

Management of Bronchiolitis in Infants

Version: 5

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Co-issued by Paediatric Medicine and the Division of Paediatric Emergency Medicine.

Introduction

Bronchiolitis is an acute inflammatory disease of the lower respiratory tract, resulting from obstruction of small airways. It is initiated by infection of the upper respiratory tract by any one of a number of seasonal viruses, the most common of which is respiratory syncytial virus (RSV).

Previous confusion around the clinical management of infants with bronchiolitis has improved with the creation and integration of clinical practice guidelines. Typical bronchiolitis in infants is a self-limited disease, usually due to an acute viral infection whose clinical course is not generally altered by aggressive evaluations/interventions, use of antibiotics, or other therapies. Young infants and those in high-risk categories are at higher risk of requiring admission. RSV immunization reduces the rate of hospitalization.

Several studies on the use of clinical guidelines for the management of infant bronchiolitis have shown a reduction in unnecessary resource utilization with a streamlining of medical care for these infants.

Objectives

In the target population, the objectives of this guideline are to:

- decrease the use of unnecessary diagnostic studies;
- decrease the use of medications;
- provide guidance on the use of appropriate respiratory therapy;
- improve the rate of appropriate admission;
- improve the use of appropriate monitoring activities; and
- decrease length of stay.

Target Users

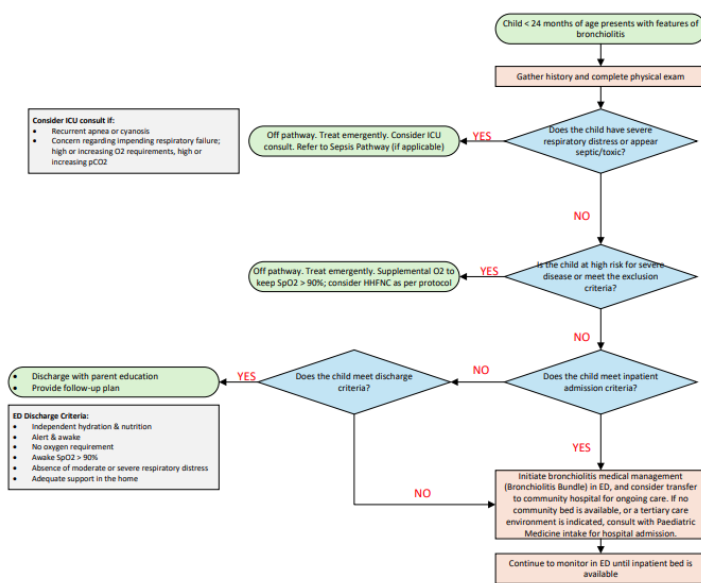
Include, but are not limited to:

- Emergency Medicine physicians, nurses, nurse practitioners, and trainees
- Inpatient physicians, nurses, nurse practitioners, and trainees
- Respiratory Therapists
- Pharmacists
- Patients and families

Clinical recommendations summary table

ED Management Recommendations

Bronchiolitis ED Management Pathway



History, symptoms, and signs of viral bronchiolitis:

- Preceding upper respiratory illness and/or rhinorrhea
- First episode of respiratory distress with the following signs: wheezing, accessory muscle use, lower chest wall indrawing, crepitations, low O2 saturation, elevated respiratory rate for age, colour change, nasal flaring, cough, runny congested nose and/or fever
- Signs of dehydration
- Exposure to persons with viral upper respiratory infection
- Presentation typically between November and April

WHEEZY (RR)	1 year	1 year	2 year	3 year
<2	24-30	24-30	24-30	24-30
2-10	44-49	30-39	30-39	30-39
10-20	30-39	30-39	30-39	30-39

Groups at higher risk for severe disease/exclusion criteria:

- Infants born prematurely (< 32 weeks gestation)
- < 2 months of age (post due date)
- Hemodynamically significant cardiopulmonary disease
- Immunodeficiency
- Medically complex children
- Severe comorbidities

Ward Admission Criteria:

- Supplemental O2 requirements to keep SpO2 > 90% while awake, > 88% while asleep during ED observation
- Infant with high risk criteria: premature (< 32 weeks gestation), < 4 kg, < 7 weeks of age, RR > 80, HR > 180
- Signs of distress: grunting, nasal flaring, marked chest retractions, lethargy
- Evidence of dehydration
- Refusal to feed or poor oral intake
- Major comorbidity (i.e., cardiopulmonary, immunodeficiency, neuromuscular disease)
- Need to rule out alternative diagnosis
- Significant social concerns about adequacy or safety of home management

Medical Management: Bronchiolitis Bundle

- Use minimal handling strategy whenever possible: bundle cares, dim lights, limit stimulation
- Assess for fever and treat with antipyretics as indicated
- Assess hydration status: Consider T1H of 80-100% maintenance needs if not significantly hypovolemic
- Reposition and nasal or nasopharyngeal suction with a catheter as needed for mild desaturations
- If SpO2 < 90% awake, < 88% asleep, apply low flow nasal cannula. Consider Heated High Flow Nasal Cannula (HHNC) for severe respiratory distress as per SickKids Guidelines
- Attempt O2 wean Q2H. Attempt O2 wean Q4H after initial successful wean
- Assess and document work of breathing now and Q4H (or sooner as needed)
- Inform primary care team of any concerns or worsening patient clinical status

Differential diagnosis of wheezing in young children may include:

