Health Education Thames Valley

ACUTE ASTHMA (PAEDIATRIC)

MODULE: BREATHING

TARGET: ALL PAEDIATRIC TRAINEES; ED TRAINEES

BACKGROUND:

Acute asthma is a common presentation to the Emergency Department. Every 17 minutes a child is admitted to hospital in the UK because of their asthma (Asthma UK). In 2009 there were 12 children under the age of 14 years old who died from acute asthma exacerbation. It is estimated that up to 90% of deaths are potentially avoidable and 75% of admissions preventable.

Recognition and initial management of acute severe asthma is expected of all paediatric trainees (RCPCH curriculum).

Editor: Dr Andrew Darby Smith
Original Author: Dr R Furr (adapted from Bristol Key Competencies)

INFORMATION FOR FACULTY

LEARNING OBJECTIVES

At the end of the session participants should:

1. Recognise asthma and classify severity (moderate, severe and life-threatening)
2. Have familiarity with BTS Guideline for management of acute severe asthma
3. Understand when inhalers vs nebulisers indicated
4. Be aware of indication for IV therapy (salbutamol vs aminophylline, and magnesium)
5. Recognise when to ask for more help, including PHDU/PICU support

SCENE SETTING

Location: Emergency Department
Expected duration of scenario: 15 mins Expected duration of debriefing: 30 mins

EQUIPMENT AND CONSUMABLES

Mannequin (child or adult)
Monitoring
Resuscitation trolley
O_2 facemask
Nebuliser mask
Bag and mask
IV cannula and sticker fixation
Simulated drugs:
- Salbutamol neb 2.5mg, 5mg
- Hydrocortisone 250mg, 500mg
- Salbutamol bolus 15mcg/kg over 10 min
- Salbutamol infusion 1-4mcg/kg/min
- Aminophylline bolus 5mg/kg over 20 min
- Aminophylline 1mg/kg/hr

SORT Emergency drug chart (if requested – see appendix)

PERSONNEL-IN-SCENARIO

1 x ST1-3 trainee *and/or* 1 x ST4-8 trainee
1 x nurse (faculty or participant)
1 x mother (faculty)

PARTICIPANT BRIEFING

Dylan is 6 years old and has been sent to ED by his GP. He has a one day history of increasing coughing and wheeze. He is a known asthmatic. You are called to resus area of the Emergency Department by the nurse who has just triaged Dylan and is concerned about him.

