Implant Date

**Durable Implantable VAD Support**

- **Device type**
  - LVAD
  - RVAD
  - Both (LVAD + RVAD in the same OR visit)
  - Total Artificial Heart

Please remember to fill out the RHF adverse event form

- **Approach to insertion**
  - Full Sternotomy
  - Right thoracotomy only
  - Percutaneous
  - Left subcostal
  - Right subcostal
  - Left Thoracotomy only
  - Bilateral Thoracotomy
  - Axillary (cut down)
  - Left Thoracotomy plus Mini Sternotomy
  - Left Thoracotomy to Right Mini Sternotomy
  - Unknown
  - Other, specify

- **LVAD device brand**
  - HeartMate IP
  - HeartMate VE
  - Novacor PC
  - Novacor PCq
  - HeartMate XVE
  - Thoratec IVAD
  - Medtronic HVAD
  - Berlin Heart EXCOR (paracorporeal)
  - Micromed DeBakey VAD - Child
  - Thoratec PVAD
  - HeartMate II LVAS
  - HeartMate III
  - Durable Implantable: Other, Specify
  - Abiomed BVS 5000
  - Abiomed AB5000
  - TandemHeart
  - Thoratec Centrimag (Levitrionix)
  - Sorin Revolution
  - Abiomed Impella CP
  - Abiomed Impella 2.5
  - Abiomed Impella 5.0
  - Abiomed Impella RP
  - Abiomed Impella 5.5
  - Temporary: Other, Specify
Temporary: Other, specify: 

LVAD: Serial Number 

ST: Unknown

LVAD: cannulae location-inflow
- Left ventricle, Apex
- Left ventricle, Diaphragmatic surface
- Left atrium, Interatrial groove
- Left atrium, Left atrial appendage
- Left Atrium, Dome Left Atrium
- Right Atrium (Option for Adult Congenital Cases)
- Right Ventricle (Option for Adult Congenital Cases)
- Unknown
- Other, specify

LVAD: cannulae location-outflow
- Ascending aorta
- Descending thoracic aorta
- Abdominal aorta
- Left subclavian artery
- Right subclavian artery
- Unknown
- Other, Specify

RVAD device brand
- Thoratec IVAD
- Medtronic HVAD
- Berlin Heart EXCOR (paracorporeal)
- Thoratec PVAD
- HeartMate III
- Durable Implantable: Other, Specify
- Abiomed BVS 5000
- Biomedicus
- Abiomed AB5000
- TandemHeart
- Thoratec Centrimag (Levitronix)
- Sorin Revolution
- Abiomed Impella CP
- Abiomed Impella 2.5
- Abiomed Impella 5.0
- Abiomed Impella RP
- Abiomed Impella 5.5
- Temporary: Other, Specify

RVAD, Temporary: Other, specify:
<table>
<thead>
<tr>
<th>RVAD: Approach to insertion</th>
<th>Full Sternotomy</th>
<th>Right thoracotomy only</th>
<th>Percutaneous</th>
<th>Left subcostal</th>
<th>Right subcostal</th>
<th>Left Thoracotomy only</th>
<th>Bilateral Thoracotomy</th>
<th>Axillary (cut down)</th>
<th>Left Thoracotomy plus Mini Sternotomy</th>
<th>Left Thoracotomy to Right Mini Sternotomy</th>
<th>Unknown</th>
<th>Other, specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>RVAD: Serial Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ST:</td>
<td>Unknown</td>
</tr>
<tr>
<td>RVAD: cannulae location-inflow</td>
<td>Right atrium</td>
<td>Right ventricle</td>
<td>Left Atrium (option for adult congenital cases)</td>
<td>Left Ventricle (option for adult congenital cases)</td>
<td>Unknown</td>
<td>Other, Specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RVAD: cannulae location-outflow</td>
<td>MPA (main pulmonary artery)</td>
<td>LPA (left pulmonary artery)</td>
<td>RPA (right pulmonary artery)</td>
<td>Aorta</td>
<td>Conduit</td>
<td>Unknown</td>
<td>Other, Specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAH device brand</td>
<td>SynCardia TAH - 50cc</td>
<td>SynCardia TAH - 70cc</td>
<td>AbioCor TAH</td>
<td>Other, Specify</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAH: Serial Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ST:</td>
<td>Unknown</td>
</tr>
<tr>
<td>Anticipated need for RVAD</td>
<td>Planned (decision for insertion made prior to surgical incision)</td>
<td>Unplanned (unanticipated complication)</td>
<td>Unknown</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The association of the right heart failure event should be classified as:</td>
<td>Patient related</td>
<td>e.g., pre-implant right heart failure, volume overload secondary to non-adherence with medical management, severe aortic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
regurgitation, cardiorenal syndrome, arrhythmia induced, pulmonary disease, elevated pulmonary vascular resistance

