Shared health Soins communs Manitoba	F01 - GENERAL APPROACH TO MAJOR TRAUMA (ALL AGES)	
	Version date: 2025-03-23	Effective Date: 2025-04-30 (07:00)
PCP = PCP - ACP	ICP = ICP & ACP	ACP = ACP only	None = EMR - ACP

TABLE A: SIGNS, SYMPTOMS & CLASSES OF HEMORRHAGIC SHOCK [5]				
PARAMETER	**CLASS 1**	**CLASS 2**	**CLASS 3**	**CLASS 4**
Blood loss (%)	Less than 15	15 - 30	30 - 40	Greater than 40
Heart rate	Normal	Normal / increased	Increased	Very increased
Blood pressure	Normal	Normal	Normal / decreased	Decreased
Pulse pressure	Normal	Decreased	Decreased	Decreased
Respiratory rate	Normal	Normal	Normal / Increased	Increased
GCS	Normal	Normal	Decreased	Decreased
TXA	Consider	Strongly consider	Administer	Administer
Blood products	Unlikely	Possible	Probable	Yes

TABLE B: LIFE-THREATENING INJURIES [7]	
IMMEDIATE:	**POTENTIAL:**
• Airway obstruction • Hypoxemia • Flail chest • Tension pneumothorax • Open pneumothorax • Exsanguination • Shock • Intracranial injury with cerebral herniation [6]	• Penetrating trauma to head / neck / torso • Penetrating trauma / amputation / multiple fractures proximal to elbow or knee • Open book pelvic fractures • Head trauma with depressed skull fracture, focal neurological deficit, or GCS < 13 • Paraplegia or quadriplegia • Major burns (20% BSA) or airway involvement

INDICATIONS
• All patients who have sustained traumatic injuries

WARNINGS
• For traumatic cardiac arrest refer to F02.1 and F02.2

NOTES

NOTE: This care map is intended as a guideline for the general management of a major trauma victim. However, each situation is unique and the sequence of steps may need to be varied, depending upon on available resources and patient findings. With additional personnel, some steps can be performed simultaneously with others.

1. Airway maneuvers are considered aerosol-generating medical procedures (AGMP). Appropriate personnel protective equipment (PPE) is required (A09).
2. Protect the cervical spine during the primary survey. Do not attempt to "clear the C-spine" until life-threatening injuries have been excluded. Afterwards implement spinal motion restriction (SMR) as soon as possible if indicated (F06).
3. Keep a low index of suspicion for the causes of shock. A normal blood pressure (BP) does not rule out significant hemorrhage (table B). The shock index (SI) may be helpful in determining subtle cases (heart rate / systolic BP).
   - > 0.6 - suspicious for subtle shock
   - > 0.8 - definite shock
4. Signs of cerebral herniation include a depressed level of consciousness (LOC), abnormal pupillary response ("blown pupil") and asymmetrical motor response. Consider securing the airway if the GSC is 8 or less. Maintaining an end-tidal CO2 level of 35 to 40 mmHg may temporarily reduce intracranial pressure. DO NOT IMPLEMENT PERMISSIVE HYPOTENSION IF INTRACRANIAL INJURY IS SUSPECTED.
5. With any life-threatening injury (table A), scene time should be kept to the minimum required to stabilize the patient for transport to the next level of care. Some interventions may be better performed during transport (e.g. establishing vascular access).
6. Aggressive crystalloid administration can create coagulopathy, dislodge fragile clot, enhance bleeding and increase mortality. In the absence of head injury, mild permissive hypotension should be considered, based on the following age cohorts. Carefully and continuously reassess the patient's LOC to monitor cerebral perfusion.
   - Adult = 90 mmHg
   - Adolescent = 80 mmHg
   - Child = 70 mmHg
   - Infant = 60 mmHg
7. If your patient meets any of the criteria for direct transport to a trauma center (B04.1 / B04.2 / B04.3), contact the Virtual Emergency Care & Transport Resource Service (VECTRS) <u>regardless of your geographical location</u> and indicate that you have a major trauma patient for a potential trauma bypass.