FACULTY BRIEFING

'VOICE OF THE MANIKIN' BRIEFING

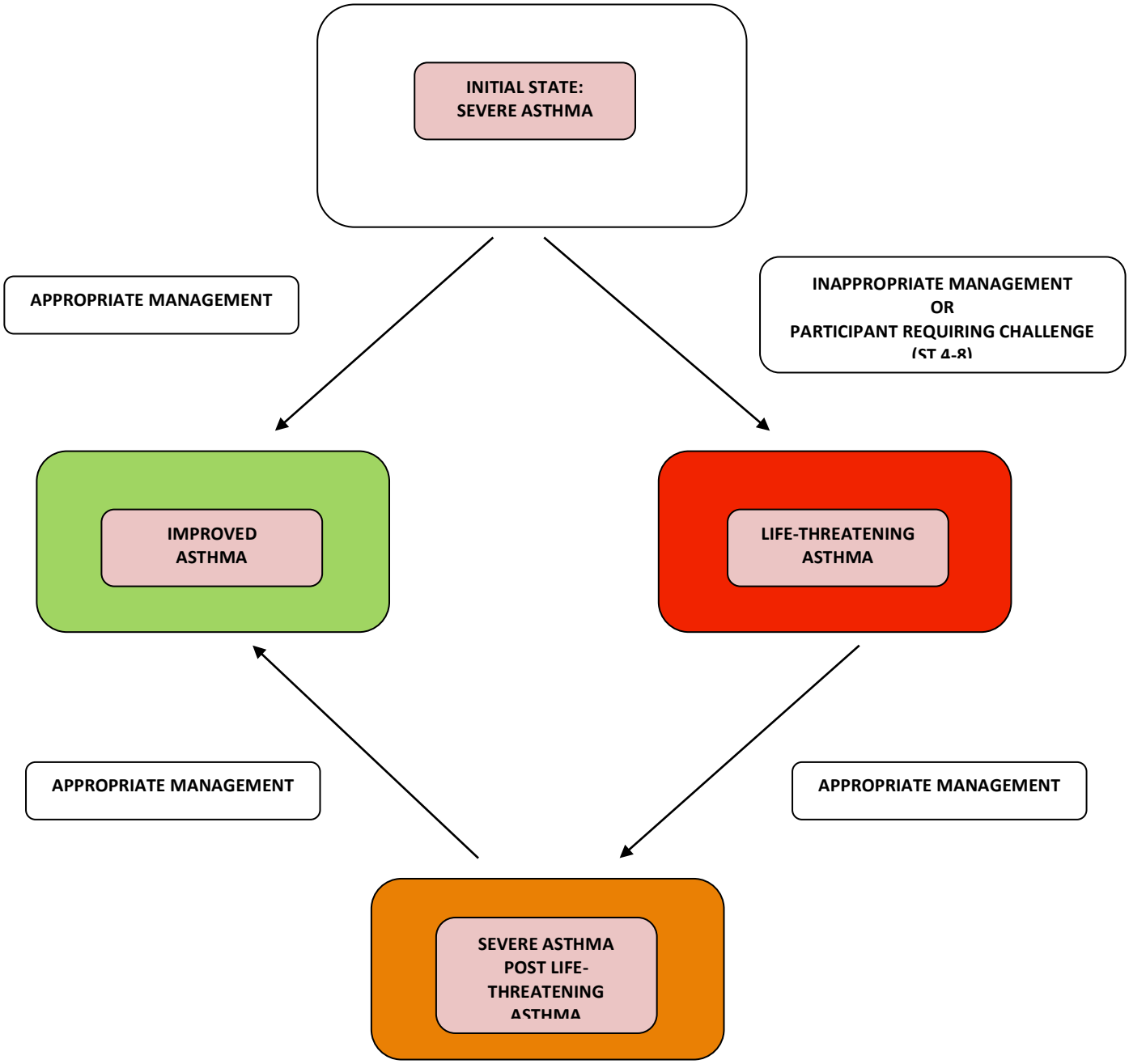
As 6-year-old Dylan you are short of breath, and unable to talk in full sentences. You have been unwell for the past day. Your chest hurts and you are scared.

IN-SCENARIO PERSONNEL BRIEFING (MOTHER)

Your 6-year-old son Dylan has known asthma on inhaled corticosteroids (which he is not very good at taking regularly). He has previously required nebulisers at his GP surgery but has never been admitted to hospital and has never needed ITU/HDU or any IV medication.

Triggers for his wheeze include cats, exercise and cold weather. No-one else in the family has asthma. You smoke (but not inside the house).

CONDUCT OF SCENARIO



BASELINE STATE – SEVERE ASTHMA

VITAL SIGNS					
Rhythm	SR	**HR**	120	**BP**	100/50
Resp rate	40	**SaO_2**	89%	**$ETCO_2$**	
Temp	36.5	**AVPU**	A	**Pupils**	ERL
Other					
ASSESSMENT					
Pulses	Normal	**Cap refill**	2 sec	**Skin**	No rash
Airway	Maintained	**Breathing**	Prolonged expiration	**Breath sounds**	Wheezy
Work of breathing	Increased	**Recession**	Subcostal & intercostal	**Neuro**	
Other	Equal air entry Unable to speak in full sentences				
EXPECTED OUTCOMES					
Participants should:	1. Administer 100% O_2 via facemask 2. Establish monitoring 3. Diagnose asthma and recognise severity 4. Commence nebuliser salbutamol (5mg) and atrovent (500mcg) 5. Obtain IV access, take bloods and venous gas 6. Administer hydrocortisone 4mg/kg IV				
Facilitators should:	Provide further information if requested: - Cap refill time 2 sec - Peripheral pulses normal - Not able to speak in full sentences Progression: - If managed well patient does not deteriorate. Progress to **'Improved Asthma State'** - If suboptimal management (or if ST4-8 requiring increased difficulty to challenge participant), patient deteriorates to life-threatening asthma. Progress to **'Life-threatening Asthma State'**				

