A Passion for Excellence in Our Genes
National Heart Centre Singapore Annual Report 2008
The National Heart Centre Singapore (NHCS) 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, we handle over 90,000 outpatient consultations, 6,000 interventional and surgical procedures and 9,000 inpatients. Our outcomes for heart attack treatment, balloon angioplasty with stenting and coronary bypass surgery have been shown to be equivalent to international standards.
FY2008 was another very exciting year for National Heart Centre Singapore (NHCS). Amongst several medical firsts, we performed Asia’s first percutaneous transfemoral and transapical aortic valve replacements. These are minimally invasive procedures used to treat severe valvular heart disease especially in the elderly, to improve their quality of life. They would otherwise not have been suitable for open cardiac surgical valve replacement. Surgical valve replacement had been the only available treatment modality up to this time.

We also initiated the National Cardiovascular Homograft Bank to help heart patients obtain cardiac valve homografts in a more expedient manner, and with more choices of the correct sizes. There is also a cost reduction since these grafts are harvested locally. Previously, we had to purchase these grafts from overseas centres. More recently, NHCS jointly performed Asia’s first heart and liver transplant with SGH, making regional medical history.

Moving forward, with the groundbreaking of our new building heralding a new era in cardiac care, we will continue to provide the optimal level of clinical care that Singaporeans can be proud of. This would serve to maintain our lead in the forefront of cardiovascular medicine in the region.
Clinical Governance

Clinical governance is a system for improving the standard of clinical practice. Elements of clinical governance include clinical audit, clinical effectiveness, risk management, research and development, education and openness. At National Heart Centre Singapore (NHCS), we are committed to the highest standards of clinical governance and ensuring the delivery of safe and high quality patient care.

Clinical Governance Statement

ORGANISATION OF CLINICAL GOVERNANCE IN NHCS

The Management Committee of NHCS sets the overall clinical governance strategy of the institution and the Medical Director is responsible for the coordination of clinical governance activities through the various sub-committees, such as Quality Management Committee, Infection Control Committee, Pharmacy and Therapeutics Committee, and Credentialing Committee. Each sub-committee has its terms of reference. The Management Committee is kept updated of major issues identified in a timely and appropriate manner, and conducts reviews and provides guidance when required.

MAJOR ACHIEVEMENTS IN PATIENT SAFETY

Various new programmes to improve quality of care have been implemented this year. Examples include a “Ventilator Bundle” that has led to lower ventilator-associated pneumonia rates and length of intubation in patients at CTICU; improved design of an operating theatre warming blanket that has resulted in an improvement in maintaining the body temperature of patients undergoing cardiothoracic surgery within the desirable range after 30 minutes in the intensive care unit post-operatively; a programme that has been successfully implemented to reduce platelets transfusions in patients on pre-operative aspirin undergoing coronary artery bypass grafting; and improved inpatient medication records documentation resulting in reduction of medication errors. Some of these programmes have received local and international awards.

PATIENT SATISFACTION

In addition to the above programmes and initiatives, we have achieved good outcomes in terms of patient satisfaction, with 93.8% of our patients rating our services as “excellent” or “good” in 2008. We will continue to strive to maximise patient satisfaction, with our target for 2009 set at 95%.

STAFF TRAINING AND ASSESSMENT

Recognising that learning is a continuous process that helps improve our quality of care, we cultivate a culture of learning within our organisation. With the departmental and individual learning plans, all staff members are given the opportunity to take up induction programs, trainings, seminars, conferences and conventions locally or overseas.

NHCS is dedicated to providing excellence in healthcare as the national and regional referral centre for cardiovascular diseases through cost-effective and best care possible at the best value.
Patient Care

Patient-Centred Service

The National Heart Centre Singapore is a national and regional referral centre for cardiovascular diseases. A one-stop facility with the largest group of heart specialists in Singapore, the Centre treats complex cases and strives to provide the highest standard of medical care to the patients.

A Shot at a Normal Life

Seamless Service Under One Roof

Tissue Bank is a Store and More of Life

Landmark Double Transplant Restores Gift of Life
**Patient Care**

**Patient-Centred Service**

**A Shot at a Normal Life**

Elderly patients like Mr Tang who need to replace their aortic heart valves but cannot undergo open chest surgery can now opt to have the valve replaced via a balloon catheter.

