Bronchiolitis: LESS IS BEST

A toolkit for the management & assessment of bronchiolitis in primary care & emergency departments

V1

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This toolkit was reviewed and supported by:
Introduction

Bronchiolitis is a common viral respiratory infection that primarily affects infants and young children under the age of two leading to a spectrum of symptoms. Respiratory syncytial virus (RSV) along with many other common viruses, including COVID-19, can cause bronchiolitis.

The diagnosis of bronchiolitis is based on clinical evaluation rather than diagnostic testing. Despite Choosing Wisely recommendations and an abundance of clinical guidelines, overuse of several tests and treatments in children with typical bronchiolitis still occurs. Studies have found more than half of children receive ≥1 form of overuse and sometimes this even causes harm.

Drivers of Overuse

Caring for infants with bronchiolitis spans many different practice settings from primary care, emergency medicine to acute hospital care. These diverse settings often have different degrees of familiarity with clinical practice guidelines for managing children with respiratory illnesses. Many providers can feel discomfort or have time pressures limiting “watching and waiting” with a symptomatic or unwell infant. Providers may also feel pressured to manage the expectations of families and caregivers. These system-based and individual psychological barriers can often drive unnecessary testing and treatments.

Changing Practice

Phase 1 of this toolkit provides practical guidance to reduce unnecessary tests and treatments in children with typical bronchiolitis presenting to primary care or emergency department settings. This toolkit is designed to:

- Provide guidance on the assessment and management of bronchiolitis in otherwise healthy children and infants < 24 months old.
- Increase adoption of structured and efficient communication practices that can address caregiver concerns on bronchiolitis diagnosis, symptom management, expected clinical course, and safety net planning.
- Provide clinician and patient tools that target some of the barriers to addressing overuse in bronchiolitis diagnosis and treatment that includes a focus on symptom management.
Recommendations

Do not obtain radiographs in children with bronchiolitis, croup, asthma, or first-time wheezing.

Paediatric Emergency Medicine - Choosing Wisely Canada and Choosing Wisely US

In children presenting with first-time wheezing or with typical findings of bronchiolitis, croup, or asthma, radiographs rarely yield clinically significant findings and expose patients to radiation, increased cost of care, and prolonged length of stay. Guidelines emphasize the history and physical examination in making an accurate diagnosis and excluding serious underlying pathology. Radiography performed in the absence of significant findings is associated with overuse of antibiotics as it can commonly show patchy infiltrates which are not from bacterial pneumonia. As bacterial pneumonia is uncommon in young children greater than 2 months of age, radiographs should not be routinely obtained unless findings such as significant hypoxia, focal abnormalities on lung exam, prolonged illness course, or severe distress are present. Read Rationale.

Antibiotics should not be used for viral respiratory illnesses (sinusitis, pharyngitis, and bronchiolitis).

American Family Physician and Society of Hospital Medicine - Choosing Wisely US

Antibiotics do not help in the treatment of viral respiratory infections, like bronchiolitis, nor do they prevent complications from these viruses. Unnecessary antibiotics can lead to side effects and other harms, including antimicrobial resistance, and can complicate clinical assessments and accuracy. Evidence shows that caregivers are seeking a diagnosis and support for symptom management, not unnecessary antibiotics. Read Rationale.

Do not obtain comprehensive viral panel testing for patients who have suspected respiratory viral illnesses.

Paediatric Emergency Medicine - Choosing Wisely Canada and Choosing Wisely US

Viral illnesses are diagnosed clinically and usually do not require confirmatory testing. Consistent evidence is lacking on the impact of comprehensive viral panels (i.e., panels simultaneously testing for 8-20+ viruses) on clinical outcomes or management. Hence, most guidelines do not recommend their routine use. Some viral tests are quite expensive, and obtaining nasopharyngeal swab specimens is uncomfortable for children. Comprehensive viral panel testing can be considered in high-risk patients (e.g., immunocompromised) or in situations in which the results will directly influence treatment decisions. (e.g. antivirals for influenza or SARS-CoV-2) or current local public health recommendations (e.g., isolation for SARS-CoV-2). Read Rationale.

Do not use continuous pulse oximetry routinely in children with acute respiratory illness unless they are on supplemental oxygen.

