

## MEDIA RELEASE

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### National Heart Centre Singapore Introduces New Robotic-Assisted Procedure for Lung Cancer Patients

- First in Singapore and Southeast Asia to perform lung cancer surgery with robotic endoscopic system
- Improved accuracy and patient safety with shorter length of hospital stay
- Potential procedure of choice for minimally invasive lung surgery in near future

The National Heart Centre Singapore (NHCS) successfully completed the first robotic-assisted lobectomy in Southeast Asia in August 2010. For the very first time in the region, the diseased lobe of a lung was removed using a sophisticated robotic system - the *Da Vinci Si Dual*. This new development also made NHCS one of about 25 centres in the world to offer the robotic-assisted lobectomy surgery to its patients.

The robotic arms with seven degree of movement can perform complex manoeuvres. It offers superior articulation of the instruments within the chest and the range of motion of the instruments actually exceeds that of a human hand. The high technology system also removes any trembling movement by the human hands. Together with the highly magnified 3-dimension view offered by the camera, the ergonomic design of the instruments allows surgery to be done with extremely high precision and safety.

Mdm Goh Geck Khin is one of the two patients who had undergone the robotic-assisted lobectomy surgery at NHCS. She had a 3-cm tumour removed from her right lung and was discharged four days after the operation.

“My family was very worried about me going through a surgery, but everything went well. I am happy to have only four small wounds and felt very little pain,” said the cheerful 71-year-old grandmother.

Mdm Goh’s surgeon, Dr Su Jang Wen, Consultant, Department of Cardiothoracic Surgery, NHCS shares, “The average length of stay for the robotic lobectomy is about 3 - 5 days, compared to 5 - 7 days for an open surgery. The precision of the procedure also means

enhanced safety for the patient. Results at the other centres worldwide have shown that the procedure is as good as the open surgery method and we are excited to be able to provide this option to our patients.”

Lobectomy or resection of the lung is traditionally done via a long incision of about 10 -15 cm through the chest with spreading of ribs in order to gain access to the chest cavity. While the open procedure is still the gold standard, the patients tend to suffer more pain, longer hospital stay, higher risk of infection and longer recuperation period before resuming routine activities. In addition, it also gives patients a long scar.

In the recent five years, NHCS has been performing video-assisted thoracoscopic surgery (VATS) for most early-stage lung cancer patients. This is a minimally invasive approach which operates through four small incisions with special long instruments, with no need to spread the ribs.

However, the VATS method has its limitations. It involves operating on the lung from outside the chest cavity while looking at a 2-dimension image on a computer screen. As a result, the perception of depth is lost. The techniques are further limited by the long and stiff instruments with poor manoeuvrability. The operating surgeon also relies very much on the assisting surgeon holding the camera to capture good images from inside the chest cavity.

The robotic-assisted lung lobectomy is currently offered to patients with early-stage lung cancer but its application is expected to expand to more advanced-stage lung cancer surgery in the future.

NHCS started its robotic-assist minimally invasive cardiothoracic surgery (RAMICS) programme in 2006 with funding from the SingHealth Endowment Fund. The programme has grown from strength to strength and now includes procedures such as internal mammary artery harvest, removal of the thymus gland, mitral valve repair, closure of congenital heart defects and most recently the lung lobectomy.

“The robotic-assisted lung lobectomy is a milestone in NHCS RAMICS programme. It is also a new option for lung surgeons who want to give their patients a safer minimally invasive surgery,” said Dr Tan Teing Ee, Senior Consultant, Department of Cardiothoracic Surgery, NHCS.

NHCS currently performs an average of 1600 cardiothoracic surgeries a year, of which about 400 are thoracic and lung surgeries.

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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 over 100,000 outpatient consultations, 6,000 interventional and surgical procedures and 9,000 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.