	Document Scope: Hospital-wide Patient Care	
	Document Type: Clinical Practice Guideline Approved on 2019-07-02 Next Review Date: 2021-07-01	
	Management of Bronchiolitis in Infants	Version: 3

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. Most infants who contract bronchiolitis recover without sequelae; however, rates of admissions have increased from 1% to 3% of all infants.

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:

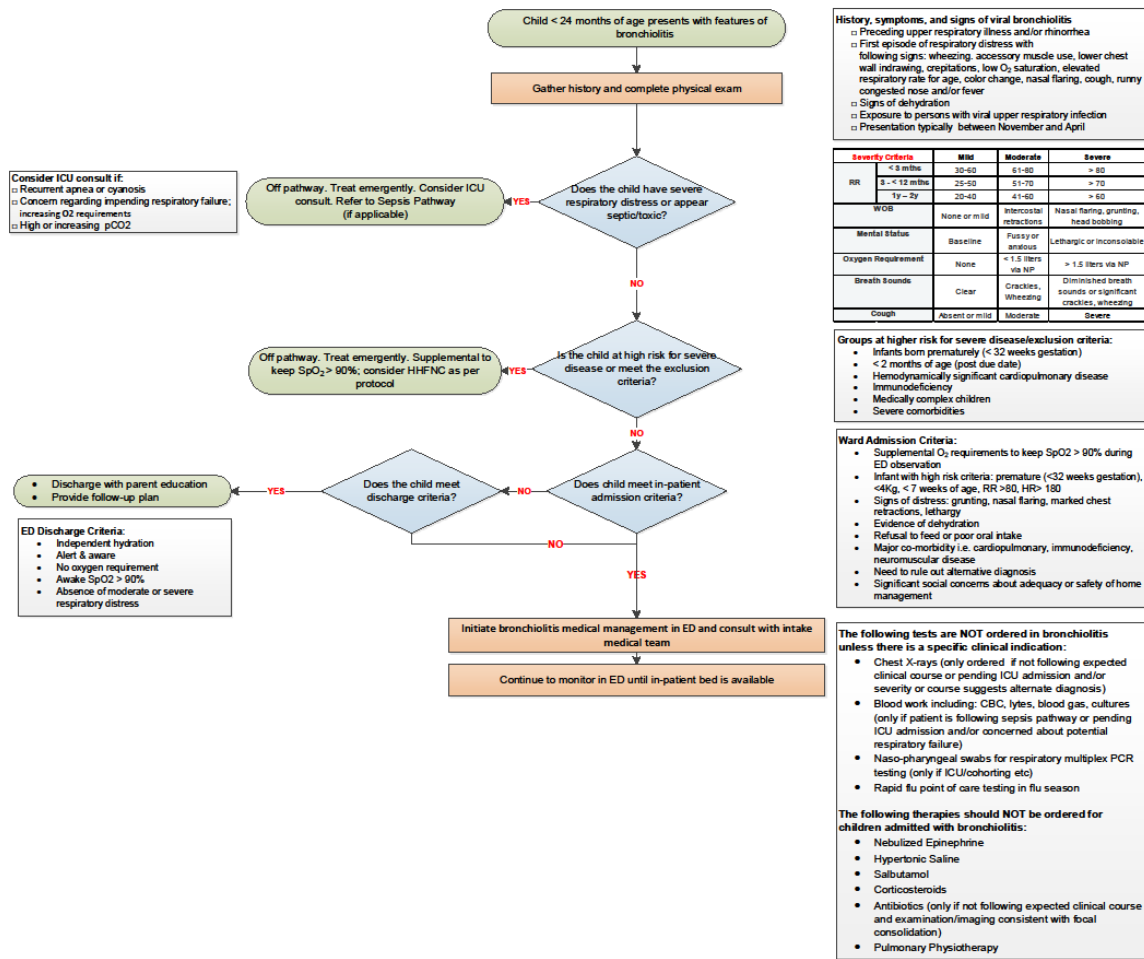
- Emergency Medicine physicians, nurses, nurse practitioners, and trainees
- Inpatient physicians, nurses, nurse practitioners, and trainees
- Respiratory Therapists
- Pharmacists
- Patients and families

[Clinical recommendations summary table](#)

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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 following signs: wheezing, accessory muscle use, lower chest wall indrawing, crepitations, low O₂ saturation, elevated respiratory rate for age, color 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

Severity Criteria	Mild	Moderate	Severe
RR	< 5 mbts 8-12 mbts	30-50 25-50	61-80 51-70 > 70
WOB	None or mild	Intercostal retractions	Nasal flaring, grunting, head bobbing
Mental Status	Baseline	Fussy or anxious	Lethargic or inconsolable
Oxygen Requirement	None	< 1.5 liters via NP	> 1.5 liters via NP
Breath Sounds	Clear	Crackles, Wheezing	Diminished breath sounds or significant crackles, wheezing
Cough	Absent or mild	Moderate	Severe

Differential diagnosis of wheezing in young children may include:

