Clinical guideline for acute wheeze & asthma
In children aged 1 - 5 years
Hospital care

Airedale NHS Trust
Bradford Teaching Hospitals NHS Foundation Trust
NHS Bradford and Airedale

Name:_____ DOB: ____/____/____/ A&E/Hospital No:_____

Weight:_____

Doctor:_____ Date: ____/____/____/ Time:_____

Assess the severity on initial presentation

- Has any pre-hospital treatment temporarily improved the child's condition?
- At any stage has the child had any features of life-threatening/severe asthma?
- The severity should be based on the worst set of vital signs/features of asthma.

	Heart Rate	Respiratory Rate	SaO	Fi02	Recessions?
Initial presentation YAS/ED/PAR/GP amb					
ED/PAR (leave blank if same as above)					

Coma?	Yes ☐	No ☐	Exhaustion?	Yes ☐	No ☐
Silent chest?	Yes ☐	No ☐	Confusion?	Yes ☐	No ☐
Poor respiratory effort?	Yes ☐	No ☐	Able to complete sentences?	Yes ☐	No ☐

Life threatening	Severe	Moderate	Mild
SaO ≤92% plus any of • Silent chest • Poor resp effort • Confusion/coma • Cyanosis • Bradycardia • Apnoeas in infants	• SaO ≤92% • HR >130 • RR >50 • Use of accessory muscles • Too breathless to talk/eat	• SaO ≥93% • No features of severe asthma • Able to take feeds	• SaO >95% • No increased work of breathing • HR within normal limits
GO TO PAGE 3	GO TO PAGE 4	GO TO PAGE 5	GO TO PAGE 6

Patients with life-threatening features must be seen in resuscitation area by a senior doctor ASAP

Name: A&E/Hospital No:

HISTORY:

Does the child have an existing wheeze/asthma care plan? Yes ☐ No ☐

Have they used bronchodilators for this illness? **How** administered, **how** much and **how** often?

Triggers to illness: Interval symptoms:

Nocturnal symptoms in last 6 months:

School days missed in last 6 months (days): Problems with daily activities:

Does any member of the household smoke? Yes ☐ No ☐

PMH:
Any previous PICU admissions

FH:

FH of atopy (specify relationship);

MEDICATIONS/ALLERGIES:

EXAMINATION:

Investigations - only perform if cannulating. Life-threatening asthma - cannulate immediately. Severe, or moderate and not responding, apply topical anaethesia and delay cannulation.

FBC

Biochemistry

Blood gases – venous or capillary, only in life-threatening asthma or severe and not responding

1.	pH	02	C02	HC03	Fi02
2.	pH	02	C02	HC03	Fi02

CXR indicated in all cases of life threatening features. Also in cases of suspected pneumothorax and/or presence of focal signs.

Other

Name: A&E/Hospital No:

LIFE-THREATENING WHEEZE & ASTHMA OR SEVERE & NOT RESPONDING TO TREATMENT

Obtain senior help and Paediatric Registrar immediately (consider anaesthetists)
Patient must be managed in a Resuscitation Area

	Signature & Time
AIRWAY & BREATHING 1. Check airway 2. Give high flow O2 with non-rebreathe mask 3. If apnoea occurs support respiration with bag and mask and obtain senior anaesthetic help 4. Give Salbutamol nebuliser 2.5mg (nebulise on oxygen) 5. Give Ipatropium nebuliser 0.25mg (nebulise on oxygen)	
IV ACCESS 1. Insert appropriately sized IV cannula 2. Obtain samples for FBC, U&E, glucose & venous gas 3. Give IV hydrocortisone 4mg/kg	
BLOOD GAS ANALYSIS 1. May use venous or capillary gas 2. Markers of severity • Severe hypoxia (p02 <8kPa) • Low pH (<7.35)	
CONTINUING MEDICATION 1. Continue nebulised bronchodilators every 20-30 min 2. Consider IV Salbutamol infusion 1-5 microgram/kg/min 3. Consider Aminophylline infusion 1mg/kg/hour (may be preceded by loading dose if not already on theophyllines)	
FURTHER SUPPORT 1. Paediatric Registrar/Consultant 2. Anaesthetic Registrar/Consultant	
CONTINUED MONITORING 1. Continuous monitoring of saturations and heart rate 2. Assess respiratory rate & work of breathing every 30min	

ALL PATIENTS WITH LIFE-THREATENING SIGNS OF ACUTE WHEEZE/ASTHMA AT ANY TIME MUST BE ADMITTED

Ensure History & Examination findings on page 2 are filled in

Name: A&E/Hospital No:

SEVERE ACUTE FEATURES

	Signature & Time
AIRWAY & BREATHING 1. Check airway 2. Give O2 via face mask to maintain SaO above 95% 3. Give Salbutamol nebuliser 2.5 mg (nebulise on oxygen) 4. Give Ipatropium nebuliser 0.25mg if poor response to Salbutamol (nebulise on oxygen)	
APPLY AMETOP	
15-20 MIN - RE-ASSESS AFTER INITIAL NEBULISER HR RR: Recessions or use of accessory muscles: Sa0 on air: IF LIFE-THREATENING FEATURES OR NO IMPROVEMENT AND OBTAIN SENIOR HELP GO TO PAGE 3 IF SEVERE FEATURES BUT IMPROVING CONTINUE ON THIS PAGE 4 IF MODERATE FEATURES GO TO PAGE 5 1. Repeat nebulised Salbutamol 2.5mg 2. Give oral Prednisolone (use soluble) - 20 mg in infant under 3 years - 30 mg in child 3 years & over 3. Insert appropriately sized IV cannula 4. Take blood for FBC, U&E, glucose and venous gas	
1 HOUR - RE-ASSESS THE PATIENT HR RR: Recessions or use of accessory muscles: Sa0 on air: IF LIFE-THREATENING OR SEVERE FEATURES GO TO PAGE 3 AND OBTAIN SENIOR HELP IF CONTINUES TO HAVE RAISED RR OR INCREASED WORK OF BREATHING ARRANGE ADMISSION IF HR&RR NORMAL, NO INCREASED WORK OF BREATHING & Sa0 >95% ON AIR, CONSIDER DISCHARGE. GO TO PAGE 7 AND FOLLOW DISCHARGE PLAN	
IF NOT IMPROVING CONSIDER ALTERNATIVE DIAGNOSES	