The less invasive Percutaneous Aortic Valve Replacement (PAVR) procedure gives a new lease of life to patients who may have had chest surgery previously or other conditions that make open surgery dangerous.

On February 9, 2009, a multi-disciplinary team comprising Associate Professor Koh Tian Hai, Dr Paul Chiam, Dr Chua Yeow Leng, Dr Victor Chao, Dr Lee Chung Yin and Dr See Tho Ving Yuen performed the PAVR procedure on Mr Tang. After his successful treatment, the National Heart Centre Singapore (NHCS) carried out more procedures on elderly patients. As of June 2009, NHCS has performed a total of eight PAVR cases.

Doctors mount a valve on a catheter inserted into the patient's groin or chest and thread it towards the heart. The valve is left in place in the aorta - the artery that carries blood from the heart to the rest of the body.

With the new valve replacement procedure, up to 20 patients a year can hope to enjoy their day-to-day activities.

The NHCS expects to see an increasing number of patients with valve problems with a rapidly ageing population in Singapore.
Patient Care

Patient-Centred Service

Seamless Service Under One Roof

A patient-centric focus at the new National Heart Centre Singapore (NHCS) building aims to deliver leading edge integrated cardiac care services. This includes a three-fold increase in the number of clinics and the addition of day surgery facilities which will raise NHCS’s holistic care profile. With a suite of seamless services at their disposal, patients can look forward to stretching their healthcare dollar.

Set to be ready and operational in 2013, the 10-storey building with two basements measuring 35,000 square metres will house self-registration kiosks which give patients faster access to consultations or laboratory tests. Also in the pipeline is a time-saving, one-stop payment system.

On the teaching front, the new NHCS will continue to strengthen its status as the preferred cardiovascular training centre through training an increasing pool of qualified doctors, nurses and allied healthcare workers in cardiovascular medicine. The centre will also intensify its collaborations with the Duke-NUS Graduate Medical School to strengthen cardiovascular research on the SGH Campus in the next decade.

And to improve processes and care, the new NHCS building will harness greater IT usage by letting doctors place electronic clinical orders, migrate to an electronic-structured clinical documentation, and leverage on telemedicine with digital imaging capabilities.
Patient Care

Patient-Centred Service

Tissue Bank is a Store and More of Life

Patients born with congenital heart disease or adult patients who develop heart or vascular ailments can hope to get replacement heart valves in a faster and less costly way via the National Cardiovascular Homograft Bank (NCHB).

The heart tissue bank is a lifeline for doctors and hospitals in Singapore searching for suitable tissues for their patients. Before the NCHB was set up by the National Heart Centre Singapore (NHCS) with support from the Ministry of Health in February 2008, medical staff had to trawl for suitable homografts from more than 70 homograft and heart valves banks worldwide in a time-consuming and expensive process.

When human homografts are unavailable, heart patients have to opt for implantation with synthetic valves, which are often less durable.

Dr Lim Yeong Phang, Medical Director of the NCHB and Consultant Cardiothoracic Surgeon at the NHCS said that the centre hopes to offer patients optimal and timely treatment with the establishment of the NCHB. Meanwhile, Dr Lim Chong Hee, Programme Director of the NCHB and Director, Heart and Lung Transplant Programme at NHCS, hopes to raise awareness of the need for heart and tissue donations to grow the number of donors in Singapore. In addition, the lower cost of NCHB grafts also translates to lower healthcare costs for patients.
Diagnosed with Familial Amyloid Polyneuropathy, a condition that causes the liver to produce abnormal proteins, hence, impairing the nerves and major organs, Pastor Lau Chin Kwee’s only option was to undergo a double transplant. Fortunately, a suitable donor came along and the surgery was carried out in April 2009.

He made medical history when he became Asia’s first heart-liver transplant recipient. The landmark 12-hour operation by a team of 50 medical staff from the National Heart Centre Singapore (NHCS)’s Heart and Lung Transplant Unit and Singapore General Hospital’s Liver Transplant Service, gave him another 10 years of life.