- Viral bronchiolitis
- Asthma
- Other pulmonary infections e.g., Pneumonia
- Laryngotracheobronchitis
- Foreign body aspiration
- Gastroesophageal reflux
- Congestive heart failure
- Vascular ring
- Allergic reaction
- Cystic Fibrosis
- Mediastinal mass
- Tracheoesophageal fistula

The following tests are NOT ordered in bronchiolitis unless there is a specific clinical indication:

- Chest X-ray (only ordered if not following expected clinical course or pending ICU admission and/or severely or course suggests alternate diagnosis)
- Blood work including: CBC, lytes, blood gas, cultures (only if patient is following sepsis pathway or pending ICU admission and/or concerned about potential respiratory failure)
- Nasopharyngeal swabs for respiratory multiplex PCR testing (only if ICU/admission, etc.)
- Rapid flu point of care testing in flu season

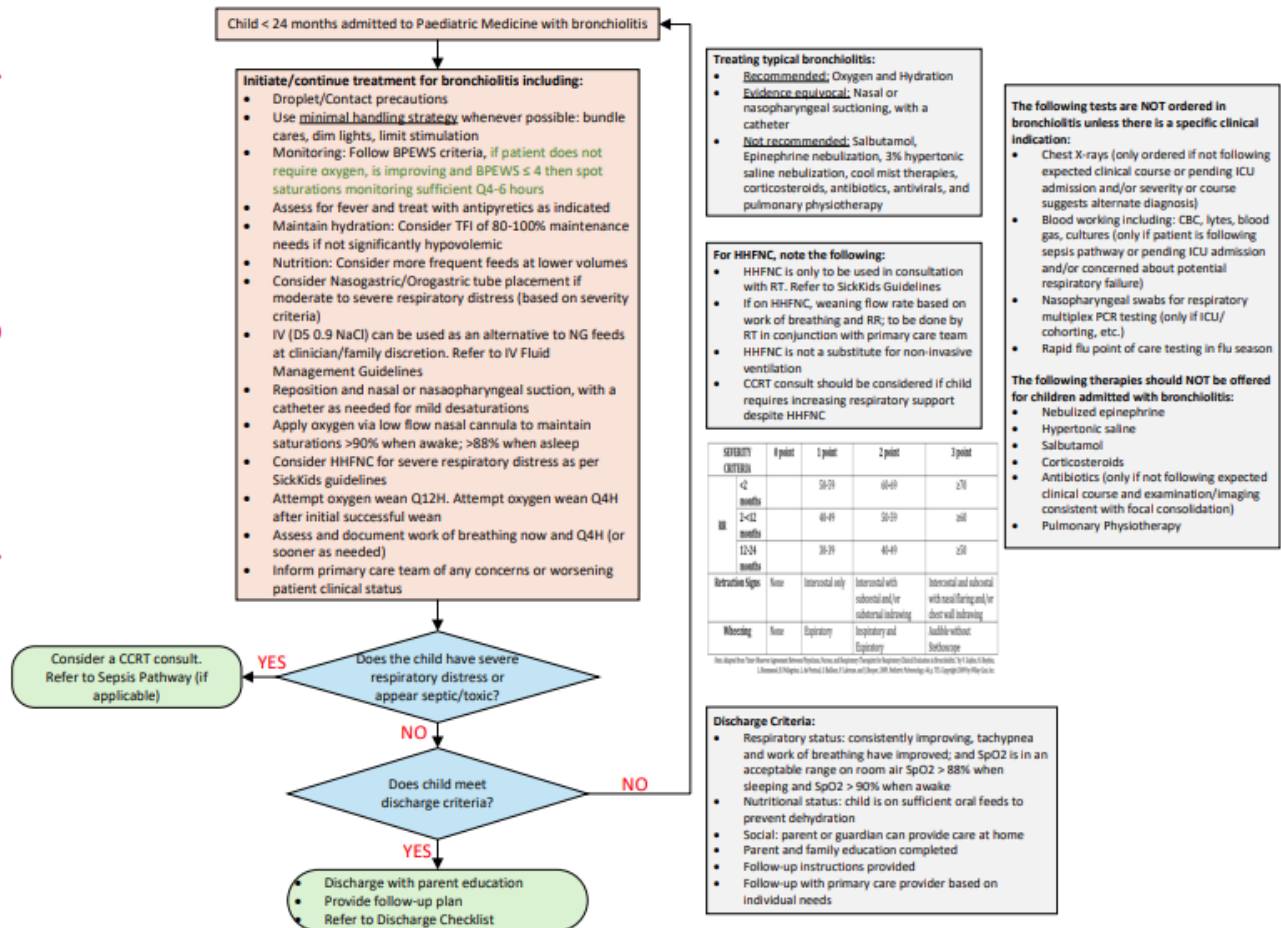
The following therapies should NOT be ordered for children admitted with bronchiolitis:

- Nebulized epinephrine
- Hyperosmotic saline
- Salbutamol
- Corticosteroids
- Antibiotics (only if not following expected clinical course and examination/imaging consistent with focal consolidation)
- Pulmonary Physiotherapy

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Inpatient Management Recommendations

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Evaluation Plan

- Ongoing monitoring of bronchiolitis pathway adherence.

References

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Attachments:

[Clinical Recommendations.pdf](#)

[Discharge Checklist Bronchiolitis June 29.docx](#)

[ED pathway.pdf](#)

[Inpatient pathway.pdf](#)