Consider the differential diagnosis of wheezing and abnormal breathlessness which include:

- Anxiety associated breathing pattern disorders such as hyperventilation and inducible laryngeal obstruction
- Infections such as atypical bacterial or viral pneumonia
- Inhaled Foreign body
- Compression or narrowing of the trachea due to tumour or a congenital abnormality
- Anaphylaxis
- Cardiac failure

Consider the following risk factors for near fatal/fatal asthma:

- Severe wheezing in the context of adverse psycho-social factors
- History of a previous life threatening episode
- Representation within 1 month of a previous acute episode
- Excessive use of bronchodilators prior to seeking medical attention

If at any point the treating clinician or nurse is concerned that their patient is deteriorating, obtain help from a senior team member.

<table>
<thead>
<tr>
<th>Mild - Moderate</th>
<th>Severe</th>
<th>Life Threatening</th>
</tr>
</thead>
<tbody>
<tr>
<td>• SaO₂ ≥92% in air</td>
<td>Any one of:</td>
<td>SaO₂ &lt;92% plus any of:</td>
</tr>
<tr>
<td><strong>No</strong> clinical features of severe Viral Induced Wheeze/Asthma</td>
<td>• SaO₂ &lt;92%</td>
<td>• Silent chest</td>
</tr>
<tr>
<td>• May have some increased work of breathing</td>
<td>• Too breathless to talk or eat</td>
<td>• Poor respiratory effort</td>
</tr>
<tr>
<td></td>
<td>• Heart rate &gt;140 (1-5y) or &gt;125 (5+)*</td>
<td>• Agitation</td>
</tr>
<tr>
<td></td>
<td>• Resp rate &gt;40 (1-5y) or &gt;30 (5+)</td>
<td>• Altered consciousness</td>
</tr>
<tr>
<td></td>
<td>• Use of accessory neck muscles</td>
<td>• Cyanosis</td>
</tr>
<tr>
<td></td>
<td>• PEF 33-50% best or predicted</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*consider impact of prior bronchodilator use on HR before using HR alone to define severe asthma</td>
<td></td>
</tr>
</tbody>
</table>
**LIFE THREATENING**

- Move to RESUS/HDU
- Senior medical review
- Prescribe O₂ to maintain SaO₂ > 94%
- Back to back nebulisers - Salbutamol 2.5-5mg plus Ipratropium Bromide 250-500mcg

If not improving or worsening airway obstruction:
- IV access/blood gas
- IV bronchodilators as per SORT guideline
- IV Hydrocortisone
- Outreach/PICU/ICU/Anaesthetic input

---

**Mild - Moderate**

- Salbutamol MDI via spacer*
  - Reassess in 15 mins
  - Improving?
    - NO
      - Reassess in 1-2 hours#
      - Obs. normal, no respiratory distress?
        - NO
          - Discharge Home
            - Check inhaler technique
            - Consider GP review in 2 working days +/- asthma clinic in <1 month
        - YES
          - Admit to inpatient area
            - Salbutamol 100mcg MDI up to 10 puffs 1-4 hourly
            - Consider Prednisolone if not already given

  - YES
    - Reassess in 15 mins
    - Improving?
      - NO
        - Reassess in 3-4 hours#
        - Improving?
          - NO
            - Discharge Home
          - YES
            - Switch to Nebulised Salbutamol plus Ipratropium Bromide*
              - Reassess in 15 mins
              - Improving?
                - NO
                  - Discharge Home
                - YES
                  - Continue Burst Therapy:
                    - Give two further doses of Salbutamol plus Ipratropium Bromide MDI via spacer* after 20 and 40 mins
                    - 2. Consider oral steroids (known asthmatic/atopic history)*
        - YES
          - Consider oral steroids (known asthmatic/atopic history)*

**Severe**

- Start Bronchodilators (Burst Therapy):
  - 1. Salbutamol plus Ipratropium Bromide MDI via spacer – or nebuliser via oxygen if SaO₂<92%*
  - 2. Prescribe O₂ to maintain SaO₂ >94%
  - Reassess in 15 mins
  - Improving?
    - NO
      - Switch to Nebulised Salbutamol plus Ipratropium Bromide*
      - Reassess in 15 mins
      - Improving?
    - YES
      - Move to RESUS/HDU
      - Senior medical review
      - Prescribe O₂ to maintain SaO₂ > 94%
      - Back to back nebulisers - Salbutamol 2.5-5mg plus Ipratropium Bromide 250-500mcg

---

**Drug Doses**

**Salbutamol**
- 1-4 yr  5 puffs or 2.5mg Neb
- 5+       10 puffs or 5mg Neb

**Ipratropium Bromide**
- 1-4 yr  4 puffs or 250mcg Neb
- 5+       8 puffs or 500mcg Neb

**Prednisolone**
- 1-4 yr 10-20mg 3 days
- 5+       30-40mg 3 days

(or) **Dexamethasone**
- 0.3mg/kg PO x 1 dose

---

* The nursing team should reassess vital signs and work of breathing every hour and alert the medical team if they are concerned.

---

V15 Aug 2020 D James, M Alderton, G Roberts, G Connett, J Legg,