The procedure started with a 3.5-hour heart transplant led by Dr C. Sivathasan, Dr Lim Chong Hee and Dr Lim Yeong Phang of the NHCS before moving on to a liver transplant, which took another five hours.

Doctors from both teams had to overcome several obstacles ahead of surgery as Pastor Lau’s illness had made him very weak. Dr Sivathasan, lead surgeon of the NHCS heart transplantation team cited the challenges faced by the medical team: “We had to complete the heart transplant within 3 - 4 hours. The heart also had to recover from the transplantation and withstand the stress of the liver transplantation.”

Pastor Lau expressed gratitude for his newfound health: “I will never forget the one who gave me my life back and I am very thankful to the loved ones of the donor.”
Lifelong Education

The National Heart Centre Singapore invests in training and education to cultivate staff to their full potential, building a pool of competent healthcare professionals.
Education

Lifelong Education

Helping to Save Lives

Ensuring that rigorous diagnostic checks are in place makes all the difference in a life or death situation.

And this is what a cardiac technologist, who plays a pivotal role in providing technical services in the investigation, diagnosis and management of heart diseases, does on the job. National Heart Centre Singapore (NHCS), in a tie-up with Singapore Polytechnic, helps to train students for the only formal diploma in Cardiac Technology in Asia.

Cardiac technology students at the Polytechnic train alongside leading technologists and physicians in the field of cardiovascular and cardiac technology. To help them gain valuable on-site experience, cardiac technology students are posted to NHCS for their clinical attachment.

At the end of their course, medical technologists can look forward to a promising career in the healthcare, medical diagnostics or pharmaceutical sectors.
Burgeoning health problems in developing and developed nations are exacerbated by the increasingly sedentary lifestyles many people lead today. Regular physical activity and exercise plays a primary and secondary prevention role in managing chronic diseases such as hypertension, diabetes, coronary heart disease, and metabolic syndrome. There is an increasing need for trained professionals to assess and prescribe exercise to individuals who are at higher risk of, or have, these diseases. The National Heart Centre Singapore (NHCS) is committed to training allied health professionals such as physiotherapists, who make up the multi-disciplinary team delivering patient care. As part of its ongoing efforts to train healthcare workers, NHCS has offered the American College of Sports Medicine (ACSM) Exercise Specialist Workshop and Certification, since 2003.

With this highly relevant and recognized course held in Singapore, professionals in the Asia-Pacific region have been able to participate in such training and certification without incurring hefty travel expenses to the United States.

The ACSM represents the gold standard of excellence in exercise science, sports medicine, and health & fitness. As the world’s leading body in this field, ACSM has been responsible for professional position stands and statements that have been co-endorsed by the World Health Organisation, US Surgeon General, American College of Cardiology, American Diabetic Association, and used by health bodies globally.

In 2009, the course was renamed the ACSM Clinical Exercise Specialist Workshop and Certification. The change is aimed at elevating the course standing by raising the customers' perception of the certified professionals to commensurate with the work they are performing. Organised by the NHCS's Physiotherapy Department, the course was facilitated by Associate Professor Peter H. Brubaker from the Department of Health and Exercise Science and Executive Director, Healthy Exercise & Lifestyle Programs (formerly Cardiac Rehabilitation) at Wake Forest University in Winston-Salem and Dr Tan Swee Yaw, Consultant Cardiologist at NHCS. The session brought together partners in healthcare who share the passion and commitment to improving the wellness of individuals who are at high risk of having chronic diseases.

- Clinical exercise physiologists
- Other allied health professionals

On completing their training, the ACSM Certified Clinical Exercise Specialists will be armed with knowledge and practical experience in exercise testing and programming for patients with cardiovascular, pulmonary and metabolic diseases. The Exercise Specialist course and certification caters to healthcare professionals involved in health screening, wellness and cardiopulmonary rehabilitation, including:

- Physiotherapists
- Nursing professionals
- Physicians
Research

Innovative Research

Research sets the platform for new medical discoveries and breakthroughs. The National Heart Centre Singapore is committed to create a vibrant academic medical environment that promotes the translation of research into clinical services that can improve the diagnosis, treatment and cure for the patients.