STATE: IMPROVED ASTHMA

VITAL SIGNS					
Rhythm	SR	**HR**	102	**BP**	100/50
Resp rate	32	**SaO_2**	99%	**$ETCO_2$**	
Temp	36.5	**AVPU**	A	**Pupils**	ERL
Other					
ASSESSMENT					
Pulses	Normal	**Cap refill**	2 sec	**Skin**	No rash
Airway	Maintained	**Breathing**	Prolonged expiration	**Breath sounds**	Soft wheeze
Work of breathing	Improved	**Recession**	Subcostal & intercostal	**Neuro**	
Other	Able to speak in full sentences				
EXPECTED OUTCOMES					
Participants should:	1. Continue treatment 2. Admit to ward 3. Could continue on PO prednisolone 4. Switch to inhaled salbutamol if sats maintained >92% 5. NOT for CXR; NOT for ABx 6. Discuss need for asthma management plan on discharge				
Facilitators should:	Provide further information if requested: - Cap refill time 2 sec - Peripheral pulses normal - Able to speak in full sentences Debrief (see below)				

STATE: LIFE-THREATENING ASTHMA

VITAL SIGNS					
Rhythm	SR	**HR**	150	**BP**	80/30
Resp rate	40	**SaO_2**	83%	**$ETCO_2$**	
Temp	35	**AVPU**	V	**Pupils**	ERL
Other					

ASSESSMENT					
Pulses	Pulsus paradoxus	**Cap refill**	4 sec	**Skin**	No rash
Airway	Maintained	**Breathing**	Prolonged expiration	**Breath sounds**	Wheeze/quiet
Work of breathing	Increased	**Recession**	Subcostal & intercostal	**Neuro**	Agitated
Other	Increasingly confused/combative. GCS 13/15				

EXPECTED OUTCOMES	
Participants should:	1. Recognition of deterioration 2. EITHER: Salbutamol IV bolus over 10 min followed by salbutamol infusion 3. OR: Aminophylline IV loading over 20 min followed by infusion
Facilitators should:	<u>Provide further information if requested:</u> - Cap refill time 4 sec - Peripheral pulses: pulsus paradoxus - Speech is moaning/agitation <u>Progression:</u> - If managed well, patient improves. Move to **'Severe Asthma Post Life-Threatening Asthma'** - If managed suboptimally, do not allow patient to arrest. Instead, '**pause and perfect'**. Pause scenario and ask participant to tell you what clinical problem is and their thoughts on why patient is not responding. Discuss, and then restart the scenario and allow them to manage patient.

STATE: SEVERE ASTHMA POST-LIFE THREATENING ASTHMA

VITAL SIGNS					
Rhythm	SR	**HR**	120	**BP**	100/50
Resp rate	40	**SaO_2**	89%	**$ETCO_2$**	
Temp	36.5	**AVPU**	A	**Pupils**	ERL
Other					
ASSESSMENT					
Pulses	Normal	**Cap refill**	2 sec	**Skin**	No rash
Airway	Maintained	**Breathing**	Prolonged expiration	**Breath sounds**	Wheeze
Work of breathing	Increased	**Recession**	Subcostal & intercostal	**Neuro**	Compliant
Other	Unable to speak in full sentences				
EXPECTED OUTCOMES					
Participants should:	1. Continue 100% O_2 via facemask 2. Continue monitoring 3. Reassess and adjust treatment (salbutamol/atrovent nebulisers, IV hydrocortisone)				
Facilitators should:	Provide further information if requested: - Cap refill time 2 sec - Peripheral pulses normal - Unable to speak in full sentences Progression: - If managed well, patient improves. Move to **'Improved Asthma'**				

