



For Immediate Release

## **Hong Kong Sanatorium & Hospital Performed Asia Pacific's First Destination Therapy Using LVAD Bringing Hope to End-Stage Heart Failure Patients**

(11 July 2011, Hong Kong) Today Hong Kong Sanatorium & Hospital (HKSH) proudly announces Asia Pacific's first successful case of Destination Therapy (DT) through implantation of a Left Ventricular Assist Device (LVAD) in an end-stage heart failure patient.

In Hong Kong LVAD was first implanted in 3 patients, all aged below 65 who have been on a long waiting list for heart transplant, as Bridge-to-Transplantation (BTT), i.e. a temporary measure to prolong life and improve life quality while waiting. However, because of the scarcity of donor hearts, the chance of having a heart transplant timely is marginal.

“As for end-stage heart failure patients, some of them are ineligible for heart transplant due to age limit and other diseases,” said Dr. Lau Chu Pak, Honorary Consultant of HKSH and Specialist in Cardiology. “LVAD can bring new hope to severe heart failure patients as DT after all other medical treatments are exhausted.”

Heart failure is a widespread condition that develops when the heart muscle is simply too weak to pump sufficient blood throughout the body. In 2004, the annual incidence rate of heart failure was 3.0 to 3.8 per 1,000, which is comparable to that in western countries, at 1 to 5 cases per 1,000 per year (Source: *Heart failure – a growing epidemic in Asia*, JE Sanderson, Hong Kong Medical Journal Vol 10, No.2 April 2004). According to the New York Heart Association, heart failure is classified into four stages of varying severity. For Class IV patients, i.e. end-stage heart failure, physical activity is almost impossible without discomfort, while symptoms of cardiac insufficiency, e.g. breathlessness, are shown while at rest. The heart's blood pumping ability is so weak that results in hypotension, which in turn leads to dizziness and falls. Other symptoms include swollen feet, ankles and legs, trouble with sleeping while lying flat and tiredness and weakness. The mortality rate of end-stage heart failure is over 40%.

Symptoms of end-stage heart failure are generally treated with such medications as diuretics, neuro-hormonal treatment, cardiac stimulants, ACEI, ARBs, beta-blockers. Patients may also be implanted with a pacemaker.

“In Hong Kong, there are about 10 patients waiting for heart transplant every year. The scarcity of donor heart means long, excruciating wait to patients eligible for heart transplant,” said Dr. Elaine Chau, Honorary Consultant of HKSH and Specialist in Cardiology of HKSH's Cardiology Centre. “In the long run, Destination Therapy (DT) can also be an option for those eligible for heart transplant.”



### **Renewed Hope for Patients with End-Stage Heart Failure**

Mr. Chan is the first and oldest end-stage heart failure patient in Asia Pacific that receives a LVAD for DT. He is 73 years old with an over-10-year history of atrial fibrillation. He was implanted with a biventricular implantable cardiovascular defibrillator in September 2009 due to progression of heart failure. He was admitted to HKSH on 25 February 2011 for chest discomfort and shortness of breath, later transferred to ICU on 8 April 2011. He required intra-aortic balloon pump (IABP) to maintain blood pressure/ circulation. He received a LVAD on 2 May 2011 after assessment. “Mr. Chan is in his seventies and of a small figure. In such a major surgery, the administering of anaesthesia care was of particular challenge,” said Dr. Andrew Chan, Honorary Consultant of HKSH and Specialist in Anaesthesiology. Mr. Chan was discharged on 25 June 2011 and his condition remains stable after surgery. “Mr. Chan’s conditions were critical and it would be 100% mortality if no surgery was performed. This surgery demanded a 22-man strong team to complete in 12 hours,” said Dr. Chiu Shui Wah, Honorary Consultant of HKSH and Specialist in Cardio-thoracic Surgery.

“Whether it was before or after surgery, Mr. Chan, his family members and caretakers were required to receive training on wound management, home care and emergency measures,” said Ms. Anita Pang, Nursing Sister of HKSH’s Intensive Care Unit and Coordinator of LVAD Programme. “They have to pass a written test as well as practicum to ensure safety while using the device.”

