RCH Simulation
Scenario : Paed Asthma_ward deterioration

Set Up:

Mannequin /Confederate	Moulage	Equipment available	Drugs available
Std Pt	IV + drain	Nebulising circuit	salbutamol
Confederate nurse	Pale face	Airway Trolley	atrovent
Confed anaesthetist	Blue lips	Circulation trolley	Magnesium sulphate
	Agitated patient	Non invasive + invasive Ventilator	IV methylprednisolone
		spacer	IV aminophylline
		ET CO2	Intubation drugs + ketamine
		Chest drain & insertion pack	NSaline, 5%/NSaline
		stethoscope	
		Oxygen mask	

Monitor: Basic: SpO2, HR

Paperwork Required:
Observational Chart
Drug Chart
Arrest/Resuscitation Chart
Blood gas – venous pH 7.18, pCO2 86, pO2 88, Bicarb 32 BE -5
Blood gas - arterial
Blood glucose 16
CXR

Learning Objectives:

(1) *Medical*

- Management of acute severe asthma
  Indication for & risks of IPPV in acute asthma
  When experience &/or medical staff present:
  -recognition & management of tension pneumothorax (needle decompression)
  -correct method for chest drain placement following needle decompression

(2) *CRM*

- Calling for help early
  Handover to MET team
  Communication with the child & Family

Synopsis of Scenario

14 year old brittle asthmatic presented to ED with mild-moderate respiratory distress and was transferred to the ward. Deteriorates at night with increasing agitation, respiratory distress, and cyanosis. Should ensure appropriate treatment, consider pneumothorax and best mode of respiratory support, communicate with ICU and Family (who were at home).

Patient Demographics

Patient Name:	Kristy Jones	DOB/Age:	14 years		
Medical Record#:		Weight:	55 kgs		
Allergies:	Peanuts, cats, rye grass	Male	☐	Female	☒
Dx/Procedure:	Tonsillectomy & adenoidectomy at 4 years of age				
Other:	Known asthmatic				

Introductory information given to team:

- 14 yo girl, known asthmatic, with a 2 day History of URTI Symptoms
- Has been using 4 puff salbutamol 4x/day, last 2 days
- Increasing shortness of breath (SOB) during the day –parents brought her into ED
- Assessed in ED with mild asthma and transferred to the ward because of past history
- Had steroids commenced in ED, continued salbutamol puffer q4 hourly

Bedside nurse coming on for a night shift, reviews the patient
Initial Observations:

	↑, N, ↓, absent	Description
Appearance	Peri-oral pallor, prolonged respiration	
HR	↑	100, no murmur, incr to 120 2 min after medical review
RR	↑	40 prolonged respiration, bilateral wheeze
Temp – peripheral	↑	36.8 degrees C
Saturation	↓	90%, dec to 86% 2 min after medical review
Non- invasive BP – upper limb	↑	98/55, stable
ETCO2	↑	130 if intubated
Pupils	N	

Ideal Management: handover to local team and MET team

I Kristy Jones
S worsening respiratory distress & agitation
B brittle asthmatic, started on steroids in ED this afternoon
A oxygen saturation worsening, more agitated
R I'm concerned that she may need more medication and possibly respiratory support

Examination:	**Management:**
DRS ABCD Patient Speaking intermittently, agitated No improvement with medical management Becoming drowsy (not responding)	Bedside nurse: Monitor Oxygen Calls for nursing assistance and medical review Medical review: Pharmacotherapy for asthma Recognise respiratory failure, consider PNX Considers taking a gas Call for MET Talk to patient

Progression Good: inc SpO2 to 90% if oxygen applied & asthma meds commenced , HR at 110, RR to 35

When MET team arrive:

- **SpO2 90%**
- **Tachypneic, agitated, tachycardic 120/min**

CUES:	Ideal Management:
Increasing agitation, then quietening Worsening respiratory failure-comment on agitation PROMPT: oxygen saturation Call ICU Set up ventilator	inc oxygen flow pharmacotherapy Consider tension pneumothorax Bipap vs consider intubation If consider ventilation: slow rate, long expiratory time, manual decompression/disconnect/ high PEEP Calls for help Speaks to patient

Progression Poor:

CUES:	Ideal Management:
Oxygen desaturation: down to 80's and then 90's Hypotension (BP 68/44) Tachycardia (HR 120-130) Nurse concerned the child is not responding Child less responsive, lies back on bed	Look for tension pneumothorax-consider needle decompression (tell them CXR ok) Normal Saline Volume 10ml/kg Call for help Support ventilation as above

HR decreases to 120/min, RR to 35/min, SpO2 inc to 90's, patient becomes more communicative, if appropriate management course taken

Scenario finishes after 10-15 minutes and/or team have called for help, looked for tension pneumothorax and discussed intubation vs BiPaP

Important Resources:
RCH Asthma Guideline