Cardiac Arrest

Signs and Symptoms

- Unresponsive
- Apneic
- Pulseless

History

- Events leading to arrest
- Estimated downtime
- Witnessed vs. unwitnessed
- Quality bystander CPR
- Past medical history
- Medications
- Existence of terminal illness
- Signs of lividity, rigor mortis
- DNR

Differential

- Medical vs. Trauma
- V.Fib
- Pulseless V.Tach
- Asystole
- PEA

Pediatric Pearls

- Use length/weight-based calculator (Broselow tape) to assist with dose calculations and equipment size.
- If available, use pediatric attenuation AED device for child <8yo. If not available may use non-attenuated AED (full adult dose) for children of any age including infants.
- Many pediatric arrests are due to airway problems. Remember A then B then C for pediatrics.
- Think airway or respiratory failure as potential cause
- If advanced airway placed, ventilate at rate of:
  - 30 for Neonates
  - 20 for Toddlers
  - 15 for School age
  - 10 for Adolescents

WARNINGS

! If cardiac arrest results from cold water drowning or hypothermia, assess pulse for 1 min.

Care: Adult and Pediatric

B E I P

Follow General Directive #3, Orders for all Patients.

Does the patient meet criteria for death determination?

As per General Directive #4 Death Determination/Initiation of Resuscitation

Yes

Withhold resuscitation

No

B E I P

Perform CPR per AHA guidelines while preparing AED or Manual Defibrillator.

B E

Automated Defibrillation Procedure

OR

I P

Assess Rhythm
Go to appropriate protocol:

Cardiac Emergencies #2
Asystole/PEA
OR
Cardiac Emergencies #9
Pulseless V-Tach/V-Fib

B E I P

Initiate advanced airway management per Non-Cardiac Emergencies #1 Airway Management

E

May initiate IV/IO access if time and resources permit.

Initiate transport if I/P not on scene

Pearls

- Success is based on proper planning, teamwork and execution. Quality BLS skills and early use of AED/ Defibrillator are vital.
- Procedures require space and patient access. Make room to work.
- Reassess airway frequently and with every patient move.
- Excessive/prolonged attempts to intubate when BVM techniques are effective may be harmful.
- Proper compressions should be deep and fast.
- Once an advanced airway is placed (King or ET tube) there is no need to pause compressions for deliver ventilations.
- Utilize chest compression device when available.
- Interrupt compressions only as per AED Procedure.
- Do not hyperventilate patient. Ventilate no more than 10 breaths per min. **in adults** (1 breath every 6 seconds). Over-aggressive ventilations can impede venous return and worsen cardiac output.
- $ETCO_2$ can provide feedback on resuscitation efforts. Persistently low values (<10 mm Hg) during CPR in intubated patients may suggest that ROSC is unlikely. Increase in levels may be an early indication of ROSC.

Performance Indicators

- Organized command presence with clear designation of roles.
- Minimal chest compression interruption.
- Rapid initial rhythm assessment and treatment.
- Proper decision-making on initiating/terminating resuscitation.