Ventricular Fibrillation
Pulseless Ventricular Tachycardia

Cardiac Arrest Protocol AC 3

	Begin Continuous CPR Compressions **Push Hard (≥ 2 inches) Push Fast (100 - 120 / min)** **Change Compressors every 2 minutes** **(*sooner if fatigued*)** **(*Limit changes / pulse checks ≤ 10 seconds*)** **Ventilate 1 breath every 6 seconds** **30:2 Compression:Ventilation if no Advanced Airway** ***Monitor EtCO2*** ***if available***
	AED Procedure ***if available***
A	Defibrillation Procedure
	IV / IO Access Protocol UP 6
A	EPI HAS BEEN DELETED FROM THIS PROTOCOL
	Search for Reversible Causes
	Continue CPR Compressions **Push Hard (≥ 2 inches) Push Fast (100 - 120 / min)** **Change Compressors every 2 minutes** **(*sooner if fatigued*)** **(*Limit changes / pulse checks ≤ 10 seconds*)** **<u>If Rhythm Refractory</u>** **Continue CPR and give Agency specific Anti-arrhythmics and Epinephrine** **Continue CPR up to point where you are ready to defibrillate with device charged.** **Repeat pattern during resuscitation.**
P	**Amiodarone 300 mg IV / IO** May repeat if refractory **Amiodarone 150 mg IV / IO** Or **Lidocaine 1.5 mg/kg IV / IO** May repeat if refractory **Lidocaine 1.5 mg/kg IV / IO** **Maximum 3 mg/kg**
A	Refractory VF or VT without pulse **Magnesium 2 gm IV / IO**
A	Defibrillation Procedure *If VF / VT refractory after first shock consider changing vector of defib pads or Double Sequential Defib*

Notify Destination or Contact Medical Control

AT ANY TIME

Return of Spontaneous Circulation

Go to Post Resuscitation Protocol AC 10

<u>Reversible Causes</u>

Hypovolemia
Hypoxia
Hydrogen ion (acidosis)
Hypothermia
Hypo / Hyperkalemia

Tension pneumothorax
Tamponade; cardiac
Toxins
Thrombosis; pulmonary (PE)
Thrombosis; coronary (MI)

P Esmolol 0.5mg/kg IV Bolus x1
Consider For Refractory VT/VF after 2nd shock

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No Code Dose EPI for Shockable Rhythms

May Use Epi if rhythm change to Asystole or PEA.

May use Push Epi or Epi Drip for ROSC.

DSED is recommended after no response after 2nd shock

Services may Opt out of DSED if this violates their monitor service contract and warranty

Consider Esmolol 0.5 mg/kg single bolus after 2nd shock

Pearls

- **Team Focused Approach / Pit-Crew Approach recommended; assigning responders to predetermined tasks. Refer to optional Team Focused CPR Protocol AC 11 or development of local agency protocol.**
- **Efforts should be directed at high quality and continuous compressions with limited interruptions and early defibrillation when indicated.**
- **DO NOT HYPERVENTILATE: If no advanced airway (BIAD, ETT) compression to ventilation ratio is 30:2. If advanced airway in place, ventilate 10 breaths per minute with continuous, uninterrupted compressions.**
- **Do not interrupt compressions to place endotracheal tube. Consider BIAD first to limit interruptions.**
- **Passive oxygenation optional in agencies practicing Team Focused Approach / Pit-Crew Approach.**
- **Reassess and document BIAD and / or endotracheal tube placement and EtCO2 frequently, after every move, and at transfer of care.**
- **IV / IO access and drug delivery is secondary to high-quality chest compressions and early defibrillation**.
- **IV access is preferred route. Follow IV or IO Access Protocol UP 6.**
- **Defibrillation:**
  Follow manufacture's recommendations concerning defibrillation / cardioversion energy when specified.
  Charge defibrillator during chest compressions, near the end of 2-minute cycle, to decrease peri-shock pause.
  Following defibrillation, provider should immediately restart chest compressions with no pulse check until end of next cycle.
- **End Tidal CO2 (EtCO2)**
  If EtCO2 is < 10 mmHg, improve chest compressions. Goal is ≥ 20 mmHg.
  If EtCO2 spikes, typically > 40 mmHg, consider Return of Spontaneous Circulation (ROSC
- **Special Considerations**
  Maternal Arrest - Treat mother per appropriate protocol with immediate notification to Medical Control and rapid transport preferably to obstetrical center if available and proximate. Place mother supine and perform Manual Left Uterine Displacement moving uterus to the patient's left side. IV/IO access preferably above diaphragm. Defibrillation is safe at all energy levels.
  Renal Dialysis / Renal Failure - Refer to Dialysis / Renal Failure Protocol AM 3 caveats when faced with dialysis / renal failure patient experiencing cardiac arrest.
  Opioid Overdose - If suspected, administer Naloxone per Overdose / Toxic Ingestion Protocol TE 7 while ensuring airway, oxygenation, ventilations, and high-quality chest compressions.
  Drowning / Suffocation / Asphyxiation / Hanging / Lightning Strike – Hypoxic associated cardiac arrest and prompt attention to airway and ventilation is priority followed by high-quality and continuous chest compressions and early defibrillation.
- **Magnesium Sulfate is not routinely recommended during cardiac arrest, but may help with Torsades de points, prolonged QT, low Magnesium States (malnourished / alcoholic), and suspected digitalis toxicity**
- Return of spontaneous circulation: Heart rate should be > 60 when initiating anti-arrhythmic infusions.
- Success is based on proper planning and execution. Procedures require space and patient access. Make room to work.