



# Guidelines for Referral for Advanced Heart Failure Therapy Ventricular Assist Device Therapy (VAD) and/or Heart Transplantation

**Note:** Candidacy for heart transplantation not required for consideration for VAD. VAD therapy is also available for Destination Indication (permanent use).

## Patients should have:

- At least Class III Heart Failure symptoms
- LVEF  $\leq$  35% (This guideline is not necessary for patients with diastolic heart failure secondary and preserved left ventricular function that is due to restrictive cardiomyopathies; e.g. hypertrophic cardiomyopathy)

## And, any of the following criteria:

- Early End Stage Organ Dysfunction
  - BUN  $\geq$  45
  - Cr  $\geq$  1.6 mg/dl or CrCl  $\leq$  45 cc/min
- Serum sodium  $<$  135 mEq/L
- Hemodynamic Instability
  - Ventricular Arrhythmias
  - Hypotension
  - Low cardiac output
- Hospitalization for Heart Failure in the past 6 months
- Intolerance/withdrawal of evidence-based heart failure oral agents
- Non-responsive to CRT/BiV pacing
- Being considered for or currently on Inotropes
- Cardiac cachexia
- Diuretic Dose
  - furosemide  $\geq$  160 mg/day
  - torsemide  $\geq$  80 mg/day
  - bumetanide  $\geq$  4 mg/day
- Seattle Heart Failure Score  $\geq$  1.5 or 1 year mortality estimate  $>$  15%
- Peak exercise oxygen consumption  $\leq$  55% of predicted or absolute number ( $\leq$  14 ml/kg/min for women or  $\leq$  16 ml/kg/min for men)
- 6 Minute Walk Test (distance of  $\leq$  350 meters)



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## Recommended Testing Prior to Evaluation (within 3 months):

- Echocardiogram
- Right Heart Catheterization (if available)
- Peak VO<sub>2</sub> and 6 MWT Distance (if available)
- Chemistries and Complete Blood Count
- Chest Radiograph
- ECG
- Pulmonary Function Test
- Ankle-Brachial Index Test
- Carotid Duplex Scan
- Abdominal Ultrasound (to evaluate for AAA and hepatic disease)
- Noncontrast CT Scan of the Thorax (if history of prior cardiac surgery)

## For further information regarding VAD therapy or to refer/transfer a patient:

**University of Michigan Center for Circulatory Support**  
**734-615-3068**

**M-LINE • 800-962-3555**

**Hospital Paging Operator • 734-936-6267**

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