

	<b>COUNTY OF SACRAMENTO</b> EMERGENCY MEDICAL SERVICES AGENCY	Document #	8833.06
	PROGRAM DOCUMENT:  <b>Ventricular Assist Device (VAD)</b>	Draft Date:	08/01/10
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		Review:	09/01/18

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 EMS Medical Director

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 EMS Administrator

**Purpose:**

- A. To serve as the treatment standard for Emergency Medical Technicians or Paramedics treating patients with a VAD.

**Authority:**

- A. California Health and Safety Code, Division 2.5
- B. California Code of Regulations, Title 22, Division 9

**Protocol:**

**BLS TREATMENT**

**If SpO2 < 94%, Oxygen.** Adjust flow and delivery mode as needed. Airway adjuncts as needed.  
**Chest Compressions ONLY** if unresponsive, apneic, pulseless and VAD is presenting with a Red Heart Alarm.  
**Collect all VAD** equipment (power unit, spare batteries, and black emergency bag).  
**Transport** patients experiencing VAD related problems to the appropriate receiving facility providing VAD services unless the patient meets critical trauma criteria or has severe burns or if an effective airway has not been established.

**ALS TREATMENT**

**Advanced airway** adjuncts as needed.  
**If auscultated blood pressure** (see precautions A) is less than 60 mmHG, pulmonary edema is not present and patient exhibits symptoms such as dyspnea, hypotension, syncope, and loss of consciousness then: Establish Intravenous access with Normal Saline, titrate to a systolic blood pressure of 70 mmHg not exceeding 1500 cc of fluid.  
**Cardiac Monitoring.**  
**Defibrillation or cardioversion** is not contraindicated.

**Precautions:**

- A. VAD patients will not have a systolic and diastolic blood pressure in the absence of a pulse. The blood pressure can be palpated or auscultated with a 70-90 mmHg as an acceptable range. Automatic blood pressure cuffs are not reliable when used on a VAD patient.
- B. Chest compressions and blunt thoracoabdominal trauma can disrupt the anastomoses between the left ventricle, VAD and the ascending aorta.
- C. Loss of cardiac output from VAD failure and a “red heart” alarm may present patient symptoms such as dyspnea, nausea, hypotension, syncope, loss of consciousness or pulmonary edema.
- D. The patient or caregiver will interpret any VAD controller unit alarms.
- E. Do not separate the patient from the caregiver. The caregiver is trained in managing the VAD equipment.
- F. VAD patients may also have an Implanted Cardioverter-Defibrillator (ICD) or pacing ICD.
- G. Blood pressure and pulse oximetry may not be measurable.
- H. Cardiac monitoring heart rate will differ from the pulse rate since the VAD is not synchronized with the native heart. The pulse rate reflects the rate supporting perfusion.
- I. VAD Program Coordinator will likely be in contact with the patient/caregiver by phone and can be used as a resource in determining if the presenting chief complaint is a pump-related problem or a patient related problem.