Clinical Guideline
Bronchiolitis

Pediatric Emergency & Hospital Medicine

This guideline serves as a guide and does not replace clinical judgment.

To classify severity of disease utilize the modified respiratory distress tool. Classifications are mild, moderate or severe (next page).

Inclusion criteria: Ages 2-24 months, first episode of wheezing and bronchiolitis as primary diagnosis

Exclusion Criteria: Ages <2months or >24 months, premature birth: <38 weeks gestational age, BPD, chronic lung disease or active cardiac disease present prior to episode, toxic appearance or severe disease needing ICU

In ED:
- Suction nares
- Provide supplemental Oxygen for SpO2 <90%
- Place NG/IV if indicated
- Classify severity of disease
- No routine steroids or albuterol

Mild

Transition to Pediatric CDU (observation unit)

or

Consider discharge home if criteria are met (see below)

Moderate

Admit to Medical Surgical Unit or consider Pediatric CDU (if no more than one moderate criteria present)

Admission criteria:
- Room air SpO2 <90%
- Moderate respiratory disease scoring
- Dehydration or poor oral intake
- History of apnea and/or cyanosis
- Concern for inadequate outpatient treatment

Severe

Admit to PCU or PICU Consider HFNC

Supportive Care
- Nasal saline and bulb suction PRN
- Nasopharyngeal suction only for upper airway obstruction causing distress
- NG/IV for poor oral intake
- Family education
- Reposition PRN

Monitoring
- Vitals every 4 hours
- Respiratory Distress score every 4 hours - Strict I/O q8h, Daily weights
- Intermittent SpO2 monitoring

Treatments
- Nasal oxygen for SpO2 <90%
- Wean oxygen for >94%
- IV fluid bolus for dehydration
- Respiratory Therapy consult for HFNC

The following are NOT routine tests or treatments for bronchiolitis:
- Chest film
- Chest physiotherapy
- Albuterol, epinephrine, 3% NaCl or Steroids
- Viral testing while not routine is acceptable for admitted patients when cohorting is needed.

Clinical Deterioration
- PICU consult or RRT
  Blood gas for pCO2
- Chest film
- Make NPO-IV or NG feeds

Stable or Improving

Continue present care until patient meets discharge

Discharge Criteria
- Room air SpO2 >90% for > 4 hours and 1 feeding
- Minimal distress or tachypnea
- Adequate oral hydration without IV fluids - Family education complete
- Outpatient treatment reliable
- Outpatient follow up with PCP delineated

CHILDREN'S HOSPITAL OF RICHMOND AT VCU

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Modified Respiratory Assessment Score (from Children's Hospital of Philadelphia)

Respiratory Rate (RR), Work of Breathing and Oxygen Requirement have been shown to predict admission versus discharge, mental state has no such correlation in the literature. This is not a validated assessment tool but is based on consensus.

The highest assessment in any one category dictates or designates the severity of the disease. For example, a 2 month old with RR of 48, head bobbing and no oxygen requirement with agitated state would be classified as having severe disease based on the head bobbing alone. Same patient with only intercostal retractions (no head bobbing) would be classified as moderate disease.

Clinical Signs	Age	Mild	Moderate	Severe
Respiratory Rate	2-12 Months	<50	51-70	>70
Respiratory Rate	12-24 Months	< 40	41-60	>60
Work of Breathing		None	Intercostal or Subcostal Retractions	Nasal flaring, grunting, head bobbing or suprasternal retractions
Oxygen Requirement		None	< 1.5 Liters per minute	> 1.5 liters per minute
Mental Status		None	Agitated	Lethargic or inconsolable

The goal is to assess for severity of disease to discriminate from those patients needing more support and probable admission. This tool can be used sequentially to trend the severity over time.

We sought to simplify the assessment, not requiring an actual numerical scoring system and to confirm or support the processes and evaluations already used by the nursing and provider staff.

Bronchiolitis Guideline
Executive Summary

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References

Children's National Medical Center: 2014 Bronchiolitis Clinical Care Guideline

Children's Hospital Colorado: 2011 Bronchiolitis Clinical Care Guideline

Cincinnati Children's Hospital Medical Center, Bronchiolitis Guideline Team: Evidence-based care guideline for management of bronchiolitis in infants 1 year of age or less with a first time episode, Bronchiolitis Pediatric Evidence-Based Care Guidelines, Cincinnati Children's Hospital Medical Center, Guideline 1, pages 1-16, 2010.

Fernandes RM, Bialy LM, Vandermeer B, et al. Glucocorticoids for acute viral bronchiolitis in infants and young children. Cochrane Database Syst Rev. 2013;(6):CD004878

Gadomski AM, Scribani MB, Bronchodilators for bronchiolitis. Cochrane Database Syst Rev. 2014;(6):CD001266

Meissner CM, Viral Bronchiolitis in Children, NEJM 2016; 374:62-72.

Patel H, Gouin S, Platt RW, Randomized, double-blind, placebo-controlled trial of oral albuterol in infants with mild-to moderate acute viral bronchiolitis. Journal of Pediatrics 2003;142(5):509–514

Ralston S, Hill V, Martinez M, Nebulized hypertonic saline without adjunctive bronchodilators for children with bronchiolitis. Pediatrics. 2010;126(3)

Ralston SL, Lieberthal AS, Meissner HC, Alverson BK, Baley JE, Gadomski AM, Johnson DW, Light MJ, Maraqa NF, Mendonca EA, Phelan KJ, Zorc JJ,Stanko-Lopp D, Brown MA, Nathanson I, Rosenblum E, Sayles III S, and Hernandez-Cancio S, Clinical Practice Guideline: The Diagnosis, Management and Prevention of Bronchiolitis, Pediatrics 2014; 134:e1474–e1502

Ravin KA, RSV Infection, AudioDigest Pediatrics 2015; 61(3)

Silver AH, Randomized controlled trial of the efficacy of nebulized 3% saline without bronchodilators for infants admitted with bronchiolitis: preliminary data [abstr EPAS2014:2952.685]. Paper presented at: Pediatric Academic Societies Annual Meeting;May 3–6, 2014; Vancouver, British Columbia, Canada

Skjerven HO, Hunderi JO, Brügmann-Pieper SK, et al., Racemic adrenaline and inhalation strategies in acute bronchiolitis. NEJM 2013;368(24):2286–2293

Wainwright C, Altamirano L, Cheney M, et al., A multicenter, randomized, doubleblind, controlled trial of nebulized epinephrine in infants with acute bronchiolitis. NEJM 2003;349(1):27–35

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Citation

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Retrieval website: **http://www.chrichmond.org/clinical-pathway-bronchiolitis**

Example:

Children's Hospital of Richmond at VCU, Marcello D, Carlton J, Silverman J, Hanson C. Migraine Guideline. Available from: http://www.chrichmond.org/clinicalguideline-bronchiolitis