Section 700: Adult Treatment Protocols

Protocol 700-C1: Cardiac Arrest

Revision 10/5/22
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BLS Treatment

- Treat life threats. (See Procedure 701 Life Threats)
- Confirm DNR/POLST Status
  - Consider withholding resuscitative efforts if asystole with evidence of unwitnessed arrest, prolonged downtime, and in the absence of bystander CPR (See Policy 613 Determination of Death in the Field)
- PIT Crew CPR. (See Reference 806 Core Principles: Managing Cardiac Arrest.)
- Establish Airway (See Procedure 704: *Advanced Airway Management*)
- CPR per current County guidelines. Minimize delays and interruptions
- Apply AED and use as indicated
- Mechanical CPR Device
  - After at least 2 rounds of manual CPR and defibrillation (if indicated), use a mechanical compression device wherever manual CPR is indicated and if device is available
  - Refer to specific manufacturer's instructions for specific information
  - Minimize interruptions when performing manual or mechanical chest compressions
  - Upon ROSC, discontinue mechanical CPR device but leave in place should it be needed again
  - If the patient is transported with a mechanical compression device, a rescuer from the agency that applied the device should accompany the patient to the hospital
  - Contraindications for mechanical CPR

Autopulse	LUCAS
▪ ≤ 17 years of age	▪ Too small patient: device alerts w 3 fast signals, cannot enter PAUSE or ACTIVE mode
▪ Traumatic injury	▪ Too large patient: cannot lock the upper part of LUCAS to the back plate without compressing the patient's chest

- Prepare for transport/transfer of care.

ALS Treatment

- Treat life threats. (See Procedure 701 Life Threats)
- Cardiac Monitor and determine rhythm
- Establish Airway (See Procedure 704: *Advanced Airway Management*)
- Identify possible causes*
  - Treat according to Table 1
    - Known dialysis patients with possible hyperkalemia

*Causes of Cardiac Arrest	
• Hypovolemia	• Tox (OD/Drugs) (M1)
• Hypoxemia	• Tamponade (Cardiac)
• Hydrogen Ion (Acidosis)	• Tension Pneumothorax (702)
• Hyper/Hypokalemia	• Thrombosis (MI, PE)
• Hypothermia (E2)	

- **Sodium Bicarbonate** 1 mEq/kg IV/IO
- **Calcium Chloride** 1 gram IV/IO.
- Penetrating Chest Trauma
- Consider Tension Pneumothorax (see Procedure 702 Pleural Decompression)

❖ If ROSC achieved:
- ➢ Maintain SpO2 ≥ 95% using lowest concentration of O2 possible
- ➢ Ventilate the patient 10-12 breaths per minute to achieve an end tidal CO_2 of 35 – 45 mmHg Warning: Avoid hyperventilation
- ➢ Maintain SBP ≥ 90 mmHg.
  - IV fluids, **Normal saline** 1-liter bolus
    - Push-dose **Epinephrine** 0.5 ml (5 mcg) very slow IV/IO every 3-5 minutes prn SBP < 90. See Procedure 708 *Push-dose **Epinephrine** Mixing Instructions*
  - If the patient's BP is 90 systolic or higher, there is no need for any further circulatory support.
- ➢ Manage post-arrest arrhythmias as needed.
- ➢ Obtain a 12 lead ECG and transmit as indicated. Crews in South County should contact Dominican Hospital before transporting a post-arrest STEMI patient north as transport to Watsonville Community Hospital may be more appropriate.

❖ Consider transporting hypothermic, drug-overdosed, or electrocuted patients.

❖ Consider termination of resuscitative efforts after at least 20 contiguous minutes. (See Policy 613 *Determination of Death in the Field*)

❖

Table 1		
Asystole	Pulseless Electrical Activity (PEA)	Ventricular Fibrillation or Pulseless Ventricular Tachycardia
❖ **Epinephrine** ➢ (1:10,000)1mg IVP/IO ➢ Repeat q3-5minutes for duration of arrest. ❖ Consider **Normal saline** ➢ 250 ml fluid challenge. ➢ May repeat as indicated, ❖ If no response consider termination of resuscitative efforts (see Policy 613, *Determination of Death in the Field*)	❖ **Epinephrine** ➢ (1:10,000)1mg IV/IO ➢ Repeat q3-5minutes for duration of arrest. ❖ Consider **Normal saline** ➢ 250 ml fluid challenge. ➢ May repeat as indicated, ❖ If electrical HR <40 BPM due to blunt trauma, consider determination of death prior to initiating resuscitation (see Policy 613, *Determination of Death in the Field*)	❖ Defibrillate ASAP ❖ **Epinephrine** ➢ (1:10,000)1mg IV/IO ➢ Repeat q3-5min ❖ Defibrillate at max. joules as above after 5 cycles of CPR ❖ Defibrillate after each medication throughout the arrest ❖ **Amiodarone** ➢ 300 mg IVP/IO ➢ Repeat with 150 mg IV/IO if nor response ❖ If return to supraventricular rhythm, consider: ❖ **Normal saline** 250ml bolus

Documentation

❖ Cardiac Arrest is a System Quality Indicator (See Policy 101 Quality Improvement Program and System Evaluation and Policy 502 Santa Cruz County Patient Care Record (PCR) and Transfer of Care Document)

❖ Minimum documentation elements include:

➢ Primary or Secondary Impression (esituation.11 or esituation.12) = "*Cardiac Arrest -Non-traumatic*"

- ❑ Bystander CPR (PUB-1)
- ❑ AED prior to arrival (CAR-1)
- ❑ First Arrival time to rescuer CPR
- ❑ Initial rhythm recorded
- ❑ $EtCO_2$ readings (initial and continuous)
- ❑ Defibrillation (number and dose)
- ❑ Intubation (see #6)
- ❑ ROSC (y/n) (CAR-2)
- ❑ Survival to ED discharge (CAR-3)
- ❑ Survival to hospital discharge (CAR4)