APPROVED: SIGNATURE ON FILE IN EMS OFFICE
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Medical Director

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VENTRICULAR FIBRILLATION - PULSELESS VENTRICULAR TACHYCARDIA

I. AUTHORITY: Health and Safety Code, Division 2.5, California Code of Regulations, Title 22, Division 9

II. PURPOSE: To serve as the treatment standard for EMT-Is and EMT-Ps in treating patients.

III. PROTOCOL: **V-FIB**: Bizarre, rapid, irregular, ineffective rhythm with electrical waveforms varying in size and shape. There is no P wave. QRS complexes are absent. V-fib may masquerade in one lead as asystole. Be sure to check at least two leads to confirm asystole. **V-TACH**: Regular or slightly irregular rhythm with no pulse. Heart rate 100 to 200 (commonly about 120). A-V disassociation is present: P-waves may be seen unrelated to QRS complex. QRS complex distorted, wide (> 0.12 seconds) and bizarre. T-waves usually have opposite axis as QRS complex. Consider Code 2 transport of all patients in cardiac arrest, unless special circumstances which might favor survival are suspected.

STANDING ORDERS	
ABCs	
CPR	In an unwitnessed arrest or when no CPR has been initiated by bystanders give 5 cycles of CPR (about 2 minutes)
DEFIBRILLATE	Defibrillate at 360j (or clinically equivalent biphasic energy doses). Immediately resume CPR for 5 cycles (about 2 minutes), then re-check rhythm and defibrillate as appropriate. Interruption of CPR should be brief.
SECURE AIRWAY/ INTUBATE	Using the simplest effective method. A BLS airway with objective evidence of good ventilation and oxygenation is adequate and acceptable. Consider intubation while en route. Confirm placement, if intubated, with end-tidal CO_2 detector and esophageal detector device. **Continuous waveform capnography should be used in all intubated patients, if available.**
IV/IO ACCESS:	TKO
EPINEPHRINE	1 mg of 1:10,000 IV/IO push (or 2 mg of 1:1,000 ET - Flush with 5 ml NS). Repeat every 3 minutes. (Do not delay Epinephrine due to difficult IV/IO starts. Give via ET.)
DEFIBRILLATE:	360 J (or clinically equivalent biphasic energy doses)
LIDOCAINE	1.5 mg/kg IV/IO push (or 3 mg/kg ET - Flush with 5 ml NS). Repeat once in 3 minutes if V-Fib/ pulseless V-Tach persists. (Do not delay Lidocaine due to difficult IV/IO starts. Give via ET.)
DEFIBRILLATE	360 J (or clinically equivalent biphasic energy doses). Repeat after each medication administered if V-Fib/Pulseless V- tach persists. Reassess rhythm after each shock.
LIDOCAINE	If patient converts to perfusing rhythm following defibrillation. (Do not give if conversion rhythm is idioventricular or AV Block.) Give either multiple-bolus or drip: -Lidocaine: 0.5 mg/kg IV/IO (or 1.0 mg/kg ET - Flush with 5 ml NS). Repeat every 10 minutes OR; -Lidocaine: 2 mg/minute IV drip. Increase to maximum 4 mg/minute if ventricular ectopy persists.
SODIUM BICARBONATE	1mEq/kg IV/IO for suspected hyperkalemia or cyclic antidepressant overdose or cocaine/amphetamine overdose in cardiac arrest. Repeat every 5 minutes. May give before Lidocaine.
CALCIUM CHLORIDE	1000mg (10ml) IV for suspected hyperkalemia. Repeat once in 5 minutes. May give before Lidocaine. **Note: Use with caution in patients on digitalis.**
BASE PHYSICIAN ORDERS	
DECLARATION OF DEATH:	Refer to Determination of Death policy 570.20.