Clinical Assessment Tool for the Child with Acute Exacerbation of Asthma/ Acute Episodic Wheeze Age > 2 years - Management within a Community Setting

Suspected exacerbation of Asthma or Acute Episodic Wheeze

Consider other diagnosis if any of the following are present:
-Fever (Pneumonia)– Dysphagia (epiglottitis) –Productive Cough (pneumonia) – Breathlessness with light-headedness and peripheral tingling (hyperventilation) - Asymmetry on auscultation (pneumonia or a foreign body etc.) –Excessive vomiting (GORD)- Inspiratory stridor (possible anaphylaxis)

Yes → It may not be asthma/acute episodic wheeze. Consider seeking expert help.

No → Suspected Acute Exacerbation of Asthma/Wheeze: Assess Severity

	Green- Mild/Moderate	Amber- Severe	Red- Life Threatening
Behaviour	Normal	Anxious/Agitated	Exhaustion/Confusion
Talking	In sentences	Not able to complete a sentence in one breath Too breathless to talk or feed	Not able to talk/ Not responding
Respiratory	Rate: <40 breaths/min (2-5 years) <30breaths/min (5-12 years) <25 breaths/min (>12 years)	Rate: >40 breaths/min (2-5 years) >30 breaths/min (>5 years) >25 breaths/min (>12 years) Use of accessory muscles	Poor respiratory effort Silent chest Cyanosis
Heart Rate	<140bpm (2-5 years) <125bpm (>5 years) <110bpm (>12 years)	>140bpm (2-5 years) >125 bpm (> 5 years) Consider influence of fever &/or salbutamol	Extreme tachycardia/bradycardia Or Arrhythmias
SaO2	≥ 92% in air	<92% in air	< 92 in air plus any of the above symptoms
PEFR	> 50% predicted (Ref to tablet 3)	33-50% of predicted (Ref to table 3)	< 33% predicted (Ref in table 3)

- Give 2-10 puff of β agonist via spacer (+/- facemask)
- Give as single puffs for 5-10 tidal breaths
- Use patient's own spacer where available
- Give 1 puff every 30-60 seconds, up to 10 puffs, adjusted to clinical response
- Consider an appropriate dose of oral prednisolone - 2-5y: 20mg OD 3/7, 6-12y: 30-40mg OD 3/7, 12-16y: 40mg OD 5/7 (Ref Table 1 for more information)

Deterioration? Consider if now amber or red

Good Response (Green Features)

Good Response:

- Advise patient to continue using β agonist via spacer as needed- but not exceeding 4 hourly.
- Advise to seek urgent medical attention in the event of worsening Sx in line with the wheeze asthma plan
- Review overall asthma control, inhaler technique, medication, ask about smoking
- If yes offer smoking cessation support
- Provide a written asthma action plan for treating future attacks + discharge advice leaflet
- If started, continue Prednisolone for up to 3 days.
- Arrange a review within 2 working days
- Consider referral to **children's community nursing team** HERE
- Follow up if child's meets criteria for **referral to Integrated Wheeze/Asthma Service (S&W Herts)**
- Review need for regular treatment and the use of inhaled steroids.

- Give oxygen via a facemask/nasal prongs to achieve Sp02 94-98%
- Give β agonist 10 puffs via spacer + facemask or nebulised salbutamol at an appropriate dose driven by oxygen (6-8L) (Ref Table 2).
- Repeat every 20-30 minutes according to response
- Give an appropriate dose of oral prednisolone - 2-5y: 20mg OD 3/7, 6-12y: 30-40mg OD 3/7, 12-16y: 40mg OD 5/7 (Ref Table 1 for more information)

If symptoms are not controlled:
- Repeat β agonist via oxygen driven nebuliser.
- Refer to hospital- consider ambulance +/- 999.
- Discuss with Paediatric Registrar.
- Stay with child until ambulance arrives

- Give oxygen via a facemask to achieve Sp02 94-98%
- Call 999 for an Emergency Ambulance
- Give nebulised β agonist and ipratropium at an appropriate dose driven by oxygen (6-8L) (Ref table 2)
- Give appropriate dose of oral prednisolone - 2-5y: 20mg OD 3/7, 6-12y: 30-40mg OD 3/7, 12-16y: 40mg OD 5/7 (Ref Table 1 for more information)
- Repeat β agonist up to every 20-30 minutes whilst waiting for ambulance to arrive
- Continually assess the child after each intervention
- Ensure continuous oxygen delivery
- Stay with child whilst waiting for ambulance to arrive

Lower threshold for referral/ discussion with paediatrics if:

- Recent hospital admission or previous serious attack
- Concern over social circumstances or ability to cope.
- Previous cardio-respiratory illness
- Significant co-morbidity
- Already taking oral steroids or high doses of inhaled steroids

Table 1: Prednisolone Guidelines

There is limited evidence for the use of oral steroids in pre-school children (<5 yrs.) with episodic wheeze and there are potential side effects. * * Consider oral steroids in this group, if*:*

- Significant atopic history e.g., eczema requiring treatment with topical steroids; history of anaphylaxis.
- OR • History of multi-trigger wheeze or history of interval symptoms in preceding 2-4 weeks; OR
- History of HDU/ITU admission or current life-threatening exacerbation

- Give Prednisolone by mouth:

2-5y: 20mg Prednisolone OD for 3/7
6-12y: 30-40mg Prednisolone OD for 3/7
12-16y: 40mg Prednisolone OD for 5/7

- For children on maintenance steroid give 2mg/kg to max 60mg.Start early in attack: within 1 hour if possible.
- Length of course should be tailored to number of days necessary to bring about recovery.
- Tapering is unnecessary unless the course exceeds 14 days, or if recent multiple courses of prednisolone
- Repeat the dose in children who vomit.

Table 2: Guideline for nebuliser

- Significantly low sats despite inhaler and
- spacer use
- Oxygen Saturations persistently below 96%
- Requiring oxygen
- Unable to use volumatric/spacer device
- Severe respiratory distress.

Age (years)	2-5	5-12	>12
Salbutamol	2.5mg	5mg	5mg
Ipratropium	250micrograms (mcg)		500 mcg

Table 3: Episodic Wheeze vs Multiple Trigger Wheeze

• 1/3 of children have an episode of wheezing in the first 3 years of life, usually triggered by a viral infection. Only 20% of these children will go on to have asthma. The classification and treatment of wheeze in the preschool age group continues to be debated.
• They should not routinely be labelled as having asthma as the pathophysiology of a Viral induced wheeze is different from that of asthma.
• Caveat: early onset asthma may be indistinguishable from Viral Induced Wheeze at first presentation.

• It is important to consider the temporal pattern of wheezing:
• **Episodic (viral) wheeze:** child only wheezes with viral URTIs and is symptom free in between episodes.
• **Multiple-trigger wheeze:** child wheezes with URTIs but also with other triggers such as exercise, smoke, and allergen exposure.

Table 4: Guidelines for Peak Flow

Height (m)	Height (ft)	Predicted EU PEFR(L/min)	Height (m)	Height (ft)	Predicted EU PEFR(L/min)
0.85	2'9"	87	1.30	4'3"	212
0.90	2'11"	95	1.35	4'5"	233
0.95	3'1"	104	1.40	4'7"	254
1.00	3'3"	115	1.45	4'9"	276
1.05	3'5"	127	1.50	4'11"	299
1.10	3'7"	141	1.55	5'1"	323
1.15	3'9"	157	1.60	5'3"	346
1.20	3'11"	174	1.65	5'5"	370
1.25	4'1"	192	1.70	5'7"	393