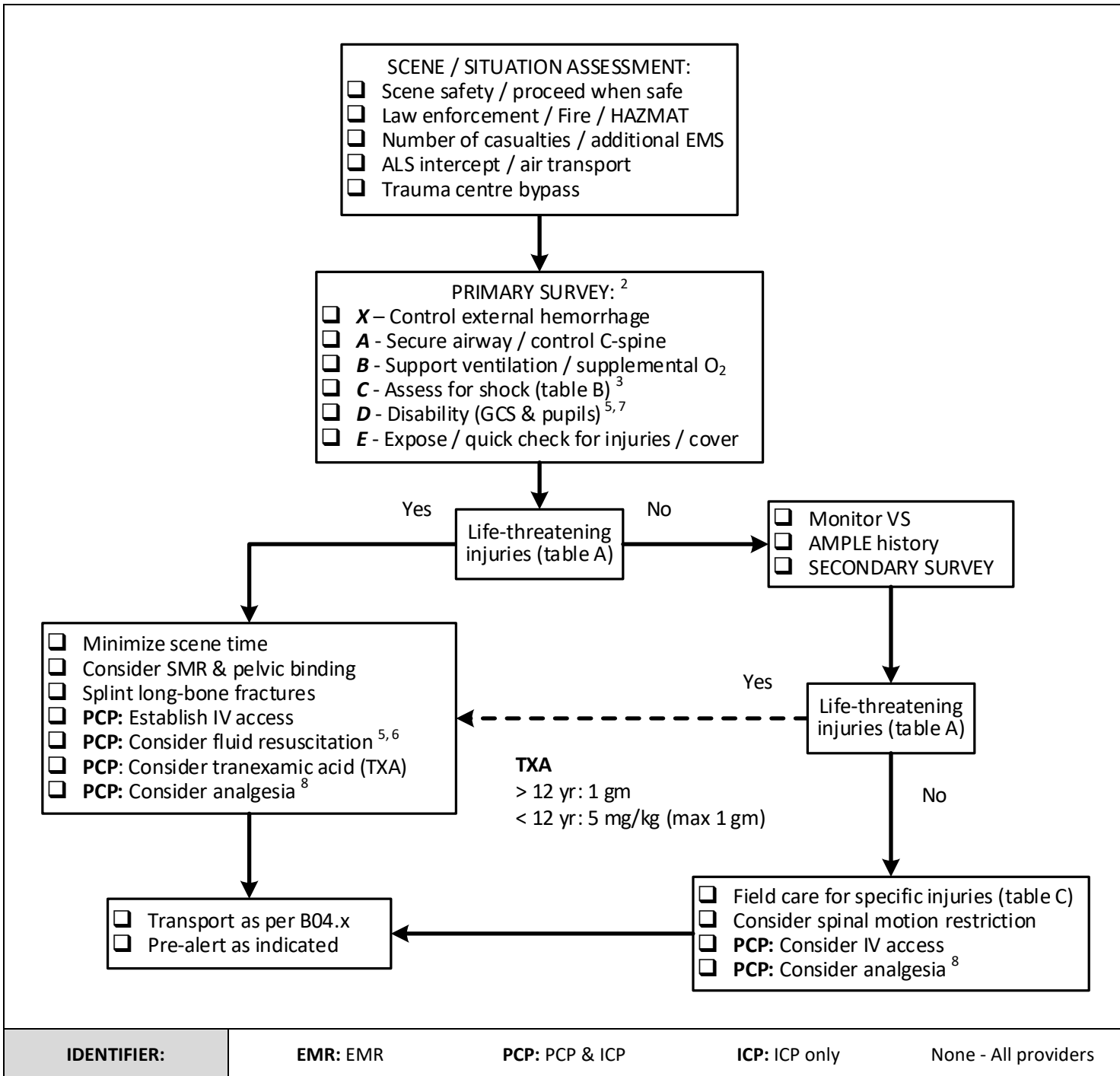
	F01 - MAJOR TRAUMA	
	All ages	TRAUMA
Version date: 2023-11-11		Effective Date: 2023-12-19 (0700)



IDENTIFIER:	EMR: EMR	PCP: PCP & ICP	ICP: ICP only	None - All providers
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TABLE A: LIFE-THREATENING INJURIES

IMMEDIATE	POTENTIAL
<ul style="list-style-type: none"> • Airway obstruction • Hypoxemia • Flail chest • Tension pneumothorax • Open pneumothorax • Exsanguination • Shock • Intracranial injury with cerebral herniation 	<ul style="list-style-type: none"> • 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 • Unstable vital signs

TABLE B: SIGNS, SYMPTOMS & CLASSES OF HEMORRHAGIC SHOCK

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 (MTP) ⁴

INDICATIONS

- All patients who have sustained traumatic injuries

CONTRAINDICATIONS

- For traumatic cardiac arrest refer to F02.1 and F02.2

NOTES

1. This care map is a guideline to the management of major trauma. Every situation is unique and paramedics should use clinical judgement in management. Paramedics will call the Virtual Emergency Care & Transport Resource Service (VECTRS) for trauma bypass and clinical support.

The sequence of steps in the trauma care may need to be varied. With additional personnel, some interventions can be performed simultaneously with other procedures. Some interventions may be performed during transport (eg. establishing vascular access).
2. With any life-threat, scene time should be kept to the minimum required to stabilize the patient enough for transport to the next level of trauma care.
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 beneficial in determining subtle cases (heart rate / systolic BP).
 - > 0.6 - suspicious for subtle shock
 - > 0.8 - definite significant shock
4. Paramedics may be directed to transport to specific destinations with transfusion capabilities.
5. **DO NOT IMPLEMENT PERMISSIVE HYPOTENSION if an intracranial injury is suspected**
6. Aggressive crystalloid administration can create coagulopathy, dislodge fragile clot, increase bleeding and 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 level of consciousness (LOC) to monitor cerebral perfusion.
 - Adult = 90 mmHg
 - Adolescent = 80 mmHg
 - Child = 70 mmHg
 - Infant = 60 mmHg
7. Signs of cerebral herniation include a depressed level of consciousness, asymmetrical 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.
8. Adequate analgesia should be considered as necessary (even with some life-threatening injuries) based on the patient's LOC, blood pressure, and respiratory status.

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 as 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
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 F04 - SPINAL MOTION RESTRICTION M28 - TRANEXAMIC ACID

APPROVED BY	
	
EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X06 for change
<ul style="list-style-type: none"> • Links to F02.x - BASIC / ADVANCED TRAUMA ARREST