



Queensland
Trauma Education

PRE-HOSPITAL RETRIEVAL

Preparation and packaging

Procedural skill

Facilitator resource kit

CSDS



Clinical Skills Development Service



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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

**Pre-hospital retrieval – Preparation and packaging: Procedural skill – Facilitator resource kit
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About this training resource kit

This resource kit provides background knowledge in the preparation for transfer by a retrieval team.

National Safety and Quality Health Service (NSQHS) Standards



Target audience

Emergency department medical and nursing clinicians

Duration

30 minutes

Group size

Suited to small group participation

Learning objectives

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

- Understand the key components of a transfer checklist
- Perform a standard assessment to ensure safe transfer

Facilitation guide

1. Facilitator to use checklist template to discuss assessment of patient readiness for transfer.
2. Facilitator to observe participant perform checks on manikin and demonstrate understanding of important safety processes prior to transfer.

Overview of Preparation for Retrieval

Retrieval between facilities occurs when the care required for the trauma patient exceeds the local capability. To ensure a safe transfer, preparation should be undertaken prior to leaving the referral facility.

Further reading

Preparation for Retrieval	
Publication	Trauma Victoria
Link	https://bit.ly/3BfxKSQ

Procedural skill

Resources required

Equipment	<ul style="list-style-type: none"> • Manikin • Additional equipment- ETT, ICC, UWSD, PIVC x 2, IDC, pelvic binder, cervical collar, ventilator, oxygen cylinder, suction • Chart- clinical documentation, medication chart, fluid chart, ICC drainage chart
Delivery tool	Facilitator-led pause and discuss procedural skill

Case 1

A 27-year-old male is the driver involved in a high speed RTC. He is brought to the local ED by ambulance paramedics. On arrival he has a GCS 10 (E3V2M5), unequal pupils (R 3mm L 1mm and both sluggish), but no other focal neurological deficits. His vital signs are HR 110, BP 110/70mmHg, sats 97% 15L NRB. At the hospital he is intubated, has a R ICC placed for a pneumothorax seen on his CXR. He had a pelvic binder and cervical collar placed by the paramedics.

He has been referred to the nearby tertiary hospital for further assessment and management as there is no CT available at the local hospital.

Procedural skill

Discuss and perform the procedural checks for ensuring the patient is safe and ready for transfer when the retrieval team arrives.

Checklist

1. Airway and C spine- secure ETT and record insertion depth, secure orogastric tube separately, review imaging for ETT placement. Maintain spinal precautions but ensure anterior neck is reviewed for injury under cervical collar.
2. Breathing- aim for oxygenation and ventilation targets, secure ICC and change drain to retrieval compatible, review imaging of ICC placement.
3. Circulation- ensure 2 x patent PIVC present, appropriate lines for volume replacement, record IV fluids given including blood and blood products, utilise serial blood gasses and haemodynamic parameters to assess for ongoing shock state, ensure monitoring lines (arterial/CVP) are correctly attached and zeroed.
4. Documentation- copies of all clinical notes, charts, and forms. Identify NOK details, limits of care documentation and referral letter.

5. Other

Other

1. Maintain body temperature
 2. Insert IDC
 3. Check position of pelvic binder/splints if used
 4. Empty all drainage bags, document ICC drainage volume
 5. Review recent laboratory results and correct abnormalities
 6. Review all limbs for wound care, compartment syndrome and pressure area concerns
 7. Ensure family/NOK are updated
 8. Collect patient belongings for transfer

Question prompts and answer guide

Facilitator to lead session with reference to checklist items. Participant to demonstrate using the manikin. May use questions as required or allow participant to demonstrate checks and frame questions to group.

In this patient, what checks will occur to ensure the airway is safely maintained during transfer?

1. ETT position, confirm size, depth, and securement device, ETCO₂ waveform.
2. Ensure oro or nasogastric is placed.

(Prior to leaving referral facility- CXR can be used to confirm depth of ETT and orogastric tube)

Are there precautions for the spine during transfer?

This patient has an 'uncleared' spine and so full spinal precautions should be used until assessment can be made in conjunction with imaging studies. A cervical collar should be used as a visual reminder for the teams caring for this patient. Full spinal precautions will be continued, including the possible use of vacuum mat for transfer which the retrieval team will bring with them.

What steps are undertaken to ensure 'B' for breathing and ventilation is assessed in preparation for transfer?

1. Clinical assessment- equal breath sounds, expansion and ETCO₂ waveform. ICC function- swing +/- bubbling/draining and well secured.
2. Radiological assessment- ICC well positioned, pneumothorax re-expansion.
3. Laboratory assessment- recent VBG/ABG.
4. The retrieval team will ensure during pre-flight checks that adequate oxygen available for the ventilator function, suction, and equipment available for chest decompression if required before or after leaving the referral facility.

Outline the circulation assessment considerations prior to transfer.

1. Peripheral perfusion, laboratory parameters and cardiovascular monitoring should be checked prior to transfer.
2. Adequate IV access to deliver sedation, fluids and medications during transfer and ensure safely secured.
3. Adequate supplies of medications, drug infusions, fluid and blood products needed for transfer.

What other check are undertaken prior to transfer?

