

## **MEDIA RELEASE**

**For immediate release**

### **NATIONAL HEART CENTRE SINGAPORE (NHCS) INTRODUCES NEW PULSE-FREE ARTIFICIAL HEART FOR HEART FAILURE PATIENTS**

**Singapore, 30 September 2009** – Patients with end-stage heart failure now have a much-improved option for left-ventricular support of the heart. The new device, known as Heart Mate II has a much smaller pump, making it fully implantable within patient’s body regardless of patient’s chest cavity size. Hence, this is suitable for adults with smaller build, for example, Asians and female patients. The new device is also built to last, possibly for years. This means that the device can potentially be used for chronic long-term support of patients with irreversible heart failure.

Bridging the gap between end-stage heart failure and heart transplant, mechanical heart assist devices for end-stage heart failure patients were first introduced in Singapore when NHCS set up its Mechanical Heart Device (MHD) Programme in 2001. The devices, which take over the function of a failing heart by pumping blood around the body, provide critically ill patients with a mean to prolong and improve their quality of life while waiting for a heart transplant.

Over the years, the programme has achieved many landmark milestones both in Singapore and ASEAN, providing increasingly sophisticated support to our patients as the devices become ever more competent.

The new Heart Mate II is a good example of the newer generation devices. This Left Ventricular Assist Device (LVAD) has a smaller pump, which permits its use in a broad patient population when compared to older models, which requires patients to have a taller and bigger build. Dr C. Sivathasan, senior consultant and director of the MHD programme shares, “A few years ago, we can only offer a LVAD to a patient who is at least 1.7 m tall and with a body weight of 65 kg and above. Now, we no longer have to exclude patients who have a smaller build, potentially allowing more patients to benefit.”

The other advantage of the new device is its simpler design, which consists of just one

rotating pump keeping a continuous blood flow in the body. Fewer moving parts translate to a more durable device and lower chances of mechanical damage of blood cells and components, known as shear damage. Continuous flow pumps are also much quieter when compared to the older pulse pumps mimicking the heart's natural pulse rhythms.

According to Dr Sivathasan, this heralds the beginning of more permanent devices, which can provide chronic long-term support for patients with irreversible heart failures. "In Europe, one of this device has been supporting a patient continuously for four years now and counting. Very soon, we may have a device that can provide an even longer period of support with fewer side effects. Such a device will eventually reduce the demands for heart transplants."

### **Research and Development in MHD**

Research and development is an essential part of advances in the MHD world. Experts in this field, engineers, scientists and clinicians, gather yearly to share the latest developments under the umbrella of the International Society for Rotary Blood Pumps (ISRBP). The 17th conference this year will be hosted by NHCS in Singapore for the first time. Dr Sivathasan, who is also the President of the Congress, says, "Being able to host this conference in Singapore means that our skills and expertise in MHD here is maturing and this is recognised internationally. We hope to continue to further our work and benefit more patients in Singapore and the region."

In Singapore, heart failure is the most common cardiac cause of hospitalisation, accounting for 17 per cent of all cardiac admissions. This translates to about 5,000 admissions a year. NHCS, as the national tertiary cardiac centre receives an average referral of 30 cases of end-stage heart failure patients every year, with about 20 per cent needing device support and/or heart transplant.

### **Media Contact**

Ms Teo Hwee Leng  
Corporate Development  
National Heart Centre Singapore  
Tel: 6236 7415  
Email: [teo.hwee.leng@nhc.com.sg](mailto:teo.hwee.leng@nhc.com.sg)

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### **About the National Heart Centre Singapore**

The National Heart Centre Singapore (新加坡国家心脏中心) is a 185-bed national and regional referral centre for cardiovascular diseases. A one-stop facility with the largest heart specialists group in Singapore, NHCS treats complex cases and sees the highest volume of heart patients locally.

Each year, the centre handles around 100,000 outpatient consultations, 6,000 interventional and surgical procedures and 9,800 inpatients. Its outcomes for heart attack treatment, balloon angioplasty with stenting and coronary bypass surgery have been shown to be equivalent to international standards.

NHCS is the first heart centre outside USA and in Asia to receive the prestigious Joint Commission International (JCI) since 2005, which is an assurance for safe and quality patient care for the patients.

### **About 17th Congress of the International Society for Rotary Blood Pumps (ISRBP)**

The annual congress of the International Society for Rotary Blood Pumps (ISRBP) will be held in Singapore for the first time on **1st to 3rd October 2009** at the Furama Waterfront Hotel. Hosted by the National Heart Centre Singapore (NHCS), this also marks the first time the congress is coming to Southeast Asia.

This congress, previously held in Europe, USA, Japan and Sydney, Australia, will see expert engineers, scientists and clinicians from all over the world coming together to exchange ideas and information on the research and development of advanced cardiac support devices. This is in line with the society's vision of "contribution of engineering challenges together with medical and clinical science to solve practical medical problems and to develop next-generation technologies of rotary blood pumps."

### **About Heart-Mate II**

The HeartMate II is a mechanical circulatory support device intended for a broad range of advanced-stage heart failure patients. An axial flow device, the HeartMate II can pump up to 10 liters of blood per minute, the full output of a healthy heart, and is designed to provide long-term cardiac support. The device is implanted alongside a patient's native heart and takes over the pumping ability of the weakened heart's left

ventricle. It is easier to implant than prior devices, and with only one moving part, the HeartMate II is designed to provide reliability and improved patient quality of life. The device is designed to have a much longer functional life than the previous generation of devices and to operate more simply and quietly.

Heart-Mate II LVAD is a product of Thoratec. Singapore is the first country in Southeast Asia to use this new device.