Clinical Practice Guidelines:
Trauma/Traumatic haemorrhage control

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Purpose: To ensure a consistent approach to the management of a Traumatic haemorrhage.
Scope: Applies to all QAS clinical staff.
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Vascular injury causing haemorrhage is a potentially life-threatening emergency that requires the early identification of actual or possible bleeding sources. Prompt interventions at scene and recognition of the need for rapid transport to definitive care positively impact patient outcomes.

Internal and external haemorrhage may present in isolation or concurrently. Regardless the goals of treatment remain; minimise blood loss and bleeding, restore tissue perfusion and achieve an appropriate haemodynamic state.[1]

External haemorrhage can result from open wounds, lacerations, peripheral vascular injuries or amputation.

Internal haemorrhage arises secondary to blunt and/or penetrating forces and due to concealment, it may be difficult to identify the site and extent of bleeding. It should always be suspected that the shocked trauma patient is bleeding internally until proven otherwise.

There are essentially 6 sites of bleeding in the injured patient:

- head
- intra-thoracic
- intra-abdominal
- pelvic
- long bones; and
- externally

### Clinical features

**General signs of hypovolaemic shock:**
- Tachycardia
- Hypotension
- ALOC
- Pale, cool peripheries
- Prolonged capillary refill.

**High risk mechanisms of injury include:**
- Gunshot wounds
- Stab wounds
- Blast injuries
- Fall > 3 metres
- High speed acceleration/deceleration injuries
- High mechanism RTC

**High risk signs for significant haemorrhage include:**
- Significant abdominal or chest wall bruising
- Flail segment
- Abdominal distension/rigidity
- Haemoptysis
- Haematemesis
- Haematuria
- Vaginal or rectal haemorrhage.
A trauma patient may appear clinically well with normal vital signs despite significant blood loss due to various factors:

- β blocker medication
- Coagulopathic patient (i.e. aspirin, clopidogrel, warfarin)
- The usually hypertensive patient
- Compensating pregnant/paediatric patient

**Additional information**

- The effectiveness of direct/indirect pressure in assisting to stem bleeding should not be underestimated.
- Temperature regulation in the multi-system trauma patient is vital to prevent/reverse coagulopathy and shock – maintain normothermia.
- Posturing to reduce airway complications attributed to ongoing bleeding is to be prioritised over spinal immobilisation (ie position patient lateral, raise head).
- To reduce the risk of clot dislodgement during extrication patient movement should be minimised and coordinated with a maximum angle of 15° during log rolls and transportation on the scoop/CombiCarrier®II (timeframe limits).
- Penetrating or embedded objects are not to be removed in the pre-hospital environment due to the risk of increased bleeding and/or clot dislodgement.
- Re-alignment and extension of long bone fractures minimises the tissue space into which bleeding may occur.
- Correct anatomical positioning of a SAM sling stabilises the pelvic ring and reduces the pelvic volume and space into which bleeding may occur.
Consider:
- IV access
- IV fluid
- Analgesia
- Antiemetic

Note: Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.

Consider:
- Direct pressure
- Proximal pressure points
- Indirect pressure
- Tourniquet
- Position (lateral, head/limb elevation)
- Nasal pack
- Maintain normothermia

Active external haemorrhage?
- Y
- N

Potential internal haemorrhage?
- Y
- N

Shocked?
- Y
- N

Consider:
- FAST
- Pelvic binder
- Fracture reduction
- Minimise movement
- Maintain normothermia

Manage as per:
- CPG: Hypovolaemic shock

Transport to hospital (consider trauma by-pass criteria)
Pre-notify as appropriate

CPG: Paramedic Safety
CPG: Standard Cares