Adult Asystole / Pulseless Electrical Activity

History
- SAMPLE
- Estimated downtime
- See Reversible Causes below
- DNR, MOST, or Living Will

Signs and Symptoms
- Pulseless
- Apneic
- No electrical activity on ECG
- No heart tones on auscultation

Differential
- See Reversible Causes below

Cardiac Arrest Protocol AC 3

Criteria for Death / No Resuscitation
Review DNR / MOST Form

YES →
Decomposition
Rigor mortis
Dependent lividity
Blunt force trauma
Injury incompatible with life
Extended downtime with asystole or Wide Complex PEA ≤ 40 bpm

Do not begin resuscitation

Follow Deceased Subjects Policy

NO

	Begin Continuous CPR Compressions ***Push Hard (≥ 2 inches)*** ***Push Fast (100 - 120 / min)*** ***Change Compressors every 2 minutes*** ***(sooner if fatigued)*** ***(Limit changes / pulse checks ≤ 10 seconds)*** **Ventilate 1 breath every 6 seconds** **30:2 Compression:Ventilation if no Advanced Airway** ***Monitor EtCO2*** ***if available***
	Defibrillation - AED Procedure CSP 5 *if available*
P	Cardiac Monitor
	IV or IO Access Protocol UP 6
A	**Epinephrine (1:10,000) 1 mg IV / IO**
A	**Normal Saline Bolus 500 mL IV / IO** May repeat as needed **Maximum 2 L**
	Search for Reversible Causes
	Blood Glucose Analysis Procedure ASP 4 ***if applicable***
P	Chest Decompression Procedure WTP 1 ***if applicable***
	On Scene Resuscitation / Termination of Resuscitation Protocol(s) AC 12 ***as indicated***

Notify Destination or Contact Medical Control

AT ANY TIME

Return of Spontaneous Circulation

Go to Post Resuscitation Protocol AC 10

Reversible Causes
Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia
Hypoglycemia
Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

Suspected Opioid Overdose
Administer Naloxone per Overdose / Toxic Ingestion Protocol TE 7

Consider Early for PEA
1. Repeated Saline Boluses for possible hypervolemia
2. Dextrose IV/IO
3. Glucagon 4 mg IV/IO/IM for suspected beta blocker or calcium channel blocker OD
4. Calcium Chloride 1 g IV/IO for suspected hyperkalemia
5. Sodium Bicarbonate 50 meq IV/IO for possible overdose, hyperkalemia, renal failure
6. Atropine 1 mg IV only for organized, narrow, PEA with rate < 60
7. Chest Decompression

Adult Cardiac Protocol Section

Adult Asystole / Pulseless Electrical Activity

- Early Transport to closet most appropriate medical facility should be initiated if the patient's cardiac rhythm is identified as PEA along with any of the following situations:
  - ROSC obtained at any time
  - Any shockable rhythm was identified during care
  - Witnessed Cardiac Arrest (Bystander or Provider)
  - Any Pediatric Patient (≤ 18 years of age)
  - Narrow Complex PEA > 40 bpm with EtCO2 ≥ 20mmHg
  - Provider Discretion
- Consider listening with stethoscope apically if, narrow complex PEA and appropriate EtCO2 readings.
  - If heart sounds are present, consider vasopressors and transport immediately.
- If ROSC obtained and patient subsequently loses pulses administer an additional epinephrine 1 mg of 1:10,000
- Epinephrine 1 mg 1:10,000 should be given every 3-5 minutes if anaphylaxis is suspected.

Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to Team Focused CPR Protocol AC 11.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT), compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation is appropriate in the initial phases of the Team Focused Approach / Pit-Crew Approach.**
- **Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.**
- **IV / IO access and drug delivery are secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Procedure UP 6.**
- **Defibrillation:** Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC)
- **Special Considerations**
  Maternal Arrest - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  Renal Dialysis / Renal Failure - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  Opioid Overdose - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol TE 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
  Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Transcutaneous Pacing:**
  Pacing is NOT effective in cardiac arrest and pacing in cardiac arrest does NOT increase chance of survival
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.
- Discussion with Medical Control can be a valuable tool in developing a differential diagnosis and identifying possible treatment options.