APPENDIX 1 – BLOOD GAS – SEVERE ASTHMA

RADIOMETER ABL SIMULATION SERIES

ABL725 ICU 00 00 C0 08-12-2012
PATIENT REPORT Syringe - S 195uL Sample# 90396

Identifications

Patient ID	10183365
Patient First Name	Dylan
Patient Last Name	Burrows
Date of Birth	10/04/2006
Sample type	Venous
Operator	Emergency Department

Blood Gas Values

pH	7.3		[7.340 - 7.450]
*p*CO²	5.37	kPa	[4.70 - 6.00]
*p*O²	7.17	kPa	[10.0 - 13.3]
*p*O²(A-a)e		kPa	

Oximetry Values

*c*tHb	13.3	g/dL	[12.0 - 16.0]
sO²		%	[95.0 - 98.0]
*F*O²Hb		%	[94.0 - 99.0]
FC OHb		%	[-]
*F*HHb		%	[-]
*F*metHb		%	[0.2 - 0.6]
Hct*c*		*%*	

Electrolyte Values

cK+	3.7	mmo1/L	[3.0 - 5.0]
cNa+	137	mmo1/L	[136 - 146]
*c*Ca²+	1.2	mmoq/L	[1.15 - 1.29]
*c*C1-	101	mmo1/L	[98 - 106]

Metabolite Values

*c*Glu	15.8	mmo1/L	[3.5 - 10.0]
*c*Lac	1.7	mmo1/L	[0.5 - 1.6]

Oxygen Status

*c*tO²c		vol%
*p*50c		kPa

Acid Base Status

*c*Base(Ecf)c	-2.9	mmo1/L
*c*HCO³-(P,st)c	24	mmo1/L

APPENDIX 2 – BLOOD GAS – LIFE-THREATENING ASTHMA

RADIOMETER ABL SIMULATION SERIES

ABL725 ICU 00 00 C0 08-12-2012
PATIENT REPORT Syringe - S 195uL Sample# 90396

Identifications

Patient ID	10183365
Patient First Name	Dylan
Patient Last Name	Burrows
Date of Birth	10/04/2006
Sample type	Venous
Operator	Emergency Department

Blood Gas Values

pH	7.22		[7.340 - 7.450]
*p*CO²	9.41	kPa	[4.70 - 6.00]
*p*O²	5.02	kPa	[10.0 - 13.3]
*p*O²(A-a)e		kPa	

Oximetry Values

*c*tHb	13.1	g/dL	[12.0 - 16.0]
sO²		%	[95.0 - 98.0]
*F*O²Hb		%	[94.0 - 99.0]
FC OHb		%	[-]
*F*HHb		%	[-]
*F*metHb		%	[0.2 - 0.6]
Hct*c*		*%*	

Electrolyte Values

cK+	3.5	mmo1/L	[3.0 - 5.0]
cNa+	136	mmo1/L	[136 - 146]
*c*Ca²+	1.2	mmoq/L	[1.15 - 1.29]
*c*C1-	101	mmo1/L	[98 - 106]

Metabolite Values

*c*Glu	16.3	mmo1/L	[3.5 - 10.0]
*c*Lac	2.8	mmo1/L	[0.5 - 1.6]

Oxygen Status

*c*tO²c		vol%
*p*50c		kPa

Acid Base Status

*c*Base(Ecf)c	-4.8	mmo1/L
*c*HCO³-(P,st)c	18.4	mmo1/L

APPENDIX 3 – EMERGENCY DRUG CALCULATOR

Date Jan 9, 2013

Southampton Oxford Retrieval Team

DRUG CALCULATOR

WEIGHT 20 Kg

Enter weight and click calculate

Calculate | Print

Emergency

Adrenaline 1:10,000	2 ml	(0.1 ml/kg)
Atropine 600mcg/ml	0.67 ml	(20mcg/kg, min 100mcg)
Atropine 100mcg/ml	4 ml	(20mcg/kg min 100mcg)
Sodium Bicarbonate 8.4%	20 ml	(1 ml/kg)
Calcium Gluconate 10%	10 ml	(0.5 ml/kg)

