**Ambulatory Bronchiolitis Guideline**

**EXCLUSION CRITERIA**
- Chronic Lung Disease
- Anatomical defects of the airways
- Hemodynamically significant congenital heart disease
- Immunodeficiency
- Neuromuscular disease
- Signs of pneumonia (T > 39 C with focal findings on lung exam)
- Asthma
- Febrile Neonate (< 2 months)

**Inclusion Criteria**
- Age less than 2 years
- Clinical suspicion for Bronchiolitis

**Assess Clinical Severity Assessment**

**Mild Disease**
- No tachypnea
- No or minimal retractions
- Clear BS or mild end expiratory wheezing
- Looks well
- Feeding well and hydrated

**Consider pulse ox measurement, if available**

**O2 sat < 90%**

**No**

**Yes**

**Moderate Disease**
- Mild to moderate tachypnea
- Mild to moderate retractions
- Diffuse expiratory wheezing with or without early inspiratory wheeze
- May be irritable or ill-appearing but not toxic

- Nasal succioning in the office
- Pulse Ox measurement
- Antipyretic for fever if indicated
- Repeat clinical assessment (office or telephonic)

**Severe Disease**
- Any of the following:
  - Apnea or history of apnea
  - Marked tachypnea (RR > 70)
  - Marked retractions, nasal flaring or grunting
  - Appears toxic
  - Markedly irritable or decreased level of consciousness
  - O2 sat persistently < 90% or presence of cyanosis if no sat monitor

- Provide supplemental oxygen if pulse oximetry is < 90%
- Refer to ED

**At Risk for Severe Disease**
- Premature (< 32 weeks)
- Age < 12 weeks

**Any of the following persistently present during observation?**
- O2 sat < 90%
- Moderate tachypnea or retractions
- Clinical dehydration or poor oral fluid intake (< 50-75% of normal)
- Ill-appearing
- Inability to control secretions with bulb succioning

**Discharge Home**

**Education**
- Review S/S of distress
- Expected course
- Cig. Smoking avoidance
- Nasal succioning
- Handwashing
- Recommended F/U

**Diagnostics**
- Not routinely rec: CXR
- Viral testing
- Blood work

**Medications**
- Not routinely rec: Albuterol, Hypertonic Saline, oral/inhaled steroids, antibiotics, inhaled epinephrine, inhaled Ipratropium, OTC cold/cough meds, Montelukast
- Consider brief (1-3 days) use of intranasal vasoconstrictor

**If O2 sat < 90%, start supplemental O2**
- Refer to ED
Notes for Bronchiolitis Guideline

1. Symptoms
   - Diagnosis based on history and physical exam
   - Lower respiratory symptoms begin on days 2-3 of illness and peak on days 4-7 of illness.
   - Cough resolves in 90% by 3 weeks
   - Young infants (especially < 6 weeks) can present with apnea without respiratory symptoms.
   - Fever present in 1/3. Usually < 39°C. Fever greater than this, with focal respiratory findings, suggests pneumonia.
   - Suspect asthma in children > 1-2 years old with recurrent wheezing, family or past medical history of atopy, wheezing with exercise, past improvement with bronchodilators. Can consider albuterol in these patients.

2. Risk factors for severe disease
   - Prematurity (< 32 weeks gestational age)
   - Age < 3 mo
   - Chronic Lung Disease
   - Anatomic Defects of the airways
   - Hemodynamically Significant Congenital Heart Disease
   - Immunodeficiency
   - Neuromuscular Disease

3. Physical Exam
   - Clinical appearance can vary over time. Repeated assessments in the office are recommended for children with more than minimal disease.
   - Guidelines for normal RR rates
     - 0-6 mo < 60/min
     - 7-12 mo < 50/min
     - 13-24 mo < 40/min
   - Many respiratory scoring systems are available, but none have been validated as predictors for hospitalization or to assess response to treatment.
   - Nasal congestion and tachypnea interfere with feeding. Check for clinical dehydration or a history of significantly reduce fluids (< 50-75% of normal)

4. Pulse oximetry used in ED and hospital settings. Recommended in clinic setting, but data on the utility of measuring it on every patient are not available.

5. All of the following are NOT indicated in bronchiolitis and should only be obtained to evaluate for other diagnoses:
   - Laboratory studies (e.g. rapid viral panel, CBC, cultures, UA)
   - Chest X-Ray
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6. Treatment
   - Nasal suction may help some infants to feed and can be useful to assess severity of disease. May not be needed in all infants. No benefit to deep airway suctioning.
   - All of the following are NOT indicated in the treatment of bronchiolitis in the clinic setting:
     - Antibiotics
     - Albuterol, epinephrine, or ipratropium
     - Oral/Inhaled corticosteroids, Montelukast
     - Nebulized hypertonic saline
     - OTC cold medications
   - Since studies have generally excluded patients with severe disease, a single dose of albuterol could be considered in the infant with severe disease pending transfer to the ED.

7. Consider urgent EMS transfer to the ED for any patients with
   - Apnea or a history of apnea
   - Severe respiratory distress (grunting, marked retractions, RR > 70)
   - Ill-appearing or toxic
   - O2 sat < 90% on room air

8. Consider transfer to the ED for
   - Persistent moderate respiratory symptoms
   - Clinical signs of dehydration or significantly decreased oral intake (NICE guidelines recommend < 50-75% of normal)
   - O2 sat < 90% on room air
     (Recognize that Prematurity < 32 weeks gestational age or age < 3 months is a risk factor for severe disease)

9. Education
   - Review signs of respiratory distress with family (tachypnea, accessory muscle use, lethargy, nasal flaring)
   - Review expected clinical course (up to 2 weeks of congestion and cough)
   - Reinforce cigarette smoke avoidance and hand hygiene
   - Demonstrate proper nasal suctioning technique
   - Review recommended follow-up