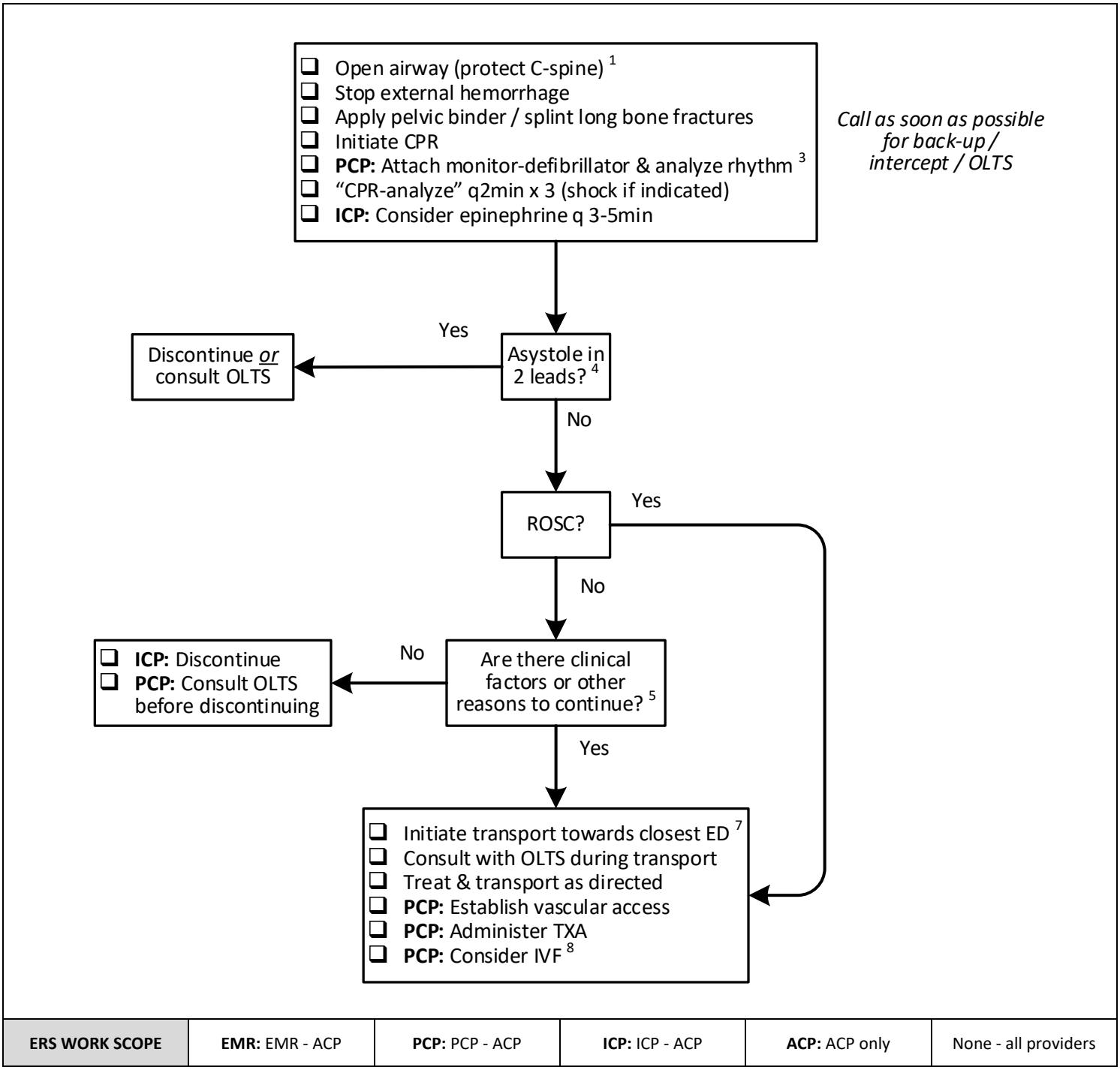
Shared health Soins communs Manitoba	F02.2 - ADVANCED TRAUMA ARREST (PCP & ABOVE)	
	All ages	TRAUMA
Version date: 2024-05-04		Effective Date: 2024-05-15 (0700)



ERS WORK SCOPE	EMR: EMR - ACP	PCP: PCP - ACP	ICP: ICP - ACP	ACP: ACP only	None - all providers

