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## DEFINING TOMORROW'S MEDICINE



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## to·mor·row's · med·i·cine

[ tuh·mor·ohs med·suhn ]

**1.** At SingHealth, our pursuit of Academic Medicine – integrating clinical care, research and education, has only one aim in mind – a better tomorrow for our patients. **2.** To enhance our capability to deliver excellent care, our investment in education is vital. Inspiring and nurturing tomorrow's healthcare professionals is the spark to keep the flame of continuous improvement alight. There can be no other way, for in their hands is the future. **3.** To keep expanding what we know, we devote ourselves to continuing innovation and discovery. It is only by probing the depths of inquiry that we can stay at the leading edge of practice. It is only by stretching the furthest reaches of the boundaries of knowledge that we can open up new vistas of possibility. **4.** Behind every step we take is the perseverance to always deliver the best outcomes to our patients. It is an unwavering belief that tomorrow can be better. This is our shared passion. This is our journey to Defining Tomorrow's Medicine.

## chair·man's · mes·sage

[ Mr Peter Seah Chairman ]

### *Academic Imperatives*

We will stay focused on pursuing Academic Medicine. The key is the passion, determination and drive of our staff.



Singapore is faced with an increasing demand for healthcare services that are accessible and affordable to Singaporeans, against a backdrop of rising patients' expectations, ageing population, increased prevalence of chronic diseases and emergence of new disease patterns. These form the backbone of the Ministry of Health's (MOH) Healthcare 2020 plan. At SingHealth, we are committed to aligning our organisational goals to the Healthcare 2020 plan to ensure we deliver quality, leading edge healthcare to our patients.

#### **ACADEMIC MEDICINE – HEALTHCARE TRANSFORMATION**

Our Academic Medicine aspirations are shaped by a culture of continuous improvement and care innovation fueled by research and education. This is why it is a journey we must undertake to support our strategic priorities so that we can continue to improve the lives of our patients.

#### **VISIONARY LEADERSHIP, TALENTED WORKFORCE**

As part of planned talent succession, FY 2011 saw the passing of the leadership baton from Professor Tan Ser Kiat to Professor Ivy Ng as Group Chief Executive Officer. Professor Tan has been a steady, steering visionary force for SingHealth since 2000 and Professor Ng will build on his leadership legacy to drive SingHealth onwards on its Academic Medicine transformation journey.

The leadership reins were also handed over for SingHealth Nursing as Dr Tracy Carol Ayre took over from Associate Professor Lim Swee Hia this year as Group Director of Nursing and Director of Nursing, Singapore General Hospital (SGH). Our nurses are recognised for

innovative patient care, training, education and research, and we will continue to strengthen these efforts.

Giving the Academic culture a boost was the conferment of the Benjamin Sheares Professorship in Academic Medicine to Professor Soo Khee Chee, Deputy Group Chief Executive Officer (Research and Education), Director, National Cancer Centre Singapore (NCCS) and Vice Dean of Clinical and Faculty Affairs at Duke-NUS Graduate Medical School. Professor Soo also received the President's Science and Technology Award 2011 for his outstanding contributions to research.

At the National Medical Excellence Awards, Dr C Sivathanan from National Heart Centre Singapore (NHCS) received the National Outstanding Clinician Award 2011 and Associate Professor Tan Eng King from National Neuroscience Institute was recognised as the National Outstanding Clinician Scientist 2011.

For advancing the nursing and allied health professions respectively, Curtin University, Australia conferred a Honorary Doctor of Science to Associate Professor Lim Swee Hia, Director, Special Projects, SGH and Senior Director, SingHealth Alice Lee Institute of Advanced Nursing, and Adjunct Associate Professor to Dr Celia Tan, SingHealth's Group Director for Group Allied Health, and Director, SGH-Post Graduate Allied Health Institute. Both are the first in their respective fields to receive the appointments in Singapore.

In 2011, Senior Nurse Manager Chong Lai Ling from SGH was awarded the President's Award for Nurses, joining 16 other SingHealth nurses who were recipients in previous years of the prestigious award which was first introduced in 2000.

We continue to exceed ourselves in our quest to improve patient care through groundbreaking discoveries. Examples include the group of NHCS researchers who successfully created beating heart cells from skin cells, joining only a handful of basic research laboratories worldwide that have the expertise to do this.

A team of researchers from Duke-NUS and clinicians from SGH and NCCS identified novel genes that are mutated in stomach cancer and several new genes frequently mutated in bile duct cancers. These insights bring us closer to finding new treatment drugs for cancer patients.

More recently, a landmark clinical trial to test the world's first drug to treat patients with dengue fever has begun, involving doctors and scientists from SGH and Duke-NUS. The trial has the potential to benefit up to 100 million people who suffer from the disease every year.