Cardiac

Cardioversion (sync)	20 Joules	(1J/kg) (use 2J/kg if fails)
Shockable rhythm (async)	80 Joules	(4J/kg)
Adenosine	2000 mcg	(100 mcg/kg)
Amiodarone Load	100 mg	(5 mg/kg over 30 minutes to 4hrs)

Neuro

Lorazepam	2 mg	(0.1 mg/kg)
Midazolam Buccal	2 mg	(0.1 mg/kg)
Phenytoin	400 mg	(20 mg/kg over 20 minutes)
Phenobarbitone	400 mg	(20 mg/kg)
Paraldehyde PR	8 ml	(0.4 ml/kg, mix 1:1 with oil)
3% Saline	60 ml	(3ml/kg)
Mannitol 10%	100 ml	(5ml/kg, eqivalent to 0.5g/kg)

Respiratory

Magnesium Sulphate	800 mg	(40 mg/kg over 20 minutes)
Salbutamol load	250 mcg	(15 mcg/kg over 10 minutes)
Hydrocortisone	80 mg	(4 mg/kg , max 100mg)
Aminophylline load	100 mg	(5 mg/kg over 20 minutes)
Adrenaline 1:1000 Nebulised	5 ml	(0.5 ml/kg, max 5 mls) Make up to 5 ml with saline

Anaesthesia

Ketamine			40 mg	(2mg/kg)
Thiopentone	20	to	100 mg	(1-5mg/kg)
Fentanyl	40	to	100 mcg	(2-5mcg/kg)
Morphine			2 mg	(0.1 mg/kg)
Rocuronium			20 mg	(1mg/kg)
Atracurium			10 mg	(0.5mg/kg)
Vecuronium			2 mg	(0.1mg/kg)
Suxamethonium			30 mg	(1.5mg/kg)

Anaphylaxis

Adrenaline IM	0.3 ml of 1:1000

Infusions

Calculations based on Southampton PICU infusions guidelines (2011)

Dopamine (central)	200 mg in 50ml of 0.9% Saline or 5% Glucose	3 ml / hr =	10	mcg/kg/min
Dopamine (peripheral)	20 mg in 50ml of 0.9% Saline or 5% Glucose	3 ml / hr =	1	mcg/kg/min
Adrenaline	4 mg in 50ml of 0.9% Saline or 5% Glucose	1.5 ml / hr =	0.1	mcg/kg/min
Noradrenaline	4 mg in 50ml of 0.9% Saline or 5% Glucose	1.5 ml / hr =	0.1	mcg/kg/min
Milrinone	10 mg in 50ml of 0.9% Saline or 5% Glucose	3 ml / hr =	0.5	mcg/kg/min
Dinoprostone (Prostin E2)	0 mcg in 50ml of 0.9% Saline or 5% Glucose	0 ml / hr =	0	ng/kg/min
Morphine	20 mg in 50ml of 0.9% Saline or 5% Glucose	1 ml / hr =	20	mcg/kg/hr
Midazolam	20 mg in 50ml of 0.9% Saline or 5% Glucose	1 ml / hr =	20	mcg/kg/hr
Salbutamol	10 mg in 50ml of 0.9% Saline or 5% Glucose	6 ml / hr =	1	mcg/kg/min
Aminophylline	250 mg in 250ml of 0.9% Saline or 5% Glucose	20 ml / hr =	1	mg/kg/hr

It is the prescribers responsibility to ensure the correct dose is prescribed Compiled by Tom Bennett - May 2012