American Academy of Family Physicians and Society of Pediatric Hospital Medicine - Choosing Wisely US

Many infants and young children with bronchiolitis can experience transient episodes of desaturation without any clinical consequence. Continuous pulse oximetry can lead to overdiagnosis of hypoxemia and subsequent oxygen use that is of no benefit to the child while also contributing to unnecessary admissions, prolonged length of stay and other resource utilization. Desaturation not accompanied by other signs of respiratory distress, is an isolated finding that should not change management in an otherwise well-appearing child. Read Rationale.
Bronchiolitis: Initial Assessment and Management

Bronchiolitis is a clinical diagnosis. Tests **DO NOT** help make the diagnosis. Consider in infants with upper respiratory illness prodrome (cough, rhinorrhea); wheezing and/or crepitations and increased work of breathing (grunting, nasal flaring, retractions) or respiratory rate.

<table>
<thead>
<tr>
<th>CLINICALLY Diagnose (SEE CPS TABLE)</th>
<th>PROVIDE SUPPORTIVE MANAGEMENT</th>
<th>DISPOSITION &amp; TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MILD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No or mild respiratory distress</td>
<td>• Ensure adequate fluid intake: Small &amp; frequent feeds</td>
<td>• Outpatient assessment, usually managed at home</td>
</tr>
<tr>
<td>• &quot;Happy Wheezer&quot;</td>
<td>• Suction nasal passages as needed, especially before feeds</td>
<td>• See practice tools for clinicians &amp; families</td>
</tr>
<tr>
<td>• Feeding adequately</td>
<td>• Give antipyretics to treat fever</td>
<td>• Advise when to seek further care</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Arrange close follow up as needed</td>
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<tr>
<td><strong>MODERATE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Moderate respiratory distress</td>
<td>• Ensure adequate fluid intake: Small &amp; frequent feeds</td>
<td>• Often observation period needed; ED assessment, hospital admission may be required (see admission guidelines)</td>
</tr>
<tr>
<td>• RR &gt; 60</td>
<td>• Suction nasal passages as needed, especially before feeds</td>
<td>• See practice tools for clinicians &amp; families</td>
</tr>
<tr>
<td>• Inadequate feeding</td>
<td>• Give antipyretics to treat fever</td>
<td>• Advise when to seek further care</td>
</tr>
<tr>
<td></td>
<td>• Check O2 saturation for hypoxemia (&lt;90%)</td>
<td>• If discharged, arrange close follow up</td>
</tr>
<tr>
<td><strong>SEVERE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Severe respiratory distress</td>
<td>• Suction nasal passages</td>
<td>• Testing and treatment to be guided by differential diagnosis. Limit use of items listed above (for moderate disease) when exclusive bronchiolitis diagnosis</td>
</tr>
<tr>
<td>• Unable to feed</td>
<td>• Give antipyretics to treat fever</td>
<td>• ED assessment, requires hospital admission (see admission guidelines)</td>
</tr>
<tr>
<td>• Refractory hypoxemia</td>
<td>• Consider alternative hydration methods with caregivers (NG, OG, IV)</td>
<td>• Consider potential need for transfer to higher level of care</td>
</tr>
<tr>
<td>• Lethargic</td>
<td>• Oximetry monitoring</td>
<td>• See practice tools for clinicians &amp; families</td>
</tr>
<tr>
<td>• Apnea</td>
<td>• Oxygen therapy for persisting O2 saturation &lt; 90% (low flow nasal prongs preferred initially)</td>
<td></td>
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<tr>
<td></td>
<td>• If persisting severe symptoms despite above measures, consider heated high flow nasal cannula</td>
<td></td>
</tr>
</tbody>
</table>

**CONSIDER DIFFERENTIAL DIAGNOSIS**

- Asthma (recurrent wheeze, atopy)
- Pneumonia
- Croup (stridor) or Pertussis (cough & apnea)
- Foreign body aspiration (unilateral signs, no prodrome)
- Laryngomalacia (stridor, positional)
- Viral myocarditis (fatigue, pallor, persisting tachycardia)

**TOOLS TO SUPPORT BEST PRACTICES**

- Viral Prescription
- TREKK Parent Tool
- Family Info-Sheet
- Bronchiolitis Order Set (if applicable)

