For any queries regarding the content of this document e-mail: nclicb.pathways@nhs.net 1.0 (B) Key Consider other diagnoses and manage as clinically appropriate if any of the following are present: "Must do" actions for GP's / (Triaged by RSS) Fever or productive/persistent wet cough Breathlessness with light headedness and **Recommendations for Primary Care** peripheral tingling (hyperventilation) Red flag / urgent referral Asymmetry on auscultation/focal chest signs Excessive vomiting or dysphagia Routine referral Inspiratory stridor Public health intervention Clubbing or nasal polyps Tachypnoea without wheeze Audio-visual aids for patients and GP New onset wheeze in older child +/- orthopnoea Click icon for clinical evidence Right-click to use hyperlink 2.0 (B) Acute asthma attack suspected Note: Alpha-numeric step references are to aid printing in black & white and colour Assessment by a healthcare professional with the appropriate training and skills relevant in the care of Investigations must be within 6 children and young people - This is equivalent to Tier 2 or above in the new tiered asthma capabilities framework. See reference [1] (page 24) for further details History – current episode, background control, PMH, FH. Consider smoking cessation in household smokers General appearance, cyanosis? months of date of referral Use of accessory muscles Breathlessness – able to speak/feed? Investigations: Auscultation – air entry, added sounds Peak flow (actual and %best/predicted) Record temperature, pulse, respiratory rate and oxygen 6.0 (R) 4.0 (B) 5.0 (B) **MODERATE, ACUTE ASTHMA SEVERE, ACUTE ASTHMA** LIFE-THREATENING, ACUTE ASTHMA Presence of any of the following: Saturation ≥92% in air Presence of any of the following: Saturations <92% in air Saturations < 92% in air or cyanosis Moderate use of accessory muscles Heart rate (HR) and respiratory rate HR >125 bpm, RR > 30 breaths/min Silent chest Marked use of accessory muscles (RR) within normal range for age (see Poor respiratory effort/exhaustion Appendix 1 for normal paediatric Too breathless to talk/feed, unable to Confusion/reduced GCS values) complete sentences Hypotension/bradycardia (pre-terminal) Breathless on exertion only, can talk in Peak flow 33-50% best/predicted* Peak flow <33% best/predicted* short sentences Moderate wheeze Peak flow ≥ 50% best/predicted* **IMMEDIATE REFERRAL TO A&E IS APPROPRIATE** Additional prescribing information 7.0 (R) 8.0 (R) 9.0 (R) Whilst waiting for admission to hospital carry Whilst waiting for admission to hospital carry Immediate medical assessment by a doctor out the following actions: out the following actions: **DIAL 999** Give up to a maximum of 10 puffs of Give up to a maximum of 10 puffs of Give high flow oxygen via a tight-fitting 100 microgram salbutamol MDI via 100 microgram salbutamol MDI via face mask or nasal cannula at sufficient spacer (tidal breathing, 1 puff to every spacer (tidal breathing, 1 puff to every 5 flow rates to achieve normal saturations breaths) OR Give salbutamol 5mg + ipratropium **AND** Give salbutamol 5mg + ipratropium bromide (250mcg - age 5-12; 500mcg -Reassess 20 minutes post intervention bromide (250mcg -age 5-12; 500mcg age >12) via oxygen driven nebuliser (if Consider stat dose of prednisolone age >12) via oxygen driven nebuliser if (see **box 10.0** for dosing information) not tolerating inhaler or saturations <92% in air) If not available, give 10 puffs 100mcg **AND** salbutamol MDI via spacer (tidal Assess Response Good response: Continue salbutamol Give high flow oxygen via a tight-fitting breathing, 1 puff to every 5 breaths) via spacer as needed whilst awaiting Repeat nebulisers/inhalers every 10-20 face mask or nasal cannula at sufficient admission. Do not exceed 4 hourly flow rates to achieve normal saturations minutes or more frequent if needed. Give stat dose of prednisolone or IV Poor response: Treat as per severe Reassess 20 minutes post intervention hydrocortisone if the patient is unable to Give stat dose of prednisolone (see acute asthma take oral prednisolone orally (see box **box 10.0** for dosing information) **10.0** for dosing information) Assess Response

Latest Version

Review Date Approving Body

NCL-Wide / Borough(s)

Author(s)

