

Questions for the Panel

Device Reliability

1. The bench testing performed to assess device reliability did not account for all observed clinical conditions; in particular, higher than expected pressure in the pump chamber and higher than expected beat rates. Accordingly, the observed times to device failure and device malfunction seen in the clinical study are less than those predicted by the reliability model. As well, there is no reliable end-of-pump-life indicator. Please discuss the clinical implications of the observed device reliability.
2. Are the device failure and malfunction rates and their time to occurrence appropriate for a device intended for use for destination therapy?

Data Analysis

3. Given the Kaplan-Meier survival curves and the fact that 7 device patients and 3 control patients (as of 2/02) had survived to 24 months, have enough patient data been reported to demonstrate a clinically meaningful survival benefit?

Effectiveness of the System on Functional Status

4. The NYHA, QOL, and functional testing results are not consistent. From these data, can we determine that there is a clinically meaningful improvement in functional status?

Risk-Benefit of the System used for Destination Therapy

5. This device demonstrated an increase in median survival time and showed an overall difference in survival. However, this benefit diminished at two years and was associated with serious adverse events and hospitalizations throughout the course of the study. Do the benefits of this device outweigh its risks?

Labeling

6. One aspect of the pre-market evaluation of a new product is the review of its labeling. The labeling must indicate which patients are appropriate for treatment, identify potential adverse events with the use of the device, and explain how the product should be used to maximize benefits and minimize adverse effects.
 - a. Please discuss the appropriateness of the proposed indications for use for this device, which reads:

The HeartMate VE LVAS is indicated for use as a bridge to transplantation in cardiac transplant candidates at risk of imminent death from nonreversible left ventricular failure. The HeartMate VE LVAS is also indicated for use in patients with end-stage left ventricular failure who are ineligible for cardiac

transplantation. The HeartMate VE LVAS is intended for use both inside and outside the hospital.

- b. Does the labeling accurately inform patients of the risks of the device?
- c. Does the labeling adequately inform patients of the expected duration of use for this device (see page 44 of the patient handbook of Tab 3.2 of the Panel Pack)?
- d. Are there any other issues of safety or effectiveness not adequately covered in the labeling?

Post-Market Evaluation

- 7. Based on the clinical data provided in the panel pack, do you believe that additional clinical follow-up or post market studies are necessary to evaluate the long-term effects of this device? If so, how long should patients be followed, and what endpoints and adverse events should be measured?