ALL INFANTS UNDER 2 YEARS WITH SEVERE FEATURES AT ANY TIME MUST BE ADMITTED

Any patients with signs of severe features on arrival must only be considered for discharge after observation for at least 2 hours and must be reviewed by a senior/middle grade doctor before discharge,
Have lower threshold for admission if any social concerns.
Ensure History & Examination findings on page 2 are filled in.

Name: A&E/Hospital No:

MODERATE ACUTE FEATURES

Signature & Time

AIRWAY & BREATHING

1. Check airway
2. Give O2 via face mask to maintain Sa0 above 95%
3. Give Salbutamol inhaler 5-10 puffs via a spacer

15-20 MIN - RE-ASSESS AFTER INITIAL BRONCHODILATOR

HR RR: Recessions or use of accessory muscles:

Sa0 on air:

IF LIFE-THREATENING OR SEVERE FEATURES GO TO PAGE 3 AND OBTAIN SENIOR HELP

IF MODERATE FEATURES CONTINUE ON THIS PAGE 5

IF HR&RR NORMAL, NO INCREASED WORK OF BREATHING & Sa0 >95% ON AIR, CONSIDER DISCHARGE. GO TO PAGE 7 AND FOLLOW DISCHARGE PLAN

1. Repeat inhaled Salbutamol 4-10 puffs via spacer
2. Give oral Prednisolone (use soluble) - 20mg to infant under 3 years
   - 30mg to children 3 years & over

1 HOUR - RE-ASSESS THE PATIENT

HR RR: Recessions or use of accessory muscles:

Sa0 on air:

IF LIFE-THREATENING OR SEVERE FEATURES GO TO PAGE 3 AND OBTAIN SENIOR HELP

IF MODERATE FEATURES CONTINUE ON THIS PAGE 5

IF HR&RR NORMAL, NO INCREASED WORK OF BREATHING & Sa0 >95% ON AIR, CONSIDER DISCHARGE. GO TO PAGE 7 AND FOLLOW DISCHARGE PLAN

1. Give Salbutamol nebuliser 2.5 mg (nebulise on oxygen)

2 HOUR - RE-ASSESS THE PATIENT

HR RR: Recessions or use of accessory muscles:

Sa0 on air:

IF LIFE-THREATENING OR SEVERE FEATURES GO TO PAGE 3 AND OBTAIN SENIOR HELP

IF MODERATE FEATURES CONTINUE ON THIS PAGE 5

IF HR&RR NORMAL, NO INCREASED WORK OF BREATHING & Sa0 >95% ON AIR, CONSIDER DISCHARGE. GO TO PAGE 7 AND FOLLOW DISCHARGE PLAN

1. Repeat nebulised Salbutamol 2.5mg
2. Refer for admission

Ensure History & Examination findings on page 2 are filled in

Name: A&E/Hospital No:

MILD ACUTE FEATURES

	Signature & Time
INITIAL MANAGEMENT Give **usual** bronchodilator via a spacer If not already taking bronchodilator give 2-5 puffs of Salbutamol via a spacer	
15-20 MIN - RE-ASSESS AFTER INITIAL NEBULISER HR RR: Recessions or use of accessory muscles: Sa0 on air: IF LIFE-THREATENING FEATURES OR NO IMPROVEMENT GO TO PAGE 3 AND OBTAIN SENIOR HELP IF MODERATE FEATURES GO TO PAGE 5 IF HR&RR NORMAL, NO INCREASED WORK OF BREATHING & Sa0 >95% ON AIR, CONSIDER DISCHARGE. GO TO PAGE 7 AND FOLLOW DISCHARGE PLAN	

Ensure History & Examination findings on page 2 are filled in

Name: A&E/Hospital No:

DISCHARGE PLANNING

	Signature & Time
Before discharge consider 1. Before discharge can be considered the patient must be stable, have a heart rate within normal limits for their age, have no recessions or use of accessory muscles. 2. Any patient with life-threatening signs of asthma at any time MUST be admitted 3. Any patient who had signs of severe asthma at presentation MUST be observed for 2 hours and reviewed by a Senior/Middle Grade Doctor before discharge 4. All infants under 2 years who present with signs of severe asthma MUST be admitted 5. If patient received nebulised bronchodilator before presentation consider extended period of observation 6. If patient presented with recessions consider discharge on oral Prednisolone for 20-30mg for 3-5 days 7. If patient has re-attended within 6 hours a period of extended observation must be considered	
Consider referral for admission/extended observation if any of the following 1. Signs of severe asthma at initial presentation 2. Significant co-morbidity 3. Taking oral steroids prior to presentation 4. History of poor compliance 5. Previous near fatal attack/brittle asthma 6. Psychological problems/learning difficulties 7. Poor social circumstances	
At time of discharge 1. Ensure the patient has an adequate supply of inhalers and oral medications 2. Check inhaler technique and ensure the patient has a spacer 3. Ensure the patient is clear about their treatment 4. Give the patient a copy of their management plan patient to be reviewed at their GP surgery as needed 5. Advise the patient to seek further medical advice if there is any deterioration in their symptoms	

Ensure history & Examination findings on page 2 are filled in