Victorian State Trauma System Guideline

Thoracic Trauma

RAUMA VICTORIA

Make early contact with ARV for advice from the major trauma services and to initiate retrieval.

- Life threatening injuries identified in the primary survey need to be addressed promptly.
- Thoracic trauma is a common injury in the multi-trauma patient and a significant cause of morbidity and mortality.
- Adequate analgesia is essential to prevent secondary complications from poor lung expansion and hypoventilation

Early Activation

- Gather vital information
- Activate Trauma Team
- Designate roles
- Set up to receive patient
- Ensure safety using PPE

Primary Survey

AIRWAY / C-SPINE

- Rapidly assess airway stability & for major injuries affecting patency
- Be prepared for a difficult intubation
- Maintain full spinal precautions

BREATHING

- Identify any life threats & treat immediately
- Assess RR, work of breathing, SpO_2 & symmetry
- Oxygen therapy to maintain SpO_2 between 94-98%
- $ETCO_2$ monitoring if intubated

CIRCULATION

- Insert x 2 large bore IV cannulas
- IO access if required
- Assess HR/BP/Cap refill
- Initial management of hypovolaemia - early admin of blood products. If unavailable small boluses of cystalloid fluids to maintain end organ perfusion.

DISABILITY

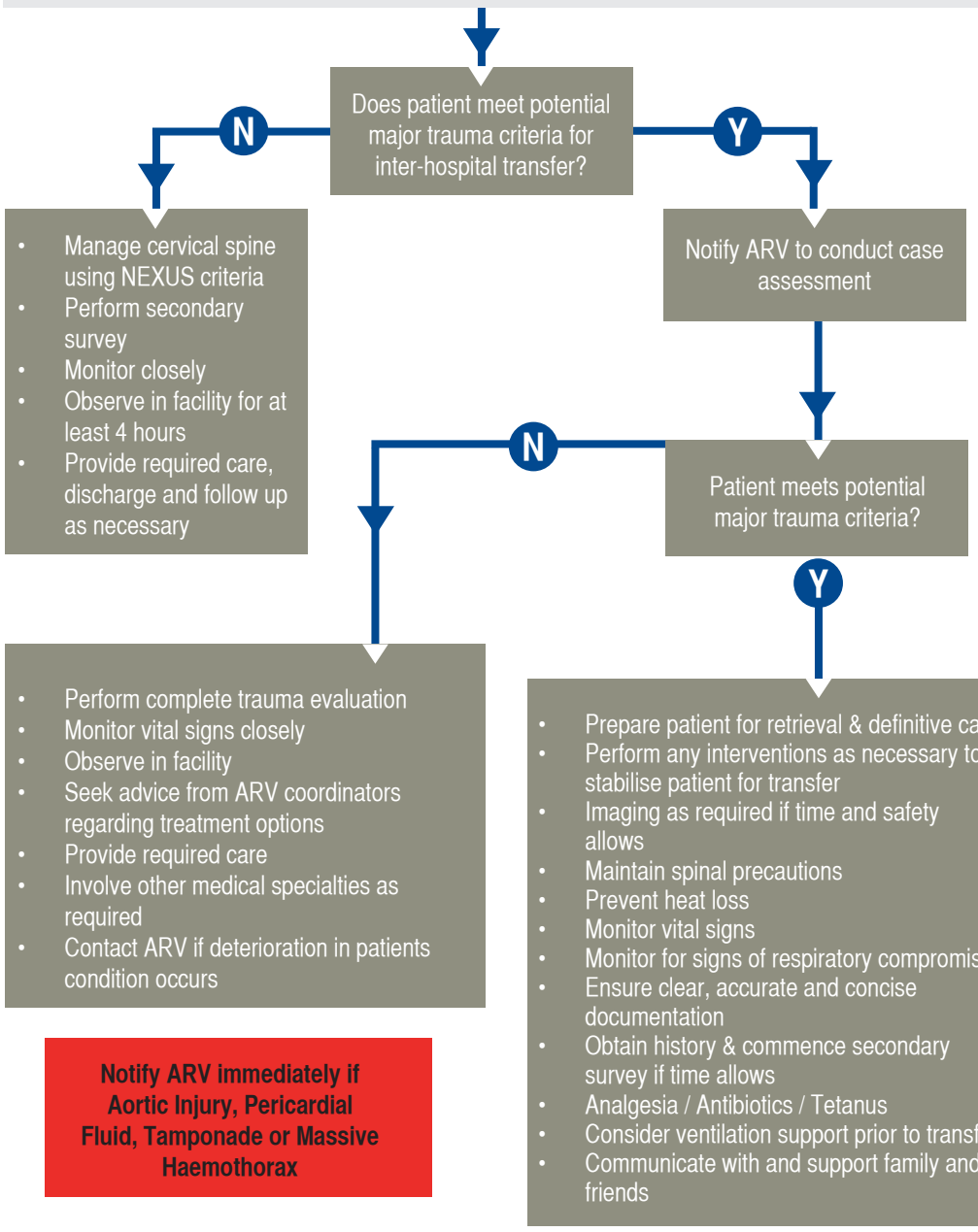
- Assess conscious state- AVPU
- Check pupils
- Test BSL

EXPOSURE / ENVIRONMENT

- Fully expose and inspect patient
- Prevent heat loss
- Log roll

ADJUNCTS

- eFAST scan
- Analgesia
- X-ray: Chest, Pelvis
- Bloods – FBE, X-match, coags screen, U&E, Lipase, LFT, Lactate, blood gas, Troponin
- 12 lead ECG
- Orogastric tube if intubated
- AMPLE mnemonic



Notify ARV immediately if Aortic Injury, Pericardial Fluid, Tamponade or Massive Haemothorax

Key Points

Life threatening injuries:

Tension pneumothorax

Tachypnoea, decreased/absent air entry to affected side, decreased chest movement, tracheal deviation (late sign)

----> Immediate finger thoracostomy, then reassess. An Intercostal catheter can be performed later

Massive haemothorax

Decreased or absent air entry or noted via eFAST/CXR

----> Initiate administration of blood products followed by insertion of intercostal catheter

Open pneumothorax

Open 'sucking wound", decreased air entry

----> 3 sided occlusive dressing followed by insertion of intercostal catheter.

Flail chest & Pulmonary contusions

Paradoxical chest movement

----> Adequate analgesia / oxygenation / consider early intubation and ventilation.

Resuscitative thoracotomy:

Patients who present with penetrating or blunt thoracic injuries and are pulseless but with myocardial electrical activity may be candidates for resuscitative thoracotomy. This can be done in the emergency department with trained clinicians and appropriate equipment.

Management Considerations

Analgesia

- Titrated IV narcotic analgesia is the initial approach to pain management in trauma.
- Ongoing pain from chest trauma decreases coughing, leads to shallow hyperventilation, reduced FRC and retention of sputum.
- Effective pain management may be achieved with the use of paracetamol, non-steroidal anti-inflammatory drugs, tramadol, opioid analgesia as well as consideration of regional anaesthesia and/or patient controlled analgesia.