HENRY FORD HOSPITAL Ventricular Assist Device Emergency Response

Cheryl Smith, R.N., B.S.N.
VAD Coordinator
Henry Ford Health System

WHAT IS A VAD?

- What is a VAD?
- How does it work?

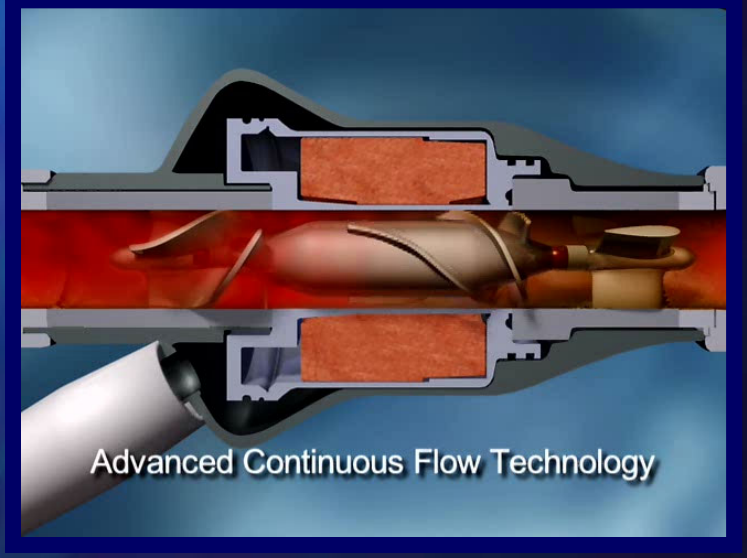
Pulsatile, Volume Displacement Pumps – Constraints

- Provides excellent pulsatile hemodynamic support
- Approved for bridge-to-transplantation and destination therapy

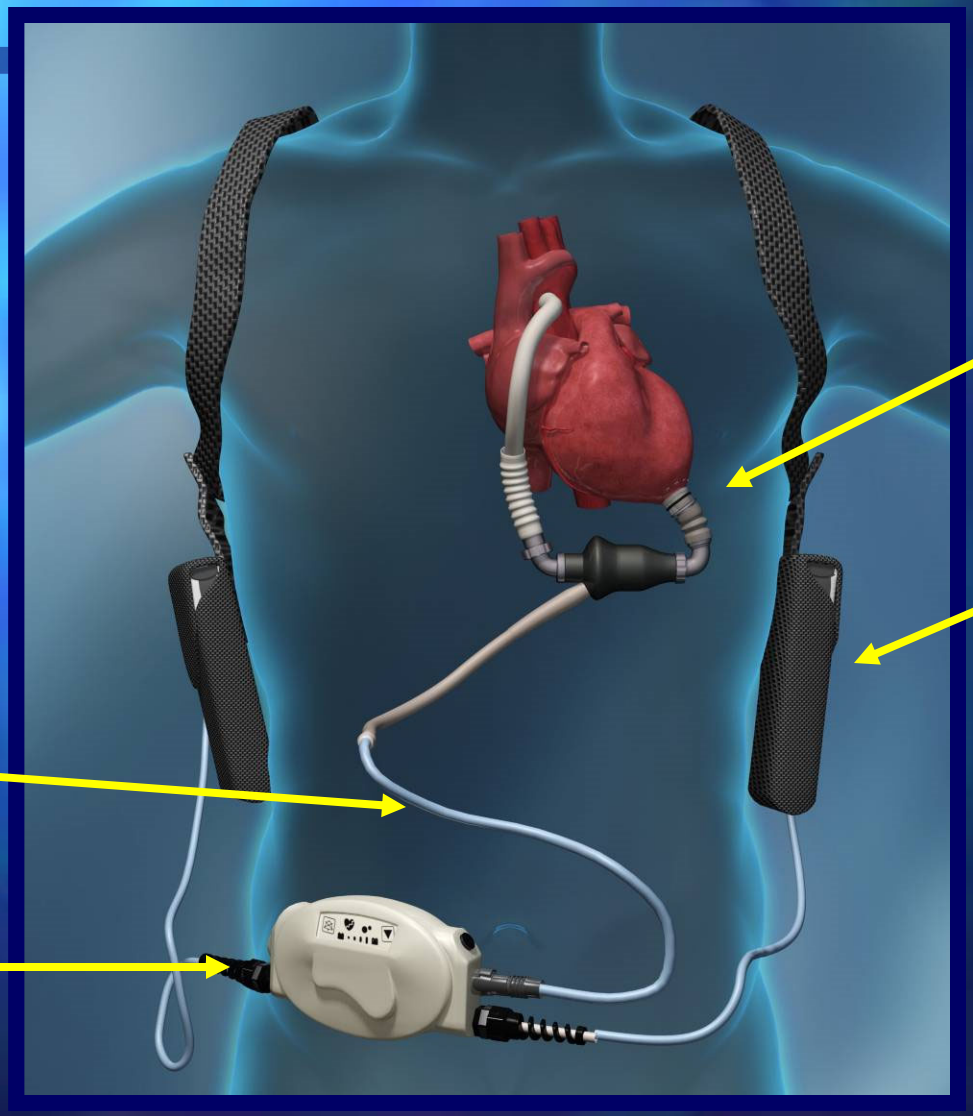
- Large size
  - Minimal BSA requirement of 1.5 m^2
- Extensive surgical dissection
- Limited durability
- Requirement for venting of air
  - Large percutaneous lead
- Noisy operation

