BASE GUIDELINES

1. Determine ALS Standing Order treatments/procedures provided prior to Base Hospital contact. Use ALS standing order as guidelines for treatments/procedures not initiated prior to Base Hospital contact.

2. If at any time patient develops a rhythm with a pulse/return of spontaneous circulation (ROSC), patient should be routed to the nearest open Cardiovascular Receiving Center (CVRC) with an available cardiac catheterization laboratory.

3. As soon as possible, remind field personnel to assess for reversible causes for arrest:
   - hypovolemia
   - acidosis
   - tension pneumothorax
   - hypothermia
   - hypoxia
   - toxins

4. For return of spontaneous circulation (ROSC) with systolic blood pressure less than 90 systolic:
   - If NO signs of congestive heart failure (lungs are clear to auscultation), administer 250 mL Normal Saline Bolus.

   If systolic blood pressure does not respond to initial 250 mL Normal Saline bolus or signs of congestive heart failure (pulmonary rales), proceed with:
   - If available, push-dose Epinephrine (per procedure #230)
   - **Mixing instructions:**
     - Take Epinephrine 1 mg of 0.1 mg/mL preparation (cardiac Epinephrine) and waste 9 mL of Epinephrine.
     - Into that syringe, withdraw 9 mL of normal saline from the patient’s IV bag. Shake well.
     - Mixture now provides 10 mL of Epinephrine at a 10 mcg/mL concentration.
   - **Push-Dose:**
     - Epinephrine 0.5 mL (5mcg) IV/IO, every 3 minutes titrate to a SBP >90.

ALS STANDING ORDER

Ventricular Fibrillation (VF) OR Pulseless Wide Complex Tachycardia (VT)

1. Initiate or continue CPR and as soon as defibrillator available:
   - Defibrillate once at maximum energy setting or pre-programmed/manufacturer’s recommended defibrillator setting.

2. If before loading and initiation of transport, a rhythm with pulse develops (return of spontaneous circulation [ROSC]):
   - Ventilate and oxygenate
   - Assess for and correct suspected:
     1. hypoxia
     2. hypovolemia
     3. hypoglycemia
     4. hypothermia
   - Make Base Contact for CVRC Destination

3. If remains pulseless:
   - Maintain CPR
   - High-flow oxygen by BVM
   - IV/IO vascular access without interruption of CPR

4. Monitor cardiac rhythm:
   - If continues VF/pulseless Wide Complex Tachycardia
     - Defibrillate once at maximum energy setting or pre-programmed/manufacturer’s recommended defibrillator setting
   - If PEA or asystole: refer to PEA/Asystole treatment sequence

5. For continued VF/pulseless Wide Complex Tachycardia or if reverts to VF/pulseless Wide Complex Tachycardia:
   - Maintain CPR, apply Automatic Chest Compression Device, when available
   - Administer Epinephrine 1mg IV/IO (0.1 mg/mL preparation), repeat approximately every 3 minutes for continued VF/pulseless Wide Complex Tachycardia
   - Advanced airway with minimal interruption of CPR and confirm tube placement.
5. Once ALS Standing Orders treatment sequence is completed, if patient is still pulseless and in continues cardiac arrest, survival with the intact neurological function is highly unlikely. **Pronouncement** in the field is appropriate at this point (requires direct Base Physician order).

6. There are circumstances in which the field EMS team will find pronouncement difficult and inadvisable once the treatment sequence in completed, in these situations continue with the following and transport to the nearest ERC:
   - Maintain CPR
   - Administer Epinephrine 1 mg IV/IO (0.1 mg/mL preparation), repeat approximately every 3 minutes for continues VF/pulseless Wide Complex Tachycardia/PEA/Asystole
   - Defibrillate at maximum energy setting or pre-programmed defibrillator setting **if indicated**.
   - Repeat defibrillation sequence after approximately every 2 minutes of CPR if there is continued VF/Pulseless Wide Complex Tachycardia.

7. If a patient is wearing a LifeVest®,
   - Proceed with standard evaluation and treatment measures.
   - Initiate CPR unless the vest device is broadcasting “press the response buttons,” “electrical shock possible, do not touch patient,” or “bystanders do not interfere.”
   - Follow standard treatment as described in algorithms above and remove the LifeVest® and monitor/treat the patient with the standard monitor-defibrillator.
   - To remove the LifeVest®, first pull out or disconnect the battery, then remove the garment from the patient.
   - Take vest, modem, charger, and extra battery to the hospital.