Helping Patients 'Heal' Own Hearts

A New Lease of Life

$10m Grant Takes Docs to Heart of Cell Study
Innovative Research

Helping Patients 'Heal' Own Hearts

Heart-like cells generated from an adult's own stem cells using the National Heart Centre Singapore (NHCS)'s patented method have been found to increase the pumping force of the heart in animal studies. This may pave the way for better treatment for heart failure patients as the condition causes the heart to pump less forcefully and can lead to breathlessness, fatigue and weakness.

The study, the first in the world, shows that human adult stem cells that are converted into heart-like cells before transplant, are better than transplanting whole stem cells directly, which is the most widely used form of cell therapy for heart failure today. Key NHCS researchers involved include Associate Professor Philip Wong, Director, Research and Development Unit and Dr Winston Shim, Staff Research Scientist.

A potential benefit of this study is that through the processes developed by NHCS, a patient with heart failure can potentially have his own stem cells harvested, processed in a lab over a few weeks to optimise them and then have the converted heart-like cells transplanted back into the heart to help 'repair' or 'heal' the heart. This may alleviate his symptoms and delay the need for a whole organ transplant.

Another plus point is there is no need for immunosuppressants to prevent rejection since the process uses the patient's own cells. The cell therapy research programme is in its final translational phase and clinicians have been optimising a non-surgical method of delivering such cells.
Research

Innovative Research

$10m Grant Takes Docs to Heart of Cell Study

Fixing a broken heart might no longer be the stuff that sci-fi dreams are made of. A $10m funding award from the National Research Foundation (NRF) serves as a major shot in the research arm of National Heart Centre Singapore (NHCS) that might see doctors repairing a patient’s damaged heart through replacement heart cells grown from samples of the patient’s own skin in the near future.

NHCS researchers are now looking into reprogramming human skin cells to obtain induced pluripotent stem (iPS) cells, which have a strong potential of reconstituting all tissue types in the body. These iPS cells are then made into heart muscles to repair the damaged heart. The research will be tested on animal models for safety and feasibility prior to clinical applications.

Since this treatment involves using the patient’s own iPS cells, it eliminates the complications of rejection by the body’s immunity system and ethical concerns associated with embryonic stem cells.

With Singapore’s rapidly ageing population and heart disease being the second top killer locally, this technological advancement can potentially benefit the vast majority with cardiovascular diseases, diabetes, and other degenerative diseases.

Dr Winston Shim, Principal Investigator and Staff Scientist of the Stem Cell Laboratory Unit at NHCS, said: “Our team aims to advance the frontier of self-tailored medicine to better serve the specific needs of individual heart patients. In five years, we hope that the clinical application of this treatment will help our patients regain meaningful quality of life, otherwise not attainable with the current treatment modalities.”
Research

Innovative Research

A New Lease of Life

A procedure which uses stents nearly a third of the size of conventional stents brings new hope to patients with blood vessels that are too small for normal angioplasty.

Telecast ‘live’ to about 1,000 delegates at the Singapore LIVE 2009 cardiology conference, an implantation procedure using the CardioMind® Sparrow™ Drug-Eluting Coronary Stent System - a micro stent treatment which offers more flexibility than current stents - is hopeful of delivering effective results for treating small blood vessels often associated with diabetes, which comprise 40 per cent of patients in need of stenting procedures.

The National Heart Centre Singapore is one of 18 global heart hospitals and currently the only Asian site, to embark on the CARE II Study clinical trial. Four patients have been treated since the trial started here in September 2008 and all have experienced satisfactory hospital outcomes, says Associate Professor Koh Tian Hai, NHCS Medical Director and principal investigator of the CARE II study in Singapore.

Another revolutionary technique was unveiled at the conference for patients battling Chronic Total Occlusion (CTO), whereby an artery has been completely blocked for more than three months. The retrograde approach raises the success rate of treatments to more than 90 per cent, a marked improvement over the 50 per cent success rate seen in conventional methods.
Our People

The National Heart Centre Singapore recognises that staff need to work in a supportive environment to deliver quality healthcare. We believe in supporting, empowering and nurturing our staff so they can give their best to our patients.

