Queensland Trauma Education

TRAUMA TEAMS

Trauma reception

Immersive scenario

Facilitator resource kit

Clinical Excellence Queensland
JAMIESON TRAUMA INSTITUTE
CSDS Clinical Skills Development Service
Queensland Government

Queensland Trauma Education

The resources developed for Queensland Trauma Education are designed for use in any Queensland Health facility that cares for patients who have been injured as a result of trauma. Each resource can be modified by the facilitator and scaled to the learners needs as well as the environment in which the education is being delivered, from tertiary to rural and remote facilities.

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Queensland Trauma Education
Trauma Teams – Trauma reception: Immersive scenario – Facilitator resource kit
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About this training resource kit

This resource kit focusses on the use of a pre-brief, role allocation and effective teamwork strategies to care for a critically unwell trauma patient.

National Safety and Quality Health Service (NSQHS) Standards

Target audience

Emergency department medical and nursing clinicians.

Duration

45-60 minutes, including debrief.

Group size

Suited to small group participation.

Learning objectives

By the end of this session the participant will be able to:

- Discuss trauma activation criteria
- Effectively prepare for the trauma patient arrival
- Consider disposition options

Facilitation guide

1. Facilitator to use facilitator resource kit and printable resources to deliver immersive scenario and debrief.

Supporting resources (in Printable resources)

1. Pre-simulation briefing poster
2. Chest XRay- ETT well positioned, nil chest wall injury, nil PTx/HTx
3. Pelvic XRay- R Vertical Shear, pelvic binder
4. R UL Xray- Distal radius and ulnar fracture, in vac splint
5. R LL Xray- Tib/fib fracture, in vac splint
6. EFAST- all negative
7. Venous Blood Gas
8. ROTEM

Simulation event

This section contains the following:

1. Immersive scenario
2. Resource requirements
3. Prenotification and handover card
4. Scenario progression
    a. State 1
    b. State 2
    c. State 3
5. Debriefing guide

Immersive scenario

Type	Immersive scenario
Target audience	Emergency Department medical and nursing clinicians
Overview	24-year-old male, fall from 5 metres off a roof. Initial BP 100 systolic and tachycardic, with an episode of hypotension which improves with 500mL Sodium Chloride 0.9% IV. He is intubated prehospital due to agitation without complication. There is concern for a pelvic injury with pelvic pain prior to intubation. A pelvic binder and splints to suspected R UL and R LL fractures are applied.
Learning objectives	• Discuss trauma activation criteria • Effectively prepare for the trauma patient arrival • Consider disposition options
Duration	45-60 minutes, including debrief.

Resource requirements

Physical resources

Room setup	Resuscitation bay
Simulator/s	3G mannikin
Simulator set up	• Street clothes • Moulage- bruising to anterior pelvis and limbs.
Clinical equipment	• Intubated, size 8 ETT, 22cm at teeth • Cervical collar • Pelvic binder • Vac splint on R UL and R LL
Access	PIVC in L ACF
Other	Emergency documentation

Human resources

Faculty	Medical and nursing leads and debrief team
Simulation coordinators	1x simulation coordinator
Confederates	1x in room, radiographer
Other	Ambulance officer for handover

Prenotification

We are 5 min out with an intubated, ventilated 24-year-old male, he has had a high fall ~5m from a roof.

I am most concerned about a pelvic injury; he has a binder in-situ. His eFAST is negative. His current vital signs are HR 130 and BP 100/60mmHg, but he had an episode of hypotension responsive to 500mL IV fluid. He had to be intubated for agitation but that went ok. We will see you in about 15 minutes.

Handover card

Handover from ambulance officer

This is Milo, he is 24.

He fell over 5m from a roof, whilst cleaning the gutters.

He was initially GCS 14 (M6) with saturations 97% on RA. His initial BP was 100mmHg.

He was intubated for severe agitation at the scene. Grade 1 airway, easy to bag. Size 8 tube 22cm at the teeth.

