2.19 LEFT VENTRICULAR ASSIST DEVICE (LVAD)

FIELD TREATMENT CONSIDERATIONS FOR PATIENTS WITH A LEFT VENTRICULAR ASSIST DEVICE (LVAD)

1. Call the LVAD Center (open 24/7) per patient or patient's caretaker's contact to get advice on caring for the patient.
   - UCSF: (415) 353-2873
   - CPMC Van Ness: (415) 600-4051. For after hours (415) 487-8480
   - Stanford: (650) 498-9909. For after hours (650)-724-9400
   - You are authorized to take orders from professionals at the LVAD Center, as long as they are within your scope of practice.
   - Contact the Base Hospital with questions or if directed by patient's caregiver or LVAD Center personnel to do something outside of your protocol.
   - Have a provider not actively engaged in resuscitation contact the patient's LVAD center.

2. Attempt to locate a POLST form. Many patients have made end-of-life care decisions.

3. Provide pre-hospital care to the patient in a manner consistent with ALS and BLS treatment protocols for the patient's condition with the following exceptions:
   - **Arrhythmias**: Do not disconnect power source, defibrillate per ACLS protocol.
   - DO follow the directions of the patient's caregiver when moving and transporting the patient.

4. The **LVAD** replaces the pumping action of the left ventricle via a continuous blood flow mechanism, where there is no filling or emptying phase.
   - As a result, patients commonly have **NO PALPABLE PULSE, NO OBTAINABLE PULSE OXIMETRY OR BLOOD PRESSURE**, and only a "mean" arterial pressure detectable using a Doppler if available.
   - An LVAD patient's ECG heart rate will differ from the pulse rate since the LVAD is not synchronized with the native heart rate.

5. Assess the patient's airway and intervene per protocol. If you are unable to obtain pulse oximetry readings, you should assume the patient is hypoxic and place the patient on supplemental oxygen.

6. If the patient has an altered level of consciousness, immediately check for end-tidal CO_2 using capnography.

7. Auscultate heart sounds to determine if the device is functioning. You should expect to hear a continuous "whirling" sound for most devices.

8. Assess the device for any alarms / malfunctions. Check with patient or caregivers for device reference materials or contact the VAD Center.

9. If hypovolemia is suspected, start at least 1 large bore IV, and give a 1L **Normal Saline** fluid bolus.

10. Always transport the patient to the LVAD Center that implanted the device (UCSF or CPMC-Van Ness) You are authorized to BYPASS the closest San Francisco LVAD Center to get the patient to the LVAD Center that implanted their device no matter the patient's condition. If the LVAD Center that implanted the device is not in San Francisco, take the patient to the closest San Francisco based LVAD Center.
    - Bring **ALL** of the patient's equipment, including extra batteries and battery charger if available. Bring the patient's caregiver to act as the information resource on the device. You are authorized to use the caregiver as an information resource on the device.

11. Upon arrival to Emergency Department, immediately plug in the device into an electrical socket.

12. If cardiac AND LVAD device failure is suspected, manual or mechanical chest compressions may be initiated. A LUCAS device may be used for a patient with an LVAD assuming no other LUCAS device contraindication.

13. Call the Base Hospital for field determination of termination if resuscitation criteria are otherwise met.