### **SUPPORTING FUTURE HEALTHCARE NEEDS**

We have made progress in building capacity. A few infrastructure projects will be ready in the next two years. The Academia, comprising the Diagnostics and Discovery towers, opening in 2013 will house SGH's Department of Pathology and SingHealth's research and education and training facilities. This will be followed by a new building for NHCS in end 2013. Planning is underway for Sengkang General Hospital and a community hospital, which are both slated for completion in 2018. The planning team is working to ensure that the overall design and infrastructure of the hospitals support the future needs of patients and the community which they will serve.

### **TECHNOLOGY ENABLERS**

Technology continues to be a key enabler that we leverage to deliver consistent and quality care. Recent initiatives include the integration of patients' medical records with the national system and the automation of processes like the SGH Outpatient Pharmacy Automation System for packing and labeling of drugs. SingHealth has also invested in innovative, patient-friendly technology to empower Singaporeans to better manage their health conditions and access useful health information with the use of customised web-based applications such as the SingHealth Health Buddy and the KKH Woman & Child Healthpedia.

Moving ahead, we will stay focused in our pursuit of Academic Medicine by pushing the boundaries of medicine with research, nurturing the next generation of healthcare professionals through education and continuously looking for ways to improve patient care. All these cannot be achieved without the passion, determination and drive of our staff who share our vision of Defining Tomorrow's Medicine.



**MR PETER SEAH**  
**CHAIRMAN**



## group • c.e.o's • mes•sage

[ Prof Ivy Ng Group CEO ]

### *Care Innovation*

We have a fiery spirit of inquiry, bringing questions from bedside to bench and back, for the right solutions. Our common purpose – putting patients at the heart of all we do.

Academic Medicine is a transformational journey that SingHealth has been undergoing over the last five years and will change the way we deliver care to patients. We want to build a culture of always seeking better outcomes for patients – by diagnosing them earlier and more accurately and by providing more effective treatments. It requires that we have a fiery spirit of inquiry and bringing questions from bedside to the bench and back to the bedside for the right solutions. It is about harnessing the synergies of education and research to innovate care and meet our patients' needs for the future.

Our relationship with Duke-NUS is envisioned as a partnership that guides and promotes the future of Medicine, tapping on and combining the collective strengths of Duke-NUS' biomedical research and medical education capabilities and SingHealth's depth of clinical expertise. This partnership provides a strong foundation for our transformation journey.

### **BUILDING BLOCKS OF ACADEMIC MEDICINE**

The last year saw us making significant progress on our Academic Medicine journey, starting with cross-Board representation on the Duke-NUS and SingHealth Boards, and strong commitment from senior leadership. Steering all Academic Medicine initiatives and collaborations between SingHealth and Duke-NUS is the Academic Medicine Executive Committee with leaders from SingHealth and Duke-NUS represented. The Executive Committee provides the leadership and manages the development of Academic Medicine and the establishment of Academic Clinical Programs (ACPs).

We harnessed our strengths in clinical care, education and research, bringing together specialists in the same discipline across the Group with the roll out of the ACPs. The six ACPs rolled out since October 2011 are clinical programs in Medicine, Obstetrics and Gynaecology, Paediatrics, Surgery, Ophthalmology and Neuroscience.

Working in tandem with the ACPs, sparking conversations, ideas and sharing of resources are the Joint Institutes – the Academic Medicine Research Institute and the Academic Medicine Education Institute which will help us further enhance the Academic culture and intensify the academic impact of our achievements.

### **CHARTING THE WAY**

Providing an international perspective, benchmarking our progress and where we are headed among top Academic Healthcare Clusters in the world, is the Academic Medicine Advisory Council. This invaluable panel of prominent international leaders with years of experience in Academic Medicine met in April 2012 and provided us with fresh strategic insights on building our ACPs, advancing education and research as well as attracting and retaining top talent.

### **AN ALL-INCLUSIVE SINGHEALTH FAMILY**

We cannot go far on our Academic Medicine journey without the dedication and determination of our staff, unified by a common purpose of putting patients at the heart of all we do. Everyone has a vital role to play that touches the lives of patients.

The cross-pollination of ideas and expertise arising from the wealth of organisational resources and knowledge we have in our institutions and the Corporate Office will improve care delivery and operations. Five quality priorities were identified to guide our work cluster-wide. They are namely – Safety, Professionalism, Respect, Experience and Efficiency – or SPREE for short. The quality priorities will strengthen our quality culture and like signposts, guide our behaviour and practices to provide care that our patients deserve and an environment where our staff feels empowered and fulfilled.

Our multi-generation, multi-nationality and multi-skilled staff have fostered a strong spirit of teamwork and respect, essential in the healthcare environment today where care for a patient is often not just under one medical discipline. We are committed to helping our staff unleash their potential. This includes exposure to varied areas and disciplines, opportunities for professional and personal growth, as well as, developing and enhancing leadership abilities. The setting up of the Talent Management and Succession Planning Office is a step in this direction with a holistic framework put in place to identify, nurture and groom staff to take on leadership positions.