**ADMISSION GUIDELINES**

- Severe respiratory distress
- Need for supplemental O2 (to keep saturations > 90%)
- Dehydration/poor fluid intake
- Cyanosis or apneas
- Family unable to cope
- Consider in infants at risk of severe disease (born at <35 weeks gestation, age <3 months, hemodynamically significant cardiopulmonary disease, immunodeficiency)

*Unless clinically indicated (i.e. Dehydration; febrile infants; age less than 2 months)*
Bronchiolitis Management Tools

1. **VIRAL PRESCRIPTION**

Parents and caregivers are seeking relief for their child’s symptoms, and antibiotics will not help them recover. A viral prescription is a helpful way to 'do something' by sharing symptom management strategies and have a conversation about why antibiotics and other treatments are not needed.

**HOW TO IMPLEMENT**

There are several ways to provide a patient with a viral prescription, depending on the visit and technology available to you and your patient:

- Print and verbally review the viral prescription with your patient.
- If the viral prescription is incorporated into your EMR system, fill it in and email it directly to your patient.
- You can refer them to the Choosing Wisely Canada website to review the viral prescription.

2. **FAMILY INFO-SHEET**

The symptoms of bronchiolitis can be distressing for both the child and their caregivers, especially as some symptoms (cough and changes in feeding) can last a few weeks. Use these patient information resources to discuss how to help their child feel better.

**HOW TO IMPLEMENT**

- Print the resource to have a conversation about symptoms and potential risks.
- Email the resources to your patient using secure approved methods.
- You can refer them to the Choosing Wisely Canada website to review patient resources.
3. **POSTERS AND SCREENSAVERS**

Posters and screensavers can be an effective way to educate and set expectations before and during a visit.

**FOR CLINICIANS**

**MANAGING BRONCHIOLITIS?**

AN X-RAY OR PRESCRIPTION WON’T HELP.

**SAY NAY TO THE X-RAY**

Diagnosing bronchiolitis should be based on history and physical examination. Using chest X-rays can lead to an incorrect diagnosis of bacterial pneumonia and unnecessary antibiotic treatment.

**SKIP THE SCRIPT**

Antibiotic, steroid, and inhaler prescriptions do not help in the treatment of bronchiolitis. Unnecessary medications can lead to side effects and other harms, including antimicrobial resistance.

**FOR PATIENTS**

**LESS TESTING, MORE RESTING.**

Bronchiolitis is a virus that can make your child cough, wheeze, sneeze, and sometimes have trouble breathing. Usually, children get better with rest and don’t need tests or treatments, like antibiotics or x-rays.

Talk to your health care provider for advice on how to help your child feel better.

**HOW TO IMPLEMENT**

- Print the poster and hang it in the waiting area or examination rooms in your practice.
- Use it as a screen saver on your clinic computers or include it in the information broadcast on your waiting room televisions.
- If you do telemedicine, you can hang the poster in a visible space behind you.
4. ORDER SET EXAMPLE

To align with evidence-based care practices and reduce unnecessary practice variation, make it easier for clinicians to do the right thing through the use of standardized order sets.

HOW TO IMPLEMENT

There are a number of mechanisms to integrate order sets into practice:

- Incorporate into your EMR system.
- Add to your paper based orders; refer to the order set as a reference when placing orders on a separate form.

5. QUALITY IMPROVEMENT IN YOUR PRACTICE

Quality Improvement Plans (QIPS) provide a blueprint on how you will address quality issues and meet improvement goals.

HOW TO IMPLEMENT

- Use this QIP template to identify areas of improvement, define a strategy outlining specific actions and interventions to address these issues, and document regular monitoring, data collection, and evaluation of implemented changes.

More information about the tools and how to download them can be found at: ☀️ www.choosingwiselycanada.org/primary-care/bronchiolitis.
Resources

**Canadian Pediatric Society (CPS)**
Bronchiolitis: Recommendations for Diagnosis, Monitoring and Management of Children One to 24 Months of Age
Download

Pedagogy (Online education from the CPS)
Download

**TREKK (Translating Emergency Knowledge for Kids)**
Bottom Line Recommendations: Bronchiolitis
Download

Evidence Repository: Bronchiolitis
Download

Family Tool
Download

**The Lancet**
Bronchiolitis
Download
References


Additional References


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