Queensland Trauma Education

TRAUMA TEAMS

Rapid transfer to theatre

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.

Developed by
Dr Frances Williamson, Senior Staff Specialist – MNHHS

Dr Nicole Sng, Staff Specialist - MNHHS Name, Position – Organisation

Reviewed by
Angelka Opie, Nurse Educator – CSDS, MNHHS

Laura Owens, Simulation Educator (CSDS)

Queensland Trauma Clinical Network (QTCN)

Queensland Trauma Education
Trauma Teams – Rapid transfer to theatre: Immersive scenario – Facilitator resource kit
Version 1.0

Published by the State of Queensland (Clinical Skills Development Service), 2024

This document is licensed under a Creative Commons Attribution 3.0 Australia licence. To view a copy of this licence, visit https://creativecommons.org/licenses/by/3.0/au.

© State of Queensland (Metro North Hospital and Health Service through the Clinical Skills Development Service) 2024

You are free to copy, communicate, and adapt the work, as long as you attribute the Metro North Hospital and Health Service through the Clinical Skills Development Service. For more information, please contact Clinical Skills Development Service, Royal Brisbane and Women's Hospital, Herston, Queensland +61 3646 6500, CSDS-Admin@csds.qld.edu.au.

An electronic version of this document is available via csds.qld.edu.au/qte

Disclaimer: The content presented in this publication is distributed by the Queensland Government as an information source only. The State of Queensland makes no statements, representations or warranties about the accuracy, completeness or reliability of any information contained in this publication. The State of Queensland disclaims all responsibility and all liability (including without limitation for liability in negligence) for all expenses, losses, damages and costs you might incur as a result of the information being inaccurate or incomplete in any way, and for any reason reliance was placed on such information.

About this training resource kit

This resource kit provides an opportunity to explore the barriers and challenges in the movement of trauma patients rapidly to theatre who are hemodynamically unstable.

National Safety and Quality Health Service (NSQHS) Standards

Target audience

Emergency department medical and nursing clinicians.

Duration

45-60 minutes.

Group size

Suited to small group participation.

Learning objectives

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

- Identify patients who are hemodynamically unstable secondary to critical bleeding
- Use effective communication amongst team members
- Understand rapid transfer to theatre process for urgent haemodynamic intervention

Facilitation guide

1. Use facilitator resource kit and printable resources to guide participants through immersive scenario and debrief.

Supporting resources (in Printable Resources)

1. Pre-simulation briefing poster
2. Plain Films
    - Chest Xray- intubated, bilateral thoracostomies, nil overt PTX
    - Pelvic Xray- binder in situ, nil overt injury
3. Pathology:
    - Venous Blood gas – Respiratory acidosis, elevated lactate
    - ROTEM- trauma coagulopathy
4. EFAST:

- Morrisons positive,
- Splenorenal positive,
- Pelvis positive,
- Cardiac negative.

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 clinical staff, surgical, theatre and anaesthetic staff.
Overview	40 yo Male is BIBA after a high-speed MBC. He is intubated prehospital for altered conscious state, GCS 10 (M5). He is shocked prehospital, undergoes bilateral thoracostomies, has a positive FAST scan and is transfused 2 units PRBC prior to arrival in ED. His vital signs initially improve prior to further deterioration necessitating additional haemostatic resuscitation and rapid transfer to OT for definitive haemorrhage control.
Learning objectives	• Identify patients who are hemodynamically unstable secondary to critical bleeding. • Use effective communication amongst team members. • Understand rapid transfer to theatre process for urgent haemodynamic intervention.
Duration	45-60 minutes, including debrief.

