing, choking, or respiratory distress

High-Flow Nasal Cannula Guideline

Executive Summary

Children's Hospital of Richmond at VCU High-Flow Nasal Cannula Workgroup

Pediatric Hospital Medicine Owner: Ashlie Tseng, MD

Pediatric Respiratory Therapy: Jennifer L. Reed, BS, RRT

In consultation with the Pediatric Respiratory Committee

Approved (November 2019)

Chief of Pediatric Emergency Medicine:

Frank Petruzella, MD

Chief of Pediatric Hospital Medicine:

David Marcello III, MD

Chief of Pediatric Pulmonary Medicine:

Michael Schechter, MD, MPH

CHoR Clinical Guidelines Committee:

Jonathan Silverman, MD

Ashlie Tseng, MD

CHoR Quality Council, Executive Sponsor:

Jeniece Roane, MS, RN, NE-BC

José Muñoz, MD

References

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Citation

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Authors:

Children's Hospital of Richmond at VCU

Ashlie Tseng, MD

Jennifer L. Reed, BS, RRT

In consultation with the Pediatric Respiratory Committee

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Retrieval website: **<http://www.chrichmond.org/clinical-pathway-HFNC>**

Example:

Children's Hospital of Richmond at VCU, Tseng A, Reed J. HFNC Guideline. Available from:

<http://www.chrichmond.org/clinicalguideline-HFNC>