8. If patient is a **dialysis patient** or known to have renal failure, consider hyperkalemia and administer:
   - Sodium Bicarbonate (NaHCO3) 1 ampule IV/IO, may repeat in approximately 5 minutes if there is a response to the initial dose.

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**ALS STANDING ORDER**

6. For continued VF/ pulseless Wide Complex Tachycardia:
   - Maintain CPR
   - Defibrillate once at maximum energy setting or pre-programmed/manufacturer’s recommended defibrillator setting.

7. For continued VF/ pulseless Wide Complex Tachycardia:
   - Maintain CPR
   - Administer Amiodarone 300mg IV/IO, may repeat 150 mg IV/IO in approximately 3 minutes

8. After approximately 2 minutes of CPR, if there is continues VF/ pulseless Wide Complex Tachycardia:
   - Defibrillate once at maximum energy setting or pre-programmed/manufacturer’s recommended defibrillator setting

9. For continued VF/ pulseless Wide Complex Tachycardia:
   - Maintain CPR and transport to nearest ERC or make Base contact:
     - For further resuscitation orders
     - If appropriate, to request pronouncement of patient in the field

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Approved: [Signature]

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BASE GUIDELINES

ALs STANDING ORDER

Pulseless Electrical Activity (PEA) or Asystole

1. Initiate or maintain CPR without interruption unless pulse obtained by any step below
   - High-Flow oxygen by BVM

   ↓

2. Continually monitor cardiac rhythm:
   - Maintain CPR
   - IV/IO vascular access
   - 250 mL Normal Saline bolus

   ↓

3. PEA
   - If pulses obtained, Infusion and transport to CVRC per Base contact
   - If no response, to saline bolus, apply Automatic Chest Compression Device

   ↓

4. ASYSTOLE
   - Maintain CPR
   - IV/IO vascular access

   ↓

3. ► Administer Epinephrine 1 mg IV/IO (0.1 mg/mL preparation) approximately every 3 minutes
   - Assess for possible reversible causes:
     - hypovolemia
     - acidosis
     - hypoxia
     - tension pneumothorax
     - hypothermia
     - toxins
     - If diabetic and hypoglycemia suspected, administer:
       - Dextrose 10%, 250mL IV/IO once

   ↓

4. ► Advanced airway with minimal interruption of CPR and confirm tube placement

   ↓

5. If VF/ pulseless Wide Complex Tachycardia develops:
   - Defibrillate once at maximum energy setting or pre-programmed/manufacturer’s recommended defibrillator setting and follow VF/ pulseless Wide Complex Tachycardia algorithm

   ↓

Approved: Carl Schry

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# BASE GUIDELINES

## ALS STANDING ORDER

6. If before loading and initiation of transport, a rhythm with pulse develops (return of spontaneous circulation [ROSC]):
   - Ventilate and oxygenate
   - Assess for and correct hypoxia, hypovolemia, hypoglycemia, or hypothermia
   - Make Base contact for CVRC destination

7. For continued PEA or asystole:
   - Maintain CPR and transport to nearest ERC or make Base Contact:
     - For further resuscitation orders
     - If appropriate, to request pronouncement of patient in the field

## TREATMENT GUIDELINES:

- Agonal gasps are not adequate breathing and when accompanied with a pulseless state the patient should be considered to be in full cardiopulmonary arrest.
- If the patient has an implanted pacemaker or defibrillator/pacemaker, place electrode pads to either side and not directly on top of the implanted device.
- If the patient has a medication patch in place on the chest area, remove the patch and wipe the area clean before attaching an electrode pad.
- Automatic Chest Compression devices should be applied as soon as available for patients with pulseless rhythms or asystole and for whom CPR is to be continued.
- Appropriate advanced airway includes:
  1. Endotracheal intubation
  2. Supraglottic device (Laryngeal Mask Airway)
  3. King® airway
  4. Combitube®
- If Base hospital orders push-dose epinephrine for refractory hypotension, refer to ALS Procedure #230 (Push-Dose Epinephrine) for technique in performing procedure.