To build our healthcare manpower pipeline, the SingHealth Residency program is on its way to being the choice specialist training program as we welcome our third batch of residents with 231 new doctors. In addition, 183 pre-service scholarships were offered in medicine, nursing and allied health in FY 2011.

The path to distinguishing ourselves as an Academic Healthcare Cluster is a difficult and challenging one. But it is one which builds resilience and tenacity in our people as we push the frontiers of Medicine so that our patients' lives can be better. We look forward to making progress in the journey ahead as, together, we focus on Defining Tomorrow's Medicine.



**PROF IVY NG**  
**GROUP CEO**





## ac•a•dem•ic • med•i•cine

[ ak-uh-dem-ik med-suhn ]

**1. Improving patients' lives. 2. Everyone plays an important role. 3. Giving our best efforts through clinical care, education and research.**

“It has been an enriching learning experience as a SingHealth resident. The support from the institutions, the enthusiastic and passionate faculty and mentors, the culture of learning and improving, has made for an environment ideal to the advancement of our medical knowledge, and the quality of care we provide to the patients.”

Dr Thay Yu Jia, SingHealth Resident, Anaesthesiology Program.

Previous spread: Assoc Prof Lim Boon Leng (left), Designated Institutional Official, SingHealth Residency, and Senior Consultant, Department of Anaesthesiology, SGH, with Dr Thay (right).

## OUR ACADEMIC MEDICINE JOURNEY

Tomorrow seemed just a little bit closer this past year, as we strengthened our commitment to bring the best of Academic Medicine to our patients.

SingHealth's strategic partnership in Academic Medicine with Duke-NUS Graduate Medical School (Duke-NUS) builds on the collective strengths of the Group with Duke-NUS' research and medical education capabilities. Together, we aim to build a vibrant academic culture for new discoveries, sharing of knowledge and care innovation – and bring it to where it matters most: our patients.

In FY 2011, the Academic Medicine Executive Committee (AM EXCO), co-chaired by Prof Ivy Ng, Group CEO, SingHealth, and Prof Ranga Krishnan, Dean, Duke-NUS, announced the implementation of the Academic Clinical Program (ACP) and the appointment of key clinician leaders who will drive the academic agenda. Each ACP brings together specialists in a particular discipline from different institutions to maximise the power of shared knowledge and resources.

## ACADEMIC CLINICAL PROGRAM LAUNCHED

The formation of ACPs taps on the combined strengths of the partnership between the SingHealth Group and Duke-NUS. Research, scholarly work and education contribute to the enhancement of patient care. ACPs give recognition to clinicians who have been contributing actively to teaching and research as multi-disciplinary teams that strive to improve patient care and outcomes.

Six ACPs were rolled out successfully as of March 2012. The first three ACPs – Medicine, Obstetrics & Gynaecology, and Paediatrics – were launched in mid-2011. In March 2012, the Surgery, Ophthalmology and Neuroscience ACPs were launched. The remaining seven ACPs: Pathology, Oncology, Cardiovascular Surgery, Family Medicine, Radiology, Anaesthesiology and Oral Health will be launched progressively.



**Prof Fong Kok Yong** (left)

Group Director, Medical, SingHealth  
 Chairman, Medical Board, SGH  
 Co-opted member, Academic Medicine Executive Committee

**Prof John Rush** (right)

Vice Dean, Clinical Sciences, Duke-NUS  
 Executive Director, Academic Medicine Research Institute

Prof John Rush and Prof Fong Kok Yong are advancing the way in Academic Medicine, with groundbreaking collaborations for tomorrow's medicine through the Academic Clinical Programs (ACPs). Working through the joint institutes – Academic Medicine Research Institute (AMRI) and the Academic Medicine Education Institute (AM·EI) of SingHealth and Duke-NUS – the ACPs bring together all specialists in a clinical discipline across institutions for greater synergies, cross-fertilisation of ideas and sharing of resources in clinical care, education and research.

The close Academic Medicine partnership between Duke-NUS and SingHealth lays the ground for a major paradigm shift. Prof Rush believes that Academic Medicine can enhance care by adding innovation, discovery, and education to the care of patients. "Academic Medicine means 'clinical care plus'."

The ACPs bring exciting possibilities and the focus is always on patients. As Prof Fong says, "Tomorrow's medicine is likely to be more personalised and customised for the individual patient. The ACPs, a tool for culture change, can foster and facilitate the spirit of inquiry, enabling the exploration of new avenues to meet the challenges of tomorrow."

To catalyse cross-fertilisation of ideas and sharing of resources, the Academic Medicine Research Institute (AMRI) and Academic Medicine Education Institute (AM·EI) are established to work in tandem with, and to support, all ACPs. The AMRI at the KK Women's and Children's Hospital (KKH) and Singapore General Hospital (SGH) Campuses work closely with the ACPs by facilitating the whole range of Translational-Clinical-Health Services research and enhancing research careers.

