

SIMULATION CASE PT-3

Learning outcomes:

By the end of this simulation the candidates will:

- Apply the structured approach to trauma management
- Have managed a life-threatening chest injury
- Activated the massive haemorrhage protocol

Simulation focus: Chest injury - Four penetrating chest wounds (2 x entry, 2 x exit). Haemorrhagic shock from laceration of right lung with R haemopneumothorax and penetrating wound of the right lobe of the liver.

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
- Copy of massive haemorrhage protocol

2. [Set] Give *History*

You are informed that a non-paramedic crew are on route to your emergency unit with a 12-year-old boy who was caught in the crossfire during a robbery and sustained two bullet wounds to the chest. ETA = 15 minutes.

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 a Non-Paramedic SBAR to Team Leader}*

Situation	Chest Injury	
Background	12-year-old boy sustained 2 bullets to the chest, on arrival, conscious but shouting, restless and in obvious pain.	
Assessment	A	Patent
	B	Respiratory rate 45 / minute; Saturation monitor alarming
	C	Pulse 140 / minute, poor volume; peripheries cool and sweaty, and CR = 7 seconds.
	D	
	E	Two bullet wounds to the chest, blood-stained clothing
Recommendation	Needs resuscitation	

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

Airway is patent. Initially, breathing is rapid, becoming progressively more shallow due to mounting hypoxia and exhaustion. Oxygen by non-rebreathe mask does little to improve vital signs, and respiratory rate as well as colour and oximetry figures only improve with endotracheal intubation, manual ventilation and insertion of intercostal drain into right chest: blood is drained from this. Heart rate and blood pressure deteriorate steadily until 10ml/kg fluid and massive haemorrhage protocol instituted. However, unstable BP and distending, tender abdomen require urgent surgical referral.

Key treatment points



Preparation	Call Trauma team	
	Briefing and allocation of roles	
Airway & C-Spine	Assess the requirement to protect C-spine	
	Assess and maintain airway	
	Pass endotracheal tube and ventilate manually	
Breathing	High-flow oxygen by mask	
	Ventilate with 100% oxygen	
	Insert right intercostal drain	
Circulation	Early IV access with wide bore cannulae	
	Tranexamic acid 15mg/kg	
	Instigate Massive haemorrhage protocol	
Specific therapy	Passage of nasogastric tube	
	Surgical referral for ongoing haemorrhage	

Handover to appropriate colleague	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	<p>All of the above, plus</p> <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

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.