Sierra – Sacramento Valley EMS Agency Treatment Protocol

Non-Traumatic Pulseless Arrest

C-1 (LALS)

Approval: Troy M. Falck, MD – Medical Director | Effective: 04/01/2026

Approval: John Poland – Executive Director | Next Review: 01/2029

MANUAL CHEST COMPRESSIONS

- Rate: 100-120/min
- Depth: 2 inches – allow full chest recoil
- Minimize interruptions (≤10 secs)
- Rotate compressors every 2 mins
- Perform CPR during AED/defibrillator charging
- Resume CPR immediately after shock

MECHANICAL CHEST COMPRESSION DEVICES

Indications

- Adult pt (≥15 yo)

Contraindications

- Pt does not fit in the device
- 3rd trimester pregnancy

ⓘ Apply following completion of at least one manual CPR cycle, or at the end of a subsequent cycle

ⓘ Use in accordance with manufacturer guidelines

DEFIBRILLATION & GENERAL PT MANAGEMENT

- Analyze rhythm/check pulse after every 2 min CPR cycle
- Biphasic manual defibrillation detail **(AEMT II)**:
  - Follow manufacturer recommendations
  - If unknown, start at 200 J (subsequent doses should be equivalent or higher)
- Movement of pt may interrupt CPR or prevent adequate depth and rate of compressions
- Consider resuscitation on scene up to 20 mins
- Go to ROSC protocol (C-2) if ROSC is obtained

ADVANCED AIRWAY MANAGEMENT

- Consider/establish advanced airway at appropriate time during resuscitation
- Do not interrupt chest compressions to establish an advanced airway
- Waveform capnography (if available) shall be used on all pts with an advanced airway in place
  - An abrupt increase in $PETCO_2$ is indicative of ROSC
  - Persistently low $PETCO_2$ levels (<10 mmHG) suggest ROSC is unlikely

TREAT REVERSIBLE CAUSES

- **H**ypovolemia
- **H**ypoxia
- **H**ydrogen Ion (acidosis)
- **H**ypo-/hyperkalemia
- **H**ypothermia
- **T**amponade, cardiac
- **T**ension pneumothorax
- **T**hrombosis, pulmonary
- **T**hrombosis, cardiac
- **T**oxins

ⓘ Consider early transport of pts who have reversible causes that cannot be adequately treated in the prehospital setting

ⓘ Contact the base/modified base hospital for consultation & orders as appropriate

ⓘ Refer to Hypothermia & Avalanche/Snow Immersion Suffocation Resuscitation Protocol (E-2 - LALS) or Traumatic Pulseless Arrest Protocol (T-6 - LALS) as appropriate

BLS TERMINATION OF RESUSCITATION (TOR)

Base/Mod. Base Hosp. Physician Order Required

- BLS providers may use the following TOR criteria when ALS is not available (**all 3 must apply**):

1. Arrest not witnessed by EMS
2. No AED shocks delivered
3. No ROSC after 3 rounds of CPR/AED analysis

LALS TERMINATION OF RESUSCITATION (TOR)

- LALS providers may use the following TOR criteria:

1. Arrest not witnessed by EMS
2. No AED shocks or defibrillations delivered
3. No ROSC after full LALS care

Base/Mod. Base Hosp. Physician Order only required for pt's not meeting all 3 LALS criteria

SPECIAL TOR CIRCUMSTANCES

- In the event of communication failure, BLS/ALS providers may terminate resuscitation on pts requiring base/modified base hospital physician order when rescuers are exhausted or physically unable to continue resuscitation

SEE PAGE 2 FOR TREATMENT ALGORITHM

Non-Traumatic Pulseless Arrest

BLS

- CPR (with BVM &100% O_2) x 2 mins - apply AED as soon as possible
- Deliver **AED SHOCK**, if indicated, & immediately resume CPR
- Analyze rhythm/check pulse after every 2 min CPR cycle

LALS

Cardiac Monitor **(AEMT II)**

ASYSTOLE/PEA

- CPR x 2 mins
- IV NS (may bolus up to 1000 mL)
- Consider advanced airway
- $EtCO_2$ monitoring

Shockable Rhythm?

YES → Treat VF/VT

NO

- CPR x 2 mins
- **Epinephrine 1:10,000:** 1 mg IV **(AEMT II)**
- Treat reversible causes

Shockable Rhythm?

YES → Treat VF/VT

NO

If ROSC is not achieved:

- Continue CPR followed by rhythm check every 2 mins. If rhythm converts to VF/VT treat according to VF/FT algorithm
- **Epinephrine 1:10,000:** 1 mg IV every 3-5 mins (max: 4 doses) **(AEMT II)**
- Consider termination of resuscitation after 20 minutes of LALS intervention

VF/VT

- **DEFIBRILLATION**
- CPR x 2 mins
- IV NS (may bolus up to 1000 mL)

Shockable Rhythm?

NO → Treat Asystole/PEA

YES

- **DEFIBRILLATION**
- CPR x 2 mins
- **Epinephrine 1:10,000:** 1 mg IV **(AEMT II)**
- Consider advanced airway
- $EtCO_2$ monitoring

Shockable Rhythm?

NO → Treat Asystole/PEA

YES

- **DEFIBRILLATION**
- **CPR x 2 mins**
- **Treat reversible causes**

If refractory VF/VT

- **Lidocaine:** 1-1.5 mg/kg IV **(AEMT II)**

If ROSC is not achieved:

- Continue CPR followed by **DEFIBRILLATION** every 2 mins for continued/relapsed shockable rhythm
- **Epinephrine 1:10,000:** 1 mg IV every 3-5 mins (max: 4 doses) **(AEMT II)**
- **Lidocaine:** 0.5-0.75 mg/kg IV every 5 mins for continued refractory VF/VT (max total cumulative dose: 3 mg/kg) **(AEMT II)**