Adult BLS Standing Orders

- Universal Patient Protocol
- High quality uninterrupted CPR (See **CPR Policy)**
- Apply AED and follow device instructions (**AED Policy)**
- **If patient had arrest prior to EMS arrival, provide 2 minutes of CPR prior to defibrillation**
- BVM per **BVM Policy**
    - Adult without an advanced airway: 30:2 (30 compressions to 2 breaths)
    - Pediatric without an advanced airway: 30:2 for single rescuer
        - 15:2 for two rescuers
    - Pediatric patients are generally classified for CPR as ≤ 55 kg (121 lbs) [Merck Manual]
- Provide airway support per **Airway Protocol**
- Continuous pulse oximetry and capnography should be monitored
- Administer Naloxone (Narcan) 0.1 mg/kg, max of 2 mg IN. May repeat up to three (3) times, q5min per **Poisoning Policy**
- Check blood glucose, treat hypoglycemia as noted in **Altered Mental Status Policy**
- If Return Of Spontaneous Circulation (ROSC) occurs after any intervention, transport to closest Imperial County approved receiving STEMI center if within 90 minutes of transport location
- BLS may contact Base Hospital Physician if ALS personnel are not able to reach the incident or make patient contact.

If applicable:

- **Determination of Death in the Field Policy**
- **Do Not Resuscitate Policy -** Do not delay care and/or CPR while confirmation is being made
- **Termination of Resuscitation Policy**

Adult LALS Standing Order Protocol

- Establish IV
- Capnography
- Establish supraglottic airway per **Airway Policy**

Suspected Hypovolemia

- NS 1,000 ml IV bolus
- Use Shock Protocol for persistent hypotension

Suspected Opiate Overdose

- **Naloxone 0.1 mg/kg, max of 4 mg IV. MR x2 q5min**

Hypoglycemia

- **Treat per Altered Mental Status Protocol**

Adult ALS Standing Order Protocol

- Monitor/EKG
- Establish IV/IO
- Capnography requires both continuous numeric and waveform monitoring on all cardiac arrests
- Insert ETT (Two (2) intubation attempts allowed per patient. Use supraglottic airway if two (2) intubation attempts are unsuccessful)

If Return Of Spontaneous Circulation (ROSC)

- Obtain 12 Lead ECG and transport to closest Imperial County approved receiving STEMI center if within 90 minutes of transport location

Ventricular Fibrillation (VF) or Pulseless Ventricular Tachycardia (VT)

- Defibrillation at manufacturer's suggested values (typically 200 J in biphasic monitors)
- Epinephrine (1:10,000) 1 mg IV / IO, repeat every 3-5 minutes for the duration of the arrest

If in persistent VF/Pulseless VT after three shocks, administer:

- Lidocaine 1-1.5 mg/kg slow IV push MR Lidocaine 0.5-0.75 mg/kg until total 3 mg/kg or patient converts rhythm

OR

- Amiodarone 300 mg IV / IO, MR in 10 min at 150 mg (max 450 mg)
- If after 3 cycles of CPR rhythm remains in VF/VT, consider transport to Imperial County EMS approved STEMI center if available
- Note: Refractory VF/VT is generally from an ischemic source

Asystole

- Epinephrine (1:10,000) 1 mg IV / IO, repeat every 3-5 minutes for the duration of the arrest
- Treat any rhythm changes according to correct treatment protocol

Pulseless Electrical Activity

- Epinephrine (1:10,000) 1 mg IV / IO, repeat every 3-5 minutes for the duration of the arrest
- Treat any rhythm changes according to correct treatment protocol

Identify and treat any reversible causes:

H's & T's • Hypovolemia • Hypoxia • Hydrogen ion excess (acidosis) • Hypoglycemia • Hypokalemia • Hypothermia	• Tension pneumothorax • Tamponade – cardiac • Toxins • Thrombosis (pulmonary embolus) • Thrombosis (myocardial infarction)

- **Hypovolemia:**
  - Consider a 500-1,000 ml fluid bolus, MR x 1
  - Use Shock Protocol for persistent hypotension
- **Hypoxia:**
  - Ensure that the patient is adequately ventilated, utilizing an airway adjunct and bag valve mask with a supplemental oxygen supply
  - Ensure proper chest rise and fall
  - If there is question of endotracheal tube placement (esophageal intubation), provider should extubate the patient and return to a BLS airway
- **Hyperkalemia (**Peaked T-waves, with possible widening of the QRS complex):
  - Calcium Chloride 10 mg/kg IV / IO, max dose 1 gm
  - Sodium Bicarbonate 1 mEq/kg IV/ IO, max dose 50 mEq (1 amp)
- **Hypothermia:**
  - Consider rewarming measures
  - Patients that are hypothermic can be unresponsive to pharmaceutical therapy and electrical therapy
- **Tension Pneumothorax:**
  - Needle Thoracostomy SO

Hypothermic Cardiac Arrest (Ex: If patient is found down in near-freezing temperatures, or was pulled from near-frozen water)

- If no pulse is present, start CPR
- If defibrillation is indicated, limit to one (1) shock until patient is warm
- If patient presents with dysrhythmias, treat as appropriate
- If core temperature is less than 86°F, withhold IV medications until body temperature rises

Ventricular Assist Device (VAD) Cardiac Arrest

- Prehospital EMS providers should rely upon the patient's level of consciousness, skin signs, capillary refill, respiration, and end-tidal CO2 to make any clinical decisions. It should be noted that patient with a VAD may also have an implanted cardioverter-defibrillator (ICD) and/or a pacemaker/ICD
- The on-call VAD coordinator for the patient's VAD program may be on the telephone with the patient, caregiver or companion simultaneously with the call to 911. The VAD coordinators will be able to assist in determining whether the patient's symptoms are device related. The VAD coordinators can help provide advice on patient and device assessment but cannot provide direct medical control
- High quality uninterrupted CPR may be provided if:
  - Patient is unresponsive, apneic and there is a device failure alarm with no rotor hum upon auscultation OR
  - The patient is unresponsive, apneic and the patient's MAP is < 50 mmHg and/or the in-line ETT
  - EtCO2 is < 20 mmHg
- The only accepted determination of death in the field for a VAD patient is obvious death
- If further guidance is required during patient care, contact BH. Contact early in evaluation of VAD patients.

Notes

BLS care, high-quality compressions and early defibrillation are the most important aspects of cardiac arrest care and should be prioritized.

Resuscitation should occur on scene whenever possible. Patients should receive 20 minutes of high-performance CPR before considering transport or TOR.

Goals for compressions include:

- Compression rate between 100-120 bpm (use a metronome at 110 bpm)
- Allowing full recoil of the chest between each compression
- Minimizing pauses to < 10 seconds, and prioritizing time performing compressions
- Adequate compression depth
  - Adult chest compressions depth shall equal 2 - 2.4 inches.
  - Child chest compressions depth shall equal 1/3 the chest size, or about 2 inches.
  - Infant chest compressions depth shall equal 1/3 the chest size, or 1.5 inches.

Monitors with CPR feedback, real-time metronome use, and having CPR coaches for compressors should be used to improve CPR quality.

All cardiac arrest compression and monitor data should be uploaded to the ePCR for quality assurance review to include compression quality, EtCO2, and defibrillation timing

VAD Policy Reference https://www.ahajournals.org/doi/full/10.1161/cir.0000000000000504

APPROVED:

Signature on File

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