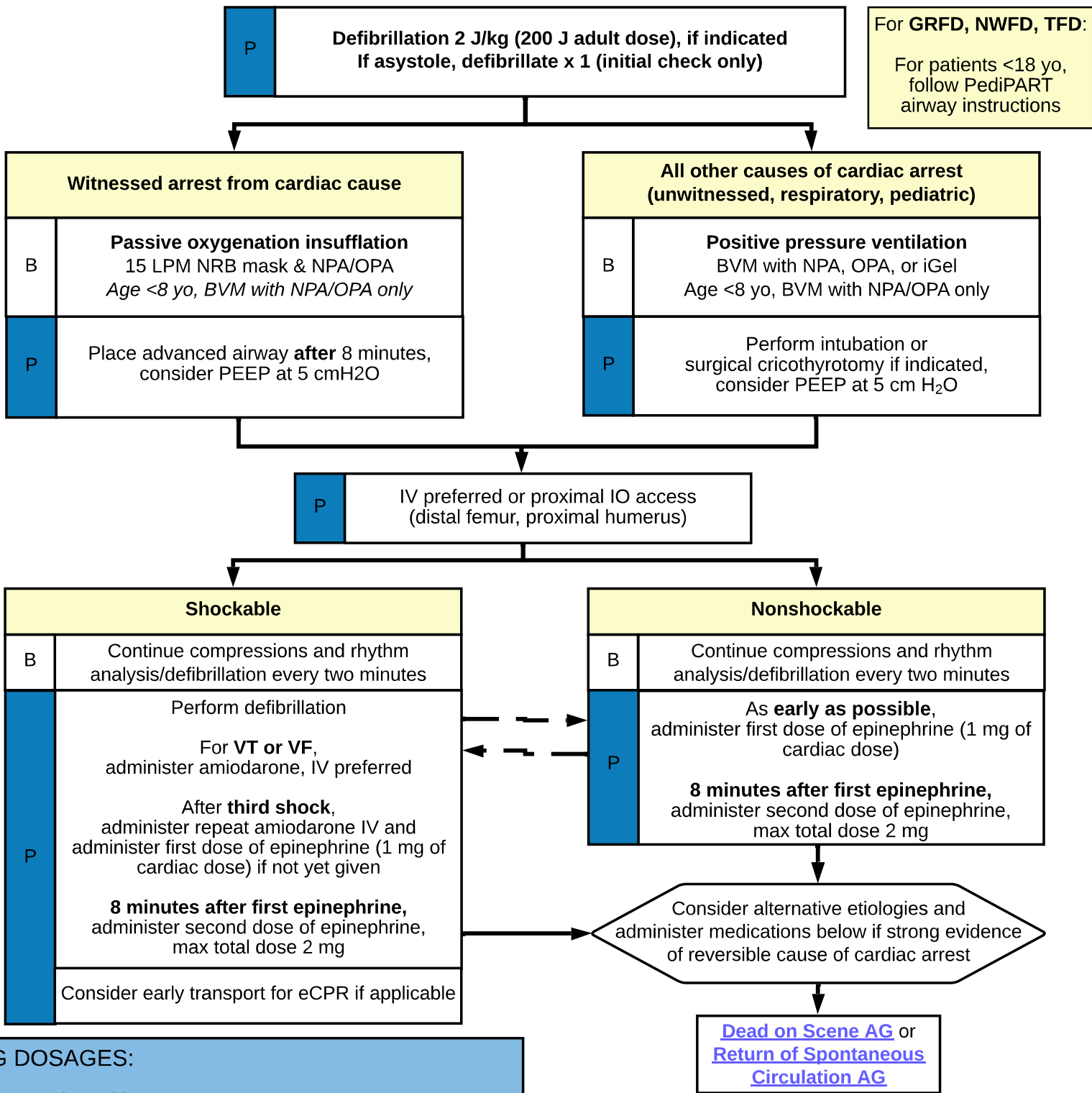


# Adult and Pediatric Medical Cardiac Arrest Administrative Guideline



**DRUG DOSAGES:**

Neonate <10 days old  
Perform heel stick glucose  
Administer **Dextrose 10% (D10) 1 mL/kg IV/IO**, max dose 250 mL

Epinephrine  
Administer **epinephrine (1 mg/10 mL) 0.01 mg/kg IV/IO**, max dose 1mg  
May repeat x 1

Ventricular tachycardia or ventricular fibrillation  
Administer **amiodarone 5 mg/kg IV/IO**, max initial 300 mg, IV preferred.  
May repeat once 6-8 min later at 2.5 mg/kg IV, max repeat dose 150 mg. Follow amiodarone doses with 20 mL flush.

