### Algorithm: Assessment and initial management of acute asthma

Reconsider diagnosis if the child is less than one year, has high fever or responds poorly to Asthma treatment

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Mild Likely to go home</th>
<th>Moderate Possibly be admitted</th>
<th>Severe and Life Threatening Will be admitted or transferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oximetry in Air</td>
<td>&gt;94%</td>
<td>90-94%</td>
<td>&lt;90%</td>
</tr>
<tr>
<td>Heart rate (age appropriate)</td>
<td>Close to normal range for age</td>
<td>Mild-Moderate Tachycardia for age</td>
<td>Marked Tachycardia - beware relative Bradycardia for age</td>
</tr>
<tr>
<td>Ability to talk in:</td>
<td>Sentences or Long vigorous Cry</td>
<td>Phrases or Shortened Cry</td>
<td>Words / Weak Cry or Unable to Speak / Cry</td>
</tr>
<tr>
<td>Accessory Muscle Use</td>
<td>None</td>
<td>Mild to Moderate</td>
<td>Moderate to Severe</td>
</tr>
<tr>
<td>Altered Consciousness</td>
<td>Alert</td>
<td>Easily Engaged</td>
<td>Be concerned if Agitated or Drowsy or Confused</td>
</tr>
<tr>
<td>Cyanosis in air</td>
<td>None</td>
<td>None</td>
<td>Any Cyanosis is very concerning</td>
</tr>
</tbody>
</table>

#### Treatment

<table>
<thead>
<tr>
<th>Oxygen</th>
<th>No</th>
<th>To maintain SaO2 &gt;94%</th>
<th>To maintain SaO2 &gt;94% Consider High flow Oxygen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salbutamol 100 micrograms Metered Dose Inhaler(MDI) &amp; Spacer</td>
<td>&lt;6 years 6 x puffs stat +6 years 12 x puffs stat review frequently and repeat when required</td>
<td>&lt;6 years 6 x puffs +6 years 12 x puffs Give 20 minutely x 3 then repeat as required</td>
<td>Severe – see page 10 &lt;6 years 6 x puffs +6 years 12 x puffs Give 20 minutely x 3 with Ipratropium Reassess</td>
</tr>
<tr>
<td>Salbutamol Nebulised</td>
<td>Not recommended</td>
<td>Not recommended</td>
<td>Life Threatening - Continuous nebulised Salbutamol (5mg/mL undiluted) with Ipratropium (3 doses as below) until improvement Reassess</td>
</tr>
<tr>
<td>Ipratropium (Atrovent) 20 micrograms</td>
<td>No</td>
<td>Consider 20 minutely x 3 &lt;6 years - 4 puffs MDI or 250mcg Neb Ipratropium ≥6 years - 8 puffs MDI or 500mcg Neb Ipratropium</td>
<td>Yes - 20 minutely x 3 &lt;6 years - 4 puffs MDI or 250mcg Neb Ipratropium ≥6 years - 8 puffs MDI or 500mcg Neb Ipratropium</td>
</tr>
<tr>
<td>No or Poor response to Treatment</td>
<td>Check diagnosis and treat as per Moderate</td>
<td>Check diagnosis and treat as per Severe and Life Threatening</td>
<td>Immediate Senior Review -Consult PICU (via NETS if outside a children’s hospital) If no or poor response to Nebulised Salbutamol, contact senior help or PICU via (NETS 1300 36 2500) for discussion regarding retrieval</td>
</tr>
<tr>
<td>If contemplating giving any of IV Salbutamol, IV Aminophylline or IV Magnesium Sulphate</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>If no or poor response to Nebulised Salbutamol, contact senior help or PICU via (NETS 1300 36 2500) for discussion regarding retrieval</td>
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<tr>
<td>Systemic corticosteroids</td>
<td>Consider Oral Prednisone 1-2mg/ kg depending on history and response to treatment</td>
<td>Oral Prednisone 1-2mg/kg</td>
<td>Hydrocortisone IV 4mg/kg or Methylprednisone IV 1mg/kg</td>
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<tr>
<td>Investigations</td>
<td>Nil (routine) required</td>
<td>Nil routine required Considering Chest X-ray if focal signs Continuous observations (HR, RR and O2 Sats). Observations pre and post treatment – initially Q 30min then MO review within 1 hour</td>
<td>Continuous Blood Gases, Chest X-ray and UEC</td>
</tr>
<tr>
<td>Observation &amp; Review</td>
<td>Observations (HR, RR and O2 Sats) pre and post treatment – minimum hourly for 3 hours. MO review prior to discharge</td>
<td>Continuous cardiorespiratory monitoring (HR, RR and O2 Sats)</td>
<td>Continuous cardiorespiratory monitoring (HR, RR and O2 Sats) Regular medical review</td>
</tr>
<tr>
<td>Disposition</td>
<td>Home if Salbutamol requirement &gt;3hourly See ‘Discharge Criteria’</td>
<td>Observe for 3 hours after last dose. If not suitable for discharge then – Admit or Transfer. Otherwise home.</td>
<td>Admit to Level 4 facility or above if improving or retrieve to Paediatric ICU (call NETS)</td>
</tr>
</tbody>
</table>

**Initial Severity Assessment**

Treat in the highest category in which any symptom occurs

- **Mild** Likely to go home
- **Moderate** Possibly be admitted
- **Severe and Life Threatening** Will be admitted or transferred

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<td>Cyanosis in air</td>
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**Treatment**

- **Oxygen**
  - No
  - To maintain SaO2 >94%
  - To maintain SaO2 >94% Consider High flow Oxygen

- **Salbutamol 100 micrograms Metered Dose Inhaler(MDI) & Spacer**
  - <6 years 6 x puffs stat +6 years 12 x puffs stat review frequently and repeat when required
  - <6 years 6 x puffs +6 years 12 x puffs Give 20 minutely x 3 then repeat as required

- **Salbutamol Nebulised**
  - Not recommended
  - Not recommended

- **Ipratropium (Atrovent) 20 micrograms**
  - No
  - Consider 20 minutely x 3 <6 years - 4 puffs MDI or 250mcg Neb Ipratropium ≥6 years - 8 puffs MDI or 500mcg Neb Ipratropium

- **No or Poor response to Treatment**
  - Check diagnosis and treat as per Moderate
  - Check diagnosis and treat as per Severe and Life Threatening

- **If contemplating giving any of IV Salbutamol, IV Aminophylline or IV Magnesium Sulphate**
  - Not applicable
  - Not applicable

- **Systemic corticosteroids**
  - Consider Oral Prednisone 1-2mg/ kg depending on history and response to treatment
  - Oral Prednisone 1-2mg/kg

- **Investigations**
  - Nil (routine) required
  - Nil routine required Considering Chest X-ray if focal signs Continuous observations (HR, RR and O2 Sats). Observations pre and post treatment – initially Q 30min then MO review within 1 hour

- **Observation & Review**
  - Observations (HR, RR and O2 Sats) pre and post treatment – minimum hourly for 3 hours. MO review prior to discharge
  - Continuous cardiorespiratory monitoring (HR, RR and O2 Sats) Regular medical review

- **Disposition**
  - Home if Salbutamol requirement >3hourly See ‘Discharge Criteria’
  - Observe for 3 hours after last dose. If not suitable for discharge then – Admit or Transfer. Otherwise home.
  - Admit to Level 4 facility or above if improving or retrieve to Paediatric ICU (call NETS)