RCH Simulation Scenario: Child with Sepsis

Set Up:

Mannequin /Confederate	Moulage	Equipment available	Drugs available
SimJunior	**Pale, port access right side**	All ED resus equipment available in situ	Click here to enter text.
Cat 1 Call to resus – 2AM	Bag valve mask for oxygen delivery	Oxygen cylinder + tubing	Click here to enter text.
Confederate- on phone in control room as PICU reg		Click here to enter text.	Click here to enter text.

Monitor: Basic

Paperwork Required:
Observational Chart
Drug Chart
Blood gas - venous
Blood glucose

Learning Objectives:

(1) *Medical*

- Recognise the presentation of septic shock
  Recognise potential delayed presentation
  Manage relative hypovolaemia secondary to septic shock
  sequential management of hypotension
  Escalation to inotropes and PICU admission
  Recognise patients at high rick for septic shock

(2) *CRM*

- Demonstrate effective teamwork and communication including PICU call, role clarity, resource utilisation, discussion with ICU

Synopsis of Scenario

8 year old male with 2 day history of fever (Temp >38 at home, max 39.8) Child has acute lymphocytic leukaemia and receieved induction chemotherapy 4 days ago.
Parents rushed him in at 2am as they were unable to rouse him at home
PMHx – 2 months of chemo, has a history of line sepsis in the past, not recently. Has a port present
Meds – paracetemol, iburpfon, Bactrim, recentinduction chemo, Ranitidine

3 doctors and 2 nurses (inc confederate) and NP Resus leader ideal for this scenario

Patient Demographics

Patient Name:	Jeff Daniels	**DOB/Age:**	January 31st 2007 8 years old		
Medical History	Nil	**Weight:**	25 Kgs		
Allergies:	nil	**Male**	X	Female	
Dx/Procedure:					
Other:					

Resus team leader - Introductory information given to team by triage nurse who has urgently brought child through to resus

Handover as per ISBAR

I Introduces pt as JD
S 8 yo obtunded, looks very unwell
B ALL, recent chemo
A Drowsy / obtunded, temp 39.2, P 146, RR 44, BP 68/38, Sats 80's RA
R Has right sided port

Start of scenario: Team: 3 doctors and 2 nurses (includes ED nurse confederate) and 1 Triage nurse who hands child over. (if numbers available could also have Mum in the room?)

Ideal Immediate Management:

Team form: leader, delegate roles: circulation doctor and nurse, airway doctor and nurse, scribe.
Call for help: Dependant on team experience / confidence
Organise resources: equipment, prepare drugs. Communicate clearly, politely and effectively

Initial Observations:

	↑, N, ↓, absent	Description
Appearance	Pale, min responsive to pain, mottled, grey, unwell looking	
HR	↑	140, sinus
RR	↑	44, rapid and shallow
Temp – peripheral	↑	39.2
- central		
Saturation NOT	Normal	82% RA
Non- invasive BP – upper limb	↓	68/38
- lower limb		
Pupils		Pupils small / reactive
Conscious state		Responds to Pain only- moans- on AVPU scale, GCS <8 (E2V2M2)

Ideal Management: post pt arrival

Examination:	**Management:**
DRS ABCDE **Airway** patent **Breathing** shallow, tachypnoea, sats 82% **CVS**: central perfusion 6 seconds **Disability**- conscious state, pupils, tone. **Exposure**- temperature, warm patient	• Applies O2 mask if tolerated • Apply monitoring-ECG/ SpO2 • Recognises port, accesses port • Path – FBE, UE, VBG, Coag, G and H, Culture • Recognises impaired conscious state • Recognises potential for life threatening sepsis • Recognises need for fluid bolus and second IV access • Empiric ABx as per protocol

Progression Good: (if good, allow scenario to progress to being more complex)

CUES:	Ideal Management:
• Persistant hypotension • requires 2 * 20ml / kg fluid boluses • Febrile • Hypoxia • 2 fluid boluses	•Empiric Abx • 2nd IV access, second blood culture • urgent CXR, preparation for intubation

Correct Management results in following Obs on Monitor

HR 140, BP 70/40, Temp 39, RR 40, sats 90% on 15l pt still obtunded, barely responds to pain

CUES:	Ideal Management:
• Continued hypotension • Potential for team to be out of depth • Venous gas returns with pH 7.1, PCO 60, lactate 7 bicarb 10, HB 50 • BSL 2.0 •Continued Hypoxia	• Discussion re inotropes • Phone for help, alert PICU • Discuss with PICU and Onco on call re blood replacement • 2 – 5 ml / kg 10% Dextrose • urgent CXR, preparation for intubation, MET Call

ICU attend at the point of inotropes and intubation discussion - ISBAR handover

Scenario finishes 10-15 mins after pt arrival and team have fluid resuscitated pt, started ABx, corrected hypoglycaemia and have discussed inotropes / intubation / called for help