

High risk factors

Increased need for hospital admission if children have any of the following:

- Attack in late afternoon or night
- Recent hospital admission
- Previous severe attack
- Young age
- Pre-existing cardio-respiratory or neuromuscular condition

Salient points on history for viral induced wheeze

- The child only has symptoms with viral infections i.e. no interval symptoms such as exercise induced wheeze, night time symptoms, triggers other than viruses.
- If previous episodes, how frequent and how severe (relevant for long-term management)
- Is the child actually wheezing (parents often mistake wheeze for other respiratory noises)

Assess Severity (treat according to category of most severe signs and symptoms)

	Green - Moderate	Amber - Severe	Red - Life Threatening
Talking	In sentences	Not able to complete a sentence in one breath. Taking two breaths to talk or feed.	Not able to talk / Not responding Confusion / Agitation
Auscultation of chest	Good air entry, mild-moderate wheeze	Decreased air entry with marked wheeze	Silent chest
Respiratory Rate	Normal range: ≤ 40 breaths/min	Above normal range: > 40 breaths/min	Cyanosis Poor respiratory effort Exhaustion
Heart Rate	≤ 140bpm	> 140 bpm	Tachycardia or bradycardic Hypotension
SpO ₂ in air	≥ 92%	< 92%	<85%
Feeding	Still feeding	Struggling	Unable to feed

If all green features and no amber or red

Moderate Exacerbation

- Salbutamol inhaler 10 puffs via spacer
- Assess response after 20 mins
- **N.B. Prednisolone and/or montelukast not routinely indicated**

Good Response
Clinically better

Discharge home:

- Send home when salbutamol inhaler is stretched to 4 hourly intervals or consider if excellent response to initial inhalers and clinically well at ED breach time
- Review need for preventer medication
- Remember wheeze discharge bundle (see page 3 for details):
 - Inhaler technique advice
 - Viral wheeze information leaflet
 - Follow-up arrangements

Poor Response

If any amber features and no red

Oxygen via face mask to achieve SpO₂ >92%
Continuous ECG and SpO₂ monitoring
Inform paediatric registrar

Severe Exacerbation

- **Burst therapy:** Salbutamol nebuliser 2.5mg (if has O₂ requirement) 20 minutely for 1 hour. Add ipratropium bromide in 2nd and 3rd nebuliser. **Give salbutamol inhalers instead if in air.**
- Assess response after every intervention
- **N.B. Prednisolone and/or montelukast not routinely indicated**

Moderate Response

Likely admission ward/CDU

- Continue Salbutamol Inhalers (if in air) or nebulisers (if in O₂) 1-4 hourly.
- Reassess need for salbutamol regularly

If any red features

Life threatening

- **Burst therapy:** Salbutamol nebuliser 2.5mg 20 minutely for 1 hour. Add ipratropium bromide in 2nd and 3rd nebuliser
- Consider oral prednisolone or IV hydrocortisone
- Assess response after every intervention

Poor Response

- IV access
- Check venous blood gas
- Inform critical care outreach nursing team bleep 6273
- Consider informing critical care doctor
- Consider IV therapy ONLY IF >2 YEARS OLD (see page 2 for details)

Note: most children with viral-induced wheeze will not require IV therapy

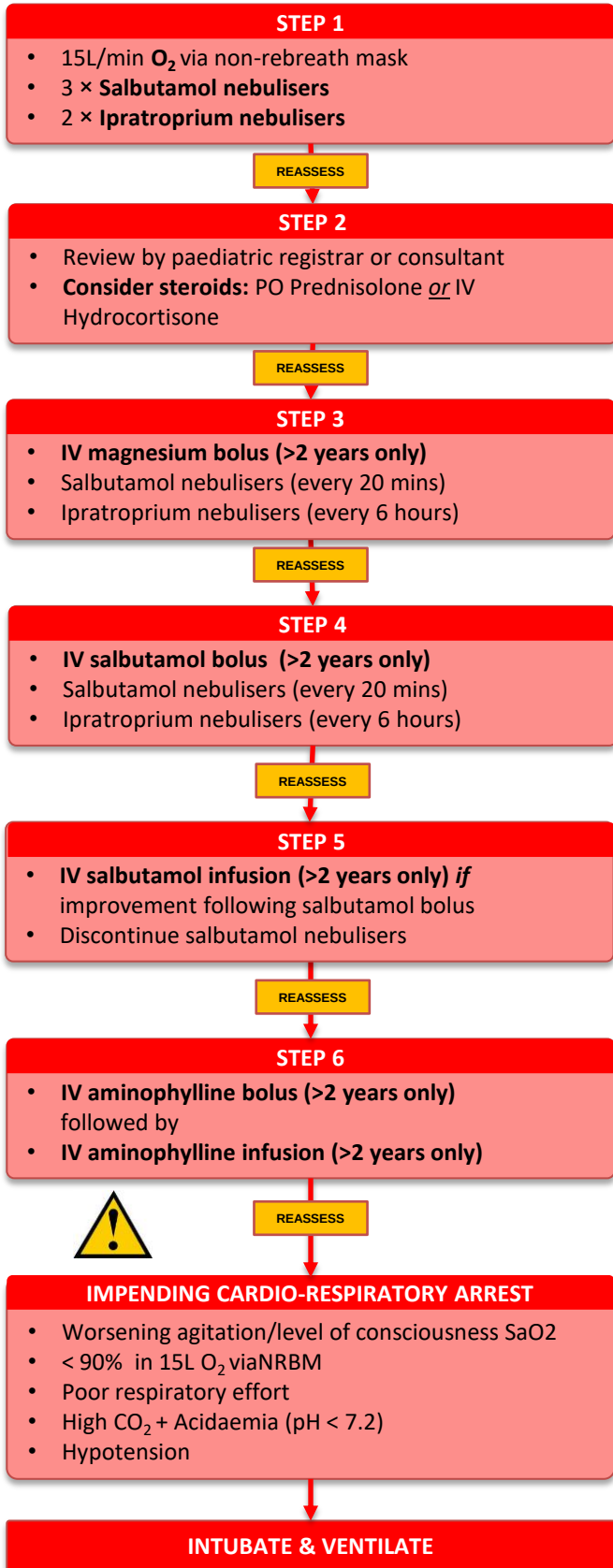
CXR? No.