INDICATIONS

- Cardiac arrest due to major traumatic injury (for nontraumatic cardiac arrest refer to C02)

CONTRAINDICATIONS

- Health care directive prohibiting resuscitation from cardiac arrest
- Injuries incompatible with survival [9]

NOTES

1. Chest compressions and defibrillation during resuscitation are not aerosol generating medical procedures. However, airway manipulation is. Appropriate personnel protective equipment (PPE) is required (A09).
2. If the patient's age is unknown, use visible signs of puberty as the differentiating feature for adolescent and child dosing. For patients less than 8 years of age or 25 kilograms weight use pediatric pads. If pediatric pads are not available, use adult pads but ensure separation by at least 2.5 cm (consider antero-posterior placement).
3. When defibrillating a patient with an implanted cardioverter-defibrillator (ICD) or pacemaker, place the electrodes at least 8 centimeters (3 inches) away from the pulse generator.
4. Traumatic cardiac arrest resulting in **asystole** in universally fatal. Transport is rarely indicated.

   Arrest from trauma most often presents initially with **pulseless electrical activity** (PEA), due to insufficient cardiac filling from severe external or internal blood loss. It will rapidly progress to asystole if uncorrected. Less common causes include tension pneumothorax and pericardial tamponade (appendix B). Prompt identification and correction (while maintaining high-quality CPR) is the priority.

   Ventricular fibrillation (VF) or **ventricular tachycardia** (VT) are uncommon initial rhythms in trauma arrest. However, blunt precordial force can result in VF or VT (without other serious injuries) a phenomenon known as *commotio cordis*. This usually responds to prompt high-quality CPR and rapid defibrillation.
5. With the exception of commotio cordis, survival from traumatic cardiac arrest is very unlikely without *immediate* access to massive transfusion capabilities and surgical care. The decision to transport without return of spontaneous circulation (ROSC) can be complex and depends on the nature and severity of the injuries, the downtime prior to EMS arrival, the ability to provide and maintain high quality cardiopulmonary resuscitation (CPR), and the transport time to a higher level of care. Emergency transport without hope of survival exposes paramedics and the public to unnecessary risk.

   In certain non-clinical circumstances and even with little probability of survival, transporting to a health care facility and deferring the decision about discontinuation to a health care provider with additional training and experience *may* be in the best interest of the patient's family and providers (e.g. pediatric victim, family distress, provider uncertainty).
6. Always maintain personal safety when performing CPR during transport. Continue until fatigue ensues or if safety concerns arise. Do not interrupt to reassess unless signs of ROSC occur (e.g. spontaneous movement).
7. Transport time to the closest emergency department (ED) must be based on safe transport speed and should consider time for scene egress and loading.
8. DO NOT IMPLEMENT PERMISSIVE HYPOTENSION IF AN INTRACRANIAL INJURY IS SUSPECTED. 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

9. Injuries incompatible with survival include decapitation, incineration, transection of the thorax or abdomen, substantial destruction of vital organs (heart, lungs, brain), or separation of vital organs from the body.

LINKS / REFERENCES
• A09 - AEROSOL GENERATING MEDICAL PROCEDURES • C02 - ADVANCED CARDIAC ARREST • M05 - EPINEPHRINE

APPROVED BY	
	
EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X06 for change tracking)
• Removal of COVID restrictions and reference to general AGMP protocol for all transmissible respiratory infections

APPENDIX A: TRAUMA ARREST QRG *This guide is for dosing only. Refer to the medication documents for additional information required for safe administration.*	
TEN YEARS & OLDER	**LESS THAN TEN YEARS** [2]
DEFIBRILLATION	
• Initial shock @ 120 to 200 J • Use maximum energy if uncertain • Increase the dose with each additional shock	• First shock @ 2 J/kg • Second shock @ 4 J/kg • Administer each additional shock @ 4 to 10 J/kg
EPINEPHRINE (M05.2)	
• 1 mg • Repeat every 3 to 5 minutes as required (q3-5min)	• 0.01 mg/kg (single max dose = 0.5 mg) • Repeat every 3 to 5 minutes as required (q3-5min)

APPENDIX B: INJURIES CAUSING TRAUMATIC CARDIAC ARREST	
• Airway obstruction	• Hypoxemia
• External or internal exsanguination	• Flail chest
• Shock	• Tension pneumothorax
• Intracranial injury with cerebral herniation	• Open pneumothorax