The AM·EI conducted an Education Survey to identify the needs of different professional groups in education, including in areas such as Nursing and Allied Health. Aptly, the AM·EI launch on Teachers' Day, emphasised its purpose to develop a community of excellent educators.

## SHARING THE VISION

To facilitate sharing of knowledge and the discussion of issues to achieve the Academic Medicine vision, hundreds of specialists have attended regular physician engagement sessions. These fortnightly sessions are co-hosted by Prof Ivy Ng, Deputy Group CEOs Prof Ang Chong Lye and Prof Soo Khee Chee, together with Prof Ranga Krishnan and senior management. Additionally, the AM EXCO holds monthly dialogue sessions with our educators and researchers. The ACP Leaders' Forum is another regular platform for academic leaders to discuss issues and to learn from one another.

## ACADEMIC MEDICINE ADVISORY COUNCIL

The Academic Medicine Advisory Council (AMAC) is a panel of experts who provides the SingHealth Board and the Duke-NUS Governing Board independent advice and guidance for the development of our Academic Medicine vision and mission through the sharing of knowledge and experience; and recommendations on our programs and initiatives; and advising on emerging global trends. The council

– which held its first meeting in April 2012 – comprises renowned international leaders in Academic Medicine:

- Prof R Sanders Williams (Chairman), Founding Dean, Duke-NUS and President of J David Gladstone Institutes
- Prof Sir Keith Peters, Emeritus Regius Professor of Physic, University of Cambridge
- Prof Sir Sabaratnam Arulkumaran, Head of Obstetrics and Gynaecology, St George's University of London and President Elect, International Federation of Gynaecology and Obstetrics
- Prof Eugene Braunwald, Distinguished Hersey Professor of Medicine, Harvard Medical School, and Eminent Cardiologist

Recommendations from the AMAC to steer the way forward in our Academic Medicine journey include:

- (a) The development of research that has real impact in significance and reach;
- (b) Sustainable excellence in education; and
- (c) Retention of the best young clinicians through a culture of inventiveness, creativity and scholarship that improves medical practice.

## RESEARCH BREAKTHROUGHS

Meanwhile, as we continue our Academic Medicine journey, our researchers continue to achieve breakthroughs.

These include a combined team of scientists from Singapore and Thailand who used the latest genomic technologies to identify several new genes frequently mutated in bile duct cancers, paving the way for better understanding of the cause of bile duct cancer. The team was led by Prof Teh Bin Tean, Principal Investigator and Director, NCCS-Van Andel Research Institute Translational Cancer Research Laboratory (NCCS-VARI); Assoc Prof Patrick Tan, Cancer & Stem Cell Biology Program, Duke-NUS and Principal Investigator, NCCS; Assoc Prof Steve Rozen, Neuroscience & Behavioral Disorders

Program, Duke-NUS, and Prof Vajarabhongsa Bhudhisawasdi from Thailand's Khon Kaen University. The breakthrough came in May 2012 after two years of intensive research, which saw scientists from Singapore visiting villages in northern Thailand, and Thai researchers coming to work at the National Cancer Centre Singapore (NCCS).

An international team of scientists, led by researchers from Duke-NUS and NCCS (Lead author Dr Zang Zhi Jiang, and senior co-author Prof Teh Bin Tean, and Assoc Prof Patrick Tan, and Assoc Prof Steve Rozen), identified more than 600 genes mutated in stomach cancer, the second-most lethal cancer. Using state-of-the-art DNA sequencing technology, the research team analysed tumours and normal tissues in stomach cancer patients.

With more of such foundation stones now in place, the partnership is assured for our journey towards excellence in Academic Medicine and improving patients' lives.



**in·fra·struc·ture · de·vel·op·ment**  
[ in-fruh-struhk-cher dih-vel-uhp-muhnt ]  
**1.** We are preparing the ground well. **2.** Our new facilities will integrate care from primary to acute, intermediate to long-term.

“My right leg swelled to twice its normal size and I could not walk for too long. After the treatment, I lost about 3kg of the fluid and now I feel much better.”

Mr Ramakrishnan S/O Ramaiyan, who underwent the new Aquapheresis therapy at NHCS for fluid overload.

**Previous spread: Mr Alson Goh, Chief Operating Officer, NHCS (right) with Mr Ramakrishnan (left). The NHCS new building will have all its services under one roof for the benefit of patients such as Mr Ramakrishnan.**

## INFRASTRUCTURE DEVELOPMENT

Our ongoing infrastructure development projects are gathering pace as we prepare the ground for the next phase of our pursuit of tomorrow's medicine.

Building on our excellence in research and education to deliver quality patient care, the physical co-location of our healthcare professionals will spur collaboration and spark inspiration in patient care, as SingHealth advances its Academic Medicine journey.

## THE ACADEMIA

Care, research and education will come together in twin towers, under one roof, at The Academia when it opens in 2013. The new synergies will bring the quality of care for our patients to a whole new level.

