

CARDIAC ARREST

ALL PROVIDERS / EMT

- ① Focused history and physical exam
 - Assess for evidence that resuscitation should not be attempted per the **Death Determination Guideline**.
- ❑ Continuous ECG, CO2, and Pulse Oximetry monitoring when available
- ❑ **Treatment Plan**
 - **Assess for presence of a pulse, respirations, and consciousness. If absent,**
 - **Begin chest compressions for 2 min**
 - **Apply AED and shock if advised.**
 - AEMT/PM: Apply cardiac monitor/defibrillator and shock if Vtach/Vfib
- ❑ **Key Considerations**
 - Effective chest compressions are critical
 - Minimize interruptions in chest compressions
 - Rate: 100-120/min
 - Depth: 2-2.4 inches (adult) / 1/3 of chest depth (pediatric)
 - Allow full chest recoil after each compression
 - After each shock, immediately perform 2 minutes of chest compressions before checking pulse
 - Rotate compressors every 2 minutes
 - Consider the Pit Crew model as an approach to treatment
 - Pre-defined roles, as determined by a specific EMS agency, for members of an integrated team of first responders, BLS, and ALS.
 - Designated individuals for chest compressions
 - Designated individual for overall code leadership/management
 - Designated individual for airway management
 - Additional roles to be assigned as determined by specific agency based on provider availability include: IO/IV access, medication administration, CPR quality monitoring, cardiac rhythm monitoring, defibrillation.
 - Consider transition of roles as additional providers become available to ensure maximal use of resources
 - Assume cardiac origins for all adult arrests unless evidence to the contrary. Consider underlying causes and treat when possible.
 - **H's & T's** - Treat as appropriate with confirmed or suspected Hypovolemia, Hypoxia, Hydrogen ion (Acidosis), Hyperkalemia, Hypothermia, Hypoglycemia, or specific Toxins.
- ❑ Pregnancy >20 weeks gestation
 - Perform manual displacement of the uterus to the patient's left. If unable to perform manual displacement, place wedge-shaped cushion or multiple pillows under patient's right hip to achieve 30 degree lateral tilt.
 - Transport pregnant patients to the nearest emergency department without delay while attempting to provide continuous compressions and defibrillation if applicable. There is potential to perform emergency cesarean section.
- ❑ Pediatric Population
 - Pediatric lowest acceptable systolic blood pressures are birth to 1 month = 60mmHg, 1 month to 1 year = 70mmHg, 1 year to 10 years = 70mmHg + (age x 2), >10 years = 90mmHg.
 - Pediatric Defibrillation:
 - Age < 1 year: Manual defibrillator with pediatric paddles/pads preferred in patients <1. If not available, an AED may be used, preferably with pediatric pads.
 - Age 1 – 8 years: AED may be used with pediatric pads preferred
- ❑ As nationally-established cardiac care guidelines (e.g. ACLS, PALS) are updated, these may be integrated into performance, as per agency medical director.

ADULT

PEDIATRIC (<15 years of Age)
NOTE: Pediatric weight based dosing should not exceed adult dosing.

ADULT EMT

- Respiratory Management.
- **Witnessed arrest**, presumed cardiac etiology: Place an NP / OP airway and a non-rebreather mask during the first 2-3 cycles of CPR/defibrillation. After 2-3 cycles, apply asynchronous BVM breaths at a rate of 1 breath every 6-8 seconds, if available
- **Unwitnessed arrest or evidence of a non-cardiac cause:** Apply asynchronous BVM breaths at a rate of 1 breath every 6-8 seconds

AED

- Defibrillate immediately if AED advises shock.
- ☐ Resume CPR immediately after each shock and continue for 2 minutes
- ☐ Check pulse

ADULT AEMT

PEDIATRIC EMT

- ☐ Respiratory Management:
 - Place an NP or OP airway and apply asynchronous BVM breaths at a rate of 1 breath every 4-6 seconds

AED

- ☐ Defibrillate immediately if AED advises shock
 - Resume CPR immediately after each shock and continue for 2 minutes
 - Check pulse

PEDIATRIC AEMT

ALL RHYTHMS

- Begin CPR, as above
- ☐ Advanced airway, vascular access and fluid therapy per the **IV/IO Access and Fluid Therapy Guidelines**
- ☐ Consider placement of a supraglottic device after first 2-3 cycles of CPR/defibrillation
- ☐ Placement of supraglottic device should not interrupt chest compressions
- ☐ **Epinephrine**
- ☐ **1 mg (0.1mg/ml = 1:10,000) IV/IO push**
 - Repeat every 3-5 minutes as long as patient remains pulseless
 - Begin 1000cc IV NS Bolus

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ☐ **Defibrillation**
- ☐ **360J** for a monophasic defibrillator or **200J** for a biphasic
- ☐ Resume CPR immediately after shock and continue for 2 minutes
- ☐ Check rhythm and pulse
- ☐ **Anti-arrhythmics**
- ☐ May use any **ONE** anti-arrhythmic available
 - **Amiodarone** 300 mg IV/IO, second dose is 150mg IV/IO
 - **Lidocaine** 1-1.5 mg/kg IV push or one time dose of 1.5 mg/kg. May repeat every 3-5 min up to 3 mg/kg.
- ☐ **Contact OLMC before terminating resuscitative efforts in the field**

ADULT PARAMEDIC

ALL RHYTHMS

- May consider endotracheal intubation
- ☐ Intubation must not interfere with chest compressions

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ☐ **Magnesium**
- ☐ Give **2 gm** IV over 2 minutes for torsades de pointes
- ☐ **Contact OLMC for further orders or therapies**

ALL RHYTHMS

- Begin CPR, as above
- ☐ BVM and advanced airway, vascular access and fluid therapy per the **IV/IO Access and Fluid Therapy Guidelines**
- ☐ **Epinephrine**
- ☐ **0.01mg/kg = 0.1 ml/kg (0.1 mg/ml = 1:10,000) IV/IO push**
- ☐ Repeat every 3-5 minutes as long as patient remains pulseless
 - Begin 20ml/kg bolus of NS, reassess and repeat if needed to a max of 60cc/kg

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ☐ **Defibrillation**
- ☐ **2 J/kg** for the first shock with either a monophasic or biphasic defibrillator. Second and subsequent shocks at **4 J/kg**
- ☐ Resume CPR immediately after shock and continue for 2 minutes
- ☐ Check rhythm and pulse
- ☐ **Anti-arrhythmics**
- ☐ May use any **ONE** antiarrhythmic available
 - **Amiodarone** 5 mg/kg IV/IO. May repeat up to 2 times. Do not exceed 300mg
 - **Lidocaine** 1 mg/kg IV/IO/ET. May repeat every 3-5 min up to 3 mg/kg.
- ☐ **Contact OLMC before terminating resuscitative efforts in the field**

PEDIATRIC PARAMEDIC

ALL RHYTHMS

- May consider endotracheal intubation, if unable to adequately ventilate with BVM (preferred) or supraglottic airway
- ☐ Intubation must not interfere with chest compressions

SHOCKABLE RHYTHM (VF/VT) PRESENT

- ☐ **Magnesium**
- ☐ Give **25-50 mg/kg** IV/IO for torsades de pointes. Maximum 2 grams
- ☐ **Contact OLMC for further orders or therapies**