CXR is **NOT** part of VIW management. In particular, unilateral crepitations or fever in context of a wheezy child can be part of viral-induced wheeze clinical picture, and is not an indication for CXR

CXR is **very rarely required**. Possible indications include clinical pneumothorax or subcutaneous emphysema

1. British guideline on the management of asthma. BTS/SIGN, May 2008; revised Jan 2012.
2. Management of acute wheeze in secondary care; 2-16 years. August 2012. Children and Young People Urgent Care Board.

Management of Severe / Life Threatening Episodes



Oral and inhaled/nebulised therapy

PO/INH/NEB DRUG DOSES

- Neb Salbutamol
 - <5yr 2.5mg
- Neb Ipratropium bromide
 - <12 yr 250 micrograms
- PO Prednisolone (only if HDU; consider if strong personal atopic history/ FHx asthma)
 - 2-5yrs 20mg
 If prednisolone not tolerated, try:
 - PO Dexamethasone 0.3 mg/kg

Intravenous Drug Therapy

IV DRUG DOSES (if <2y: d/w PICU)

- IV Hydrocortisone
 - 4mg/kg (max 100mg) QDS
- IV Magnesium
 - Bolus 40mg/kg = 0.4mls/kg of 10% solution over 20 mins (max 2g)
- IV Salbutamol
 - Bolus 15mcg/kg (max 250mcg) over 10min
 - Infusion 0.5-2 mcg/kg/min (PHDU/PICU only) max 20 mcg/min
- IV Aminophylline
 - Bolus 5mg/kg (max 500mg)
 - Infusion 2-12 yrs 1mg/kg/hr

SALBUTAMOL TOXICITY

- Tachycardia/tachyarrhythmia
- Hypokalaemia
- Metabolic acidosis
- Elevated lactate
- Hyperglycaemia

Timing of Discharge

- Children with acute wheeze can be safely discharged when they have been spaced to 4 hourly bronchodilators and do not have an oxygen requirement.
- *Consider* discharging directly from ED after discussion with senior doctor if:
 - Initial presentation mild or moderate severity and
 - Excellent response to initial inhalers and
 - Clinically well at ED breach time

Smoking Cessation Advice

In all children admitted with acute wheeze, a social history should be taken, including smokers in the household. Smoking cessation advice should be offered to families where appropriate. <http://www.nhs.uk/smokefree>.

Medication review

- Most children with **intermittent** pre-school **viral-induced** wheeze can be managed with intermittent bronchodilator therapy
- Consider a trial of montelukast if severe/frequent episodes
 - Start at the onset of viral URTI and continue until child is better
- There is currently no evidence supporting the use of intermittent or continuous inhaled corticosteroids at licensed doses in these children
 - If an inhaled corticosteroid is trialed in those with severe/frequent episodes, this should be reviewed and discontinued if no benefit in 6-8 weeks.
- Pre-school children with multi-trigger wheeze and older children with asthma should be managed according to the BTS Step-wise Asthma pathway (see separate asthma guideline for children aged 5-16 years)

Check Inhaler Technique

- All children admitted with acute wheeze should have an assessment of their inhaler technique during their admission.
- The assessment should be documented in the child's notes.

Use and Care of Spacers

- The spacer should be compatible with the pMDI being used.
- A facemask should be used
- The drug should be administered by repeated single puffs followed by 6-10 tidal breaths
- Spacers should be cleaned monthly and replaced yearly
- They should be washed in detergent and dried in air.

Viral Induced Wheeze Discharge Paperwork

Note: no 'weaning plan' needed

Viral-Induced Wheeze patient information leaflet (PIL)

- Available on wards, or download from on intranet [here](#)

Follow up

Follow up

- All children seen in hospital with acute wheeze should be advised to see their GP 48 hours after discharge
- Routine outpatient follow-up not required for most children with viral-induced wheeze. If recurrent admissions to hospital *consider* paediatrician follow-up 1-2 months after admission.
- If >4 years old will be seen by Dr Hull for follow-up: see separate asthma guideline for details