Continuous Flow, Rotary Pumps

- Smaller size
  - 1/4th weight
- No requirement for venting
  - 40% reduction in the size of percutaneous driveline
- Enhanced patient comfort
- Near noiseless operation
- Ease of surgical implantation
  - Standard sternotomy vs. extended midline excision
  - Smaller preperitoneal pocket
- Single internal moving part – potential for extended durability



HeartMate II Left Ventricular Assist System



VAD POWER SOURCES

- VAD must be hooked to AC power or batteries at all times.
- DO NOT get VAD wet! Patient cannot submerge in water.

VAD EMERGENCY PAGER

- **VAD TEAM EMERGENCY PAGER: (313) 705-0089**
- On call 24 hours, 365 days a year
- If no response in five minutes, page again.

VAD EMERGENCY

- Patient instructed to call 911 and then call emergency VAD pager: (313) 705-0089
- All patients have emergency card in VAD battery case with helpful tips for emergencies and specific to their type of VAD.
- Caregiver also trained on VAD. Keep caregiver with patient at all times.
- Caregiver needs to bring all patient equipment with them.

VAD EMERGENCY PRECAUTIONS

- NO CHEST COMPRESSIONS! Risk of dislodging VAD cannula.
- CARDIOVERSION/DEFIBRILLATION: See VAD emergency card; you may need to hand pump. You may need to treat arrhythmias with either medications or shock patient. (LVAD only helps left side of heart)

VAD EMERGENCY PRECAUTIONS (continued)

- ACLS protocol should be used (but avoid chest compressions).
- Patients are often on Coumadin!
- Do NOT get VAD or equipment wet!
- Do NOT submerge patient, driveline or equipment in water.

XVE LVAD EMERGENCY

- Pulsatile flow
- Hand Pump: directions on pump
- Disconnect and hand pump for cardioversion or defibrillation

Heartmate II Emergency

- Axial flow pump (may not feel a pulse)
- Blood pressure: use doppler and that will indicate mean arterial pressure
- No need to disconnect for cardioversion/defibrillation
- Patient will be on blood thinners with InR goal 2.0-3.0

VAD Emergency Response SUMMARY

RESOURCES

- VAD emergency pager
- Patient/Caregiver
- VAD emergency card

QUESTIONS?