Lessons From a World Leader

Heroes Who Make a Difference

Pioneers of a Necessary Revolution

A Nurse’s Specialty Knowledge Adds Value to Patient Care

A Doc’s HMDP Experience at UC Davis Medical Center
Lessons From a World Leader

Setting his heart on a highly competitive fellowship programme at the Heart Centre at Massachusetts General Hospital (MGH), a Harvard University-affiliated Hospital, Dr Stanley Chia wasted no time in getting down to work on arrival with his family amid the withering New England chill.

His fellowship training, co-funded by the SingHealth Health Manpower Development Plan (HMDP) and the National Medical Research Council, Singapore, involved both clinical research and clinical experience in interventional cardiology. The HMDP scheme gives healthcare professionals the opportunity to be attached to renowned international healthcare centres for further training and development in their chosen area of specialty.

For the first year of training, Dr Chia was part of the research team led by Dr Ik-Kyung Jang, a renowned interventional cardiologist at MGH’s Heart Centre. The team focused on innovative imaging systems designed to characterise atherosclerotic plaques and myocardial function. They also compared different methods of monitoring anti-thrombin therapy during PCI and performed post-hoc analysis of a multi-centre trial of patients undergoing primary PCI following acute ST-segment elevation myocardial infarction.

This research will help doctors better understand the causes of heart attacks to enable the design of more effective strategies for the treatment and prevention of these conditions. Furthermore, the published findings of the discrepancies in monitoring clotting times may also lead to safer interventional procedures for patients.

For the second year of his fellowship, Dr Chia worked alongside a well-respected pioneer in Interventional Cardiology, Dr Igor Palacios and underwent rigorous training in both coronary and non-coronary cardiac interventions. The breadth and depth of the hands-on training allowed Dr Chia to hone his clinical skills and enrich his experience.

Returning with robust confidence and skills acquired during this programme, Dr Chia now routinely performs percutaneous coronary intervention procedures to treat patients presenting with heart attacks and coronary artery disease. He has also been awarded a New Investigator Grant by the National Medical Research Council to study the use of a high-resolution intravascular imaging tool to detect and treat atherosclerotic disease in coronary arteries.
Pioneers of a Necessary Revolution

No strangers to risks and rewards of surgery, Dr Paul Chiam and Dr Victor Chao saw their labour bear fruit in a revolutionary treatment to replace the aortic heart valve using a balloon catheter with a tissue valve pre-mounted. The less invasive procedure, for patients who are unable to undergo open heart surgery, was a first in Singapore and Asia when it was carried out by a multi-disciplinary team which included the two doctors in February 2009.

As recipients of the Health Manpower Development Plan (HMDP) awards, Dr Chiam and Dr Chao had gained invaluable experience through training stints in the United States.

The HMDP scheme aims to develop Singapore’s health manpower capabilities and improve the quality and range of available healthcare services. As part of this programme – funded by the Ministry of Health and SingHealth Foundation – healthcare professionals are given the opportunity to be attached to renowned international healthcare centres for further training and development in their chosen area of specialty.

Dr Paul Chiam spent one-and-a-half years at the Lenox Hill Heart and Vascular Institute of New York where he was trained in carotid and peripheral vascular interventions, and also became closely involved with structural heart and valvular interventions.

Dr Victor Chao did his two-year fellowship training at the Cleveland Clinic where he was trained in endovascular aortic stent grafting and was also involved with the transcatheter aortic valve implantation programme.
A Doc's HMDP Experience at UC Davis Medical Center

While gaining skills in sub-specialised techniques for peripheral vascular interventions at the Vascular Center of the University of California (UC) Davis Medical Center under the Health Manpower Development Plan (HMDP), Dr Jack Tan underwent a well-rounded training.

Under the mentorship of Dr John R Laird, Director of the UC Davis Vascular Center, he gained a vast array of skills in carotid, subclavian, renal, mesenteric, aortic, iliac and low extremity endovascular medicine and interventions. He further honed his skills in complex coronary interventions during his stint at the cardiovascular laboratories.

Through the HMDP, healthcare professionals are given the opportunity to be attached to renowned international healthcare centres for training in their chosen area of specialty.

A fulfilling aspect of his work at UC Davis included working to save ischemic limbs from amputation or preventing definite death from acute mesenteric infarction with timely intervention.

Dr Tan felt that his HMDP experience in California gave him a first-hand experience of how healthcare services in the United States varied from world-class to none at all depending on Medicare or Medicaid eligibility or third party insurance coverage. His experience made him appreciate the affordable healthcare system even more.