APPENDIX 4 – SORT GUIDELINE FOR ACUTE SEVERE ASTHMA

Guideline for the management of severe asthma

NO/POOR RESPONSE

STEP 1
15L/min O_2 via NRBM
3 × Salbutamol nebulisers (2.5-5 mg)
3 × Ipratroprium nebulisers (250 mcg)
PO Prednisolone (20 mg < 5yrs, 20/40 mg >5 yrs)
OR IV Hydrocortisone (4mg/kg)

STEP 2
IV **Salbutamol** bolus (15 mcg/kg)
Salbutamol nebulisers (every 20 mins)

STEP 3
IV **Magnesium** bolus (40 mg/kg)
(0.4 mls/kg of 10% solution over 20 mins)
Salbutamol nebulisers (every 20 mins)

STEP 4
If improves following Salbutamol bolus
IV **Salbutamol** infusion(0.5- 2mcg/kg/min)
Discontinue Salbutamol nebulisers

STEP 5
If **NO** improvement following Salbutamol bolus
IV **Aminophylline** bolus (5mg/kg)
Followed by
Aminophylline infusion
< 9 years 1 mg/kg/hour
9-16 years 800 mcg/kg/hr
16-18 years 500 mcg/kg/hr

IMPENDING CARDIO-RESPIRATORY ARREST
Worsening agitation/level of consciousness
$SaO_2 \leq 90\%$ in 15L O_2 via NRBM
Poor respiratory effort
High CO_2 + Acidaemia ($pH \leq 7.2$)
Hypotension

INTUBATE AND VENTILATE

HIGH RISK CLINICAL SIGNS
Agitated
Altered level of consciousness
Unable to talk/feed
$SaO_2 \leq 92\%$ in air, $PaO_2 < 8$ kPa
$PaCO_2$ 'normal' (4.6 – 6 kPa)
Silent chest
Exhaustion/Poor respiratory effort

INDICATIONS FOR CXR
$SaO_2 \leq 92\%$ in 15L O_2
To exclude a pneumothorax/consolidation
To exclude FB/mediastinal mass

SALBUTAMOL TOXICITY
Tachycardia/tachyarrhythmia
Hyperglycaemia
Metabolic acidosis
Elevated LACTATE
Hypokalaemia

INTUBATION
Often difficult to ventilate post intubation
Risk of hypotension/cardiac arrest
Senior anaesthetic assistance
Rapid sequence induction
10-20 mls/kg fluid bolus pre induction
Ketamine 1-2 mg/kg
Suxamethonium 2 mg/kg
Or Rocuronium 1 mg/Kkg
Cuffed ETT
Continue paralysis
Consider disconnection and manual deflation if haemodynamic collapse

INITIAL VENTILATOR SETTINGS
PCV - may need high PIP
Rate 8-15/min
Allow completion of expiration – watch E_TCO_2 trace / ventilator flow loops
(Age independent)
Inspiratory time 0.8 -1 sec
PEEP 3-5 cmH_2O
FiO_2 1

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DEBRIEFING

POINTS FOR FURTHER DISCUSSION

Background risk factors for intensive care admission/mortality:

- Previous PHDU/PICU admissions
- Poorly controlled chronic symptoms
- 3 or more classes of medication
- Poor socioeconomic background
- Poor compliance and appointment non-attendance

Salbutamol vs aminophylline as choice of IV medication

- Both are equivalent in terms of effectiveness
- Both have significant side effects (tachycardia, vomiting)
- Depends on local policy. Trusts should ideally choose one IV medication to use regularly to increase staff familiarity with drug and prevent medication errors

Magnesium sulphate IV

Intravenous magnesium sulphate is a safe treatment for acute asthma although current evidence is limited.

Chest X-rays and antibiotics

No role in moderate asthma or acute severe asthma that is responding appropriately to treatment. Should be reserved for children in whom pneumothorax is suspected. Unequal air entry is a common finding in acute asthma and is due to transient mucus plugging, not consolidation due to bacterial infection.

