

# TRAUMA SIMULATION Demo

## Simulation focus - Chest, pelvis and long bone injury

### Lecturer

Introduces the sim demo team and shows the candidates the slide with the discussion points.

Make sure you ask the candidates to focus on the TL role and the primary survey.

At the end facilitates the candidate partner discussion and the questions/comments feedback at the end.

### Team members of instructors and instructor candidates:

- **Lead instructor**
- **Faculty helper**
- **Team leader**
- **2/3 Team members**

### Demonstration

**This demonstration is of the ABCDE assessment in a trauma situation, with embedded skills within it and will reinforce the earlier learning from the online pre-course videos.**

The demonstration will follow the same principles as all simulations used on APLS, with a lead instructor briefing the candidate, informing them of a pre-alert for a trauma patient. A faculty member will play the candidate along with a faculty member playing the “faculty helper”. The team of instructors doing the demonstration will clearly demonstrate the necessary skills during the simulation with clear communication.

*It should be undertaken in real time to allow candidates to experience how the simulations will run in their teams.*

### Expected outcomes

**Team Leader** - to allocate someone to do the initial ABCDE assessment (primary survey), direct team and lead care – taking over skills as and when appropriate. Identify the injuries the child has sustained and initiate appropriate initial therapies (**MILS, Pelvic binder, 20-degree tilt**, leg splint, and thoracostomy followed by chest drain). Identify the child is increasingly short of breath and saturations are dropping, manage tension pneumothorax and call for senior help/trauma team, massive haemorrhage protocol).

***Skills in bold should be demonstrated to the candidates – the other skills can be discussed.***

### History

#### Emergency staff

Tom is a 15-year-old boy who was on his bike and has been hit by a car driving approximately 40mph. He has sustained injuries to his left femur, pelvis and the left side of his chest. He has not received any treatment at the scene, is conscious with **GCS 15**.

### Immediately apparent

Please ensure the prompt card with global overview is placed on the manikin for the start of the sim.

*As you approach the child you notice he looks pale, no signs of catastrophic haemorrhage, is breathing fast and complaining of pain to his leg and chest with visible injuries to the left side of the body.*

## Clinical course (to be given as the simulation progresses)

Although slightly reduced air entry on the left, the findings are grossly normal, and no immediate action needs to be taken so that the skills of **pelvic binder** (and leg splint) can be demonstrated before the patient deteriorates.

Assess	Features	Action	Key treatment points
<c>	No signs of catastrophic haemorrhage	Assess	<b>Assess</b>
A	Patent, Alert (A on AVPU). Talking and complaining of pain. Trachea is central.	Manual inline stabilisation, Assess, give oxygen	<b>MILS</b> Suggest analgesia
B	<b>RR 32</b> with deep breaths. Equal air entry, slightly quieter on the left, no additional noises <b>SpO<sub>2</sub> 93%</b> (poor trace)	Assess including auscultation and SpO <sub>2</sub> Recognise increased effort Obvious injury to left side of chest	<b>High flow oxygen via face mask</b>
C	<b>HR 122, CRT 3, BP 97/52</b> Pale with cool peripheries Abdomen is not distended	Assess and recognise compensated shock. Bloods (including <b>G&amp;S and crossmatch</b> )	<b>Pelvic binder</b> <b>MHP initiation</b> <b>Immediate IV/IO x 2</b> <b>Bloods</b> <b>Fluid bolus 10ml/kg, suggest blood transfusion</b>
D	Alert, <b>GCS 15</b> (E4V5M6). <b>BM 4.8</b> Pupils 4mm, equal and reacting.	<b>glycemie 86 mg/dl</b>	
E	Injury to left side chest, left thigh. No open wounds. No active bleeding visible.		

## Reassessment

**Once pelvic binder and the splint are applied, the patient deteriorates on reassessment. He is now quieter; RR has increased, and his trachea is deviated to the right.**

The candidate will recognise a tension pneumothorax and will proceed with a thoracostomy. At this point the skill of thoracostomy and insertion of a chest drain can be demonstrated as a real time demo on a chest manikin. Once this is inserted the simulation will continue with reassessment of ABCDE.

Assess	Features	Action	Key treatment points
A	Airway clear, short sentences, trachea deviated to the right.	Assess	<b>Recognise signs of tension pneumothorax</b>
B	<b>RR 36, SpO<sub>2</sub> 90%</b> shallow breathing, unequal chest movement with reduced air entry to the left. Hyper resonant on percussion.	Assess including auscultation, percussion and SpO <sub>2</sub>	<b>Recognise tension pneumothorax</b> <b>Suggest thoracostomy and chest drain</b>
C	<b>HR 140, CRT 3, BP 92/49</b>	Assess, suggest further bolus of fluid/blood	
D	Alert, in pain.	Assess	<b>Analgesia</b>
E	<b>Temp 36.5, pale</b>		<b>Demonstration of 20° tilt</b>

At the end of the simulation, if time allows, the whole team can carry out a 20° tilt (embedded realtime skill).

<b>NB</b>	<p><b>Ensure that all skills (MILS, 20°tilt and pelvic binder) are clearly communicated and demonstrated to ensure that candidates are fully aware of their importance.</b></p> <p><b>Needle thoracocentesis can be suggested by trauma team member as a discussion point in learning conversation.</b></p>
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## Discussion

Get candidates to discuss the following questions with a partner for 2 minutes.

Allow candidates to share some of their thoughts and questions by opening up to the group.

With your partner discuss your observations of how the Team leader:

- directed the primary survey
- led the team

## Props to print and laminate

### Trauma demo - Global overview (to be placed on SIM manikin)

The child is awake, moaning and in pain.

He is breathing fast

No massive external bleeding but visible injuries to left side of body

### Trauma demo - Faculty helper information

When candidate requests information regarding observations please give the following in “real-time” (e.g., wait for blood pressure to cycle, saturation trace to be achieved). If key treatment points are not undertaken, consider a “prompt” that would be visible in a child.

Assess	Observation	Example prompt
<c>	No signs of catastrophic haemorrhage	Assess
A	Patent Trachea is central Child is alert and in pain,	MILS talk through the skill “He seems to be in pain, should we get some analgesia?”
B	<b>RR 32</b> talking <b>Sats 93%</b>	“There is air entry, with slightly reduced sounds on the lower left side”. “It is normal to percussion”
C	<b>HR 132, CRT 3, BP 97/52</b>	“Do you want IV access?” “Shall I put in 2 cannulas” “Do we need to put out a MHP call” “Do you want me to get/give some blood?” Send bloods for G&S and crossmatch
D	<b>BM 4.8</b> glycemie 86 mg/dl	“He seems to be in pain, should we get some analgesia?”
E	<b>Temp 36</b> , pale Bruising to left side chest Deformity to left thigh	“Do we need to splint his pelvis and leg?”

### Trauma demo – Reassessment

Assess	Observation	Example prompt
A	Distressed, airway clear Trachea deviated to the right	“The trachea is now deviated to the right”
B	<b>RR 36</b> <b>Sats 90%</b> Reduced chest movement on left	No air entry to left side chest Hyper-resonant on percussion <b>MOVE TO CHEST MANIKIN for demonstration</b>
C	<b>HR 140, BP 92/49, CRT 3</b>	
D	<b>BM 4.8</b> glycemie 86 mg/dl	
E	Pelvic binder and splint in situ.	20 degree tilt