- **Management related** e.g., related to implant surgery, volume overload, inotropic agent withdrawal
- **Device related** e.g., associated with Pump malfunction, outflow graft compromise
- **No association identified**

<table>
<thead>
<tr>
<th>Associated findings</th>
<th>PFO / ASD</th>
<th>Aortic Insufficiency</th>
<th>Mitral insufficiency</th>
<th>Tricuspid Insufficiency</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical observations or Intraoperative TEE</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
<td>☑️</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aortic Insufficiency</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitral Insufficiency</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>Tricuspid Insufficiency</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
</tbody>
</table>

- Is the VAD implant occurring in the setting of a failed cardiac operation (same operation or hospitalization)?
  - Yes
  - No

- If yes, select an indication
  - Failure to wean from Cardio Pulmonary Bypass
  - Failure to Wean from ECMO
  - Persistent heart failure following cardiac surgery (same hospitalization)
  - Enter cardiac operation:
  - None

<table>
<thead>
<tr>
<th>Indication for CABG</th>
<th>Planned (decision for CABG made prior to skin incision)</th>
<th>Unplanned (unanticipated complication)</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territories revascularized</td>
<td>RCA</td>
<td>LAD</td>
<td>Circumflex</td>
</tr>
<tr>
<td>Aortic Valve Procedure</td>
<td>Full (annular patch or complete leaflet closure)</td>
<td>Partial leaflet closure (Park Stitch or plication leaflet tips only)</td>
<td>Unknown</td>
</tr>
<tr>
<td>Mitral Valve Repair</td>
<td>Annuloplasty</td>
<td>Alfieri stitch</td>
<td>Unknown</td>
</tr>
<tr>
<td>Annuloplasty</td>
<td>Complete ring</td>
<td>Partial band</td>
<td>Unknown</td>
</tr>
<tr>
<td>Annuloplasty - Size</td>
<td>mm</td>
<td>ST: Unknown</td>
<td></td>
</tr>
<tr>
<td>Arrhythmia surgery (ablation)</td>
<td>Ventricular</td>
<td>Atrial</td>
<td>Unknown</td>
</tr>
<tr>
<td>Atrial</td>
<td>Left-sided</td>
<td>Right-sided</td>
<td>Unknown</td>
</tr>
<tr>
<td>Left-sided</td>
<td>Pulmonary vein isolation only</td>
<td>Complete left sided lesion set (Maze procedure)</td>
<td>Unknown</td>
</tr>
<tr>
<td>Ligation of left atrial appendage</td>
<td>Surgical device (e.g., AtriClip)</td>
<td>Oversew and or staple</td>
<td>Excision</td>
</tr>
<tr>
<td>Temporary MCS Removal</td>
<td>ECMO decannulation</td>
<td>IABP</td>
<td>RVAD, Temporary</td>
</tr>
<tr>
<td>Temporary RVAD Brand</td>
<td>Abiomed BVS 5000</td>
<td>Biomedicus</td>
<td>Biomedical</td>
</tr>
</tbody>
</table>
Abiomed AB5000
TandemHeart
Thoratec Centrimag (Levitronix)
Sorin Revolution
Abiomed Impella CP
Abiomed Impella 2.5
Abiomed Impella 5.0
Abiomed Impella RP
Abiomed Impella 5.5
Temporary: Other, Specify

Temporary LVAD Brand
Select one
Abiomed BVS 5000
Abiomed AB5000
TandemHeart
Thoratec Centrimag (Levitronix)
Sorin Revolution
Abiomed Impella CP
Abiomed Impella 2.5
Abiomed Impella 5.0
Abiomed Impella RP
Abiomed Impella 5.5
Temporary: Other, Specify