Severity of asthma (from BTS/SIGN guideline):

	Clinical Signs	**Measurements**
Life-Threatening Asthma	Silent chest	SpO_2/Pulse/Resps as for 'acute severe asthma' (below)
	Cyanosis	
	Poor respiratory effort	
	Hypotension	PEF <33% best/predicted
	Exhaustion	
	Confusion	
Acute Severe Asthma	Can't complete sentences	SpO_2 <92%
	Too breathless to feed	PEF 33-50% best/predicted
		Pulse >140 (age 2-5)
		Pulse >125 (age >5)
		Resps >40 (age 2-5)
		Resps >30 (age >5)
Moderate Asthma	Able to talk in sentences	SpO_2 >92%
		PEF >50% Best/predicted
		None of 'acute severe asthma' features

ACUTE ASTHMA - HANDOUT

INFORMATION FOR PARTICIPANTS

KEY POINTS

Background risk factors for intensive care admission/mortality:

- Previous PHDU/PICU admissions
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ASSESSMENT OF SEVERITY OF ASTHMA:

	Clinical Signs	**Measurements**
Life-Threatening Asthma	Silent chest	SpO_2/Pulse/Resps as for 'acute severe asthma' (below)
	Cyanosis	
	Poor respiratory effort	
	Hypotension	PEF <33% best/predicted
	Exhaustion	
	Confusion	
Acute Severe Asthma	Can't complete sentences	SpO_2 <92%
	Too breathless to feed	PEF 33-50% best/predicted
		Pulse >140 (age 2-5)
		Pulse >125 (age >5)
		Resps >40 (age 2-5)
		Resps >30 (age >5)
Moderate Asthma	Able to talk in sentences	SpO_2 >92%
		PEF >50% Best/predicted
		None of 'acute severe asthma' features

NHS
Health Education Thames Valley

Guideline for the management of severe asthma

NO/POOR RESPONSE

STEP 1

15L/min O_2 via NRBM
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Salbutamol nebulisers (every 20 mins)

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Discontinue Salbutamol nebulisers

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Altered level of consciousness

Unable to talk/feed

$SaO_2 \leq 92\%$ in air, $PaO_2 < 8$ kPa
$PaCO_2$ 'normal' (4.6 – 6 kPa)

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Exhaustion/Poor respiratory effort

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Hyperglycaemia

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Elevated LACTATE

Hypokalaemia

INTUBATION

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Continue paralysis

Consider disconnection and manual deflation if haemodynamic collapse

INITIAL VENTILATOR SETTINGS

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Allow completion of expiration – watch E_TCO_2 trace / ventilator flow loops
(Age independent)

Inspiratory time 0.8 -1 sec

PEEP 3-5 cmH_2O

FiO_2 1

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RELEVANT AREAS OF THE CURRICULUM

Level One

L1_GEN_STA_02	Effective responses to challenge, complexity and stress in paediatrics
L1_GEN_STA_03	Advanced neonatal and paediatric life support skills
L1_GEN_STA_05	Effective skills in paediatric assessment
L1_GEN_STA_06	Skills in formulating an appropriate differential diagnosis in paediatrics
L1_GEN_STA_07	Effective initial management of ill-health and clinical conditions in paediatrics seeking additional advice and opinion as appropriate
L1_GEN_STA_15	Knowledge of common and serious paediatric conditions and their management
L1_GEN_STA_29	Effective communication and interpersonal skills with colleagues
L1_GEN_STA_30	Professional respect for the contribution of colleagues in a range of roles in paediatric practice
L1_GEN_STA_32	Effective handover, referral and discharge procedures in paediatrics
L1_GEN_STA_34	Ethical personal and professional practice in providing safe clinical care
L1_GEN_STA_35	Reliability and responsibility in ensuring their accessibility to colleagues and patients and their families
PAED_L1_CARD_GEN_04	Be able to respond appropriately to cardiac arrest
PAED_L1_RESP_ACU_ASTH_01	Be familiar with the British Thoracic Society guidelines for management of acute asthma
PAED_L1_RESP_ACU_ASTH_02	Be able to assess the severity of an asthma attack
PAED_L1_RESP_ACU_ASTH_03	Be able to institute appropriate emergency treatment (of acute asthma)
PAED_L1_RESP_ACU_ASTH_04	Recognise when more senior help is needed (in acute asthma)