Resource requirements

Physical resources

Room setup	Trauma/resus bay
Simulator/s	3G manikin on QAS trolley
Simulator set up	• Bruising to L eye, PEARL • Bruising and abrasions across abdomen
Clinical equipment	• Cervical collar • Intubated • Pelvic Binder • Ventilator • Infusion pumps • Medications- analgesia infusions, TXA, Ca2+ • Blood/products Local resources – transfer policies, massive haemorrhage protocols etc.
Access	IVC 18G ACF, second available with "no IV" sticker.
Other	PRBC hanging from QAS

Human resources

Faculty	2 facilitators (Dr/Nurse with debriefing experience) to take on roles as scenario commander and primary debrief.
Simulation coordinators	1 for manikin set up and control.
Confederates	1 team member in room as simulated participant (Dr or Nurse)
Other	QAS paramedic to provide handover.

Prenotification and Handover card

Prenotification from ambulance:

Hi this is (__________) with QAS

I am with a 40-year-old male, who has been involved in a high-speed MBC.

He was unresponsive at scene (GCS 10/M5) and has been intubated. We have started blood resuscitation as his FAST is positive, with ongoing haemodynamic instability (HR 130 and SBP 90/50). He has had bilateral thoracostomies without much effect. We are 10 minutes from the hospital.

Handover from ambulance officer:

Hi everyone. Am I able to start the handover?

This is an unknown approximately 40-year-old-male.
45 min ago he was involved in a presumed high-speed MBC – mechanism unclear but appears to have lost control and fallen down embankment. He was found 4 metres from the road, unconscious.
His major injuries appear to be head, chest and abdomen. He has been intubated due to ALOC - Best GCS 10 (M5). He has a positive FAST and is persistently tachycardic at 120bpm. His lowest SBP has been ~85/-, but this has improved to 100mmHg with resuscitation. His best saturations have been 95% on 100% FiO2 with bilateral finger thoracostomies. There was minimal air and no blood from either chest decompression.
For treatment, he was given 70mg Ketamine, 100microg Fentanyl, 100mg Rocuronium for the intubation, 1g TXA and 2U packed cells, 1 U ELP and 10mL Ca Gluconate. I couldn't get a prehospital INR. He has a cervical collar, pelvic binder and an 18G IVC in his L) cubital fossa.
Any further questions?

Scenario progression

STATE 1: INITIAL ASSESSMENT				
Vital signs		**Script**	**Details**	**Expected actions**
ECG	ST	**QAS** Handover	• **Primary survey results** • **C:** Nil obvious haemorrhage • **A**: I+V, Collar insitu. • **B**: Obvious chest injuries. Bilateral thoracostomies • **C**: Pale, cool. Tachycardic, BP ok. • **D**: GCS 3 – pupils 4mm sluggish • **E**: Abrasions and bruising to R) head, chest and abdomen. Long bones okay.	**Triage and Administration:** ❑ New admin code for **Unknown** patient **Primary Survey:** ❑ **C:** nil external haemorrhage ❑ **A & B:** Collar in situ, ant neck nad Extensive injuries R > L, Ext SC emphysema ❑ **C:** ○ FAST +ve RUQ, LUQ ○ Consider further access ○ Commence blood resuscitation. ○ Pelvis NAD ❑ **D & E:** Warm fluids, blanket
HR	120			
SpO_2	95%			
BP/ART	90/55			
RR	18 x 500			
Temp	35.9			
BGL	6			
GCS	3 (E1VtM1)			

<table>
<tr><th colspan="5">STATE 2: ONGOING MANAGEMENT</th></tr>
<tr><th colspan="2">Vital signs</th><th>Script</th><th>Details</th><th>Expected actions</th></tr>
<tr><td>ECG</td><td>ST</td><td rowspan="9"></td><td rowspan="9">Secondary survey results:
Abnormalities:
• Head: R) frontotemporal haematoma and superficial abrasions.
Pupils 4mm sluggish
• Chest: Extensive subcut emphysema. Bruising R) chest ++
• Abdomen/pelvis: Bruising RUQ -. Binder appropriately placed.
• Long bones: NAD
• Log roll: Bruising R) flank

