

# CENTRAL CALIFORNIA EMERGENCY MEDICAL SERVICES

A Division of the Fresno County Department of Public Health

Manual:	Emergency Medical Services Administrative Policies and Procedures	Policy Number: 510.08
Subject:	Basic Life Support (BLS) Protocols  <b>CARDIAC ARREST - MEDICAL</b>	Page: 1 of 5
References:	California Administrative Code, Title 22, Division 9, Chapter 2	Effective: 11/15/83

## I. TREATMENT

### A. ABCs

1. Airway – Open airway
2. Breathing – Assess breathing status
3. Circulation – Assess circulation status

### B. CPR

1. If patient has a pulse but is not breathing, provide rescue breathing.

### C. AED Placement (for AED service providers only)

1. AED is only used in the following circumstances:
  - a. Unconscious, pulseless, with agonal or absent respiration's; and,
  - b. Non-trauma; and,
  - c. Non-hypothermia; and,
  - d. Patients older than 1 year of age. Pediatric patients 1 to 8 years old, use the AED child pads. If the AED does not have child pads use the adult pads. Place the adult pads anterior and posterior.
2. If EMS providers witness the cardiac arrest, immediately place the AED on the patient, analyze and defibrillate if indicated.

Approved By: EMS Division Manager	<b>Daniel J. Lynch</b> (Signature on File at EMS Agency)	Revision:  <b>07/01/2024</b>
EMS Medical Director	<b>Miranda Lewis, M.D.</b> (Signature on File at EMS Agency)	

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3. If the EMS providers arrive on scene and the patient has an unwitnessed arrest by the EMS providers, perform two (2) minutes of CPR before analyzing with the AED.
4. After the AED is applied, have the machine analyze rhythm.
  - a. If machine determines that shock is necessary, check that all personnel are clear, and press button to shock patient. Perform CPR for two (2) minutes, then reevaluate.
  - b. Check carotid pulse. If pulseless, have the machine analyze rhythm. If machine determines that shock is necessary, check that all personnel are clear, and press button to shock patient. Perform CPR for two (2) minutes, then reevaluate. Continue sequence as needed.

NOTE: All monophasic AED's may follow old shock protocols. If so follow AED prompts.

5. If the initial rhythm is not shockable and no pulse palpable:
  - a. Do CPR for two (2) minutes and reevaluate.
  - b. Check pulse and have machine analyze rhythm if pulseless.
  - c. If unshockable rhythm remains without pulse, perform CPR for two (2) minutes, analyze rhythm, deliver one shock if indicated, repeating this sequence until the ALS unit arrives.
  - d. If shockable, follow shock series as above.
  - e. If pulse returns, maintain airway and breathing, check blood pressure.
  - f. If the transport unit is an Advanced Life Support unit, the care of the patient will be turned over to the Paramedic. The AED may accompany the patient to the hospital.
  - g. If the transport unit is a Basic Life Support unit, CPR shall be continued and the patient transported to the nearest hospital.

(1) The AED shall accompany the patient in the BLS unit.

If the patient has transiently regained palpable pulses as a result of previous defibrillations and the patient loses pulses, the unit should pull over, press analyze, and if the machine recognizes a shockable rhythm, the AED will deliver one shock and continue transport. If no palpable pulses, continue CPR during transport.

#### D. Oxygen

1. 100% oxygen by bag-valve-mask or oxygen powered breathing device.
2. Should not use oxygen powered breathing device on patients 5 years old or less.

#### E. Transport

1. If patient is transported, transport Code 3, to closest appropriate hospital.
2. Consider a prehospital ALS rendezvous.

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## II. SPECIAL CONSIDERATIONS

### A. Determine if rescue efforts are appropriate.

1. Initiation/termination of CPR (refer to EMS Policy #549)
2. Do not resuscitate (DNR) documentation (refer to EMS Policy #564)
3. BLS personnel may apply an AED when treating hangings as medical (refer to EMS Policy 510.09)

### B. History

1. Down time without CPR
2. Down time with CPR
3. Transport time to hospital.
4. Symptoms prior to collapse

NOTE: It is very difficult to conduct a resuscitation attempt and obtain a history from bystanders at the same time. Resuscitation efforts should take precedence over history.

### C. Drowning

1. Resuscitate all cold water victims (water temperature less than 70°) with less than one hour submersion.
2. Resuscitate all warm water victims (water temperature greater than 70°) with less than 30 minutes submersion.

