Management of Viral Bronchiolitis in the Emergency Department

Clinical Practice Guideline

Approved by SSM Health Cardinal Glennon Clinical Practice Guideline Committee May 25, 2023

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Exclusion Criteria
- History of birth at < 32 weeks gestation
- Cardiac disease requiring medication
- Chronic lung disease on home oxygen or diuretics
- Neuromuscular disease
- Any home supplemental oxygen

Inclusion Criteria
- Age 30 days to 23 months
- Viral upper respiratory symptoms and lower respiratory symptoms that may include:
    - increased work of breathing
    - cough
    - feeding difficulty
    - tachypnea
    - wheeze
    - fever

SSMHealth Cardinal Glennon Access Center Transfer Line
888-229-2424

1. SSMHealth Cardinal Glennon CPG Home

2. Resources

a. Ralston SL, Garber MD, Rice-Conboy E, et al. Clinical Practice Guideline: the diagnosis, management, and prevention of bronchiolitis. *Pediatrics* 2014; 134(5).
b. Fernandes RM, Plint AC, Terwee CB, et al. Validity of bronchiolitis outcome measures. *Pediatrics*. 2015;135(6):e1399-1408.
c. Destino L, Weisgerber MC, Soung P, Bakalarski D, Yan K, et al. Validity of respiratory scores in bronchiolitis. *Hospital Pediatrics*. 2012;2(4):202-209.
d. Franklin D, Babl FE, Schlapbach LJ et al. A Randomized Trial of High-FLow Oxygen Therapy in Infants with Bronchiolitis. *N Engl J Med*. 2018;378(12):1121-1131.

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Viral bronchiolitis with respiratory distress evidenced by:
- hypoxia
- retractions/increased work of breathing
- tachypnea

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RSS, Perform Interventions, RSS
(*see Appendix 1*)
- Nasopharyngeal Suctioning

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Assess Discharge Criteria
- Oxygen saturations > 90% on room air
- Tolerating adequate oral intake
- None to mild increased work of breathing
- Reliable caretaker
- Able to obtain follow-up care

CRITERIA MET

Additional Considerations for Admission
- Prematurity
- Frequent suctioning needed
- Respiratory rate > 70
- Age < 12 weeks if early in illness and symptom progression with difficulty following up is expected
- Apnea risk (<46 weeks CGA or prior apnea witnessed)
- Complex medical history

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Disposition

Discharge Home
- Follow up per provider discretion
- Manage for duration of illness

Admission to Floor
- O2 requirement or meets additional admission consideration
- Requires IVF
- High risk for symptom progression

CRITERIA NOT MET

Mild (RSS 1-4) and Moderate (RSS 4-8) Disease
→ Start oxygen via nasal cannula for hypoxia

Severe Disease (RSS 9-12)
→ Start High Flow Nasal Cannula (HFNC) at 2L/kg/min

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- Suction as needed, titrate flow
- Place IV or subcutaneous Hylenex if failing PO after initiating respiratory support measures
- Consider PRN albuterol trial if Age > 12 months with any of the following:
    - Recurrent wheezing encounters
    - Prior symptom improvement with albuterol
    - Personal history of atopy
    - Strong family history of atopy

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Perform RSS after 60 minutes if on HFNC

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Disposition
→ Admission to Floor
→ Admission to PICU

Admission to PICU
- Late findings of respiratory failure
    - Inappropriately low respiratory rate
    - Lethargy or altered mental status
    - Poor perfusion despite adequate fluid resuscitation
    - Significant hypercarbia on blood gas
- Apnea episodes with associated bradycardia or desaturation requiring frequent intervention

SSMHealth Cardinal Glennon Children's Hospital

Appendix 1: Respiratory Severity Scoring Tool

CG Respiratory Severity Scoring (RSS) Tool

		0 points	1 point	2 points	3 points
Respiratory Rate	< 2 months	< 50	50-59	60-69	> 70
	2-12 months	< 40	40-49	50-59	> 60
	13-23 months	< 30	30-39	40-49	> 50
Retractions		None	Subcostal or intercostal	*2 of the following*: subcostal, intercostal, substernal, suprasternal, supraclavicular, OR nasal flaring/head bobbing	*3 of the following:* subcostal, intercostal, substernal, suprasternal, supraclavicular, OR nasal flaring/head bobbing
Dyspnea		Normal feeding, vocalizations, and activity	*1 of the following*: difficulty feeding, decreased vocalization, or agitated	*2 of the following*: difficulty feeding, decreased vocalization, or agitated	Stops feeding, no vocalization, or drowsy and confused
Auscultation		Clear	Scattered crackles/rhonchi/ end-expiratory wheezing	Diffuse crackles/rhonchi/ expiratory wheezing *(with diminished breath sounds)*	Little to no audible air movement

How To Use

- The Respiratory Severity Scoring Tool consists of 4 elements that make up the assessment of the patient in respiratory distress
- Each component is assessed individually and added to provide a total score between 0-12
- Patients should be scored, suctioned, and then re-scored to determine improvement of this intervention
- Respiratory Severity Score should be documented in the electronic medical record

About the Respiratory Severity Scoring Tool

- The Cardinal Glennon Respiratory Severity Scoring Tool was adapted from Seattle Children's respiratory scoring tool, which was adapted from Seattle Children's asthma pathway. Interrater reliability was validated
- Other scoring tools have been validated, but no single tool has been universally adopted or has clearly superior performance for patients with viral bronchiolitis