

SIMULATION CASE PI-2

Learning outcomes:

By the end of this simulation the candidates will:

- Recognise the presenting features of pneumonia and sepsis
- Perform a full ABCDE approach to the seriously ill teenager
- Initiate resuscitation and specific treatment for pneumonia and septic shock

Simulation focus: Pneumonia - Severe right-sided pneumonia (probably Group A Streptococcus)

Timing: 0-3 minutes: introduction; remaining time: split equally between simulation and debrief

Introduction [Environment and Set]

Prior to the start of the simulation: one instructor to:

1. [Environment] Brief candidate group to *check the Environment*:

Room	Candidates to set up the room appropriately	
Equipment	Candidates to check required equipment present and accessible	

Equipment list:

In addition to generic equipment list:

- Appropriate size manikin to be ready for simulation in room and covered until simulation commences
- Nebuliser

2. [Set] Give History

A 14 year old boy became feverish and vomited once 6 hours before admission. He was seen by his GP after 2 hours, by which time he had a sore throat. The GP prescribed penicillin, but none has been given as the pharmacy was shut. Now he complains of right-sided abdominal pain and has attended the Emergency Department. He is pale, has been coughing for 3 days and is having difficulty breathing.

Then leave the room for candidate group to prepare and after 2 minutes, return with instructor team and commence simulation



[Dialogue] Simulation

Initial handover *{to tell candidate on your arrival with the child as Triage practitioner SBAR to Team Leader}*

Situation	Pneumonia	
Background	A 14 year old boy attends the Emergency Department. He is pale, complaining of right-sided abdominal pain and having difficulty breathing. The father says he has been unwell and coughing for 3 days.	
Assessment	A	Patent
	B	Respiratory rate is 32 with suprasternal recession
	C	Pulse 130. He is thin and pale
	D	He is only responsive to voice. His temperature is 40°C. SpO ₂ is 90% in 100% O ₂ by face mask. Capillary perfusion is 4 sec. BP 95/52
	E	-
Recommendation	Needs resuscitation	

Clinical course *{to be given as the simulation progresses}*

The boy has cold hands and feet, dullness to percussion and reduced breath sounds on the right, and needs a bolus of fluids and IV antibiotics. Despite high flow O₂, saturation falls as he is exhausted and he needs elective intubation. If this is not carried out bradycardia develops prior to asystole. With ventilatory support there is then gradual improvement.

Key treatment points



Airway	Establish airway patency	
Breathing	High flow O ₂ via face mask	
	Electively intubate & ventilate with 100% O ₂	
Circulation	IV access	
	Fluid bolus	
Specific therapy	IV antibiotics	
	IV Paracetamol	
Handover to PICU Consultant	S	
	B	
	A	
	R	

[Closure] Debrief

Using the learning conversation, carry out the debrief of both the technical and non-technical elements of the simulation.

The debrief will be for the team as a whole and should focus on some or all of the following:

- Technical skills in an A, B, C, D, E format and guided by the KTPs; in particular the safe and effective demonstration of all continuously assessed skills:
 - BLS
 - Defibrillation
 - Airway management
- Non-technical skills, including qualities of team membership and leadership:

Team members	<ul style="list-style-type: none"> • Clear communication • Respect • Flexibility • Assertiveness • Ability to listen
Team leaders	All of the above, plus <ul style="list-style-type: none"> • Full overview of all aspects associated with child, parents and team • Prioritises according to KTPs • Summarises and re-evaluates

- Feedback on Environment, where required

Potential issues that may be raised for this specific simulation

- Clinical presentation: abdominal pain as referred pain, the importance of a full ABCDE assessment to detect septic shock
- The management of pneumonia and empyema/pleural effusion
- The choice of antibiotics
- The role of blood gases and chest x-ray (not needed for intubation)

Assessment

Refer to the *Instructor guidance on simulations* document for a guide to the assessment of the simulation station. These assessments should be documented on the paper-based or electronic system for the final faculty meeting. Any scores of *serious concern* should be reported immediately to the course director.