	COUNTY OF SACRAMENTO EMERGENCY MEDICAL SERVICES AGENCY	Document #	8031.24
	PROGRAM DOCUMENT: **Cardiac Arrest**	Initial Date:	08/12/93
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Signature on File	Signature on File
EMS Medical Director	EMS Administrator

Purpose:

A. To serve as the treatment standard for treating cardiac arrest patients.
B. To serve as the treatment standard for Asystole, Pulseless Electrical Activity (PEA), Ventricular Fibrillation (VF), and Pulseless Ventricular Tachycardia (VT).

Authority:

A. California Health and Safety Code, Division 2.5
B. California Code of Regulations, Title 22, Division 9

Protocol:

A. High-quality Cardiopulmonary Resuscitation (CPR) is fundamental to the management of all cardiac arrest rhythms. Periodic pauses in CPR should be as brief as possible and only as necessary to assess rhythm, shock VF/VT, and perform a pulse check when an organized rhythm is detected.
B. CPR must be performed with a “Chest Compressions, Airway, Breathing” sequence (C-A-B) to emphasize the importance of maintaining blood flow with good compressions.
C. Performing CPR while a defibrillator is readied for use is strongly recommended for all patients in cardiac arrest.
D. Advanced airway placement shall be confirmed with ETCO2 detection device or waveform Capnography.
E. Vascular access, drug delivery, and advanced airway placement should not cause significant interruptions in chest compressions or delay defibrillation.
F. Treatment on scene- Movement of a patient may interrupt CPR or prevent adequate depth and rate of compressions. Consider resuscitative efforts on scene to maximize chances of Return of Spontaneous Circulation (ROSC).
G. Whenever feasible, and safe to do so, transport the medical Durable Power of Attorney (DPOA) or immediate family member with the patient to the hospital. DPOA and immediate family members can provide medical insight and consent for special therapies or termination of resuscitation to hospital staff.

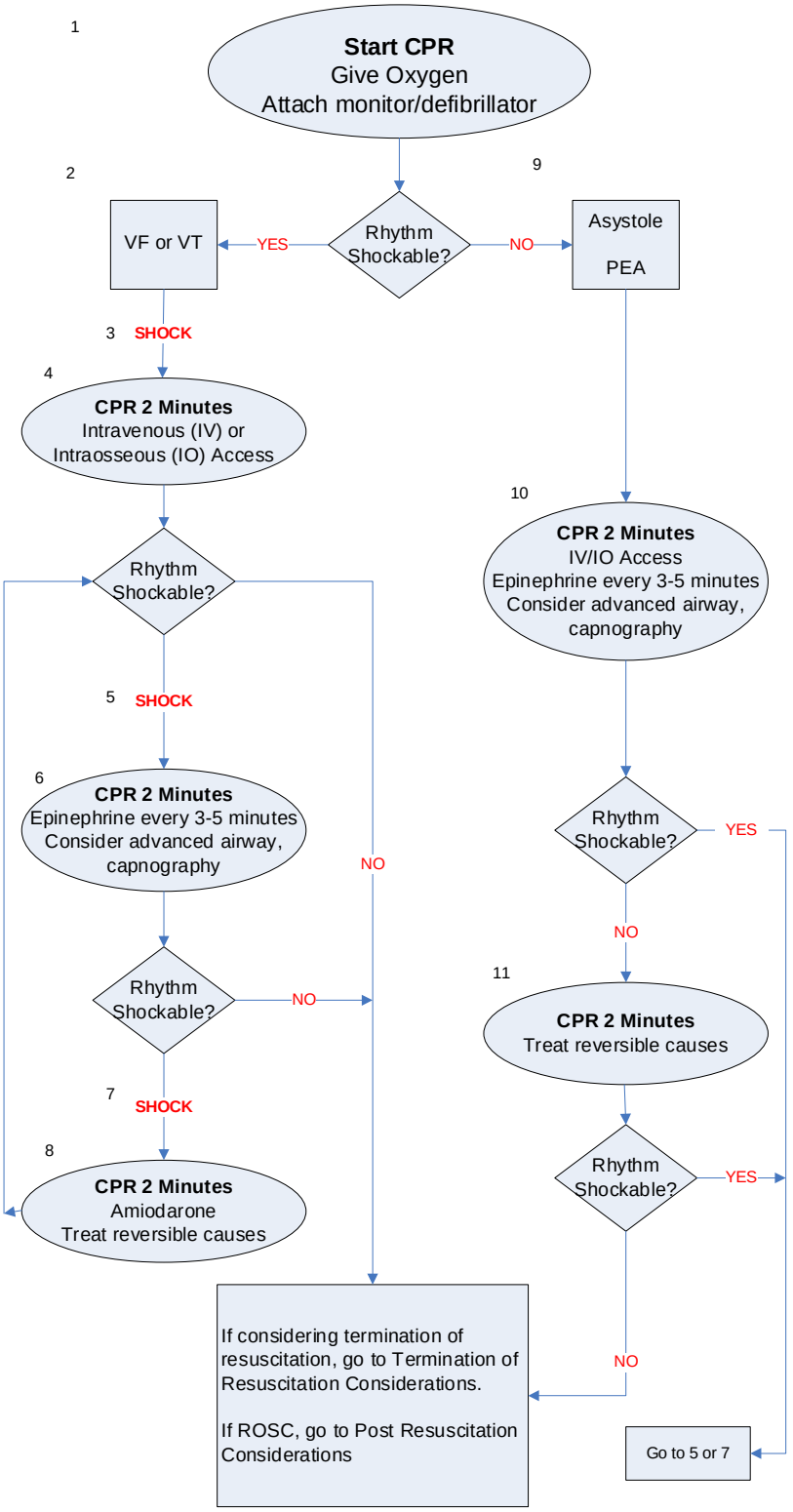
Post Resuscitation Considerations:

