San Mateo County Emergency Medical Services

Cardiac Arrest – V-Fib/Pulseless V-Tach

For non-traumatic cardiac arrest in which any resuscitation is initiated, NOT dead on arrival

History
- Events leading to arrest
- Estimated downtime
- Prior resuscitation attempts
- Past medical history
- Medications
- Known terminal illness

Signs and Symptoms
- Pulseless
- Apneic

Differential
- Medical vs. trauma
- VF vs. pulseless VT
- Asystole
- PEA
- Primary cardiac event vs. respiratory arrest or drug overdose

Enter from Cardiac Arrest

→ V-Fib or pulseless V-Tach ↔ **Mechanical Compression Device, if available**

Yes

P
- Defibrillation 200J
- Resume high quality chest compressions Change compressors every 2 minutes (*Limit changes/pulses checks < 5 seconds*)
- Establish IV; if unable, establish IO

P
- Defibrillation 300J
- Resume high quality chest compressions Change compressors every 2 minutes (*Limit changes/pulses checks < 5 seconds*)
- **Epinephrine (1:10,000)**
- **IF ECMO CRITERIA ARE MET, INITIATE IMMEDIATE TRANSPORT TO SUH**

Declare ECMO Alert & notify SUH

P
- If V-Fib/ Pulseless V-Tach is refractory after 2 shocks
  Place second set of defib pads (A/L to A/P or A/P to A/L) and use for all future defibrillations. Continue high performance CPR and give medications during compressions
- Defibrillation 360J
- Resume high quality chest compressions Change compressors every 2 minutes (*Limit changes/pulses checks < 5 seconds*)
- **Lidocaine**

Persistent V-Fib/V-Tach → **Notify receiving facility. Consider Base Hospital for medical direction**

AT ANY TIME

Return of spontaneous circulation

Go to Post Resuscitation

Change of rhythm, go to appropriate protocol

ECMO CRITERIA:
- Non-traumatic arrest;
- Initial rhythm VF/pulseless VT;
- Scene time + transport time to SUH < 40 minutes;
- Mechanical Compression Device in use; and
- 18-75 years of age.

ECMO ALERT RING DOWN

Contact SUH as soon as transport begins.

(650) 723-7337

Provide the following information:
- Time of arrival at scene
- Witnessed or unwitnessed arrest
- Bystander or no bystander CPR
- Downtime
- ROSC at any time
- Confirm mechanical CPR device in use
- Known co-morbidities (e.g., terminal cancer, end-stage disease)
- Estimated hospital arrival time

Adult Cardiac Arrest – Non-traumatic Treatment Protocols

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Pearls

- For defibrillation or cardioversion, follow manufacturer recommendations.
- Efforts should be directed at high quality and continuous chest compressions with minimal interruptions.
- If cardiac arrest occurs during transport and 12-Lead ECG indicated STEMI, divert to the nearest approved STEMI Receiving Center. Otherwise, transport to the closest receiving facility.
- IV access, including EJ, must be attempted. If unsuccessful, then attempt IO.
- Use pediatric BVM with $EtCO_2$ and ventilate at a rate of 10 ventilation per minute delivered on compression upstroke.
- Placement of an advanced airway should be deferred unless a provider is unable to ventilate the patient with a BLS airway and BVM.
- Use a metronome during chest compression to ensure proper rate.
- If not an ECMO candidate, provide resuscitative efforts on scene for 30 minutes to maximize chance of ROSC.
- If not an ECMO candidate and resuscitative efforts do not attain ROSC, consider cessation of efforts per Policy 507 – Determination of Death.
- Epinephrine in doses of greater than 3 mg has been shown to be detrimental to patient outcome.
- Do not interrupt chest compressions to place ETT.
- Consider breathing and airway management after second shock or two (2) rounds of chest compression (2 minutes each round).
- Effective chest compressions and prompt defibrillation are the keys to successful resuscitation.
- Reassess and document ETT placement and $EtCO_2$ frequently, after every move, and at transfer of care.
- Do not stop chest compressions to check for placement of ETT or to give medications.
- If the use of a BVM is ventilating the patient successfully, intubation should be deferred.
- In the setting of renal failure, dialysis, suspected DKA or hyperkalemia, calcium chloride followed by sodium bicarbonate shall be administered.