Level Two (as above plus):

L2_GEN_STA_02	Increasing credibility and independence in response to challenge and stress in paediatrics
L2_GEN_STA_03	Leadership skills in advanced neonatal and paediatric life support
L2_GEN_STA_04	Responsibility for conducting effective paediatric assessments and interpreting findings appropriately
L2_GEN_STA_06	Improving skills in formulating an appropriate differential diagnosis in paediatrics
L2_GEN_STA_09	Effective skills in performing and supervising practical procedures in paediatrics ensuring patient safety
L2_GEN_STA_15	Extended knowledge of common and serious paediatric conditions and their management
L2_GEN_STA_29	Skill in ensuring effective relationships between colleagues
L2_GEN_STA_32	Effective skills in ensuring handover, referral and discharge procedures in paediatrics

L2_GEN_STA_34	Sound ethical, personal and professional practice in providing safe clinical care
L2_GEN_STA_35	Continued responsibility and accessibility to colleagues, patients and their families
PAED_L2_CARD_GEN_01	Be able to provide advanced life support and lead the team at a cardiac arrest
PAED_L2_RESP_GEN_01	Have the knowledge and skills to be able to assess and initiate management of patients presenting with respiratory problems in acute and outpatient settings
PAED_L2_RESP_GEN_03	Understand the life threatening nature of some of these conditions and when to call for help
PAED_L2_RESP_GEN_04	Recognise factors which suggest underlying or serious pathology
PAED_L2_RESP_ACU_ASTH_01	Be able to lead treatment of severe asthma and review ongoing treatment before discharge

Level Three (as above plus):

L3_GEN_STA_02	Responsibility for an effective response to complex challenges and stress in paediatrics
L2_GEN_STA_03	Leadership skills in advanced neonatal and paediatric life support
L3_GEN_STA_06	Effective skills in making safe decisions about the most likely diagnoses in paediatrics
L3_GEN_STA_09	Expertise in a range of practical procedures in paediatrics specific to general and sub-specialist training
L3_GEN_STA_15	Detailed knowledge of common and serious paediatric conditions and their management in General Paediatrics or in a paediatric sub-specialty
L3_GEN_STA_29	Positive and constructive relationships form a wide range of professional contexts
L3_GEN_STA_32	Effective leadership skills in the organisation of paediatric team-working and effective handover
L3_GEN_STA_34	Exemplary professional conduct so as to act as a role model to others in providing safe clinical care
L3_GEN_STA_35	Responsibility for ensuring their own reliability and accessibility and that of others in their team

FURTHER RESOURCES

1. Supporting material for BTS/SIGN Guidelines:
   http://www.sign.ac.uk/guidelines/fulltext/101/index.html

2. Full BTS/SIGN guideline on treatment of Asthma:
   http://www.britthoracic.org.uk/Portals/0/Guidelines/AsthmaGuidelines/sign101%20Jan%202012.pdf

3. Quick reference guide to BTS/SIGN guidelines:
   http://www.britthoracic.org.uk/Portals/0/Guidelines/AsthmaGuidelines/qrg101%202011.pdf

4. SORT (Southampton Oxford Retrieval Team) Guideline for Acute Asthma
   http://www.sort.nhs.uk/Media/Guidelines/Guidelineforthemanagementofsevereasthma.pdf

PARTICIPANT REFLECTION

What have you learned from this experience? (Please try and list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?

PARTICIPANT FEEDBACK

Date of training session:.....

Profession and grade:.....

What role(s) did you play in the scenario? (Please tick)

Primary/Initial Participant	
Secondary Participant (e.g. 'Call for Help' responder)	
Other health care professional (e.g. nurse/ODP)	
Other role (please specify):	
Observer	

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants? This is especially important if you have ticked anything in the disagree/strongly disagree box.

FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?