Extracorporeal membrane oxygenation
Veno-venous (VV) ECMO
Veno-arterial (VA) ECMO
Unknown

Outflow
Femoral artery
Ascending aorta
Descending thoracic aorta
MPA (main pulmonary artery)
LPA (left pulmonary artery)
RPA (right pulmonary artery)
Conduit
Left subclavian artery
Right subclavian artery
Femoral (percutaneous)
Femoral (cut down)
Unknown
Other, Specify

Inflow
Femoral vein
Left atrium, Left atrial appendage
Left atrium, Interatrial groove
Left ventricle, Apex
Left ventricle, Diaphragmatic surface
Left atrium, Dome left atrium
Right atrium
Right ventricle
Femoral (percutaneous)
Femoral (cut down)
Unknown
Other, Specify
### Additional Operative Details

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the patient put on Cardiopulmonary Bypass Pump?</td>
<td>Yes, No, Unknown</td>
</tr>
<tr>
<td>CPB Time</td>
<td>Enter total cardiopulmonary bypass time in minutes</td>
</tr>
<tr>
<td>Was an aortic cross clamp used?</td>
<td>Yes, No, Unknown</td>
</tr>
<tr>
<td>Enter duration of the aortic cross clamp time in minutes</td>
<td></td>
</tr>
<tr>
<td>Temperature: Lowest body temperature during cardiopulmonary bypass</td>
<td>Normothermia (37°C), Mild hypothermia (32 to &lt;37°C), Deep hypothermia (&lt;32°C), Not done</td>
</tr>
<tr>
<td>Lowest Hematocrit on pump:</td>
<td>Enter percentage</td>
</tr>
<tr>
<td>Highest serum arterial lactate on pump:</td>
<td>Enter mmol/L</td>
</tr>
<tr>
<td>Surgery Time</td>
<td>Enter total surgery time from primary incision to closure in minutes</td>
</tr>
<tr>
<td>Status of incision at end of procedure</td>
<td>Open (i.e., delayed sternal closure), Closed, Unknown</td>
</tr>
</tbody>
</table>

**Was left ventricular thrombus present at operation?**
- Yes
- No
- Unknown

If you select Yes, you are confirming that the left ventricular thrombus was removed.

**Was left atrial appendage clot present at operation?**
- Yes
- No
- Unknown

**Was the left atrial appendage clot removed?**
- Yes
- No
- Unknown

**Was palpable atherosclerotic plaque or calcified plaque present in the ascending aorta?**
- Yes
- No
- Unknown
Implant Hemodynamics

(At the start of procedure following induction of anesthesia but prior to skin incision):

- **Heart rate**: [ ] beats per min
  ST: [ ] Unknown
  [ ] Not done

- **Systolic blood pressure**: [ ] mmHg
  (millimeters of mercury) should be determined from auscultation or arterial line if necessary.
  ST: [ ] Unknown
  [ ] Not done

- **Diastolic blood pressure**: [ ] mmHg
  (millimeters of mercury) should be determined from auscultation or arterial line if necessary.
  ST: [ ] Unknown
  [ ] Not done

- **Mean arterial blood pressure**: [ ] mmHg
  ST: [ ] Unknown
  [ ] Not done
  [ ] Not applicable
### Intraoperative Transfusions

Intraoperative transfusions are not counted as a major bleeding event.

**Were intraoperative blood products or clotting factors given to treat bleeding/coagulopathy?**
- [ ] Yes
- [ ] No
- [ ] Unknown

**Check any transfusions or clotting factor replacements administered:**
- [ ] Packed RBC
- [ ] Prothrombin Complex concentrate
- [ ] Factor VII
- [ ] Platelets
- [ ] Cryoprecipitate
- [ ] Fresh frozen plasma
- [ ] Other
<table>
<thead>
<tr>
<th>Blood Component</th>
<th>Number</th>
<th>ST Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of packed RBC units</td>
<td></td>
<td>Unknown</td>
</tr>
<tr>
<td>Number of platelet units</td>
<td></td>
<td>Unknown</td>
</tr>
<tr>
<td>Number of fresh frozen plasma units</td>
<td></td>
<td>Unknown</td>
</tr>
<tr>
<td>Number of cryoprecipitate units</td>
<td></td>
<td>Unknown</td>
</tr>
</tbody>
</table>

Implant

Implant 7/18/22

10 of 10