Acute Asthma Attack: Management for Known Asthmatic Children (5 – 18 Years)

NHS Islington Clinical Commissioning Group

Consider other diagnosis if any of the following are present:
- Fever
- Dysphagia
- Productive cough
- Breathlessness with light headedness and peripheral tingling (hyperventilation)
- Asymmetry on auscultation
- Excessive vomiting
- Inspiratory stridor

1. Assessment by appropriate healthcare professionals (Dr/Nurse)
- Saturation
- Use of accessory muscle
- Breathlessness
- Auscultation of chest
- Peak flow
- Record vital signs

2. Moderate
- Saturation ≥92% in air
- Mild to moderate use of accessory muscles
- Breathless on exertion only
- Mild wheeze
- Peak flow ≥ 50% best/predicted*

3. Severe
- Saturations <92% in air
- HR >125 bpm, RR > 30 breaths / min
- Marked use of accessory muscles
- Too breathless to talk
- Marked wheeze
- Peak flow 33-50% best/predicted*

4. Life-threatening
- Saturations < 92% in air
- Silent chest/ poor respiratory effort
- Exhausted
- Confusion / coma
- Cyanosis
- Hypotension
- PEF <33% best/predicted*

5.
- Give 10 puffs of 100 microgram salbutamol MDI via spacer (Tidal breathing, 1 puff to every 5 breaths)
- Reassess 20-30 minutes post intervention
- Consider giving 3 day course of soluble prednisolone 1mg/kg (max 40mg). Those already receiving maintenance oral steroid give 2mg/kg (max 60mg). (Box 18)

6. Good response?
- Subtle or no use of accessory muscles
- Can complete sentences
- Minimal wheeze
- Saturations >94%

No

Yes

7. Discharge Plan (BTS recommendations)
- Before discharge review overall asthma control, inhaler technique, medication and ask about smoking parent and child (if > 11yrs). If yes offer quit smoking support.
- Check understanding of condition and signpost to further resources.**
- All children need a wheeze/asthma plan, for regular medication and what to do when they start to become unwell.**
- Give a weaning plan for salbutamol 100 micrograms MDI plus spacer
  - Day 1: 6 puffs every 4 hours
  - Day 2: 4 puffs every 6 hours
  - Day 3: 2 puffs as required
- Advise parents to book a GP/Practice Nurse review within 48-72 hrs.
- Complete a three day course of prednisolone (Box 18)

8.
- Give 10 puffs 100 microgram salbutamol MDI via spacer (tidal breathing, 1 puff to every 5 breaths)
- OR or 5mg salbutamol via oxygen driven nebuliser if available
- Give high flow oxygen if available
- Reassess 20 minutes post intervention
- Repeat treatment every 20 minutes if necessary
- Give 3 day course of soluble prednisolone 1mg/kg (max 40mg). Those already receiving maintenance oral steroid give 2mg/kg (max 60mg). (Box 18)
- Reassess 1 hour post starting treatment

9. Good response?
- Subtle or no use of accessory muscles
- Can complete sentences
- Minimal wheeze
- Saturations >94%

Yes

No

Primary Care Pathway

10. (Primary care)
- Dial 999
- Contact duty paediatric registrar at referring hospital
- Continue oxygen and salbutamol therapy (Box 8)
- Send written assessment with patient

A&E Pathway

10. (A&E)
- Dial 2222
- Continue oxygen and nebulisation therapy (Box 8)

11.
- Immediate medical assessment by a doctor
- Give high flow oxygen if available
- Give salbutamol 5mg & ipratropium bromide 250mcg via oxygen driven nebuliser if available.
- If not available Give 10 puffs 100 microgram salbutamol MDI via spacer (tidal breathing, 1 puff to every 5 breaths)
- Dial 999 / 2222 (in hospital)
- Repeat nebulisers/Inhalers; every 10-20 minutes or more frequent if needed.
- Give soluble prednisolone 1mg/kg (max 40mg). Those already receiving maintenance oral steroid give 2mg/kg (max 60mg). (Box 18)

Primary care Pathway

12.(Primary Care)
- Contact duty paediatric registrar at referring hospital
- Send written assessment with patient

