

TRAUMA SIMULATION Demo

Simulation focus – Chest and pelvic injury

This demonstration should take 20-25 minutes including the learning partner conversation and is designed to:

- Show the candidates how a trauma simulation runs and to become familiar with the simulation and monitoring equipment
- Illustrate the faculty roles – lead instructor and faculty helper, and candidate roles in a trauma team
- Demonstrate the use of prompts to enable KTPs to be achieved and to enable the simulation learning points to be met regardless of candidate progress
- Allow the candidates to have a learning partner conversation about how the team leader directed the primary survey and led the team

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 of the demo facilitates the candidate learning partner discussion and feedback.

Team members of instructors:

- **Lead instructor – runs the manikin and introduces simulation**
- **Faculty helper – does the primary survey and gives clinical information and prompts**
- **Team leader – directs the primary survey**
- **2/3 Team members as needed to assist**

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, 20-degree tilt** 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 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 chest with visible injuries to the left side of the body.

There is a pelvic binder in situ.

Clinical course (to be given as the simulation progresses)

Initial observations	Observations on reassessment
RR 32 , talking SpO2 93% HR 132, CRT 5, BP 97/52 Blood glucose 4.8 Temp 36 glycemie 86 mg/dl	Distressed, trachea deviated to the R RR 36 SpO2 90% on high flow oxygen Reduced chest movement on left, hyper resonant HR 140, CRT 3, BP 92/39

Although slightly reduced air entry on the left, the findings are grossly normal, and no immediate action needs to be taken.

Assess	Features	Action	Key treatment points
<c>	No signs of catastrophic haemorrhage	Assess	Assess
A	Patent, Alert (A on AVPU). Talking and complaining of pain. Trachea is central.	Manual inline stabilisation, Assess, give oxygen	MILS Suggest analgesia
B	RR 32 with deep breaths. Equal air entry, slightly quieter on the left, no additional noises SpO₂ 93% (poor trace)	Assess including auscultation and SpO ₂ Recognise increased effort. Obvious injury to left side of chest	High flow oxygen via face mask
C	HR 122, CRT 3, BP 97/52 Pale with cool peripheries Abdomen is not distended	Assess and recognise compensated shock. Bloods (including G&S and crossmatch)	Check position of pelvic binder MHP initiation Immediate IV/IO x 2 Bloods Fluid bolus 10ml/kg, suggest blood transfusion TXA
D	Alert, GCS 15 (E4V5M6). BM 4.8 Pupils 4mm, equal and reacting.	glycemie 86 mg/dl	
E	Injury to left side chest. No open wounds. No active bleeding visible. Pelvic binder in situ.		

Reassessment

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 allocate a member of the team to prepare for a thoracostomy during which time the rest of the ABCDE should be completed.

The simulation then stops before the thoracostomy.

Assess	Features	Action	Key treatment points
A	Airway clear, short sentences, trachea deviated to the right.	Assess	Recognise signs of tension pneumothorax
B	RR 36, SpO₂ 90% Shallow breathing, unequal chest movement with reduced air entry on the left. Hyper-resonant on percussion.	Assess including auscultation, percussion and SpO ₂	Recognise tension pneumothorax Suggest thoracostomy and chest drain
C	HR 140, CRT 3, BP 92/49	Assess, suggest further bolus of fluid/blood	
D	Alert, in pain.	Assess	Analgesia
E	Temp 36.5 , pale Pelvic binder in situ		Demonstration of 20° tilt

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

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

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:

- What strategies the team leader used to direct the team.
- What you observed the other team members doing and what the role of the trauma team members should be.

Props to print and laminate

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

The child is awake, moaning and in pain.

There is a pelvic binder in situ.

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.

Initial observations RR 32, talking SpO ₂ 93% HR 132, CRT 5, BP 97/52 Blood glucose 4.8 Temp 36 glycémie 86 mg/dl	Observations on reassessment Distressed, trachea deviated to the right RR 36 SpO ₂ 90% on high flow oxygen Reduced chest movement on left, hyper resonant HR 140, CRT 3, BP 92/39
---	--

Initial assessment – trauma demo

Assess	Observation	Example prompt	KTPs
<c>	No signs of catastrophic haemorrhage	Assess	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?”	MILS Suggest analgesia
B	RR 32 talking SpO₂ 93%	“There is air entry, with slightly reduced sounds on the lower left side”. “It is normal to percussion”	High flow oxygen via face mask
C	HR 132, CRT 3, BP 97/52	“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 “Is there anything we can give that might help stop the bleeding?”	Check position of pelvic binder MHP initiation Immediate IV/IO x 2 Bloods Fluid bolus 10ml/kg, suggest blood transfusion TXA
D	Blood glucose 4.8 glycémie 86 mg/dl	“He seems to be in pain, should we get some analgesia?”	
E	Temp 36 , pale Bruising to left side chest Pelvic binder in situ.	“Does the pelvic binder look ok?”	

Trauma demo – Reassessment

Assess	Observation	Example prompt	KTPs
A	Distressed, airway clear Trachea deviated to the right	“The trachea is now deviated to the right”	Recognise signs of tension pneumothorax
B	RR 36, SpO₂ 90% Reduced chest movement on left, no air entry on left side chest. Hyper-resonant on percussion		Recognise tension pneumothorax Suggest thoracostomy and chest drain
C	HR 140, BP 92/49, CRT 3		
D	Blood glucose 4.8	glycémie 86 mg/dl	Analgesia
E	Pelvic binder in situ.		Demonstration of 20° tilt