Asystole/ Pulseless Electrical Activity (104)

Adults	Pediatrics *(13 years and under)*
Public Safety First Aid Procedures: Only	**Public Safety First Aid Procedures: Only**
• Begin High-Performance CPR • Attach AED and follow prompts • Ensure Fire/ALS have been requested	• Begin High-Performance CPR • Attach AED and follow prompts use pediatric pads and dose attenuator if available • Ensure Fire/ALS have been requested
BLS Procedures: EMT's and Paramedics start here	**BLS Procedures: EMT's and Paramedics start here**
• Begin High-Performance CPR • Attach AED/monitor and follow prompts • Pulse checks every 2 minutes for no longer than 10 seconds • Rapid transport or ALS rendezvous if ROSC • If no change after 30 minutes, consider termination of efforts per determination of death policy	• Begin High-Performance CPR • Attach AED/monitor and follow prompts use pediatric pads and dose attenuator if available • Pulse checks every 2 minutes for no longer than 10 seconds • Request ALS rendezvous. Initiate transport if ALS ETA is greater than 10 min
ALS Prior to Base Hospital Contact: Paramedic only	**ALS Prior to Base Hospital Contact: Paramedic only**
• Monitor/EtCO2 • When IV/IO established give Epinephrine IV drip 2-8 mcg/min repeat as needed. Start at 8mcg/min and titrate down once ROSC is achieved. • Consider H's and T's • Suspected Hyperkalemia? If yes, give Calcium Chloride 20mg/kg • Consider fluid challenge 20mL/kg • If no change after 30 minutes, consider termination of efforts per determination of death policy • Enter V-FIB/Pulseless V-TACH Protocol (125) as needed for rhythm change	• Monitor/EtCO2 • When IV/IO established give Epinephrine IV drip 0.1-1 mcg/kg/min not to exceed adult dose repeat as needed. Start at higher dose and titrate down once ROSC is achieved. • Consider H's and T's • Suspected Hyperkalemia? If yes, give Calcium Chloride 20mg/kg • Consider fluid challenge 20mL/kg • Transport after 10 minutes of High-Performance CPR or if ROSC is achieved. • Enter V-FIB/Pulseless V-TACH Protocol (125) as needed for rhythm change
Base Hospital Contact Required	**Base Hospital Contact Required**

104 ASYSTOLE/ PULSELESS ELECTRICAL ACTIVITY

For patients < 18 years begin transport after 10 minutes of High-Performance CPR or if ROSC is achieved.

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Special Considerations

1. Epinephrine drip 2-8 mcg/min preparation:

- **Epinephrine Drip Setup**
  - Begin with a 100mL bag of normal saline and apply medication label to indicate epinephrine drip.
  - Obtain 1 ampules or vials of epinephrine 1:1000
  - With a 1 mL syringe and a filtered needle withdraw 0.8mg of epinephrine 1:1000
  - Remove filtered needle attach hypodermic needle and inject 0.8mg of epinephrine 1:1000 in labeled 100mL saline bag. Shake well.
  - Attach the 60 drops/mL IV tubing set to the extension set with flow controller (Dial-a-flow). Prime the line and set your desired drops, see below for rates.
    - 2mcg/min set rate to 15 drops
    - 4mcg/min set rate to 30 drops
    - 6mcg/min set rate to 45 drops
    - 8mcg/min set rate to 60drops
- **10 drops/mL IV tubing shall not be used for anaphylaxis, bradycardia, or respiratory distress.**

2. Patients with PEA have poor outcomes. The most common and easily reversible causes of PEA are hypovolemia and hypoxia. The best chance of success in treating PEA is to recognize and treat the underlying cause. The most common causes of PEA are presented in the H's and T's table below:

H's	T's
Hypovolemia	Toxins
Hypoxia	Tamponade (cardiac)
Hydrogen ion (acidosis)	Tension Pneumothorax
Hyper/hypokalemia	Thrombosis (coronary and pulmonary)
Hypoglycemia	Trauma
Hypothermia	

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3. Asystole should be confirmed in 2 leads and other causes of a flat line on the monitor should be ruled out. Causes of a flat line on the monitor, other than asystole include:

    - Loose leads
    - Leads not connected to the patient or the monitor
    - No power
    - Signal gain too low

4. Prognosis for asystole is very poor and is usually seen as confirmation of death. Prolonged efforts at resuscitation of asystole are unnecessary and futile unless special resuscitation situations exist, such as hypothermia and drug overdose.

5. Transcutaneous pacing is not recommended for asystole.

6. Routine shock of asystole is not recommended unless it is questionable whether the patient is in asystole or fine ventricular fibrillation.

7. If a reversible cause is not rapidly identified and the patient fails to respond to resuscitative efforts termination of resuscitation should be considered.