A&E Pathway

12. (A&E)
- Follow local asthma emergency guidelines

*** If a child has not performed a peak flow before, the technique used may be suboptimal. In this instance the result should be treated with caution.**

** Useful resources:
www.asthma.org.uk
www.itchysneezywheezy.co.uk

Referral to secondary care if: (See box 14)
- Diagnosis unclear or in doubt
- Symptoms present from birth or perinatal lung problem
- Excessive vomiting or posseting
- Persistent wet or productive cough
- Family history of unusual chest disease
- Failure to thrive
- Nasal polyps

Referral to secondary care if: (See box 14)
- Unexpected clinical findings eg focal signs, abnormal voice or cry, dysphagia, inspiratory stridor
- Failure to respond to conventional treatment (particularly inhaled corticosteroids above beclometasone 400 mcg/day (or equivalent) or frequent use of steroid tablets)
- Parental anxiety or need for reassurance

Ref: The British Thoracic Society (BTS) British Guideline on the Management of Asthma (revised Jan 2012)

Acute Asthma Attack Management Pathway for Known Asthmatic Children (5 – 18 Years)

NHS North Central London

13. Community Children's Nursing Teams

Barnet
Tel: 020 8216 5242
Fax: 0208 216 5244

Camden & South Barnet
Tel: 020 7830 2571
Fax: 0207 830 2146

Enfield
Tel: 020 8375 1992
Fax: 0208 375 1903

Haringey
Tel: 020 8887 4301
Fax: 0208 887 2973

Islington
Tel: 0203 316 1950
Fax: 0207 7690 2861

14. Secondary Care Referrals

Barnet Hospital
Switchboard: 020 8216 4600

Royal Free Hospital
Dr. Rahul Chodhari
R.Chodhari@nhs.net
Switchboard: 020 7794 0500

North Middlesex Hospital
Dr. Arvind Shah
Switchboard: 020 8887 2000

University College Hospital
Dr Eddie Chung
Switchboard: 020 3456 7890

Whittington Hospital
Dr. John Moreiras
John.moreiras@nhs.net
Switchboard: 020 7272 3070

15. Normal Paediatric Values

Respiratory Rate at Rest:

2-5yrs	25-30 breaths/min
5-12yrs	20-25 breaths/min
>12yrs	15-20 breaths/min

Heart Rate:

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

Systolic Blood Pressure:

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

16. Inhalers Vs. nebulisers

For moderate asthma, use an inhaler and spacer. If >5-years old use the mouth piece, rather than mask (providing their technique is good)

Indications for nebulisers:

- Low saturations <92%
- Unable to use inhaler and spacer (not compliant)
- Severe and life threatening respiratory distress
- Nebulisers are not generally recommend for home use.

17. Nebulised drug doses

Salbutamol

2-5 yrs	2.5 mg
> 5 yrs	5 mg

Ipratropium

< 12 yrs	250 mcg
12-18 yrs	500 mcg

18. Prednisolone

•Those already receiving maintenance steroid give 2 mg/ kg (max 60 mg)
•Repeat the dose in children who vomit and/or consider IV steroids
•Three days is usually sufficient, but can be increased/tailored to the number of days necessary to bring about recovery.
•Weaning is unnecessary unless the course of steroids exceeds 14 days.

19. Predicted peak flows

For use with PEF meters EU/EN13826

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

20. Poor Asthma Control

•Frequent us of reliever
•Stopping daily activities
•Poor sleep, cough
•Frequent exercise induced symptoms
•Frequent admissions or attendances
•Frequent courses of prednisolone
.
•**Difficult Asthma**: Difficult asthma is defined as persistent symptoms and/or frequent exacerbations despite treatment at step 4 or 5

•Asthma Control Test:
www.asthma.com/resources/asthma-control-test.html

This guidance is written in the following context: This pathway was arrived at after careful consideration of the evidence available including but not exclusively using the BTS guidelines. The guidance does not, however, override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer. If you have any quries with regards to the information conatined with this document please contact Dr John Moreiras (john.moreiras@nhs.net)

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