**ASTHMA PATHWAY**

**EMERGENCY DEPARTMENT**

**Assessment History**
- Potential triggers
- Time of onset
- Comorbidities: heart disease, airway problems other than asthma, adrenal problems, hypertension, diabetes mellitus
- Steroids in past 24 hours
- History of intubation, ED visits, hospitalizations

**Identify Asthma Exacerbation**
Child with asthma with cough, wheeze, or respiratory distress
- Vital Signs
- SpO2<90%, place on O2
- Weight (kg)
- Assign RS
- Order ED asthma order set
- Notify RT
- Notify provider if severe

**Moderate-Severe RS: 5 or above**
- Place on CR monitors
- Attempt oral dexamethasone 0.6mg/kg PO once (max 16mg/day).
  - If not tolerated, give IM dexamethasone 0.6mg/kg if no IV access
  - OR IV methylprednisolone 2mg/kg/dose (max 60mg/day) for first dose then subsequent days dosing is 1mg/kg/dose BID
- Start weight-based combination nebulizer treatment:
  - Albuterol Nebulized + Ipratropium Bromide
    - 2.5mg x 3 = 7.5mg (for <10kg)
    - 5mg x 3 = 15mg (for >10kg)
    - 5mg x 3 = 15mg (for >10kg)

**Mild RS: 2-4**
- Albuterol
  - 4 puffs (for <10kg)
  - 8 puffs (for >10kg)
  - Consider dexamethasone 0.6mg/kg PO once (max 16mg/day)
  - OR
  - Prednisone/prednisolone 2mg/kg PO once (max 60mg/day)

**If Severe RS: 8 or above**
- Continuous Albuterol (0.5 - 1mg/kg/hr)
- Place PIV
- Start IVF: normal saline bolus 20mL/kg (max 1,000mL) if giving magnesium sulfate
- Consider magnesium sulfate 50mg/kg IV (max 2g)
- Consider terbutaline 10mcg/kg (max 250mcg)
- Consider epinephrine 0.01mg/kg (max 0.5mg/dose)
- Consider further diagnostic testing
- Provider to reassess hourly while on continuous albuterol

**Possible Diagnostic Testing**
- "Routine testing NOT recommended"
- Consider CXR if patient has one of the three F’s:
  - Focal findings, foreign body suspected, failure to respond
  - RVP if consistent with influenza-like illness or atypical pneumonia
  - CBC
  - CBG
  - BMP

**Indications for Considering PICU**
- Worsening work of breathing after combined nebulizer
- FiO2>60% of need for positive pressure
- No response to magnesium sulfate
- Need for terbutaline
- Previous history of intubation/PICU
- Declining mental status
- Being managed with continuous albuterol >1mg/kg/hr or >20mg/hr

**Emergent Pathway**
- Place in observation (See inpatient asthma pathway)

**Discharge**
- Consider scheduling albuterol Q4H for 24-48H and repeating steroid dosing (refer to table).
- Consider referral based on “Abbreviated EPR-4 and Pulmonology Referral Guidelines”
- Recommend follow-up within 3-7 days with PCP

**Disclaimer:** Pathways are intended as a guide for practitioners and do not indicate an exclusive course of treatment nor serve as a standard of medical care. These pathways should be adapted by medical providers, when indicated, based on their professional judgement and taking into account individual patient and family circumstances.

ChildrensNebraska.org/Pathways

Updated 08/2022
## Asthma Pathway

### Dosing Guidelines for Medications

**Severity Level and Medication**

<table>
<thead>
<tr>
<th></th>
<th>&lt;10kg</th>
<th>&gt;10kg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mild</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuterol</td>
<td>4 puffs q4h</td>
<td>8 puffs q4h</td>
</tr>
<tr>
<td></td>
<td>+ 2 puffs q4h PRN</td>
<td>+ 4 puffs q4h PRN</td>
</tr>
<tr>
<td>Dexamethasone OR convert to Prednisone/Prednisolone</td>
<td>0.6mg/kg PO daily x1 (max 16mg/dose), optional 2nd dose in 24-48 hours</td>
<td>2mg/kg once (max 60mg) follow ed by 1mg/kg BID (max 60mg/day) for 3-5 days</td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuterol</td>
<td>4 puffs q2h</td>
<td>8 puffs q2h</td>
</tr>
<tr>
<td></td>
<td>+ 2 puffs q1h PRN</td>
<td>+ 4 puffs q1h PRN</td>
</tr>
<tr>
<td>Dexamethasone OR convert to Prednisone/Prednisolone</td>
<td>0.6mg/kg PO daily x1 (max 16mg/dose), optional 2nd dose in 24-48 hours</td>
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<tr>
<td><strong>Severe</strong></td>
<td></td>
<td></td>
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<tr>
<td>Continuous Albuterol</td>
<td>0.5 - 1mg/kg/hr (Med-Surg max 20mg/hr)</td>
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</tr>
<tr>
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</tr>
<tr>
<td><strong>Initial Treatment ED only</strong></td>
<td></td>
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<tr>
<td>Combination Nebulizer:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albuterol</td>
<td>2.5mg x 3 = 7.5mg</td>
<td>5mg x 3 = 15mg</td>
</tr>
<tr>
<td>Ipratropium Bromide</td>
<td>+ 500mcg</td>
<td>+ 1000mcg</td>
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<tr>
<td><strong>Escalation Therapies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal Saline Bolus</td>
<td>20mL/kg IV (max 1L)</td>
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<tr>
<td>Magnesium Sulfate</td>
<td>50mg/kg IV (max 2g/dose)</td>
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<tr>
<td>Terbutaline (ED only)</td>
<td>10mcg/kg subcutaneous (max 250mcg)</td>
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<tr>
<td>Epinephrine (ED only)</td>
<td>0.01mg/kg IM (max 0.5mg/dose)</td>
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<tr>
<td>Methylprednisolone</td>
<td>1mg/kg q6h IV (max 60mg/dose)</td>
<td></td>
</tr>
<tr>
<td>Ipratropium Bromide (IP only)</td>
<td>250mcg (2.5mL) neb q6h (for 24 hours)</td>
<td>500mcg (5mL) neb q6h (for 24 hours)</td>
</tr>
<tr>
<td><strong>Asthma Action Plan</strong></td>
<td></td>
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</tr>
<tr>
<td>Albuterol</td>
<td>2 puffs q4h PRN</td>
<td>4 puffs q4h PRN</td>
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<tr>
<td></td>
<td>Red Zone</td>
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<tr>
<td></td>
<td>4 puffs q20min PRN up to 3</td>
<td>8 puffs q20min PRN up to 3</td>
</tr>
</tbody>
</table>

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