Asystole/Pulseless Electrical Activity

Signs and Symptoms

- Pulseless
- Apneic

History

- Prior cardiac event
- Significant trauma
- Downtime
- Bystander CPR

Differential

- DOA
- Lightening/electrocution
- Sudden death/arrhythmia
- Reversible Causes
  - Hypovolemia
  - Hypoxia
  - Hydrogen Ion (acidosis)
  - Hypo/Hyperkalemia (potassium)
  - Hypothermia
  - Hypoglycemia
  - Tension Pneumothorax
  - Tamponade, cardiac
  - Toxins/Overdose
  - Thrombosis, pulmonary (PE)
  - Thrombosis, coronary (MI)

Pediatric Pearls

- Most common cause of PEA is hypovolemia so rapid fluid bolus is important.
- Proper airway management and oxygenation are also crucial.

Care: Adults and Pediatrics

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Follow General Directive #3, Orders for all Patients and **Cardiac Emergencies Protocol # 4 Cardiac Arrest.**

Confirm asystole in two EKG leads. If at any time rhythm changes, refer to appropriate protocol.

Establish an IV or IO of **Normal Saline** and initiate **20ml/kg** bolus up to 1000ml .

Administer **Epinephrine** (1:10,000) **0.01mg/kg** up to 1 mg fast IV, repeated every 3 min. as long as the patient remains pulseless and CPR is being performed.

Initiate advanced airway management when provider availability allows.

If rhythm persists, consider reversible causes of PEA and treat. Consider referring to General Directive # 4 Death Determination/ Initiation Resuscitation.

If rhythm changes, refer to appropriate protocol.

If return of spontaneous circulation:

If normotensive, treat potential causes and monitor patient.

If hypotensive, refer to **Cardiac Emergencies Protocol # 7 Hypotensive Emergencies.**

Pearls

- A **10**-20 ml saline flush immediately following each IV drug administered during resuscitation is key in maximizing medication effectiveness.
- Drugs should be prepared in advance of their potential use and should be administered to the patient in cardiac arrest during the active performance of CPR.
- Endotracheal drug administration is unpredictable and undesirable. If unable to establish IV/IO access promptly contact Medical Control for direction.
- Hypothermic, overdose and drowning patients should be identified to Medical Control as longer resuscitative efforts may be indicated.
- If invasive procedures have been performed on a patient for whom resuscitative measures have been terminated by the LHC Medical Control, the ALS AIC shall accompany the body to a LHC facility.
- If hyperkalemia is suspected (renal failure, dialysis), consider on standing order **Sodium Bicarbonate** **1mEq/kg** up to 50mEq and/or **Calcium Chloride** (10% soln), **0.1 ml/kg** up to 10ml**.**

Performance Indicators

- Proper rhythm recognition and treatment.
- Documentation to include efforts to identify and treat causes of PEA.