The new 13-storey, 75,000 sq-m facility will house SingHealth's research, education and training facilities in the Discovery Tower, and Singapore General Hospital's (SGH) pathology services in the Diagnostics Tower.

The building's proximity to clinical services at SGH, the national specialty centres and Duke-NUS Graduate Medical School (Duke-NUS) will enhance collaborative research and scholarly work pursued on the SGH Campus. This will sustain a vibrant and stimulating environment for healthcare professionals to advance diagnoses, treatments and cures for our patients.

The co-location of service and research laboratories within The Academia will enable pathologists, researchers, clinician scientists and clinician investigators to come together and work towards shared goals in research, education and patient care innovations. In the education realm, team-based learning will be encouraged in simulation labs to hone surgical, nursing and life support skills. Additionally, education labs in The Academia will be testbeds to develop new healthcare education courses, teaching methodologies and techniques using the latest technology.



### **Prof London Lucien Ooi**

Chairman, SingHealth Infrastructure Development Advisory Workgroup  
Chairman, Division of Surgery & Senior Consultant, Department of General Surgery, SGH  
Director, SingHealth Transplant  
Academic Chair, Surgery Academic Clinical Program

Never satisfied that today's medicine is the best is the ethos of Academic Medicine, and also the first step to defining tomorrow's medicine. Prof London Lucien Ooi believes that this means infrastructure redevelopment must be integrated across institutions in the complete care continuum, with the patient's interests as the key focus, so that the individual patient experience becomes seamless and efficient.

Clinical infrastructure must also be designed to facilitate Academic Medicine, for example, designing multi-disciplinary clinics around a disease entity allows a patient with a particular condition to have the combined expertise of diverse specialists in a single stop. This co-location of different specialists allows for shared observations and, as Prof Ooi says, "provides for what I would call 'collision' opportunities for ideas to be generated". Putting in extra rooms in these clinics to cater to trial nurses and database personnel further enhances the research agenda, and also creates spaces for teaching.

Through all the changes, Prof Ooi and his team are focused on generating and keeping pace with new discoveries to improve patient outcomes. For example, peptic ulcers were routinely operated on previously, but with new discoveries, only medication is needed today. "What we need to continually do is search for tomorrow's medicine."

SGH pathology services' new home at The Academia will integrate the latest technology into laboratory processes to further enhance diagnostic test accuracy, reliability and turnaround times for patients.

### **NATIONAL HEART CENTRE SINGAPORE NEW BUILDING**

In late 2013, we will welcome the opening of the National Heart Centre Singapore (NHCS) new building. This 12-storey, 48,000 sq-m facility will enable us to deliver on our key focus area of seamless care delivery. This is centred on the needs of heart patients and their families, based on care models that include defined care coordinators for patients with chronic and acute conditions.

Clinics will increase two-fold in number. There will also be six cardiac catheterisation labs and three major operating theatres. The Short Stay Unit will provide holistic care and allow for shorter hospital stays. The NHCS new building will continue to strengthen its status as the preferred cardiovascular training centre for an increasing pool of qualified doctors, nurses and allied healthcare professionals in cardiovascular medicine.

Setting sights on being a digital heart hospital, the new building will harness the use of information technology to improve the processes and outcomes of patient care. Research facilities currently being sited off the main building will be housed within the new building. Together with intensified collaborations with Duke-NUS, this will create a vibrant academic medical environment that promotes the translation of research into clinical services for better cardiac diagnosis, treatment and cure.



ARTIST'S IMPRESSION OF THE ACADEMIA.



ARTIST'S IMPRESSION OF THE NHCS NEW BUILDING.



## SENGKANG GENERAL HOSPITAL AND COMMUNITY HOSPITAL

We also look forward to seeing Sengkang General Hospital and Sengkang Community Hospital open in 2018. A total of 1,400 beds are being planned for the hospital and its sister community hospital. The hospitals will offer a whole new way of delivering holistic, integrated, multi-disciplinary and patient-centric care to residents in the northeast region of Singapore. They will be sited in the heart of the community in which they are well-placed to serve.

In November 2011, the Pro-Tem committee for the hospital was formed to drive and oversee development of the new hospitals, as part of a regional healthcare system serving the northeast. Prof Christopher Cheng, Senior Consultant, Department of Urology, SGH, was appointed Pro-Tem, CEO, Sengkang General Hospital, and Assoc Prof Ong Biauwei Chi was appointed Pro-Tem, Chairman, Medical Board in February 2012. Assoc Prof Ong is also Head and Senior Consultant, Department of Anaesthesia and Surgical Intensive Care, SGH. The committee works closely with the SingHealth Board and senior management in fulfilling its mandate.

Sengkang Health Pte Ltd was incorporated in August 2012 as a wholly-owned subsidiary of SingHealth. Planning is underway and we are on track to complete both hospitals in 2018.

