Clinical Assessment Tool for the Child with Acute Exacerbation of asthma 2-16 Years

Management within a Community Setting

Suspected Acute exacerbation of Asthma:

Consider other diagnosis if any of the following are present:
•Fever •Dysphagia •Productive Cough
•Breathlessness with light headiness and peripheral tingling (hyperventilation)
•Asymmetry on auscultation •Excessive vomiting •Inspiratory Stridor

No → Suspected Acute Exacerbation of Asthma. Assess severity (Ref Table 1):

Yes → It may not be asthma: Seek expert Help (Consider use of another pathway)

If all green features and no amber or red

Mild- Moderate Exacerbation
•Give 2-10 puffs of ß$_2$ agonist via a spacer (with a facemask in younger children using tidal breathing)
•Use patient own spacer where available
•Increase ß$_2$ agonist dose by 2 puffs every 2 minutes upto 10 puffs according to response
•Consider an appropriate dose of soluble oral prednisolone (Ref Table 5)
Assess response

- Good Response (Green features)
- Deterioration? Consider if now amber/red

Good Response:
•Advise patient to continue using ß$_2$ agonist via spacer as needed—but not exceeding 4 hourly.
•Give asthma discharge management advice leaflet.
•Continue Prednisolone for up to 3 days.
•Arrange asthma clinic follow up within 48hrs.
•Review inhaler technique

If any amber features and no red

Severe Exacerbation
•Give Oxygen via a facemask/nasal prongs to achieve Sp0$_2$ 94-98%
•Give ß$_2$ agonist 10 puffs via spacer ± facemask or nebulised salbutamol at an appropriate dose driven by oxygen (Ref Table 4)
•Give an appropriate dose of oral prednisolone (Ref Table 5)

•If symptoms are not controlled repeat ß$_2$ agonist via oxygen driven nebuliser.
•Refer to hospital—consider ambulance +/- 999.
•Discuss with Paediatric Registrar at your local hospital
•Stay with child until ambulance arrives

If any red features

Life Threatening
•Give Oxygen via a facemask to achieve Sp0$_2$ 94-98%
•Call 999 for an Emergency Ambulance
•Give Nebulised ß$_2$ agonist and ipratropium at an appropriate dose driven by oxygen (Ref table 4)
•Give an appropriate dose of oral prednisolone (Ref Table 5)
•Repeat ß$_2$ agonist up to every 20-30 minutes while waiting for ambulance to arrive
•Continually assess the child after each intervention.
•Ensure continuous oxygen delivery
•Stay with the child whilst waiting for ambulance to arrive

Lower threshold for admission if:
•Attack in late afternoon or at night
•Recent hospital admission or previous severe attack
•Concern over social circumstances or ability to cope at home

12.13. V01

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Table 1: Traffic Light system for identifying severity of Acute Exacerbation of Asthma

	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	Not able to talk
Respiratory	<40 breaths/min 2-5 years <30 breaths/min 5-12 years <25 breaths/min 12-16 years	Rate>40 Breaths/min 2-5 years Rate>30 Breaths/min >5 years	Poor respiratory effort Silent Chest
Heart Rate	Within normal range (Ref to table 2)	>140 beats p/min (2-5 years) >125 beats p/min (>5 years) *Consider influence of fever &/or Salbutamol	Extreme tachycardia/bradycardia Or arrhythmias
Sa02	>92% in air	<92% in air	
PEFR	>50% of predicted (Ref to table 3)	33-50% of predicted (Ref to table 3)	<33% of predicted (Ref to table 3)

CRT: capillary refill time RR: respiration rate

Table 2: Normal Paediatric Values:

Respiratory Rate at Rest:
2-5yrs 25-30 breaths/min
5-12yrs 20-25 breaths/min
>12yrs 15-20 breaths/min

Systolic Blood Pressure
2-5yrs 80-100 mmhg
5-12yrs 90-110 mmhg
>12yrs 100-120 mmhg

Heart Rate
2-5yrs 95-140 bpm
5-12yrs 80-120 bpm
>12yrs 60-100 bpm

Table 3: Predicted Peak Flow: For use with EU / EN13826 scale PEF metres only

Height (m)	Height (ft)	Predicted EU PEFR	Height (m) (L/min)	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

Table 4: Guidelines for nebuliser

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

Salbutamol
2-5 years– 2.5mg, 5-12 years– 2.5-5mg, 12-16 years– 5mg

Ipratropium
<12 years – 250micrograms,
12-18 years – 500micrograms

Table 5: Prednisolone Guideline BNF2013-2014

Give prednisolone by mouth:
child under 12 years 1–2 mg/kg (max. 40 mg) daily for up to 3 days or longer if necessary, if the child has been taking an oral corticosteroid for more than a few days give prednisolone 2mg/kg (max. 60mg). Child12-18 years 40-50mg daily for at least 5 days.

BTS guidelines 2011: *(if weight not available)*
Use a dose of 20mg for children 2-5 years and 30-40mg for children >5years.

This guidance is written in the following context

This assessment tool was arrived at after careful consideration of the evidence available including but not exclusively use BTS Guidelines and NHS evidence. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, inconsultation with the patient and/or guardian or carer.