Acute Asthma / Wheeze Pathway (not for Bronchiolitis)

Clinical Assessment / Management Tool for Children & Young People Older than 1 year old with Acute Wheeze

Healthier Together
Local advice and support to help manage and improve the health and wellbeing of babies, children, and young people

NHS

Management – Primary Care and Community Setting

Patient >1 yr with wheeze presents:

Consider other diagnoses as per Table 1

ASSESSMENT	Low Risk MILD - GREEN	Intermediate Risk MODERATE - AMBER	High Risk SEVERE - RED	IMMEDIATELY LIFE-THREATENING - PURPLE
Behaviour	Alert; No increased work of breathing	Alert; Some increased work of breathing But talking in full sentences	May be agitated; Unable to talk freely or feed	Can only speak in single words; Confused, agitated or drowsy. Coma
O2 Sat in air	≥ 95%; Pink	≥ 92%; Pink	< 92%; Pale	< 92%; Cyanosis; Grey
Heart Rate	Normal	Normal	Under 5yr >140/min Over 5 yr >125/min	Under 5yr >140/min Over 5 yr >125/min May be bradycardic
Respiratory Peak Flow° (only for children > 6yrs with established technique)	Normal Respiratory rate Normal Respiratory effort PEFR >75% l/min best/predicted	Under 5 yr <40 breaths/min Over 5 yr <30 breaths/min **Mild** Respiratory distress: mild recession and some accessory muscle use PEFR 50-75% l/min best/predicted	Under 5 yr >40 breaths/min Over 5 yr >30 breaths/min **Moderate** Respiratory distress: moderate recession & clear accessory muscle use PEFR <50% l/min best/predicted	**Severe** Respiratory distress Poor respiratory effort: Silent chest Marked use of accessory muscles and recession exhaustion PEFR <33% l/min best/predicted or too breathless to do PEFR

Normal Values	
Respiratory Rate at rest [b/min]	
1-2yrs	25-35
>2-5 yrs	25-30
>5-12 yrs	20-25
>12 yrs	15-20
Heart Rate [bpm]	
1-2yrs	100-150
>2-5 yrs	95-140
>5-12 yrs	80-125
>12 yrs	60-100

Ref: Advanced Paediatric Life Support 5th Edition. Life Advance Support group edited by Martin Samuels; Susan Wieteska Wiley Blackwell/2011 BMJ Books

GREEN ACTION

HOME

Salbutamol 2-5 'puffs' via inhaler & spacer (check inhaler technique) - use higher dose if Tx started by parent as per asthma action plan.

Advise – Person prescribing ensure it is given properly

- Continue salbutamol as per instructions on safety netting document.

Provide:

- Appropriate and clear guidance should be given to the patient/carer in the form of an Acute exacerbation of Asthma or Viral induced wheeze safety netting sheet.
- If exacerbation of asthma, ensure they have a personal asthma plan.
- Confirm they are comfortable with the decisions / advice given check they have no high risk factors in table 2 before sending home
- Antibiotics should not be routinely given. Unless indicated

*avoid oral steroids in episodic wheezers (wheezers only with colds). Oral steroids play a role in treating acute exacerbations in multiple trigger wheezers (asthma, eczema, allergies)

FOLLOWING ANY ACUTE EPISODE, THINK:

1. Asthma / wheeze education and inhaler technique
2. Written Asthma/Wheeze action plan
3. Follow up with GP/Asthma Practice Nurse within 48hrs. Consider compliance.

AMBER ACTION

Salbutamol (check inhaler technique) x **10 'puffs'** via inhaler and spacer

- Reassess after 20 – 30 minutes
- Oral Prednisolone within 1 hour for 3 days **if known asthmatic**

<5 years - avoid steroids if episodic wheeze. role if multiple trigger wheezer.*
1-2 years- 10mg
2-5 years - 20mg
>5 years - 40mg

IMPROVEMENT?
Lower threshold for referral if concerns about social circumstances/ability to cope at home or if previous severe/life threatening asthma attack. Table 2.

YES

Follow Amber Action if:

- Relief not lasting 4 hours
- Symptoms worsen or treatment is becoming less effective

URGENT ACTION

NO

Refer immediately to emergency care by 999

Alert Paediatrician

- **Oxygen to maintain O2 Sat > 94%, using paediatric nasal cannula if available**
- Salbutamol 2.5 – 5 mg oxygen-driven Nebuliser
- Salbutamol 100 mcg x 10 'puffs' via inhaler & spacer only if no oxygen available.

- Repeat every 20 minutes whilst awaiting transfer
- If not responding add Ipratropium 20mcg/dose 8 puffs or 250 mcg/dose nebulised mixed with the salbutamol.
- Oral Prednisolone start immediately as per table 3
- Paramedics to give nebulised Salbutamol, driven by O2 according to protocol
- Stabilise child for transfer and stay with child whilst waiting
- Send relevant documentation

ACTION IF LIFE THREATENING

Repeat Salbutamol 2.5 - 5 mg via Oxygen-driven nebuliser whilst arranging immediate hospital admission - 999

Hospital Emergency Department / Paediatric Unit

° To calculate Predicted Peak Flow–measure the child's height and then go to www.peakflow.com

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This guidance was written in collaboration with the SE Coast SCN and involved extensive consultation with healthcare professionals in Frimley, Wessex and Wexham

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Table 1: Consider after diagnoses if any of the following

- Fever and/or productive cough (pneumonia)
- Dysphagia, drooling, unwell (epiglottitis)
- <1yr, diffuse wheeze and crackles (Bronchiolitis)
- Inspiratory stridor (croup)
- Breathlessness with light headedness and peripheral tingling (hyperventilation)
- Asymmetry on auscultation (pneumonia or a foreign body etc)
- Excessive vomiting (GORD)

Table 2: High Risk Factors – Healthcare professionals should be aware of the increased need for hospital admission in infants with the following:

- Attack in late afternoon or night
- Recent hospital admission
- Previous severe attack
- Young age
- Previous cardio-respiratory illness

Table 3 : Drug Doses

Dose of soluble prednisolone (orally) 1-2 years- 10mg, 2-5 years - 20mg, >5 years - 40mg

Dose salbutamol nebulisers <5 yrs 2.5 mg; >5yrs 5mg

Dose ipratropium bromide 250 mcg all ages (or up to 500mcg via nebuliser for over 12 years)

Table 4 : Normal paediatric values:

(Adapted from APLS†)	Respiratory Rate at rest:	Heart Rate	Systolic BP mmHg
Pre-school 2 - 5 years	25 - 30	95 - 140	85 - 100
School 5 - 11 years	20 - 25	80 - 120	90 - 110
Adolescent 12-16 years	15 - 20	60 - 100	100 - 120

† Adapted from Advanced Paediatric Life Support The Practical Approach Fifth Edition Advanced Life Support Group Edited by Martin Samuels; Susan Wieteska Wiley-Blackwell / 2011 BMJ Books.

Table 5: 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)
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