### **Enhanced Quality of Life for End-Stage Heart Failure Patients**

Used as DT, the implantation of LVAD allows Mr. Chan to resume gradually most of his daily activities and improves his quality of life. “I know I am the first case ever in Hong Kong and in Asia for using LVAD as Destination Therapy. I chose to have this surgery because of the trust I have in HKSH medical team, and also for their tender loving care. My family as always is my strongest support. I am still in the adjustment period, but I feel like my life is getting back to normal, only that I can no longer enjoy water activities.”

The model in use is a second-generation LVAD, a miniaturized heart assisted device designed to restore hemodynamic function by pumping oxygenated blood throughout the body. Over 7,000 patients worldwide are now implanted with this model. It received FDA approval for DT in January 2010, and according to the manufacturer, a U.S. patient is still doing well with the same LVAD 7 years after implantation. The advantages of this model are as follows:

- The LVAD is controlled by an external controller and powered by batteries outside the patient’s body.
- It uses a single rotating part to pump up to 10 litres of blood per minute, providing long-term cardiac support for patients.
- The device is implanted under the patient’s diaphragm and takes over the pumping ability of the weakened heart’s left ventricle.



“Hong Kong Sanatorium & Hospital being the hospital to perform Asia Pacific’s first implantation of LVAD for Destination Therapy is a joint effort of the cardiologists, cardiothoracic surgeons, anaesthesiologists, specialist nurses (OT and ICU), bio-medical engineers, as well as strong supportive care in the ward,” said Dr. Walton Li, Medical Superintendent of HKSH. “It brings hope to end-stage heart failure patients and benefits many.”

As always, HKSH is committed to the wellbeing of patients and general public, pioneering in this ground-breaking medical treatment to prolong and improve the life of end-stage heart failure patients. Such devotion to new technology and treatment will always remain one of HKSH’s goals in future development.

### Photos

1. Dr. Walton Li, Medical Superintendent of HKSH, said, “HKSH is committed to pioneering in this ground-breaking medical treatment to bring hope to the end-stage heart failure patients. We sincerely hope that this new technology can benefit many.”



2. In May 2011, HKSH successfully performed an implantation of LVAD for Destination Therapy (DT) by its LVAD Programme medical team, including the cardiologists, cardiothoracic surgeons, anaesthesiologists, specialist nurses (OT and ICU), bio-medical engineers, as well as strong supportive care in the ward. The figure shows the HKSH team with Mr. Chan and his family.





- (From left, back row) Dr. Lau Chu Pak, Honorary Consultant of HKSH and Specialist in Cardiology, Dr. Elaine Chau, Honorary Consultant of HKSH and Specialist in Cardiology of HKSH's Cardiology Centre, Dr. Andrew Chan, Honorary Consultant of HKSH and Specialist in Anaesthesiology, and Dr. Chiu Sui Wah, Honorary Consultant of HKSH and Specialist in Cardio-thoracic Surgery, with the patient Mr. Chan (sitting).



- (From left) Dr. Joseph Chan, Deputy Medical Superintendent of HKSH, Mr. Chan, the patient, Dr. Lau Chu Pak, Honorary Consultant of HKSH and Specialist in Cardiology, Dr. Elaine Chau, Honorary Consultant of HKSH and Specialist in Cardiology of HKSH's Cardiology Centre, and Dr. Chiu Sui Wah, Honorary Consultant of HKSH and Specialist in Cardio-thoracic Surgery.





5. Demonstration of LVAD: LVAD can pump up to 10 litres of blood per minute, which is comparable to a normal heart. The weight of LVAD is about 290 g. With mobile batteries, the total weight is about 1.5 kg. When the patient is at home, LVAD can be connected to the power module, with an extension cord of 4-metre maximizing mobility, and a display of the information such as pump rate, heart rate, etc.



#### **About Hong Kong Sanatorium & Hospital**

Hong Kong Sanatorium & Hospital is one of the leading private hospitals in Hong Kong. With the motto “Quality in Service Excellence in Care”, the Hospital is committed to serving the public as well as promoting medical education and research.

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