



Ventricular Assist Device (VAD)

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Approval: John Poland – Executive Director

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- VAD pts may also have an Implanted Cardioverter-Defibrillator (ICD) or a Pacemaker/ICD.
- VAD pts may not have a palpable pulse as these are continuous flow devices. Utilize a cardiac monitor to accurately establish the pt's heart rate/rhythm. Arrhythmias with signs of inadequate perfusion should be treated according to applicable S-SV EMS protocols. If defibrillation or cardioversion is indicated, follow the applicable treatment protocol (the pump is insulated so that electrical therapy should not be an issue).
- VAD pts may not have a blood pressure obtainable by standard EMS measurement methods. An accurate blood pressure is typically obtained via doppler, however, auscultation or NIBP readings may be possible.
- SpO₂ may not be measurable or accurate. EtCO₂ monitoring should be utilized.
- In any emergency involving a VAD patient, contact the VAD coordinator as soon as possible. VAD patients and companions are instructed to call 911 and page the coordinator, whose contact information is usually attached to or located inside the patient's VAD equipment bag.
- VAD pts should be transported to the nearest appropriate VAD center. If the pt's condition does not warrant transportation to the VAD center, the base/modified base hospital shall be consulted for pt destination. The VAD equipment bag, power source, battery & charger shall be brought with any transported VAD pt.

- Manage airway/assist ventilations, O₂ at appropriate rate if short of breath, or signs of heart failure/shock
- Assess perfusion (mental status, skin color & temperature, capillary refill)

Refer to other
protocols as necessaryUnresponsive with
inadequate perfusion?

NO

YES

- Perform chest compressions
- Refer to Non-Traumatic Pulseless Arrest Protocol (C-1 LALS)

Assess VAD function

- Look/listen for alarms
- Listen for VAD hum (left chest/left upper quadrant of abdomen)
- Driveline connected?
- Power source connected?
- Need to replace system controller?

Is VAD functioning?

NO

YES

**Adequate perfusion*
if any of the following
present**

- Normal skin color & temperature
- Normal capillary refill
- NIBP MAP >50 mm HG
- EtCO₂ >20 mm HG

*Pts may not have a palpable pulse

- Attempt to correct malfunction with VAD coordinator &/or companion assistance

- Monitor & reassess
- Refer to other protocols as necessary
- Contact base/modified base hospital for treatment consultation as needed