On returning to Singapore, Dr Tan brought with him many cherished friendships cultivated in the United States and he is thankful for the opportunity to learn from doctors in another culture.

Since his return, Dr Tan has continued his practice in coronary as well as peripheral interventions, catering to patients with ischemic heart diseases and peripheral vascular diseases. He runs a specialised clinic for patients suffering from complex vascular diseases monthly at the National Heart Centre Singapore.
Heroes Who Make a Difference

As the quiet heroes who toil alongside doctors to help patients recover, nurses take the less travelled path in their professions. The Health Manpower Development Plan (HMDP) overseas attachment awards pay tribute to nurses at the National Heart Centre Singapore (NHCS) by giving them valuable opportunities to enhance their skills.

Jasmine Lee Mei Bao, a Senior Staff Nurse (Clinical) from Ward 44 participated in a month-long Heart Failure, Heart/Lung Transplant Programme at The Alfred, Melbourne, Australia in 2008. The Alfred is a major Australian tertiary referral teaching hospital with a key role in the provision of specialist tertiary and quaternary services on a statewide and national basis. Focusing on nursing management of heart failure patients, Jasmine’s training has boosted her skills considerably. She conducted several updates to equip nurses with the knowledge and skills to manage the heart failure patients more effectively while they are hospitalised and preparing them for community care. She also helped to facilitate the strengthening of heart patients’ family education that has been expanded to include self-management tips.

With heart failure on the rise, NHCS adopts a multidisciplinary approach to effectively manage the disease. Besides Jasmine, heart and lung transplant coordinator Ms Sharon Neo was also on the same attachment for a six-week period in early 2009, and cardiologist Dr David Sim recently completed his fellowship there in September 2009.

Another nurse who underwent overseas training in Australia in early 2009 at the Heart Failure, Heart/Lung Transplant Programme at Royal Perth Hospital, was Xiao Li, a Senior Staff Nurse (Clinical) at the CTSICU.

Xiao Li’s focus is on the nursing management of post heart/lung transplant patients. Fresh from her training, she plans to collaborate with the heart failure and transplant teams in conducting updates and teaching for staff. She also intends to facilitate the heart lung transplant team and ICU nurses in reviewing heart lung transplant protocol and pressure ulcer prevention strategies.
A Nurse's Specialty Knowledge Adds Value to Patient Care

Betty Yap Tai Tee, Senior Staff Nurse (Clinical), Nursing Development Unit had her overseas training stint from February 2 to March 13, 2009. She trained in Nursing Management of Patients with Adult Congenital Heart Disease (ACHD) at the Royal Brompton Hospital in the United Kingdom.

Providing multidisciplinary support to ACHD patients, Betty lends support to this group of patients who would often require specialty knowledge and skill as they face more complex physiological and psychosocial problems.

Betty has made improvements to the patient education booklets and checklists upon her return and is currently working with the team to support a new service for the high-risk pregnancy group.
Awards & Accolades

Service

Excellent Service Awards 2008

117 staff - 16 star, 41 gold, 60 silver

NHCS’s EXSA Superstar candidate
Norashikin Binte Abdul Wahab, Senior Enrolled Nurse (Clinical)

GCEO Excellence Awards 2008

Professional Category - Medical
A/Prof Hwang Nian Chih, Senior Consultant, Department of Cardiothoracic Anaesthesia

Open Category - Bio-medical Research
A/Prof Philip Wong, Senior Consultant, Department of Cardiology

International Exposition on Team Excellence 2008 (IETEX) International Team Competition Bronze Award

Lim Paw Ling Pauline, Senior Staff Nurse (Clinical), CTSICU
Goh Su Yin, Senior Staff Nurse (Clinical), CTSICU
Ng Sok Guek, Senior Staff Nurse (Clinical), CTSICU
Wee Hwei Li Gillian, Senior Staff Nurse (Clinical), CTSICU

