Pediatric Asthma Exacerbation Protocol in the Emergency Department

The following information is intended as a guideline for the acute management of children with asthma.

**Inclusion Criteria:** 2 y/o or greater with history of asthma or recurrent wheezing with acute onset of wheezing, cough, dyspnea, hypoxia, tachypnea etc.

**Exclusion Criteria:** < 2 years of age, Diagnosed with viral bronchiolitis or croup, History of Cystic Fibrosis, Chronic Lung Disease, Cardiac Disease, Airway Anomalies

1. **Measure oxygen saturation and vital signs.**
2. **Identify risk factors:** Previous intubation/ICU admission, 2+ admissions in past year, 3+ ED visits in last year, Prior ED/admission in last month, >2 canisters of SABA per month, poor perception of symptoms

1. **Apply Continuous Education regarding proper medication administration**
2. **Provide patient with Asthma Action Plan**
3. **Repeat PAS 15 min after treatment (≤15kg)**
4. **Repeat PAS 15 min after treatment (>15kg)**

- **Measure oxygen saturation and vital signs**
- **Perform**
- **Consider oral steroids**
- **Consider maintenance therapy (inhaled corticosteroids)**
- **Administer**

**1st Hour of Treatment**

- **Mild Distress = PAS 1-2**
  - (≤15kg) Albuterol MDI 4 puffs
  - (>15kg) Albuterol MDI 4-8 puffs
  - **Alternative:**
    - (≤15kg) Albuterol MDI 2.5mg
    - (>15kg) Albuterol MDI 5mg
  - Consider oral steroids
  - Repeat PAS 15 min after treatment (preferably by same provider)
  - May repeat at provider’s discretion

- **Moderate Distress = PAS 3-5**
  - (≤15kg) Albuterol MDI 4 puffs followed by ipratropium MDI 4 puffs **
  - (>15kg) Albuterol MDI 4-8 puffs followed by ipratropium MDI 4-8 puffs **
  - **May repeat up to 3 total doses in first hour**
  - **Alternative – may be repeated as above:**
    - (≤15kg) Albuterol MDI 2.5mg with ipratropium 0.5mg neb
    - (>15kg) Albuterol MDI 5mg with ipratropium 0.5mg neb
  - Repeat PAS 15 min after each treatment (preferably by same provider)

- **Severe Distress = PAS 6-10**
  - Albuterol MDI 4 puffs
  - Albuterol MDI 4-8 puffs
  - **Alternative:**
    - Albuterol MDI 2.5mg
    - Albuterol MDI 5mg
  - Consider oral steroids
  - Repeat PAS 15 min after treatment (preferably by same provider)

- **Calculate PAS hourly. Plan disposition at 2 hrs. of presentation. Disposition decision no later than 4 hrs.**

**Hourly Reassessment**

- **Mild Distress = PAS 1-2**
  - (≤15kg) Albuterol MDI 4 puffs
  - (>15kg) Albuterol MDI 4-8 puffs
  - **Alternative:**
    - (≤15kg) Albuterol MDI 2.5mg
    - (>15kg) Albuterol MDI 5mg
  - Consider oral steroids
  - Repeat PAS 15 min after treatment (preferably by same provider)

- **Moderate Distress = PAS 3-5**
  - Ensure corticosteroids were delivered
  - (≤15kg) Albuterol MDI 4 puffs
  - (>15kg) Albuterol MDI 4-8 puffs
  - **Alternative:**
    - (≤15kg) Albuterol MDI 2.5mg
    - (>15kg) Albuterol MDI 5mg
  - Repeat PAS 15 min after treatment (preferably by same provider)

- **Severe Distress = PAS 6-10**
  - Ensure corticosteroids were delivered
  - Albuterol continuously (0.5 mg/kg/hr) – max of 20mg
  - Perform and document PAS every 15 min.
  - Repeat PAS 15 min after each treatment (preferably by the same provider)
  - Plan for admission - See Symptoms Persist / Patient Unstable below

**Symptoms Resolve / Patient Stable - Discharge**
- Contact PCP for follow up
- Education regarding proper medication administration
- Rx for albuterol Q4 hours for cough or worsening symptoms
- Rx for oral corticosteroids for 3-10 days
- Consider maintenance therapy (inhaled corticosteroids)
- Provide patient with Asthma Action Plan

**Symptoms Persist / Patient Unstable - Admission**
- Admit – follow appropriate inpatient order set and flow sheet
- Continue bronchodilators
- Perform PAS prior to transfer to floor
- Consider adjunct therapy (magnesium, Heliox)
- Consider Pulmonary or PICU consult

ED Representative: Mandisa McIver, MD  Date: 1/29/2015  Please do not distribute without calling 919-966-1055
1. PAS should be done prior to treatment and repeated 15 minutes afterward (preferably by the same provider).
2. Add elements into a single score.
3. Document score in Epic flowsheet

<table>
<thead>
<tr>
<th>Element</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>1. Respiratory Rate</strong></td>
<td></td>
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<tr>
<td>Obtain over 30 sec and multiple by 2.</td>
<td></td>
</tr>
<tr>
<td>2-3 yrs</td>
<td>≤34</td>
</tr>
<tr>
<td>4-5 yrs</td>
<td>≤30</td>
</tr>
<tr>
<td>6-11 yrs</td>
<td>≤26</td>
</tr>
<tr>
<td>≥12 yrs</td>
<td>≤23</td>
</tr>
<tr>
<td><strong>2. Auscultation</strong></td>
<td>No Wheezes</td>
</tr>
<tr>
<td>Auscultate anterior and posterior lung fields. Assess air entry and presence of wheezing.</td>
<td></td>
</tr>
<tr>
<td><strong>3. Work of Breathing</strong></td>
<td>≤1 sign</td>
</tr>
<tr>
<td>Assess for nasal flaring or retractions. (suprasternal, intercostal, subcostal)</td>
<td></td>
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<tr>
<td><strong>4. Dyspnea</strong></td>
<td></td>
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<tr>
<td>As developmentally appropriate.</td>
<td></td>
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<tr>
<td>*If sleeping AND not showing physical signs of respiratory distress, score the patient 0 (zero) for this category.</td>
<td></td>
</tr>
<tr>
<td>Speaks full sentences, playful, AND takes PO well</td>
<td></td>
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<tr>
<td>Speaks partial sentences, short cry OR poor PO</td>
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<tr>
<td>Speaks short phrases, grunting, OR unable to take PO</td>
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<tr>
<td><strong>5. O₂ Requirement</strong></td>
<td>≥92% on RA</td>
</tr>
<tr>
<td>**Do not take patients off supplemental oxygen to obtain score.</td>
<td></td>
</tr>
<tr>
<td>Supplemental oxygen required to maintain saturations above 92%</td>
<td></td>
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</tbody>
</table>