1. Splints and binders well placed and nil complications (pressure areas, tourniquet effect)
2. Monitoring connected and zeroed
3. Supportive cares- eyes taped, IDC, warming
4. Documentation
5. NOK updated

Supporting resources

The following supporting documents are provided for this case discussion:

1. Preparation for Retrieval Checklist, NSW (New South Wales) ACI.
<https://bit.ly/3x2FyF1>

PREPARATION FOR ADULT RETRIEVAL - CHECKLIST	
DISCUSSED WITH RETRIEVAL CONSULTANT?	ARRANGE RETRIEVAL PRIOR TO COMPLETING CHECKLIST
INTUBATED?	
ETT POSITION CONFIRMED <input type="checkbox"/> CAPNOGRAPHY <input type="checkbox"/> CXR <input type="checkbox"/> DEPTH AT INCISORS ____CM CUFF PRESSURE 20-30cmH ₂ O <input type="checkbox"/>	
NGT/OGT + BAG <input type="checkbox"/>	30 DEG HEAD UP <input type="checkbox"/> CERVICAL COLLAR CONSIDERED <input type="checkbox"/>
SEDATIVE INFUSION <input type="checkbox"/> ANALGESIC INFUSION <input type="checkbox"/>	SEE INFUSION TABLE FOR PREFERRED INFUSIONS
VENTILATION / NIV?	
ADEQUATE VENTILATION? <input type="checkbox"/>	CHECK CAPNOGRAPHY / TIDAL VOLUME / PEAK PRESSURE ABG (CONSIDER ART LINE): SaO ₂ , CORRELATE PaCO ₂ WITH ETCO ₂
NOT FIGHTING VENTILATOR? <input type="checkbox"/>	
TOLERATING NIV WITH NO EXCESSIVE LEAK <input type="checkbox"/>	
CHEST TUBE(S) REQUIRED? <input type="checkbox"/>	POSITION & FUNCTION OK <input type="checkbox"/>
OPTIMISE HAEMODYNAMICS, ACCESS AND MONITORING	
PATIENT +/- FLUID WARMED <input type="checkbox"/>	SEPSIS? APPROPRIATE ANTIBIOTICS <input type="checkbox"/>
TRAUMA? PELVIC BINDER / LIMB SPLINTS <input type="checkbox"/>	TRANEXAMIC ACID 1g (IF <3 HOURS) <input type="checkbox"/>
2 X IV CANNULA, SECURED AND FLUSHING, PORTS ACCESSIBLE <input type="checkbox"/>	FLUIDS/BLOOD ON PUMPSETS <input type="checkbox"/>
ARTERIAL LINE (IF INTUBATED, RESPIRATORY FAILURE OR LABILE BP) <input type="checkbox"/>	
VASOPRESSOR INFUSION +/- CVC CONSIDERED <input type="checkbox"/>	SEE INFUSION TABLE FOR PREFERRED INFUSIONS
URINARY CATHETER <input type="checkbox"/>	
PACKAGE FOR RETRIEVAL	
SECURE ALL LINES, TUBES AND MONITORING <input type="checkbox"/>	EMPTY DRAINAGE BAGS / BLADDER <input type="checkbox"/>
SPINAL PRECAUTIONS REQUIRED? <input type="checkbox"/>	ADEQUATE ANALGESIA <input type="checkbox"/> PROPHYLACTIC ANTIEMETICS <input type="checkbox"/>
DOCUMENTATION	
PHOTOCOPY/PRINT ALL NOTES AND PLACE IN ENVELOPE <input type="checkbox"/>	ECGs <input type="checkbox"/> IMAGING <input type="checkbox"/> PATHOLOGY RESULTS <input type="checkbox"/>
DOCUMENT NEXT OF KIN AND CONTACT NUMBER <input type="checkbox"/>	
EXPLAIN RETRIEVAL PROCESS TO PATIENT AND/OR RELATIVES <input type="checkbox"/>	
CLARIFY PATIENT'S WISHES AND LIMITATIONS OF TREATMENT <input type="checkbox"/>	LOCAL SPECIALIST AWARE OF TRANSFER <input type="checkbox"/>
FLAG ANY ISSUES TO THE RETRIEVAL TEAM	
CALL RETRIEVAL CONSULTANT IF DETERIORATION / CHANGED PLAN	

Acronyms and abbreviations

Term	Definition
NOK	Next of kin
ICC	Intercostal catheter
IDC	Indwelling catheter
ETT	Endotracheal tube
ED	Emergency department
GCS	Glasgow Coma Scale
PIVC	Peripheral intravenous catheter
UWSD	Underwater seal drainage

References

1. RFDS Western Operations, Transporting your patient. 2015. <https://bit.ly/3BfzzPz>
2. Queensland Health, Royal Flying Doctor Service (Queensland Section). *Primary Clinical Care Manual* (10th ed.). Rural and Remote Clinical Support Unit, Torres and Cape Hospital and Health Service, Cairns Available at: <<https://bit.ly/3QjgfoY>> [Accessed 26 July 2022].
3. Langford, S. (2015). *Transporting your patient* (2nd ed.). Royal Flying Doctor Service of Australia Western Operations. Available at: < <https://bit.ly/3D8DoHE>> [Accessed 26 July 2022].

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