

**REGION I EMERGENCY MEDICAL SERVICES  
STANDING MEDICAL ORDERS  
EMT – Intermediate, EMT – Paramedic**

**SMO: Asystole**

**Overview:** Asystole is a cardiac arrest rhythm associated with no discernable electrical activity on the ECG (“flat line”). The single most important therapy for asystole continues to be search for, identify, and reverse any treatable cause (see treatment).

**INFORMATION NEEDED**

- History of arrest:
- Witnessed collapse: time down and preceding symptoms
- Unwitnessed collapse: time down and preceding symptoms if known
- Bystander CPR and treatments, including First Responder, AED or PAD defibrillation, given prior to arrival
- Past medical history: diagnosis, medications
- Scene: evidence of drug ingestion, hypothermia, trauma, Valid DNR, nursing home or hospice patient

**OBJECTIVE FINDINGS**

- Patient apneic, pulseless and in asystole on the monitor

**TREATMENT**

- Assess patient and confirm pulselessness
- Start High Quality CPR if indicated (See Guidelines for Determining Death in the Field Policy)
- Assure adequacy of ventilations and compressions
- Assess for possible causes of Asystole and administer corresponding treatments:

**5 Reversible Causes (“H”) and associated treatments**

- Hypovolemia (give fluid bolus)
- Hypoxia (secure airway and ventilate patient)
- Hydrogen ion (acidosis) (secure airway, ventilate patient, consider sodium bicarbonate)
- Hyperkalemia/Hypokalemia (consider sodium bicarbonate)
- Hypothermia (warm patient)

**5 Reversible Causes (“T”) and associated treatments**

- Tablets (drug overdoses) (secure airway, ventilate; see Drug Overdose Protocol)
- Tamponade (cardiac) (secure airway, ventilate)
- Tension pneumothorax (secure airway, ventilate, needle decompression)
- Thrombosis-heart (AMI) (secure airway and ventilate)
- Thrombosis- lungs (pulmonary embolus) (secure airway and ventilate)

### **TREATMENT (cont)**

- Obtain patient history
- Confirm asystole in two EKG leads
- Ensure adequacy of CPR
- Establish IV or IO of NS
- Epinephrine 1 mg IVP or IO**, repeat q 3 to 5 min or **Vasopressin 40 units IVP or IO** for first or second dose of a vasopressor.
- Advanced Airway Management; confirm tube placement
- Sodium Bicarbonate 1mEq/kg IVP** for suspected hyperkalemia (history of renal failure, dialysis, or potassium ingestion), diabetic patient with possibility of DKA, or tricyclic or phenobarbital overdose;
- If return of spontaneous circulation consider Cardiac Hypothermia Protocol

### **Documentation for Adherence to Protocol:**

- CPR performed
- ALS or BLS airway management
- Correct doses of medications administered if indicated

### **PRECAUTIONS AND COMMENTS**

- Document calibration spike and/or CPR compression to ensure that EKG monitor is functioning and electrodes and cables are properly attached.
- Epinephrine/Vasopressin may be administered via ETT. ET drug doses are 2 X the standard IV dose. ET drugs should not exceed 10 ml for any single dose. Maximum total doses of drugs are also doubled for ETT administration. Relative effectiveness of ET drug administration is in question.