- Viral bronchiolitis
- Asthma
- Other pulmonary infections eg. Pneumonia
- Laryngotracheomalacia
- Foreign body aspiration
- Gastroesophageal reflux
- Congestive heart failure
- Vasular ring
- Allergic reaction
- Cystic fibrosis
- Medastinal mass
- Tracheoesophageal fistula

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% during ED observation
- Infant with high risk criteria: premature (<32 weeks gestation), <4kg, < 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 co-morbidity i.e. cardiopulmonary, immunodeficiency, neuromuscular disease
- Need to rule out alternative diagnosis
- Significant social concerns about adequacy or safety of home management


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

- Chest X-rays (only ordered if not following expected clinical course or pending ICU admission and/or severity 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)
- Naso-pharyngeal swabs for respiratory multiplex PCR testing (only if ICU/cohorting etc)
- Rapid flu point of care testing in flu season

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

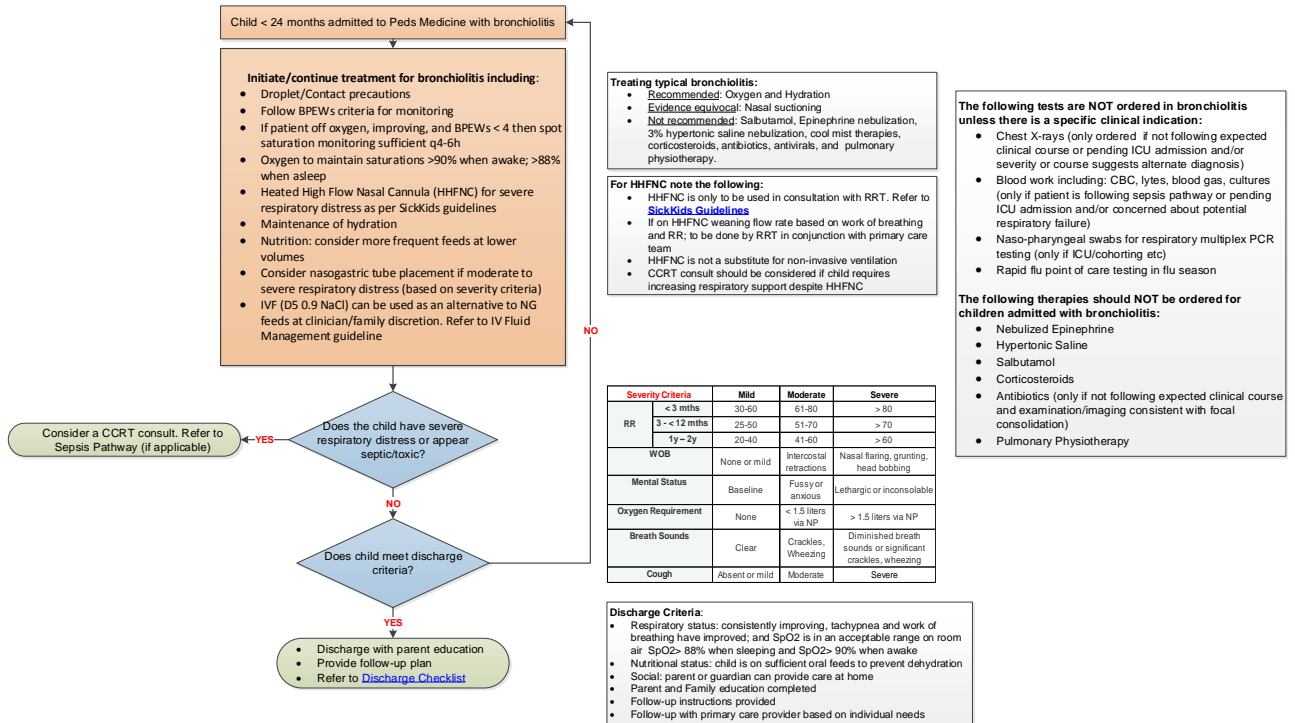
- Nebulized Epinephrine
- Hypertonic Saline
- Salbutamol
- Corticosteroids
- Antibiotics (only if not following expected clinical course and examination/imaging consistent with focal consolidation)
- Pulmonary Physiotherapy

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Inpatient Management Recommendations

Bronchiolitis In-patient Management Pathway



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Implementation and Evaluation Plan

Implementation Plan

- Education and awareness building by Paediatric Medicine and ED Divisions' practice champions during resident/fellow orientation, resident educational rounds, and nursing orientation/staff meetings.
- ED and Inpatient Medical Director to communicate any updates in practice to ED and Paediatric Medicine Divisions respectively.

Evaluation Plan

- Ongoing monitoring of bronchiolitis pathway adherence.

Guideline Group and Reviewers

Guideline Group Membership:


1. Julie Johnstone, MD, Staff Paediatrician, Paediatric Medicine
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3. Carolyn Beck, Staff Paediatrician, Paediatric Medicine
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2. Canadian Paediatric Society. Bronchiolitis: Recommendations for diagnosis, monitoring and management of children one to 24 months of age. *Paediatrics and Child Health* 2014; 19(9):45-91. (Reaffirmed 2017)
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Attachments:

[Clinical Recommendations July 2019.pdf](#)

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

[inpatient pathway_july 5.pdf](#)

[ED pathway_july 5.pdf](#)