A. Any patient with an initial shockable rhythm (Ventricular Tachycardia or Ventricular Fibrillation or shocked by an AED) who has a Return of Spontaneous Circulation (ROSC) during any part of the resuscitation, and who is transported, shall be transported to a STEMI (PCI) center
1. Any other Cardiac Arrest patient who is transported, shall be transported to the time closest hospital.

B. Intravenous (IV) or Intraosseous (IO) fluids should be placed at, to keep open (TKO) unless hypotension is present.
C. Post-resuscitation bradycardia, hypotension, shock and pulmonary edema.
    1. Bradycardia, refer to Cardiac Dysrhythmias Policy PD# 8024.
    2. CHF/Pulmonary Edema refer to Respiratory Distress Policy PD# 8026
    3. Hypotension/Shock
        a. Normal Saline 1000 ml bolus, may repeat once to achieve SBP > 90 mmHg. Reassess vital signs after each bolus
        b. Push Dose Epinephrine 0.01 mg/ml (10mcg/ml).
            - Dose: 0.5-2 ml every 2-5 minutes (5-20mcg). Titrate to SBP ≥ 90 mmHg. NOTE: Monitor SBP while administering/titrating.

Termination of Resuscitation Considerations:

A. Consider termination of resuscitation efforts after twenty (20) minutes of Advanced Life Support (ALS) care if BOTH of the following are present:
    1. Pulseless, apneic, or agonal, or apneustic respirations with no signs of life (non-reactive pupils, no response to pain, no spontaneous movement).
    2. Asystole, or wide complex PEA with HR < 40 bpm.



CPR Quality

- Push hard (≥2 inches [5 cm]) and fast (≥100/min) and allow complete chest recoil
- Minimize interruption in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- Quantitative waveform capnogrpahy
- If PETCO2 <10 mmHg, attempt to improve CPR quality

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in PETCO2 (typically ≥40 mmHg)

Shock Energy

- **Biphasic:** Manufacturer recommendation (eg, initial dose of 120-200 Joules); if unknown, use maximum available. Second and subsequent doses should be equivalent, and higher doses may be considered.
- **Monophasic:** 360 Joules.

Drug Therapy

- **Epinephrine IV/IO Dose:** 1 mg every 3-5 minutes
- **Amiodarone IV/IO Dose:** First dose: 300 mgs bolus. Second dose: 150 mg

Advanced Airway

- Supraglottic advanced airway
- Waveform capnography to confirm and monitor placement
- 8-10 breaths per minute with continuous chest compressions

Reversible Causes

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

Cross Reference: Cardiac Dysrhythmias PD# 8024
Respiratory Distress PD# 8026