Defibrillation: 2 J/kg → 4 J/kg → 6 J/kg → 10 J/kg (Max 200J)

Opioid overdose  
Administer **naloxone 2 mg IV/IO or 4 mg IN**  
May repeat x 1 **naloxone 2 mg IV/IO**, max total 6 mg

Hyperkalemia  
Administer **calcium chloride 20 mg/kg IV/IO**, max dose 1 g

Polymorphic ventricular tachycardia (Torsades)  
Administer **magnesium 25 mg/kg IV/IO** over 2 min, max 2g



# Prehospital CPR Timeline

Minutes

0 2 4 6 8 10 12 14 16 18 20

Begin chest compressions  
Perform initial rhythm check

200 chest compressions  
Asystole initial rhythm  
VT / VF

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions  
VT / VF only

200 chest compressions

**EMT**

Passive Oxygen for witnessed cardiac/shockable rhythms  
Positive pressure for hypoxia related (peds, drowning, OD) and unwitnessed arrests with unknown downtime

Place advanced airway (SGA or ETI) if not already performed  
Begin positive pressure ventilation if not already.  
Consider change in airway strategy when EtCO<sub>2</sub> less than 10

Place IO /IV (femoral and humeral preferred)  
Administer Epi as soon as possible for asystole/PEA.  
Administer Amiodarone if VT/VF  
Defib once if initial rhythm is asystole

Consider if indicated:  
Naloxone  
Calcium chloride  
Magnesium

Administer initial dose of Epinephrine if shockable rhythm or additional dose of Epinephrine for nonshockable rhythms  
Monitor EtCO<sub>2</sub>  
Consider if indicated:  
Repeat amiodarone  
Consider transport decision - if indicated

**MEDIC**



## Education/Pearls

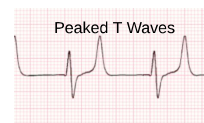
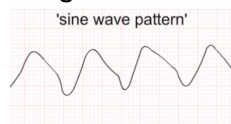
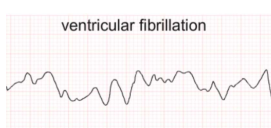
Prioritize effective CPR in the first 8 minutes of cardiac arrest management, addressing promptly any cardiac arrhythmias. First-look asystole is defibrillated once to cover for otherwise undetected or occult VF. Anytime a shockable rhythm is assessed in cardiac arrest, defibrillation should be performed. Good quality CPR, effective post-ROSC care, and early epinephrine in non-shockable rhythms are tied to improved patient outcomes.

**Refractory VF/VT:** For patients exhibiting 3+ episodes of shockable rhythm, pre-hospital management is often only temporizing due to profound cardiac ischemia. These patients often require emergent hospital resources, such as ECMO or the cath lab. For patients with refractory shockable rhythms, consider early transport (e.g. at the third shock) to a cardiac receiving facility, administration of a second dose of amiodarone, and a vector change. In patients with isolated electrical disturbances, we delay epinephrine to the third shock. The second, final dose of epinephrine should follow approximately eight minutes after the first dose.

**Asystole and PEA:** Early administration of epinephrine is prioritized in these patients, as trials have shown benefit in survival. Asystole (not PEA) should be shocked once when first detected. The second, final dose of epinephrine should again follow approximately eight minutes after the first dose.

**Airway management:** For patients with witnessed cardiac arrests in the setting of suspected cardiac cause (i.e. suspected MI, sudden syncope), airway management should consist of passive oxygen insufflation with a NRB +/- NC. For all other cardiac arrests (unwitnessed, pediatric, respiratory), hypoxia is a suspected major contributor of the cardiac arrest. Pursue positive pressure ventilation immediately in these patients and place an earlier advanced airway.

**Hyperkalemia:** In the setting of renal failure, tissue destruction (e.g. rhabdomyolysis, large burns), certain medication use, or prior hyperkalemia, treat hyperkalemia in wide complex rhythms or VF. When suspected, give Calcium Chloride. The following ECG changes may be present in hyperkalemia:



<https://acadoodle.com/articles/5-ecg-changes-of-hyperkalemia-you-need-to-know>

**Pediatrics:** In patients under the age of 14, strongly consider respiratory illness as the cause of cardiac arrest.

- Early ventilation is indicated in these patients
- Defibrillation should follow an escalating doses: 2J/kg, 4J/kg, 6J/kg, then 10J/kg with a max of 200J.
- If a Pedi-PART participating agency, consider iGel on odd days
- **Do not intubate patients <8 years**

## Polymorphic VT (Torsades de Pointes):

- Administer magnesium (max 2 g)
- Defibrillate pulseless torsades.

**IV/IO Access:** Recent studies have shown improved outcomes in patients with amiodarone when administered IV (when compared to IO) access in cardiac arrest, as well as increased flow rates for proximal IO access. For this reason, IV/IO access is a renewed focus in OHCA management.

- When IV access is not feasible, obtain proximal IO access. Femoral or humeral are preferred over tibial.
- When possible, administer amiodarone via IV.

**Measuring Terminal EtCO<sub>2</sub>:** When nearing termination of resuscitation, record a final EtCO<sub>2</sub>. This is measured by ceasing compressions and continuing ventilation for 20 seconds, then measuring the EtCO<sub>2</sub> level.