   Depending on your location and the condition of the patient, on line medical support (OLMS) at VECTRS will perform one or more of the following actions:

   - authorize you to bypass of the closest emergency department (ED) and transport directly to the Health Sciences Center (HSC).
   - advise you to transport to a local ED for initial assessment and care (or stabilization if required).
   - provide a trauma team activation (TTA) if transporting to HSC.
   - assist with the coordination of care and subsequent interfacility transport (IFT) if transporting to a local ED.
   - conference in the transport physician and air medical crew for consideration of air intercept or to expedite interfacility transfer by air.

TABLE C: FIELD CARE FOR SPECIFIC INJURIES
IMPALEMENT: Secure the object(s) in place unless restricting safe extrication or interfering with airway management / chest compressions and cannot be cut or otherwise dismantled.
EVISCERATION: Do not attempt to replace contents back into the abdominal cavity. Support large eviscerations with bulky dressings or manually to prevent traction on blood vessels or tissue damage. Bleeding at wound edges should be controlled with direct pressure, avoiding pressure on the exposed contents. Cover with sterile dressings, and cover dressings to minimize heat loss.
PELVIC FRACTURES: Pelvic fractures may cause significant internal bleeding. Unstable fractures increase the volume of the pelvic, potentially allowing uncontrolled hemorrhage into the pelvic cavity. Pelvic binding can reduce internal bleeding by stabilizing any fractures and reducing the volume of the pelvic cavity, potentially allowing for tamponade of bleeding. Pelvic binding should be applied across the greater trochanters of the femurs, not the superior iliac spines (figure 2).
FRACTURE WITH VASCULAR COMPROMISE: The management of limb fractures with vascular compromise should not delay lifesaving maneuvers or emergency transport. A limited attempt at restoring perfusion may be performed if time allows. Check distal circulation before and after the reduction. If resistance is encountered, discontinue, and splint the limb in the position found. If the attempted reduction does not restore circulation, splint in the post reduction position. Do not re-manipulate is this may cause greater vascular damage.
OPEN FRACTURES: Clean exposed bone of gross debris and dress appropriately. Open fractures do not contraindicate necessary reduction if vascular compromise is present.
TRACTION SPLINTS: Do not use with known or suspected pelvic fractures as this may cause further disruption of the pelvic ring. Paramedics must adhere to manufacturer's recommendations for application, monitoring, and removal.
CONTAMINATED WOUND: Lightly brush off loose material from wounds with sterile gauze. Do not scrub. Reinforce dressing as required. Replace dressings if they impede control of bleeding.
AMPUTATION: Do not place severed parts in water or on ice. Gently rinse with sterile saline solution to remove gross debris, wrap in sterile saline soaked gauze and seal in a waterproof container or sealable plastic bag. If available place the container or bag on ice. Transport with the patient
OPEN GLOBE EYE INJURY: Open eye injuries can result from penetrating or blunt trauma. Do not irrigate or apply topical anesthesia. Pressure on the globe may cause extrusion of ocular contents. Protect with a rigid cover that does not contact the globe.
MID-FACIAL OR BASAL SKULL FRACTURES: Do not insert a nasopharyngeal airway (or administer intranasal medication) in a patient with known or suspected facial or basal; skull fractures. Possible cribriform plate injury can directly expose the central nervous system to the nasal cavities.

LINKS
• A01 - Standard Clinical Approach • A07 - VECTRS / OLMS • A09 - Aerosol Generating Medical Procedures • B04.1 - Trauma Destination for IERHA & SHSS • B04.2 - Trauma Destination for PMH • B04.3 - Trauma Destination for NRHA • F02.1 - Basic Trauma Arrest • F02.2 - Advanced Trauma Arrest • F06 - Spine & Spinal Cord Trauma • F07 - Head Trauma • M28 - Tranexamic Acid

APPROVED BY	
	
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VERSION CHANGES (refer to X06 for change
• Addition of ACP work scope indicator • Revised notes on trauma bypass for greater clarity & ease of use