National Day Public Administration Medal (Silver) 2008

A/Prof Lim Swee Hia, Director of Nursing

National Day Efficiency Medal Award 2008

Ng Choo Khong Shirley, Chief Medical Technologist, Vascular Lab

Healthcare Humanity Award 2008

Yip Yeok Mui, Nurse Clinician

Healthcare Humanity Award 2009

Dr Lim Chong Hee, Senior Consultant, Department of Cardiothoracic Surgery and Director, Heart and Lung Transplant Programme

National IQC Convention

5 Awards – 2 Gold, 3 Silver
### Awards & Accolades - Education

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<tr>
<th>Service</th>
<th>Recipient(s) Name &amp; Designation</th>
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<tr>
<td>SingHealth-Lee Foundation Nursing Excellence Award</td>
<td>Wee Hwei Li Gillian, Senior Staff Nurse (Clinical), CTSICU</td>
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### Awards & Accolades - Research

| National Research Foundation (NRF) Grant                              | Dr Winston Shim, Staff Research Scientist, Research and Development Unit |

### Awards & Accolades - Human Resource / Talent Development

| Work-Life Achiever Award 2008                                        | NHCS                                                 |
| Singapore Health Award 2008 (Gold)                                   | NHCS                                                 |
| Ministry of Health Nurses' Merit Award 2008                          | Wee Gek Choo Pearl, Nurse Clinician                  |
| 3rd Tan Chin Tuan Nursing Award for Enrolled Nurses - Certificate of Merit | Low Geck Hwa, Senior Staff Nurse (Clinical)               |
|                                                                 | Lim Pui Ching, Enrolled Nurse                                                                 |


Patient Stories

Patient Success Stories

**New Procedures Bring New Hope**

Mr Tang Yat Cheong, 77 years old

Mr Tang suffered from severe aortic valve stenosis, which caused constant breathlessness and fainting spells. Having had a coronary bypass 15 years before, Mr Tang was deemed unsuitable for surgical aortic valve replacement. When NHCS introduced the minimally-invasive percutaneous aortic valve replacement in February 2009, Mr Tang became the first patient to benefit from the procedure. He is now able to breathe easily, resume his daily activities and take care of his grandchildren.

**New Heart. New Liver. New Life**

Mr Lau Chin Kwee, 58 years old

Mr Lau was diagnosed with Familial Amyloid Polyneuropathy, a rare genetic condition which causes the liver to produce abnormal proteins, affecting the nerves and organs in the body. His heart had also been affected by the disease, so when a suitable donor match under the Human Organ Transplant Act (HOTA) became available, he underwent a complex 12-hour combined heart and liver transplant in April 2009 – a first in Asia that brought together specialists from SGH and NHCS. Mr Lau is now on the road to recovery and enjoying his newfound life with his family.

**Lower Risk, Faster Recovery**

Mr Ng Hai Chiang, 53 years old

Mr Ng has had a history of heart murmurs since his 20s. In 2004, he was diagnosed with infective endocarditis and mitral valve regurgitation, and was advised to undergo surgery. Reluctant to do so, he continued to see his cardiologist twice yearly to monitor his condition. In early 2009, he experienced chest pains due to an enlargement of his left ventricle. At the suggestion of his doctor, he opted for the relatively new, minimally-invasive robotic-assisted mitral valve repair procedure at NHCS - which results in less blood loss, lower risk of infection and faster recovery time. One month after his surgery, Mr Ng was back at work.
### Key Figures

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<th>FY 08</th>
<th>FY 07</th>
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<tr>
<td><strong>Size</strong></td>
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<td>Beds in Service</td>
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<td>184</td>
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<td><strong>Workload Per Annum</strong></td>
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<td>Bed Occupancy Rate</td>
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<td>Inpatient Discharges</td>
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<td>Total Patient Days</td>
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<td>Average Length of Stay (days)</td>
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<td>Total Procedures*</td>
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<td>Day Procedures*</td>
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<td>Inpatient Procedures*</td>
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<td>Specialist Outpatient Clinic Attendances</td>
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<td><strong>Staffing</strong> (as at end Mar)</td>
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<td>Nurses</td>
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<td>Allied Health Professionals</td>
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<td>82</td>
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<tr>
<td>Others</td>
<td>249</td>
<td>228</td>
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*Interventional and Surgical

Note: Staffing figures refer to Filled Posts, in terms of Full-Time Equivalent, and may not add up to total due to rounding.