Acute Asthma / Wheeze Pathway (not for Bronchiolitis)

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

Management – Acute Care Setting

Patient >1 yr with wheeze presents:

ASSESSMENT	Low Risk MILD - GREEN	Intermediate Risk MODERATE - AMBER	High Risk SEVERE - RED
Behaviour	Alert; No increased work of breathing	Alert; Some increased work of breathing	May be agitated; Unable to talk freely or feed
O2 Sat in air	≥ 95%; Pink	≥ 92%; Pink	< 92%; Pale
Heart Rate	Normal	Normal	Under 5yr >140/min Over 5 yr >125/min
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 **Impending respiratory arrest (life threatening severity) suggested by confusion/drowsiness, silent chest or poor respiratory effort**

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

*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)

Consider other diagnoses:
- Cough without a wheeze
- foreign body
- croup
- bronchiolitis

GREEN ACTION

First Steps

Salbutamol 10 'puffs' via inhaler & spacer (check inhaler technique)

Advise – Person prescribing ensure it is given properly
- Continue Salbutamol 4 hourly 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/Wheeze safety netting sheet.
- If exacerbation of asthma, ensure they have a personal asthma plan.
- Confirm they are comfortable with the decisions / advice given and then think "Safeguarding" before sending home.
- Consider referral to acute paediatric community nursing team if available

HOME

FOLLOWING ANY ACUTE EPISODE, THINK:
1. Asthma / wheeze education and inhaler technique
2. Written Asthma/Wheeze action plan
3. Early review by GP / Practice Nurse – consider compliance

AMBER ACTION

First Steps

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**

<2 years -avoid steroids if episodic wheeze. 10mg/day if multiple trigger wheezer*
2-5 years 20 mg/day
Over 5 years 30-40 mg/day

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

YES

NO

Follow Amber Action if:
- Relief not lasting 4 hours
- Symptoms worsen or treatment is becoming less effective

URGENT ACTION

Immediate paediatric assessment

Seek assistance
- High flow oxygen (15L/min) via non-rebreather mask
- 3 x salbutamol 2.5mg (under 5 years) / 5 mg (5-18 years) nebulised
- 3 x ipratropium bromide (250 micrograms/dose mixed with the nebulised salbutamol).
- Oral prednisolone 20mg <5 years, 30-40mg >5years.
- Monitor response for 15-30 minutes. If response is poor to inhaled therapy:
  - Early addition of a single bolus dose of intravenous salbutamol (< 2 years - 5mcg/kg ; > 2 years - 15 mcg/kg) - maximum dose 250 mcg. Consider IV Magnesium bolus (40 mg/kg) (0.4 mls/kg of 10% solution over 20 mins). If improvement following salbutamol bolus, commence salbutamol infusion (0.5-2mcg/kg/min)
- If severe/life threatening asthma despite above, inform PICU, inform anaesthetist and give intravenous aminophylline bolus (7.5mg/kg) followed by aminophylline infusion (1 month – 12 years 1 mg/kg/hour, 12-18 years 500-700 mcg/kg/hr)

See SORT asthma guideline http://www.sort.nhs.uk

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

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Management – Acute Care Setting

Glossary of Terms	
ABC	Airways, Breathing, Circulation
APLS	Advanced Paediatric Life Support
AVPU	Alert Voice Pain Unresponsive
B/P	Blood Pressure
CPD	Continuous Professional Development
CRT	Capillary Refill Time
ED	Hospital Emergency Department
GCS	Glasgow Coma Scale
HR	Heart Rate
MOI	Mechanism of Injury
PEWS	Paediatric Early Warning Score
RR	Respiratory Rate
WBC	White Blood Cell Count