



CARDIAC ARREST RESUSCITATION

PURPOSE

To better manage and treat Advanced Life Support (ALS) cardiac arrest resuscitation patients.

AUTHORITY

Health & Safety Code, Division 2.5, § 1797.220
California Code of Regulations, Title 22, Division 9

POLICY

Studies have shown the best hope for resuscitation is bystander cardiopulmonary resuscitation (CPR), early activation of EMS, and early application of an automated external defibrillator (AED). Once on scene personnel should be dedicated to resuscitation, not transport. It is key to avoid interruptions in CPR, providing high quality, and high performance chest compressions.

Waveform capnography is required from the time of tube placement to the time of transfer at the hospital. Both numerical value (capnometry), and wave morphology **MUST** be obtained and documented every ten (10) minutes during resuscitation.

In general transportation should only take place after successful return of spontaneous circulation (ROSC). Termination of resuscitation should be considered when there is no response to resuscitation efforts after twenty (20) minutes (except in unusual circumstances such as hypothermia).

PROCEDURE

- I. Follow the 2010 American Heart Association (AHA) Guidelines for CPR, Compressions-Airway-Breathing (C-A-B).
 - A. Begin chest compressions at least one hundred (100) per minute, depth of two (2) inches, and apply high flow oxygen (O₂) via non-rebreather (NRB) (passive insufflations).
 - B. Attach cardiac monitor
 - C. Continue CPR for two (2) minutes, five (5) cycles. **AVOID INTERRUPTIONS.**
- II. After two (2) minutes, five (5) cycles, analyze rhythm, and shock if indicated. If no shock is indicated, continue CPR.
 - A. Initiate peripheral intravenous/intraosseous (IV/IO) when able, without interrupting CPR.
 - B. Ventilate via bag-valve-mask (BVM) when able, with adequate personnel to assist. Placement of an advanced airway is not a priority during the first five (5) minutes of resuscitation unless no ventilation is occurring with basic maneuvers.
 1. Administer **Epinephrine one milligram (1 mg)** (1:10,000) IV/IO, every three-five (3-5) minutes during.
- III. Continue cycle



Yolo Emergency Medical Service Agency

Protocol

ADULT CARDIAC

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- IV. Follow appropriate protocol for ventricular fibrillation/ventricular tachycardia (VF/VT) or pulseless electrical activity (PEA)/Aystole as indicated.
- V. If **ROSC** is achieved:
 - A. Discontinue CPR
 - B. Maintain an open airway, administer (O₂) to main saturations if greater than or equal to (\geq) 94% but less than ($<$) 100% peripheral capillary oxygen saturation (SpO₂).
 - C. Obtain 12-Lead electrocardiogram (EKG)
 - D. Transport patient to ST elevation myocardial infarction (STEMI) Receiving Center (SRC).

DETERMINING DEATH AFTER INITIATION OF RESUSCITATIVE MEASURES (TERMINATION OF RESUSCITATION)

- I. EMS personnel shall initiate transport and continue resuscitation only when one (1) of the following factors are present:
 - A. ROSC occurs following cardiac arrest
 - B. Hypothermia.
 - C. Extreme, unusual or dangerous social or scene situations.
 - D. Patient age $<$ sixteen (16).
- II. In the absence of factors requiring rapid transport, as identified above, EMS personnel shall remain on scene and provide resuscitation to cardiac arrest patients. It is imperative EMS personnel understand the criteria for terminating resuscitative efforts below are described in generalities. There are many factors that need to be considered when determining the termination of resuscitative efforts (i.e. patient age, downtime, response to treatment, etc.). Clinical judgment is required. *Base hospital consultation should be obtained if EMS personnel have any patient care concerns.*
 - A. If the patient remains pulseless and apneic following twenty (20) minutes of resuscitative measures, advanced life support (ALS) personnel shall consider terminating resuscitative efforts. And/or if after twenty (20) minutes and end tidal carbon dioxide (EtCO₂) $<$ ten millimeters of mercury (10 mmHg) consider termination of resuscitation efforts. Even after long resuscitation times, efforts should continue in patients with high EtCO₂ values.
 - B. If resuscitative efforts are terminated, ALS personnel shall confirm and document the patient's cardiac rhythm in two (2) electrocardiographic leads and provide evidence that the cardiac monitor is functioning properly.
 - C. EMS personnel shall not transport expired patients by ambulance except in the extremely rare occurrence that a patient expires during transport. In such situations, EMS personnel shall continue resuscitative efforts and continue to the closest receiving facility.