He has had transient hypotension to 80 systolic which was responsive to (500mL) fluids and currently his vital signs are HR 130 and BP 100/50, he is still peripherally shut down.

eFAST was negative, he was very tender in the R side of his pelvis before he was intubated. He has a deformed R) forearm and R) tib/fib which have been splinted.

We have applied a cervical collar, pelvic binder and only 1x peripheral cannula in his L) forearm which was difficult to get.

He has had a total of 150microg fentanyl, 80mg ketamine and 100mg Roc for the RSI which was 20 minutes ago.

Any further questions?

Scenario progression

STATE 1: PRIOR TO ARRIVAL				
Vital signs		**Script**	**Details**	**Expected actions**
ECG		**Triage RN** We are expecting a young male patient who has fallen from 5 metres. He has had one episode of hypotension pre-hospital which is better with 500mL IV fluids. He was intubated at scene for agitation. They are concerned about a pelvic injury and R arm and leg fractures.		❑ Team role allocation ❑ Team leader- pre-brief with initial priorities ❑ Determination of Trauma Activation level
HR				
SpO_2				
BP/ART				
RR				
Temp				
BGL				
GCS				

STATE 2: INITIAL ASSESSMENT				
Vital signs		**Script**	**Details**	**Expected actions**
ECG	ST		• CXR- ETT well positioned • PXR- Vertical shear R hemipelvis, pelvic binder adequately positioned • R UL- Radius/ulnar # • R LL- Tibial/fib # • EFAST- negative	❑ Perform primary survey ❑ Perform bedside radiological studies ❑ Send trauma bloods including coags/ROTEM
HR	130			
SpO_2	100% FiO2 1.0			
BP/ART	100/50			
RR	20			
Temp	37			
BGL	7			
GCS	3			
Pupils	PEARL			

STATE 3: ONGOING MANAGEMENT				
Vital signs		**Script**	**Details**	**Expected actions**
ECG	ST		• Deterioration in blood pressure • No external sites of haemorrhage • Repeat primary survey unchanged • Identification of major pelvic injury resulting in haemorrhagic shock	❑ Recognition of deterioration in haemodynamic state ❑ Commence warmed blood/blood products ❑ Consider TXA / coagulopathy management ❑ Upgrade trauma activation / engage surgical team / RSQ ❑ Consider additional management for limb injuries- reduction and splinting
HR	130			
SpO_2	100% FiO2 1.0			
BP/ART	80/40			
RR	20			
Temp	37			
BGL	7			
GCS	3			

Debriefing guide

Scenario objectives

- Discuss trauma activation criteria
- Effectively prepare for the trauma patient arrival
- Consider disposition options relevant to local environment

Example questions

Exploring diagnosis

- What were the priorities for this patient
- What investigations were most helpful to determine the cause of shock in this patient
- What further information would have been useful to determine disposition

Discussing management

- How did the team determine the management priorities
- What were the aims of blood/product administration
- How was the pelvic injury managed
- Did the concurrent limb fractures complicate management options

Discussing teamwork / crisis resource management

- What is the local Trauma Activation process
- What are the benefits/use of a two-tier activation process
- Who attends the Trauma Activation at local site
- How did the team prioritise the needs of this patient / was a pre-brief conducted

Key moments

- Early recognition of critical state post injury
- Use of pre-brief for role allocation and shared mental model
- Utilisation of pre-defined trauma activation criteria to engage hospital teams

Acronyms and abbreviations

Term	Definition
ETT	Endotracheal tube
PIVC	Peripheral intravenous cannula
ACF	Antecubital fossa
UL/LL	Upper limb/lower limb
RSI	Rapid sequence induction
TXA	Tranexamic acid
RSQ	Retrieval Services Queensland
FiO2	Fraction of inspired oxygen
eFAST	Extended focussed assessment with sonography in trauma
Roc	Rocuronium
CXR/PXR	Chest/Pelvis Xray
PTx/HTx	Pneumothorax/haemothorax
ROTEM	Rotational thromboelastometry

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