



# Post Resuscitation

Return of Spontaneous Circulation

**Transport Destination Decision**  
 Post-resuscitation patient is medically complex.

Consider facility capabilities:

- 24-hour cardiac catheterization laboratory
- Medical ICU service
- Cardiology service
- Neurology service
- Pulmonology service
- Targeted Temperature Management

Repeat Primary Assessment	
	<b>Optimize Ventilation and Oxygenation</b> <ul style="list-style-type: none"> <li>• Remove Impedance Threshold Device</li> <li>• Respiratory Rate 10 / minute</li> <li>• Maintain SpO2 92 – 98%</li> <li>• <b>DO NOT HYPERVENTILATE</b></li> </ul>
<b>B</b>	<ul style="list-style-type: none"> <li>• ETCO2 ideally 35 – 45 mm Hg</li> </ul>
	Airway Protocol(s) AR 1, 2, 3, 4 <b>as indicated</b>
<b>B</b>	12 Lead ECG Procedure
	IV or IO Access Protocol UP 6
<b>P</b>	Cardiac Monitor
	Monitor Vital Signs / Reassess
	Search for reversible causes

**Reversible Causes**

Hypovolemia  
 Hypoxia  
 Hydrogen ion (acidosis)  
 Hypothermia  
 Hypo / Hyperkalemia

Tension pneumothorax  
 Tamponade; cardiac  
 Toxins  
 Thrombosis; pulmonary (PE)  
 Thrombosis; coronary (MI)

	Chest Pain and STEMI Protocol AC 4 <b>if indicated</b>
	Hypotension / Shock Protocol AM 5 <b>as indicated</b>
<b>A</b>	<b>Optimize Systolic BP and Mean Arterial BP</b> <ul style="list-style-type: none"> <li>• Systolic BP &gt; 90 mmHg</li> <li>• Mean Arterial BP &gt; 65 mmHg</li> </ul>
<b>P</b>	
	Appropriate Arrhythmia Protocol(s) AC 2, 6, 7 <b>as indicated</b>
	Seizure Protocol UP 13 <b>as indicated</b>
	Post Intubation BIAD Management Protocol AR 8
	Targeted Temperature Management Protocol AC 13 <b>if available</b>

Arrhythmias are common and usually self limiting after ROSC

If Arrhythmia Persists follow Rhythm Appropriate Protocol

**Notify Destination or Contact Medical Control**



# Post Resuscitation

## Pearls

- **Recommended Exam: Mental Status, Neck, Skin, Lungs, Heart, Abdomen, Extremities, Neuro**
- **Continue to search for potential cause of cardiac arrest during post-resuscitation care.**
- **Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post resuscitation phase and must be avoided. Titrate FiO<sub>2</sub> to maintain SpO<sub>2</sub> of 92 - 98%.**
- **Pain/sedation:**
  - Patients requiring advanced airways and ventilation commonly experience pain and anxiety. Unrelieved pain can lead to increased catecholamine release, ischemia, immunosuppression, and prolonged hospitalization.
  - Ventilated patients cannot communicate pain / anxiety and providers are poor at recognizing pain / anxiety.
  - Vital signs such as tachycardia and / or hypertension can provide clues to inadequate sedation, however they both are not always reliable indicators of patient's lack of adequate sedation.
  - Pain must be addressed first, before anxiety. Opioids are typically the first line agents before benzodiazepines. Ketamine is also a reasonable first choice agent.
- **Ventilator / Ventilation strategies:**
  - Tailored to individual patient presentations. Medical Control can indicate different strategies above.
  - In general ventilation with BVM should cause chest rise. With mechanical ventilation a reasonable tidal volume should be about 6 mL/kg and peak pressures should be < 30 cmH<sub>2</sub>O.
  - Continuous pulse oximetry and capnography should be maintained during transport for monitoring.
  - Head of bed should be maintained at least 10 – 20 degrees of elevation when possible to decrease aspiration risk.
- **EtCO<sub>2</sub> Monitoring:**
  - Initial End tidal CO<sub>2</sub> may be elevated immediately post-resuscitation, but will usually normalize.
  - Goal is 35 – 45 mmHg but avoid hyperventilation to achieve.
- **Titrate fluid resuscitation and vasopressor administration to maintain SBP of 90 – 100 mmHg or Mean Arterial Pressure (MAP) of 65 – 80 mmHg.**
- **STEMI (ST-Elevation Myocardial Infarction)**
  - Consider placing 2 IV sites in the left arm: Many PCI centers use the right radial artery for intervention.
  - Consider placing defibrillator pads on patient as a precaution.
  - Document and time-stamp facility STEMI notification and make notification as soon as possible.
  - Document the time of the 12-Lead ECG in the PCR as a Procedure along with the interpretation (Paramedic).
- **Consider transport to facility capable of managing the post-arrest patient including hypothermia therapy, cardiology / cardiac catheterization, intensive care service, and neurology services.**
- **Targeted Temperature Management (optional):**
  - Maintain core temperature between 32 - 36°C.
  - Infusion of cold saline is NOT recommended in the prehospital setting.
  - No evidence suggests improved survival with prehospital cooling.
- **The condition of post-resuscitation patients fluctuates rapidly and continuously, and they require close monitoring. Appropriate post-resuscitation management may best be planned in consultation with Medical Control.**