NOTE: All lakes, canals, ponding basins, and rivers should be considered cold water.

### D. Hypothermia

1. These victims often look deceased and are often salvageable. CPR and gradual warming should be initiated as soon as possible.

### E. AED

1. Unconscious, pulseless patients who have agonal, gasping respirations are to be considered apneic for defibrillation purposes.
2. Patients with pacemakers and automated internal cardiac defibrillator (AICD) implanted on the right side should have the right defibrillator pad placed on the right posterior shoulder over the scapula (this does not pertain to Laerdal Heartstream AED). (Follow directions of AED).
3. When an ALS unit arrives simultaneously with the AED unit, the ALS unit shall use their equipment, and the AED unit will assist the ALS unit.
4. AED information from the documentation device on the defibrillator and written documentation shall be submitted within 72 hours of the defibrillation to the appropriate person for data collection purposes.

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## F. Mechanical CPR Devices

Manual chest compressions are the standard of care for patients in cardiopulmonary arrest. Studies have shown no mortality benefit to support the use of mechanical CPR devices over high-quality manual chest compressions. However, there are situations where manual CPR is challenging or dangerous for the prehospital provider and mechanical chest compressions are preferred.

1. Indications:
  - a. Patients being transported with ongoing CPR
  - b. Prolonged resuscitation (> 10 minutes) to prevent rescuer fatigue or when limited rescuers are available
  - c. Prophylactic application prior to transport in patients with ROSC in case of rearrest. Device should only be activated in the event of rearrest
  - d. Cardiac arrest patients located in a confined space where manual CPR and rapid extrication are not possible
2. Contraindications:
  - a. Patient is too small for the device to be applied per manufacturer instructions
  - b. Patient is too large for the device to be applied per manufacturer instructions
  - c. Age and weight restrictions per manufacturer instructions
  - d. Device cannot be appropriately positioned on the chest
  - e. Cardiac arrest due to trauma
  - f. Patients with ventricular assist devices
3. Procedure:
  - a. Manual CPR should be performed immediately on patient arrival. Do not delay initiation of chest compressions to place the mechanical CPR device.
  - b. Ensure the chest is exposed prior to placement of the device.
  - c. The CPR feedback device must be removed prior to application of the mechanical CPR device, unless otherwise specified in manufacturer instructions.
  - d. Minimize interruptions in compressions when applying the device. The device should be applied in a choreographed stepwise fashion with manual chest compressions delivered between steps.
  - e. Follow device specific manufacturer instructions for application and operation.
  - f. Ensure appropriate defibrillator pad placement and reassess pad placement with each rhythm check.

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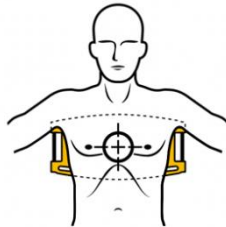
4. Special Considerations:

The following devices are approved for use in the CCEMSA region. Any additional devices shall be approved by the EMS Agency prior to implementation.

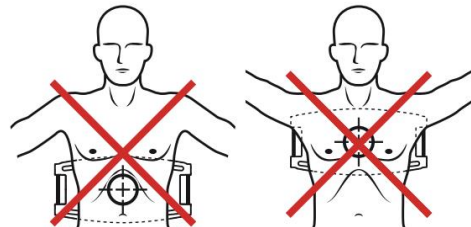
LUCAS:

1. It is critical that the suction cup is placed in the appropriate position indicated below and continually reassessed during transport.

Correct placement:



Incorrect placement:



2. The neck stabilization strap must be applied prior to patient movement. Secure the arms to the device using the device straps. Additionally, a permanent marker should be used to mark the upper and lower edges of the suction cup on the patient's chest. These markings will be referenced as landmarks to ensure the suction cup is in appropriate position throughout transport.
3. If the suction cup position migrates during transport, it must be immediately corrected. Misplacement of the device may lead to inadequate circulation and internal injury.
4. Defibrillation energy may safely be applied while the LUCAS device is providing compressions.

Zoll AutoPulse

1. Ensure that the device is appropriately positioned according to the manufacturer instructions.
2. The device should be continually monitored during transport to prevent migration.
3. Ensure shoulder restraint should be applied prior to transport to keep the patient properly aligned on the AutoPulse platform.