Airway / Breathing | Circulation / Shock | Cardiac | Medical | Trauma

ADULT PROTOCOL

REFRACTORY VENTRICULAR FIBRILLATION
PULSELESS VENTRICULAR TACHYCARDIA

Reassess and assure that all previous interventions are functioning as expected

1. Oxygen supply to BVM still appropriate
2. Airway properly in place with a capnography waveform
3. CPR is optimized / Device in proper position
4. Defib Pads properly adhered and positioned

Consider Transport and / or Medical Direction Contact

Refractory or V-FIB / V-TACH
Patient stays in V-FIB / V-TACH after exhausting the V-FIB / V-TACH algorithm

RECURRANT V-FIB / V-TACH
Patient goes back into V-VIB / V-TACH after a conversion to another rhythm from EMS interventions

Consider Treatable Causes

- Hypovolemia
- Hypo-hyperkalemia
- Hypoxia
- Hypoglycemia
- Hydrogen ion (acidosis)
- Hypothermia
- Toxins
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis (coronary or pulmonary)
- Trauma

CONSIDER
ELECTRICAL VECTOR CHANGE
Add Anterior / Posterior Pads Attempt Defibrillation

Then / Or CONSIDER
DOUBLE SEQUENTIAL DEFIBRILLATION
If capable, after minimum of 4 unsuccessful EMS defibrillations

Continue EPINEPHrine
1 mg IV / IO of 0.1 mg / ml
q 3 - 5 minutes

Consider OTHER anti-arrhythmics NOT given during arrest

LIDOCAINE
1 - 1.5 mg / kg IV / IO First Dose
0.5 – 0.75 mg / kg IV / IO Second Dose if needed
(max dose 3 mg / kg)

OR

MAGNESIUM SULFATE
2 grams over 1 - 2 minutes IV / IO
May Repeat 2 ram dose prn up to Max 6 grams

OR

AMIODARONE
300 mg IV / IO
May repeat @ 150 mg IV / IO
in 3 - 5 minutes – Max 450 mg

TRANSPORT to appropriate facility
CONTACT receiving facility
CONSULT Medical Control where indicated
APPROPRIATE transfer of care

Consider Field Termination of Resuscitative Efforts

EMT Intervention | AEMT Intervention | PARAMEDIC Intervention | Online Medical Control

ADULT PROTOCOL

REFRACTORY VENTRICULAR FIBRILLATION
PULSELESS VENTRICULAR TACHYCARDIA

HISTORY	SIGNS AND SYMPTOMS	DIFFERENTIAL DIAGNOSIS
• Estimated down time • Past medical history • Medications • Events leading to arrest • Renal failure / dialysis • DNR	• Unresponsive, apneic, pulseless • Ventricular fibrillation or ventricular tachycardia on ECG	• Asystole • Artifact / device failure • Cardiac • Endocrine / metabolic • Drugs • Pulmonary embolus

Strongly encourage transport of **resuscitated** patient to facility with PCI where available.

KEY POINTS
• Exam: Mental Status • Always minimize interruptions to chest compressions. • When IV access failed or difficult, humeral head IO are preferred routes over tibial IO for resuscitation. • Effective CPR should be as continuous as possible with a minimum of 5 cycles or 2 minutes. • Reassess and document endotracheal tube placement and Capnography frequently, after every move, and at discharge. • Polymorphic V-Tach (Torsades de Pointes) may benefit from administration of Magnesium Sulfate. • If the patient converts to another rhythm, or has a return of circulation, refer to the appropriate protocol and treat accordingly. • If the patient converts back to ventricular fibrillation or pulseless ventricular tachycardia after being converted to ANY other rhythm, defibrillate at the previous setting used. • Defibrillation following effective CPR is the definitive therapy for ventricular fibrillation and pulseless ventricular tachycardia. Magnesium Sulfate should be administered early in the arrest if hypomagnesemia (chronic alcoholic or malnourished patients) is suspected. • If patient is pregnant and in cardiac arrest, manually manipulate the uterus to the left during CPR • Zoll and Phillips equivalency settings are 120,150,200 Joules to Physio Control / Stryker 200,300,360 Joules. If unsure about settings use highest joule setting per AHA. • Damage to defibrillators during double sequential defibrillation may not be covered by manufacturers, use the technique with prior approval from your department • Do not delay transport or make stops to obtain a second defibrillator to accomplish double sequential defibrillation. This is only for situations where two are already on scene. The defibrillators do not have to be of the same make / model. • Dextrose should only be administered to a patient with a confirmed blood glucose level less than 70 mg / dl.