## FACILITIES DEVELOPMENT

The creation of Clinic 'T' at the SGH-Peritoneal Dialysis Centre and revamping of Ward 85 at KK Women's and Children's Hospital (KKH) were completed in FY 2011. Other facilities development to be completed in 2012 includes the upgrading of Block 1 Level 1 Specialist Outpatient Clinic Pharmacy in SGH, which will help us to deliver better patient care through pharmacy automation and layout improvement, the renovation of the Diagnostic and Interventional Imaging Centre at KKH, reconfiguration of the existing Neuroscience Specialist Outpatient Clinic at the National Neuroscience Institute and renovation of the Medical Social Service Department at SGH.

The new SingHealth facilities aim to seamlessly integrate care across the continuum from primary to acute, and on to intermediate and long-term care to deliver patient-centric quality care.

With these infrastructure developments creating new homes for us to deliver even better care, education and research, we are well placed to serve our patients better, and a new era for Academic Medicine will open.



## pa·tient · care

[ pey-shuhnt kair ]

**1.** Tomorrow's medicine is about improving patients' lives. **2.** We continue to enhance the capabilities of our staff to deliver the best quality care.

“The pain was so unbearable that my son actually lost his will to live. Thankfully, we were introduced to the SGH Pain Management Team and that gave us hope as Wei Zhong’s condition gradually improved.”

Mdm Chan Geok Lian, a SingHealth Inspirational Caregiver Award recipient and mother of Mr Tan Wei Zhong, 23 years old, who was diagnosed with Familial Adenomatous Polyposis (FAP), a hereditary disease at the age of 4.

Previous spread: Dr Tan Kian Hian, Consultant, Department of Anaesthesiology, SGH with a patient at the SGH Pain Management Centre.

## PATIENT CARE

Tomorrow’s medicine is about the best care for our patients and our heritage of ground breaking research and unstinting education lays a superb foundation to take patient care to the next level.

In FY 2011, we pressed ahead in our continuing efforts to deliver quality care, improving and developing the capabilities of our staff to continue raising the quality of their performance.

## CLINICAL GOVERNANCE AND QUALITY MANAGEMENT

As part of our commitment to improve patient care, our Enhancing Performance, Improving Care (EPIC) initiatives continued to expand.

The 17 workshops conducted in FY 2011 saw a total of 419 participants completing 47 projects. These workshops included the inaugural Nursing Quality Improvement (Foundation) course for 45 newly-joined nurses in March 2012. The aim was to make quality a part of the foundation training in the professional development of our healthcare professionals, equipping them with relevant tools and methodology to deliver even higher quality care.

To further enhance our quality improvement processes, an action study was carried out with Prof Lieven Demeester and two students from Singapore Management University, to better understand the success factors for quality improvement projects in healthcare. The main findings included the need to integrate quality improvement projects with strategic planning, having protected time for strategic project teams, and investing in best-practice research capabilities.

Over 1,000 participants attended the SingHealth Quality Convention in September 2011, held to advance quality improvement through innovation for better patient outcomes. A total of 34 projects and 72 posters were submitted by participants for the convention. Three were awarded Best Projects, with seven receiving the Merit Awards, and eight received the Best Poster Awards.

Our quality improvement efforts also won recognition, with two

articles acknowledged by international publications. The project, 'Improving Pre-Surgical Pupil Dilation for Cataract Surgery Patients' by Singapore National Eye Centre was accepted by The Joint Commission Journal on Quality and Patient Safety, and another project by National Cancer Centre Singapore, 'Improving On-Time Start for iMRI Neurosurgeries' was accepted by the Asian Journal of Neurosurgery.

## ENTERPRISE RISK MANAGEMENT

As SingHealth pursues our Academic Medicine aspirations, we recognise the need to address the potential risks in the clinical, financial, operational, reputational and strategic areas to continue delivering safe, quality care with a personal touch for our patients. With this in mind, the cluster-wide SingHealth Enterprise Risk Management (ERM) Programme was officially launched in April 2011.

The adoption of ERM provided an integrated view of the risks and opportunities in all aspects of our work to enhance the quality of decision-making at both the operational and strategic levels across SingHealth. A formal ERM structure was put in place, with the appointment of a Group Chief Risk Officer to support the Risk Oversight Committee (ROC), chaired by a member of the SingHealth Board of Directors, in providing oversight for risk management across the cluster. The Clinical Governance Council (CGC) and the Corporate Risk Council (CRC) were established to guide and coordinate the management of clinical and corporate risks respectively.

The SingHealth Risk Management Office (RMO) has worked closely with the ERM Consultant, US-based Bickmore Risk Services and Ms Grace Crickette, Chief Risk Officer of the University of California (UC), the ERM Consultancy Project Advisor, to facilitate and coordinate the roll out of the SingHealth ERM Programme.

The results of the cluster-wide risk perception survey conducted

in February 2011 provided the baseline inputs for identifying the key risks for formal risk assessment and key risk mitigation review to put in place effective controls that will assure success in achieving the desired outcomes.

