**CXR if focal findings on lung exam, first-time wheeze, concern for foreign body**

**MGHfC ASTHMA CLINICAL PATHWAY: Acute Phase**

<table>
<thead>
<tr>
<th>WARME</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheeze</td>
<td>None</td>
<td>End-Expiratory</td>
<td>Entire Exp, any Insp</td>
</tr>
<tr>
<td>Air Exchange</td>
<td>Normal</td>
<td>One area decreased</td>
<td>More than one area decreased</td>
</tr>
<tr>
<td>RR</td>
<td>Normal</td>
<td>Tachypneic</td>
<td>--</td>
</tr>
<tr>
<td>Muscle Use</td>
<td>None</td>
<td>Subcostal/Intercostal</td>
<td>Any neck or abd retractions</td>
</tr>
<tr>
<td>Expiration</td>
<td>Not long</td>
<td>Exp &gt; 3x Insp</td>
<td>--</td>
</tr>
</tbody>
</table>

**MILD WARME score (1-3)**

- β2-agonist nebulizer or MDI x1, consider oral corticosteroids

**MODERATE WARME score (4-5)**

- β2-agonist/anti-cholinergic nebulizer q10 minutes x 3
- Consider IV access
- Oral or IV corticosteroids
- 02 via nasal cannula to achieve 02 sat >92%

**SEVERE WARME score (6-8)**

- β2-agonist/anti-cholinergic nebulizer q10 minutes x 3 (or consider re-stacking)
- IV access, IVF
- IV corticosteroids (if not already given)
- IV magnesium
- 02 via nasal cannula to achieve 02 sat >92%
- Labs: CBC, BMP, VBG or ABG

**Consider PICU admission criteria:**
- β2-agonist < q2h (or q1h if at NSCH/NWH)
- on terbutaline gtt
- respiratory support: BiPAP
- O2 sat <93% on > 40% FiO2
- pCO2 >45

**ED Discharge Instructions**
- q4h prn β2-agonist therapy
- oral corticosteroid x 5 days
- f/u with PCP/Pulmonologist
- reasons to return to ED
- review triggers, ICS use, do they have spacer?

**ED Discharge Instructions**
- q4h prn β2-agonist therapy
- oral corticosteroid x 5 days
- f/u with PCP/Pulmonologist
- reasons to return to ED
- review triggers, ICS use, do they have spacer?

**Consider Ward admission criteria:**
- β2-agonist therapy > q2h (or q1h if at NSCH/NWH) but less than q4 h
- Only respiratory support: nasal cannula
- Begin work on discharge checklist

**Medications**
- β2-agonist: albuterol nebulization 2.5mg if <40kg, 5mg if >40kg or 4-8 puffs MDI or 5-20mg/hour continuous nebulizer
- Anti-cholinergic: ipratropium bromide 0.25-0.5mg neb q6h
- Corticosteroids: prednisolone or prednisone 2mg/kg, up to 60mg/day PO, or dexamethasone or methylprednisolone 0.5-1mg/kg/dose IV q6h, max 60mg/day
- Magnesium: 25-50mg/kg IV over 20 min
- Terbutaline: 0.01mg/kg SC (max: 0.5mg), IV gtt 10mcg/kg load, 0.4-6 mcg/kg/min

**Patient with asthma, reactive airway disease with respiratory complaint**

Entry points: home or clinic
- MGHfC ED, NWH ED, NSMC ED, Cambridge ED, direct transfer

**Consider Ward admission criteria:**
- β2-agonist therapy > q2h (or q1h if at NSCH/NWH) but less than q4 h
- Only respiratory support: nasal cannula
- Begin work on discharge checklist
Acute asthma or RAD exacerbation admission to Pediatric Ward (Hospitalist or Pulmonary)

- **β2-agonist >q2 hours**
- **Work on discharge checklist**

### DISCHARGE CHECKLIST
- Epic discharge instructions
- Asthma action plan (inquire if interpreter needed)
- Respiratory teaching
- Influenza/Pneumococcal vaccine
- Review triggers
  - Provide smoking cessation counseling
  - Allergen avoidance

#### Work on discharge checklist
- Space β2-agonist treatments as tolerated, continue oral/inhaled corticosteroids
- If persistent hypoxia or stable lung exam but not able to space to q4 x2, consider Pulmonology consult
- Once β2-agonist therapy is spaced to q4 x2, make sure discharge checklist complete

#### Discharge Medications (outpatient options):
- **β2-agonist:** albuterol nebulized: 0.083% with saline bullets q4h prn, albuterol 90mcg MDI: 1-2 puffs q4h prn inhaler with spacer +/- mask
- **Oral corticosteroids:** prednisolone 1mg/kg BID x 5 days total or 1mg/kg QD x 5 days total or prednisone 1mg/kg QD (up to 60mg)
- **Inhaled corticosteroids:**
  - Budesonide (Pulmicort respules): ages 1-8
  - Fluticasone propionate (Flovent MDI and Diskus) ages 4+
  - Beclomethasone dipropionate (Qvar MDI) ages 5+
- **Leukotriene receptor antagonists:**
  - montelukast 4mg PO QD: ages 2-5
  - montelukast 5mg PO QD: ages 6-14
  - montelukast 10mg PO QD: ages 15+
- **5-lipoxygenase inhibitor:**
  - Zileuton (extended release) 1200mg BID: ages 12+