

## Resuscitation: Post-Cardiac Arrest Care

**Goal:** Optimize neurologic and other function following return of spontaneous circulation (ROSC) after cardiac arrest resuscitation

**Inclusion Criteria:** Patient with ROSC after cardiac arrest resuscitation

**Exclusion Criteria:** None

**Refer to:** [Asystole/PEA](#), [Cardiac Arrest](#), and [Vfib/pulseless VTach CPGs](#); [Determination of Death Policy](#)

### NOTES:

- **Definition:** The UTSW/Parkland BioTel EMS System defines ROSC as: return of an organized cardiac rhythm with a palpable (**carotid? femoral? radial?**) pulse
- **Avoid excessive ventilation (rate and/or depth)**
- **Routine prehospital cooling with cold IV fluids is no longer routinely recommended**
- **During transport of a patient in cardiac arrest or ROSC, two rescuers should be present in the patient compartment of the ambulance**

### Basic Level

1. Assess and support ABCs according to [UNIVERSAL CARE – ADULT](#) or [UNIVERSAL CARE – PEDIATRIC](#), as clinically indicated:
  - a. A (Airway): Ensure airway patency with suctioning and OPA or NPA
  - b. B (Breathing): Provide supplemental oxygen to maintain SpO<sub>2</sub> of **94 to 99%** (continuous monitoring) and assist ventilations as needed (avoid over-ventilation; see below, section 6.b.)
  - c. C (Circulation): Initiate continuous ECG monitoring as soon as possible
  - d. D (Disability): Assess and document GCS; assess pupillary size and reactivity
  - e. E (Exposure/Environmental): Assess for and avoid measures that may contribute to hyperthermia
2. Positioning:
  - a. If trauma is not suspected, position the patient supine or (if aspiration risk) in the left lateral decubitus position, facing EMS Providers, in order to monitor and manage the airway:
    - i. If trauma is suspected, refer to the [Spinal Motion Restriction Policy](#) and [Trauma CPG](#)
3. Perform and document a POC Glucose analysis and assist with treatment according to the [Diabetic Emergencies CPG](#)
4. Once advanced level care arrives on scene, give report and transfer care

### Advanced Level

5. Initiate continuous PetCO<sub>2</sub> monitoring and maintain continuous ECG and SpO<sub>2</sub> monitoring:
  - a. If possible, titrate FiO<sub>2</sub> to the minimum concentration necessary to maintain SpO<sub>2</sub> 94-99%
  - b. Avoid hyperventilation – do not attempt to aggressively correct above-normal PetCO<sub>2</sub> values:
    - i. Medical etiology: no more than 10 to 12 breaths per minute
    - ii. Trauma etiology: 6 to 8 breaths per minute
  - c. Routine administration of anti-arrhythmics, especially infusions, after ROSC is not recommended
6. Consider advanced airway management:
  - a. If ROSC occurs before advanced airway placement, but the patient does not regain consciousness, or if SpO<sub>2</sub> remains less than 90%, insert [Advanced Airway](#) (ET Tube or supraglottic device)
7. Treat hypotension:
  - a. ADULT at least 14 years of age (SBP less than 90 mmHg):
    - i. Fluid bolus: 20 mL/kg NS IV/IO (1 L maximum per bolus)
      1. May repeat once, if needed (do not administer if signs/symptoms of volume overload)
      2. Consider [norepinephrine](#) infusion: 8-12 mcg/kg/min IV/IO (medical etiology only)
  - b. PEDIATRIC patient less than 14 years of age (SBP less than **5<sup>th</sup>-percentile for age**):
 

i. Fluid bolus: 20 mL/kg IV/IO NS (1 L maximum per bolus)
ii. If respiratory etiology or heart failure confirmed/suspected: 5 to 10 mL/kg
iii. BioTel must authorize additional fluid boluses or vasopressor infusion

8. Obtain and transmit a 12-Lead ECG as soon as possible:
  - a. Patients with STEMI or suspicion of acute myocardial infarction should be transmitted to a hospital with 24-hour cath lab capability, even if the patient is not awake (does not follow commands)
  - b. Consider transporting *all* patients in ROSC after cardiac arrest to a facility with 24-hour cath lab capability because of availability of comprehensive, critical care capabilities
9. Treat hypoglycemia according to the [Diabetic Emergencies CPG](#) (D10W preferred over D50 or D25)
10. Treat seizures according to the [Seizure CPG](#)
11. Assess for and avoid/treat common causes of post-resuscitation hypotension:
  - a. Hyperventilation
  - b. Hypovolemia
  - c. Tension pneumothorax (refer to [Needle Thoracostomy Procedure](#))
12. For patient awakening (coughing, gagging or movement) with advanced airway in place post-cardiac arrest:
  - a. Supraglottic airway: consider removing the airway or follow sedation guidelines for intubated patients
  - b. Endotracheal tube:
    - i. ADULT at least 14 years of age:
      1. Midazolam 2.5 to 5 mg IV/IO/IN/IM; may repeat once, after 5-10 minutes; **OR**
      2. Diazepam 2.5 to 5 mg IV/IO/IN/IM; may repeat once, after 5-10 minutes
      3. Contact BioTel if the patient requires additional sedation doses
    - ii. PEDIATRIC patient less than 14 years of age:

1. Midazolam 0.1 mg/kg IV/IO/IN/IM (maximum single dose: 5 mg)
2. May repeat once, after 5-10 minutes
3. Contact BioTel if the patient requires additional sedation doses
13. Initiate transport as soon as possible to an appropriate receiving hospital, according to Hospital Capabilities Matrix and the [Destination Policy](#)
14. For additional patient care considerations not covered under standing orders, contact BioTel