Previous

North Central London (NCL) ICS

Clinical Pathway

Acute Asthma Attack: Management for Known

Asthmatic Children (5 – 16 Years) Primary Care

Version 5.7 August 2023

Dr Oliver Anglin, Dr Joanna Yong

February 2022

Pending approval

August 2026

NCL-Wide

Nebulised drug doses

Additional prescribing information

Salbutamol 5 mg

> 5 yrs

Ipratropium bromide

< 12 vrs 250 mcg 12-18 yrs 500 mcg

Steroid Prescribing Information

Prednisolone oral (oral; non enteric coated tablet preferred): < 12 years: 1 -2 mg/kg once daily (max 40mg daily) for up to 3 days, longer if necessary < 12 years and already on maintenance steroids or have received oral steroids for more than a few days, give 2mg/kg (max 60mg daily) for up to 3

days, longer if necessary 12 - 17 years: 40 - 50mg daily for at least 5 days

- Hydrocortisone intravenous:

Good response: Continue salbutamol via spacer as needed whilst awaiting admission. Do not exceed 4 hourly Poor response: Repeat salbutamol via oxygen driven nebuliser whilst awaiting

admission

Consider IV hydrocortisone 4mg/kg (maximum dose 100mg) if child is vomiting or is unable to take oral prednisolone

Inhalers vs nebulisers in acute asthma

For moderate, acute 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

Nebulised asthma rescue therapy should only be used for the the acute management of an asthma attack. Home use of nebulisers in paediatric asthma should only be initiated and managed by specialists. See MHRA alert [2]

Following discharge from hospital, ensure all the following has been completed by the hospital: Inhaler technique checked and adequate Patient has a written Personalised asthma action plan (PAAP) for subsequent asthma attacks with clear instructions about the use of

and-managed-only-by-specialists

For use with PEF meters EU/EN13826

Post discharge actions

bronchodilators and the need to seek urgent medical attention in the event of worsening symptoms not controlled by up to 10 puffs of salbutamol 4 Assessment for exposure to environmental tobacco smoke or actual smoking in older children and refer to suitable agencies where appropriate

- Trigger for acute attack identified and future management plans for exposure discussed Follow up in a paediatric asthma clinic at about one month after admission arranged and if not consider referral to secondary care 2 days post discharge review in primary care by appropriately trained health care professional. Consider referral to secondary care if there have been life threatening features

[2]: https://www.gov.uk/drug-safety-update/nebulised-asthma-rescue-therapy-in-children-home-use-of-nebulisers-in-paediatric-asthma-should-be-initiated-

min)

[1] https://www.england.nhs.uk/wp-content/uploads/2021/09/National-bundle-of-care-for-children-and-young-people-with-asthma-resource-pack-September-2021.pdf (pg 24)

Predirected Predirected Height Height Height Height Eu P EFR(L/ Eu P EFR(L/ (ft) (m) (m) (ft)

min)

Predicted Peak Flows (EMIS can calculate predicted peak flow from age and height)

0.85	2'9"	87	1.30	4'3"	212	Poor sleep, nocturna Frequent exercise ir
0.90	2'11"	95	1.35	4'5"	233	Frequent hospital actendances Frequent courses of
0.95	3'1"	104	1.40	4'7"	254	Difficult Asthma: D defined as persisten
1.00	3'3"	115	1.45	4'9"	276	frequent exacerbation at step 4 or 5
1.05	3'5"	127	1.50	4'11"	299	Asthma Control Test: www resources/asthma-contro
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	
	•		•			'
	has not perfor tance the resul					imal. e in severe/life-threatening episode.
** Useful r						•
	ma.org.uk/for-pro	ofessionals/				

Frequent exercise induced symptoms Frequent hospital admissions or GP/A+E attendances

Respiratory rate at rest

breaths per minute 5th-95th

centile)

Poor asthma control

Frequent use of reliever Limiting daily activities Poor sleep, nocturnal cough

- 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

Heart rate (beats per minute

5th-95th centile)

improvement/guidelines/asthma/

Guide weight (kg)

Boys

Ref: The British Thoracic Society (BTS) British Guideline on the Management of Asthma (revised 2019) https://www.brit-thoracic.org.uk/quality-

Age

Appendix 1 - Paediatric normal vital signs values

5 years	18	18		80-135
6 years	21	20	20-30	80-130
7 years	23	22		
8 years	25	25		
9 years	28	28	45.05	70-120
10 years	31	32	15-25	
11 years	35	35		
12-13 years	43	43		65-110
14 years	50	50	12-24	60-110
14 years+	70	70		

Girls

Reference: Standards for Assessing, Measuring and Monitoring Vital Signs in Infants, Children and Young People 2017