

## Management of Bronchiolitis in Pediatrics

### Clinical Practice Guideline

#### MedStar Health

*"These guidelines are provided to assist physicians and other clinicians in making decisions regarding the care of their patients. They are not a substitute for individual judgment brought to each clinical situation by the patient's primary care provider in collaboration with the patient. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but should be used with the clear understanding that continued research may result in new knowledge and recommendations."*

MedStar Pediatrics and MedStar Family Choice accept and endorse the clinical guidelines set forth by the American Academy of Pediatrics: The Diagnosis, Management, and Prevention of Bronchiolitis, 2014.

The complete online version of this article/guideline is available at:

<http://pediatrics.aappublications.org/content/134/5/e1474.full.pdf>

The guideline below is a summary of the above article/guideline written in 2014 by the AAP.

#### **Diagnosis**

Bronchiolitis is a disorder commonly caused by viral lower respiratory tract infection in infants. Bronchiolitis is characterized by acute inflammation, edema, and necrosis of epithelial cells lining small airways, and increased mucus production. Signs and symptoms typically begin with rhinitis and cough, which may progress to tachypnea, wheezing, rales, use of accessory muscles, and/or nasal flaring.

Clinical Guidelines on Bronchiolitis for prevention, management, and treatment are based on best available evidence and are intended for typical cases of bronchiolitis age 1 month through 23 months. Therefore, these guidelines are not intended to address every case of bronchiolitis. Benefit versus risk must first be considered in all patients. Recommendations are based on strong evidence, moderate evidence, and weak evidence (legend found at end of guideline).

**Excluded** from the 2014 guideline recommendations are several co-morbid conditions such as:

- Immunodeficiency diseases such as HIV infection, recipients of solid organs or hematopoietic stem cell transplants
- Underlying respiratory illnesses such as recurrent wheezing, chronic neonatal lung disease (bronchopulmonary dysplasia), neuromuscular disease, cystic fibrosis, and hemodynamically significant congenital heart disease

**Recommendations for Diagnosis** (Ralston, et al):

- Clinicians should diagnose bronchiolitis and severity level on the basis of history and physical exam (strong evidence)
- Risk factors for severe disease are based on age less than 12 weeks old, prematurity, underlying cardiopulmonary disease, or immunocompromised. (moderate evidence)
- Radiographic or laboratory studies should not be routinely obtained. (moderate evidence)

## Prevention

- Disinfecting hands before and after contact with patients, after contact with inanimate objects in direct vicinity of patients, and after removing gloves is mandatory for all (strong)
- Alcohol-based rubs should be used for hand decontamination when caring for children with bronchiolitis. Soap and water should be used when alcohol-based hand rubs are not available (strong)
- Counsel caregivers about exposing infant or child to environmental tobacco smoke and smoking cessation when assessing for bronchiolitis (strong)
- Inquire about exposure of infant or child to tobacco smoke when assessing for bronchiolitis (moderate)
- Encourage exclusive breastfeeding for  $\geq 6$  months to decrease morbidity of respiratory infections (moderate)
- Educate personnel and family members on evidence-based diagnosis, treatment, and prevention in bronchiolitis (moderate)
- ***Palivizumab Dosing Recommendations per AAP recommendations***
  - **Current recommendations as of this writing (2019)**
    - Administer palivizumab to premature infants with gestational age less than 29 weeks, 0 days (strong)
    - Administer palivizumab during the first year of life in infants with hemodynamically significant heart disease or chronic lung disease of prematurity defined as preterm infants < 32 weeks, 0 days gestation who need >21% oxygen for at least the first 28 days of life (moderate)
    - During the second year of life consider palivizumab for children with chronic lung disease of prematurity that continue to require support with supplemental oxygen, chronic corticosteroid therapy or diuretic therapy within 6 months of the onset of the second RSV season.
    - Administer a maximum 5 monthly doses (15 mg/kg/dose) of palivizumab during RSV season to infants who qualify for palivizumab in the first year of life (moderate)

## Management (based on supportive, symptomatic care – including frequent nasal saline and nasal suctioning as needed)

- Administer nasogastric or intravenous fluids for infants who cannot maintain hydration orally (strong)
- Do not administer albuterol to infants and children (strong)
- Do not administer epinephrine to infants and children (strong)
- Do not administer systemic corticosteroids to infants in any setting (strong)
- Do not administer antibacterial medications to infants and children unless concomitant bacterial infection is present or strongly suspected (strong)
- Do not administer nebulized hypertonic saline in emergency department to infants (moderate)
- Do not use chest physiotherapy for infants and children (moderate)
- Nebulized hypertonic saline may be administered to infants and children hospitalized for bronchiolitis (weak)
- May choose to **NOT** use continuous pulse oximetry for infants and children (weak)

- May choose to **NOT** administer supplemental oxygen if oxyhemoglobin saturation >90% in infants and children (weak)

## Summary

- Strong recommendations against unnecessary testing (routine radiographic or lab studies not needed) and use of bronchodilators (trial dose no longer recommended)
- History and physical examination should be the basis for assessing and diagnosing bronchiolitis
- Recommended select use of prophylaxis palivizumab
- Recommended supportive care that includes hydration and oxygen as the main approach to treatment
- Testing for specific viruses including RSV is generally unnecessary
- Nasogastric or IV fluids for infants with bronchiolitis is recommended for those who cannot maintain hydration orally
- Recommendations against use of bronchodilators, corticosteroids, and chest physiotherapy
- Discourage the use of continuous pulse oximetry
- Recommendations against short term use of nebulized hypertonic saline, but may shorten length of stay in hospitalized children (sustained over a relatively prolonged period of time)
- Increased gestational age for administration of Palivizumab and specific criteria on which infants should receive it

## Legend

**Strong recommendations** are defined as particular action is favored because anticipated benefits clearly exceed harm (or vice versa) and quality of evidence is excellent or unobtainable

**Moderate recommendations** are defined as a particular action is favored because anticipated benefits clearly exceed harm (or vice versa) and quality of evidence is good but not excellent, or unobtainable.

**Weak recommendations** are based on balance of benefits and harms and defined as when aggregate database shows evidence of both benefit and harm that appear similar in magnitudes for any available courses of actions

### References

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<p><b><i>Initial Approval Date and Reviews:</i></b> Effective 4/2015, revised 4/2016 by Pediatric Ambulatory Workgroup</p>	<p><b><i>Most Recent Revision and Approval Date:</i></b> May 2019 by Pediatric Ambulatory Workgroup</p>	<p><b><i>Next Scheduled Review Date:</i></b> May 2021 by Pediatric Ambulatory Workgroup</p> <p>Condition: <b>Bronchiolitis</b></p>
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