Results:
• CXR: No PTX / Haemothorax
• Pelvic Xray: Nil abnormality
• EFAST: +ve in RUQ and LUQ quadrants (pericardium negative)
• ROTEM: Trauma coagulopathy</td><td rowspan="9">Initiate investigations
❑ Bloods
❑ Bedside tests: VBG
❑ Imaging: CXR, PXR & EFAST
Management:
❑ Blood resuscitation
❑ (Consider) Place ICCs
❑ Decision making for Red Blanket</td></tr>
<tr><td>HR</td><td>130</td></tr>
<tr><td>SpO_2</td><td>96%</td></tr>
<tr><td>BP/ART</td><td>74/45</td></tr>
<tr><td>RR</td><td>18 x 500</td></tr>
<tr><td>Temp</td><td>36</td></tr>
<tr><td>BGL</td><td>6</td></tr>
<tr><td>GCS</td><td>3</td></tr>
<tr><td></td><td></td></tr>
</table>

STATE 3: TRANSFER TO OT				
Vital signs		**Script**	**Details**	**Expected actions**
ECG	ST		• Move patient to operating theatre • Provide handover to operating theatre staff	**Management** ❑ OT Handover ❑ Changeover of monitoring ❑ Set up for induction ❑ Ongoing haemostatic resus with Blood from Blood Bank END SCENARIO at ‘knife to skin’
HR	135			
SpO_2	96%			
BP/ART	80/50			
RR	18 x 500			
Temp	35			
BGL	7			
GCS	3			

Debriefing guide

Scenario objectives

- Identify patients who are hemodynamically unstable secondary to critical bleeding
- Use effective communication amongst teams
- Understand rapid transfer to theatre process for urgent haemodynamic intervention

Example questions

Exploring diagnosis

- What was the main cause of shock in this patient?
- How did the team identify the cause of shock?
- What prehospital information was used to activate the team? Was there additional information that would be helpful next time? How would you gain this information?

Discussing management

- What were the priorities in care for this patient?
- How did the team manage the resuscitation priorities?
- Did the patient require ICC placement? Was this prior to or after theatre access?
- How was the trauma coagulopathy/haemostatic resuscitation managed in this case?

Discussing teamwork / crisis resource management

- What worked in the handover process- in ED? In theatre? Were different strategies used in each setting?
- How did the team communicate to manage this patient?
- Were there any challenges resulting from different priorities for each team (ED, surgical, anaesthetic, theatre)?

Key moments

- Recognising haemorrhagic cause for shocked state
- Communication within the MDT, styles and timing of handover
- Rapid transfer to theatre

Acronyms and abbreviations

Term	Definition
[E]FAST	[Extended] Focussed Assessment with Sonography in Trauma
MBC	Motor Bike Collision
PRBC	Packed Red Blood Cells
ELP	Extended Life Plasma
OT	Operating Theatre
ED	Emergency Department
SBP	Systolic Blood Pressure
TXA	Tranexamic Acid
ACF	Antecubital Fossa
QAS	Queensland Ambulance Service
PEARL	Pupils Equal and Reactive to Light
HR	Heart Rate
IVC	Intravenous Cannula
ICC	Intercostal Catheter
MDT	Multidisciplinary Team
LUQ/RUQ	Left/Right Upper Quadrant
BIBA	Brought in by ambulance
ACF	Antecubital fossa
ALOC	Altered level of consciousness
NAD	Nil abnormalities detected
PTX	Pneumothorax
CXR	Chest xray

Share your feedback

Please complete our survey to help make Queensland Trauma Education better

The survey should take no more than 5 minutes to complete.

Scan the QR code or visit:
Evaluation Form - Clinical Skills Development Service (csds.qld.edu.au)

Queensland Trauma Education
Trauma Teams – Rapid transfer to OT: Immersive scenario – Facilitator resource kit

Published by the State of Queensland (Clinical Skills Development Service), 2024

Visit csds.qld.edu.au/qte
Email CSDS-Admin@health.qld.gov.au
Phone +61 7 3646 6500