

Subject: Traumatic Cardiac Arrest Treatment Policy
All Providers

I. PURPOSE

To provide a standardized approach for the assessment, resuscitation, transport, and potential termination of resuscitative efforts for patients in traumatic cardiac arrest while emphasizing correction of reversible causes and rapid access to definitive trauma care

II. SCOPE

This policy applies to all EMS personnel authorized to provide care within the North Coast EMS Agency jurisdiction

III. DEFINITIONS

- A. Traumatic Cardiac Arrest: Cardiac arrest directly resulting from blunt or penetrating trauma
- B. ROSC: Return of spontaneous circulation
- C. Reversible Causes: Conditions that may be corrected during resuscitation including tension pneumothorax, airway obstruction, hypoxia, and exsanguinating hemorrhage

IV. INDICATIONS

- A. Trauma patients presenting in cardiac arrest from any traumatic causes

V. CONTRAINDICATIONS, WITHHOLDING OR TERMINATING RESUSCITATION

- A. All Providers - Briefly assess the patient and determine if the injury is compatible with life. If injury is incompatible with life per Policy # 2304 or Policy #2305, do not initiate CPR, or if CPR was initiated by bystanders or first responders, terminate CPR. Base contact is not required
- B. Paramedic - Determine cardiac rhythm - if asystole or wide complex PEA at less than 40 beats per minute in the presence of blunt trauma consider termination of resuscitative efforts per Policy # 2305
- C. Paramedic - Termination of resuscitation efforts should be considered in trauma patients with EMS witnessed cardiopulmonary arrest and 20 minutes of unsuccessful resuscitation
- D. Paramedic - Traumatic cardiopulmonary arrest patients with an anticipated transport time greater than twenty minutes (20) after witnessed arrest may be considered non-salvageable. Base hospital contact is not required when termination criteria are clearly met
- E. All Providers - Document the rationale for termination in the patient care record

VI. INITIAL ASSESSMENT

- A. Determine mechanism of injury and identify blunt versus penetrating trauma
- B. Assess airway, breathing, circulation, and control major hemorrhage immediately.

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- C. Determine cardiac rhythm (ALS).
 - D. Identify potentially reversible causes of arrest.

VII. BLS TREATMENT

- A. Initiate high-quality CPR
- B. Control major bleeding using direct pressure, tourniquets, hemostatic dressings, and wound packing as appropriate
- C. Provide spinal motion restriction
- D. Apply AED and follow the instructions
- E. Ventilate with bag-valve-mask and 100 percent oxygen
- F. Minimize scene time if transporting
- G. Early notification of the receiving trauma center

VIII. ALS TREATMENT

- A. Perform bilateral needle thoracostomy when chest trauma or tension pneumothorax is suspected
- B. Establish bilateral large-bore IV and/or IO access
- C. Administer isotonic crystalloid fluids. Simultaneous infusion through bilateral access may be considered
- D. Initial fluid resuscitation may include up to one liter through each IV or IO route and may be repeated as clinically indicated
- E. Defibrillate ventricular fibrillation or pulseless ventricular tachycardia when present.
- F. Epinephrine is not routinely indicated in traumatic cardiac arrest
- G. Focus interventions on correction of reversible causes rather than standard medical cardiac arrest treatment

IX. REVERSIBLE CAUSE PRIORITIES

- A. Airway obstruction or hypoxia
- B. Tension pneumothorax
- C. Massive external hemorrhage with exsanguination and hypovolemia

X. RETURN OF SPONTANEOUS CIRCULATION (ROSC)

- A. Reassess and control all external bleeding
- B. Consider Tranexamic Acid (TXA) per Policy # 5641
- C. In patients with hemorrhagic shock without suspected traumatic brain injury and/or spinal cord injury, titrate fluids to maintain a systolic blood pressure of 90 mmHg
- D. In patients with suspected traumatic brain injury and/or spinal cord injury, titrate fluids to maintain a MAP of 65 mmHg
- E. Continue rapid transport to the appropriate trauma center

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XI. TRANSPORT DECISIONS

- A. Notify the receiving trauma center as early as possible
- B. Transport rapidly to the closest appropriate trauma facility per Policy # 7000
- C. Limit on-scene procedures to those likely to correct a reversible cause of arrest
- D. Patients with a prolonged traumatic arrest and poor salvageability may be considered for termination

XII. SPECIAL CONSIDERATIONS

- A. Patients in cardiac arrest due to drowning, hanging, electrocution or primary medical cardiac arrest shall be managed with Medical Cardiac Arrest policy
- B. Trauma patients who are not in cardiac arrest shall be managed under the General Trauma Policy

XIII. DOCUMENTATION

- A. Mechanism of injury
- B. Initial rhythm
- C. Airway management
- D. Hemorrhage control measures
- E. Any intervention (i.e. needle thoracostomy, pelvic binder placement, tourniquet placement, etc.)
- F. ROSC events
- G. Transport decision or termination rational
- H. Trauma center notification

XIV. QUALITY IMPROVEMENT INDICATORS

- A. All traumatic cardiac arrest cases
- B. Bilateral needle thoracostomy procedures
- C. Cases resulting in ROSC
- D. Termination of resuscitation decisions
- E. Delayed trauma center notifications