Over 400 staff attended the Train-the-Trainer (TtT) workshops on ERM philosophy, concepts and use of risk assessment and key risk mitigation tools conducted by the ERM consultants. The TtT workshops were converted into 15 e-Learning modules that would provide new staff the opportunity to undergo the same training, and also serve as a refresher for past participants. The RMO has continued to conduct regular quarterly foundational ERM training for staff across the Group to raise awareness of the value of ERM as part of the daily decision making process with the call – "Everyone A Risk Manager".

Two townhall sessions were also held in March 2012 by Ms Crickette to update our staff on the progress made in SingHealth's ERM implementation. She shared the key drivers and milestones as well as success stories in implementing UC's ERM Programme. Ms Crickette further highlighted that SingHealth had successfully embedded the ERM approach into its key risk mitigation processes and urged the Group to continue sustaining the ERM momentum to scale new heights in ERM excellence.

Going forward, SingHealth will be working on incorporating ERM into its annual strategic planning and performance review processes as part of the annual work plan cycle.



### **Asst Prof William Hwang**

Deputy Director, Tissue & Cell Transplant, SingHealth Transplant  
Head and Senior Consultant, Department of Haematology, SGH  
Director, Hematopoietic Stem Cell Transplant Programme, SGH

Patient care is right at the heart of defining tomorrow's medicine at SingHealth and the pursuit of Academic Medicine means recognising that healthcare professionals can always do better in the way they serve patients – searching for better ways to deliver clinical service, teach the next generation, and innovate in medical care.

This approach is well-illustrated in the field of haematopoietic stem cell transplantation, which applies breakthrough technology to innovate and advance even more each day. As Programme Director, Asst Prof William Hwang led his team to take the transplantation programme to AABB accreditation by the American Association of Blood Banks. This accreditation promotes one of the highest standards of care for patients and donors in all aspects of blood banking, transfusion medicine, cellular therapies and relationship testing.

The new standard will spur continued focus on ensuring the highest levels of patient care and documentation as the premier public hospital in the nation. As Asst Prof Hwang says, "the boundaries of this practice are constantly being extended and we have now even better ways and more indications for doing this."

## **SERVICE QUALITY**

Good service touches the hearts of patients and those around them. We are thus dedicated to delivering the highest service standards to our patients. Group Service Quality (GSQ) organised the second Singapore Health Quality Service Award (SHQSA) in January 2012, which recognises healthcare professionals committed to delivering quality care and providing excellent service. A total of 2,694 staff from 17 institutions were honoured, including Ren Ci Hospital, Ang Mo Kio-Thye Hua Kwan Hospital, St Luke's Hospital, China Healthcare Ltd as well as institutions under the Eastern Health Alliance.

For the third year running, SingHealth held the Inspirational Patient and Caregiver Award, which recognises patients and caregivers who have inspired SingHealth staff and displayed outstanding positive behaviour and attitudes through painful and difficult situations. Twenty inspirational patients such as 57-year-old Mr Tung Shee Kee, who was diagnosed with lymphoma in 2007, and 18-year-old Ms Charmaine Tan Xing En, who has been suffering from tunnel vision since the age of two, were honoured. Caregivers such as Mr Kenneth Mah Yee Wah and Ms Vivien Tan Liyun, together with 18 others were presented with the Inspirational Caregiver Award for courage and perseverance in caring for their loved ones who are ill.

The journey of developing our Quality Priorities started in 2010, as part of our learning from the best practices of world leaders such as Mayo Clinic and Walt Disney in quality service. Following discussions with senior leaders, managers and staff representatives from our institutions, the five SingHealth Quality Priorities – Safety, Professionalism, Respect, Experience and Efficiency, or SPREE for short – were officially launched in September 2011. These priorities will guide us to put our patients at the heart of all we do and create greater confidence in the care we deliver.

One hundred SingHealth Corporate Office and institutions staff were affirmed with the You Shine Award, given out bi-monthly to

recognise outstanding service. It also serves as a staff nomination platform for the SHQSA and other national awards.

## TRANSPLANT SERVICES

As part of our efforts to raise awareness and educate the public about organ transplantation and transplant medicine, the Transplant Awareness Week was held in August 2011. The Minister for Health, Mr Gan Kim Yong, graced the event in support of our cause. In line with our commitment to patient care, the TRUEfund, a special fund managed by SingHealth Foundation in aid of needy transplant patients, also had its first round of fundraising during this event.

The first Transplant Appreciation Ceremony was held in July 2011 to show appreciation to all who have made transplantation possible. The event included a special award ceremony for Transplant Coordinators to recognise their tireless efforts in helping patients throughout their transplant journeys.

A Tree of Life – symbolising the new lease of life that transplants bring to patients – was also dedicated to the Lee Foundation in appreciation of their generous S\$5 million donation. It now stands tall outside Singapore General Hospital (SGH) Block 7 Lobby, opposite Duke-NUS Graduate Medical School.

