

Augusta University
Emergency Management Guidelines for Acute Bronchiolitis in the Pediatric
Emergency Department at Children's Hospital of Georgia in Children Less than
24 Months of Age 2017

Consensus statement from the Section of Pediatric Emergency Medicine

- **Definition**

- An acute respiratory disorder commonly caused by Respiratory Syncytial Virus as well as others, in infants less than two years of age during the fall and winter months with a peak in January and February which results in inflammation and edema of the bronchioles
- Children can get bronchiolitis more than once
- Symptoms typically begin with copious rhinitis and cough, and progress
 - tachypnea
 - wheezing, irreversible
 - rales
 - use of accessory muscles (retractions)
 - nasal flaring
 - fever
 - grunting
- Peak severity at days 3-5 of illness
 - illness can last anywhere from 5 days to three weeks
 - cough may persist for months

- **Diagnosis**

- Diagnosis is made clinically
- Disease severity is determined by:
 - work of breathing
 - one area of retraction versus multiple areas
 - respiratory rate (counted on exam for one min)
 - up to 12 months of age
 - mild: 50-60 breaths per min
 - moderate: 61-70 breaths per min
 - severe: >70 breaths per min
 - from 12 months to 24 months
 - mild: 30-40 breaths per minute
 - moderate: 41-50 breaths per minute
 - severe: >50 breaths per minute
 - pulse oximetry (spot check, before and after suctioning/treatment)
 - normal: >94% on room air
 - mild: 90-94% on room air
 - moderate/severe: <90% on room air

Risk factors for severe disease

- age < 48 weeks
- a history of prematurity (gestational age of less than 38 weeks at birth)
- underlying cardiopulmonary disease

- immunodeficiency
- Radiographic or laboratory studies should not be obtained routinely
 - chest xray, CBC, CRP/ESR, blood culture (unless febrile, refer to fever guidelines), RPP (respiratory pathogen panel) not necessary for diagnosis or severity determination
 - RPP may be required upon admission
 - used in PICU for contact precautions
 - may be used on general floor admission for epidemiologic purposes
 - it is not required to direct management of the patient
- **Management (see attached algorithm Appendix A)**
 - Nasal saline and suction during evaluation
 - assess for improvement in work of breathing, respiratory rate and pulse oximetry and ability to take fluids by mouth
 - Jet nebulizer breathing treatment
 - should not routinely be used in the treatment of bronchiolitis; has not made a difference in outcomes, length of stay or need for hospitalization
 - if work of breathing, respiratory rate or pulse oximetry is abnormal and not improved with nasal saline/suction, may consider administering racemic epinephrine or albuterol jet neb
 - racemic epinephrine is recommended as first line treatment
 - albuterol may be used if family history of atopic disorder (excludes patient from guidelines)
 - may not resolve wheezing but may improve work of breathing, respiratory rate or pulse oximetry
 - Oxygen supplementation (low-flow or high-flow nasal cannula)
 - may be used if patient not responding to nasal saline/suction + jet nebulizer treatment
 - to improve oxygen saturations to > 90%
 - Intravenous fluids in children with signs of dehydration, or inability to feed well or in severe category with perfusion abnormality
- **Disposition**
 - **Discharge patient home:** if illness severity in the mild category: acceptable respiratory rate, labor of breathing, oxygen saturations and ability to take oral feeds, patient may be discharged home with proper return precautions/anticipatory guidance**
 - **Consider** admission to general floor if:
 - in moderate category with some response to nasal saline/suction
 - not requiring more than low-flow nasal cannula or multiple jet neb treatments
 - less than 48 months post gestational age, in mild category and early in disease process (<5 days of illness)
 - poor hydration status due to inability to feed
 - **Consider** admission to PICU if:
 - in moderate or severe categories with minimal response to therapies
 - requiring high flow nasal cannula to maintain oxygen saturations > 90%
 - evidence of poor perfusion with concerns for additional severe infection

***as a reminder, guidelines do not apply to neonates (less than 28 days of life), children with immunodeficiencies, children with underlying chronic respiratory illness, children with hemodynamically significant congenital heart disease**

****include parental input after education to ascertain parent's level of confidence and comfort in caring for child**

These guidelines were reviewed and supported by the Pediatric Emergency Medicine Section and the Inpatient Hospitalist Members. A scoring system is not presently used in the ED as it is in the inpatient setting. These are guidelines and do not preclude any healthcare team or physician from approaching a patient's care as they deem most appropriate. November 2017

References:

1. Clinical Practice Guideline: The Diagnosis, Management, and Prevention of Bronchiolitis, Shawn L. Ralston, Allan S. Lieberthal, H. Cody Meissner, Brian K. Alverson, Jill E. Baley, Anne M. Gadomski, David W. Johnson, Michael J. Light, Nizar F. Maraqa, Eneida A. Mendonca, Kieran J. Phelan, Joseph J. Zorc, Danette Stanko-Lopp, Mark, A. Brown, Ian Nathanson, Elizabeth Rosenblum, Stephen Sayles III and Sinsi, Hernandez-Cancio, Pediatrics; originally published online October 27, 2014
2. Apnea in Children Hospitalized With Bronchiolitis, Alan R. Schroeder, Jonathan M. Mansbach, Michelle Stevenson, Charles G. Macias, Erin Stucky Fisher, Besh Barcega, Ashley F. Sullivan, Janice A. Espinola, Pedro A. Piedra and Carlos A. Camargo Jr, Pediatrics; originally published online October 7, 2013

Clinical Management of Bronchiolitis Algorithm