Another significant milestone in SingHealth Transplant's programmes is the AABB accreditation of our Haematopoietic Stem Cell Transplant Programme as a cellular therapy facility. The American Association of Blood Banks promotes the highest standard of care for patients and donors in all aspects of blood banking, transfusion medicine, cellular therapies, and relationship testing. This accreditation ensures that we maintain the highest standards in patient care and documentation as an Academic Healthcare Cluster in Singapore.

## STRATEGIC SOURCING

In August 2011, 65 staff were transferred from the Materials Management Departments of cluster institutions to SingHealth's Group Procurement Office (GPO) to form a new Shared Services group.

The benefits of centralising these services include the ability to tap on all available supply chain resources, product standardisation, facilitating investments into infrastructure such as electronic procurement, and cross-fertilisation of ideas to grow innovation. And the results are already showing. For FY 2011, GPO enabled a gross savings of over S\$30 million, through strategic sourcing of supplies and services, with very rigorous cost analysis and benchmarking. These savings help the cluster to reinvest, enabling the growth in resources, infrastructure and new capabilities, as well as counteracting cost impacts from market forces. For example, we engaged pharmaceutical manufacturers through visits and dialogues, to encourage more market entrants and timely availability of quality generic drugs into Singapore's small market.

As part of its education efforts, GPO organised the 2nd annual SingHealth Supply Chain congress as a learning platform to share best practices and published a SingHealth Healthcare Supply Chain book to commemorate 10 years of achievement.

## INFORMATION TECHNOLOGY

In the area of Information Technology, many advances were made to support and enable us to serve our patients' needs. Our computer systems were integrated with the National Electronic Health Record (NEHR) so that clinicians can seamlessly access our patients' records. This marks the first step towards Singapore's vision to be among the first in the world to implement an electronic health record system that aims to revolutionise the way healthcare is delivered.

SGH and KK Women's and Children's Hospital (KKH) achieved the HIMSS EMR Adoption Model Stage 6 for their advanced Electronic Medical Records systems in June 2011. This is just one level away from Stage 7, the pinnacle of the seven-stage international benchmark model, and is a significant achievement for SingHealth. Currently only 8.2 per cent of hospitals in the US have attained Stage 6 and 7.

Another enhancement is the Child Development Integrated Care (CDIC) system at KKH in January 2012 that replaces handwritten notes for efficient capturing of patient information for the various allied health disciplines.

At SGH, the Outpatient Pharmacy Automation System automates the picking, packing and labelling of drugs for outpatients, eliminating human errors in dispensing. This solution was piloted in April 2011 with the commissioning of SGH's first outpatient medication dispensing machine for blister packs. A second box machine was added in August.

The Medication Assistance Fund system also went live at SGH Campus and KKH in October 2011. This is a new means-tested financial scheme to provide assistance to patients who have difficulties affording selected drugs not placed on the standard drug list. The system allows medical social workers to manage fund applications and approvals online.

The process of patient visits has also gone online in January 2012. SGH's Visitor Registration System is a web-based visitor management system to help monitor and cap the number of visitors in the wards according to quotas set by SGH. It will also facilitate contact tracing, if needed.

In March 2012, CIO Asia magazine selected KKH as one of the winners of the prestigious CIO Asia Award 2012, for KKH's "Closed Loop Medication Management", a revolutionary system to manage the administration of medication which significantly improves patient safety and care, and the efficiency of healthcare staff.



## ed·u·ca·tion

[ ej-oo-key-shuhn ]

**1.** Investing in tomorrow means imparting the best expertise. **2.** Just as vital are the values and vision embodied.



“SingHealth Academy has shown me the many different information technologies used in learning from many different settings in healthcare that is applicable for our students and learners. The use of eLearning has given us fresh impetus to dare proceed with something which on its own may be difficult to sustain. With the use of eLearning and other modalities, our team of content developers can now explore and dare dream of projects that can be sustainable in the longer term.”

Assoc Prof Mark Leong, Head and Senior Consultant, Department of Emergency Medicine, SGH.

**Previous spread: Learning Technologies Team, SingHealth Academy (left to right): Ms Amy Kuan, Ms Daphne Chan, Mr Chua Chee Yong and Ms Yentri Tan, working on a learning video shoot.**

## EDUCATION

The unending work of nurturing the next generation is the lifeblood of tomorrow's medicine. Just as important as the expertise imparted are the values and vision that will be embodied by the next generation of healthcare professionals.

At SingHealth, our commitment to education and staff training sets us in pace to define the future of medicine and ultimately translating to excellent patient care. This is the legacy of our endeavour of medical education.

## SINGHEALTH RESIDENCY

SingHealth Residency is crucial for nurturing the next generation of doctors, and building our medical pipeline. Launched in May 2010, the SingHealth Residency curriculum aims to develop well-rounded clinicians based on a structured framework of core competencies, guided by the Accreditation Council for Graduate Medical Education-International (ACGME-I). It draws on a dedicated faculty of close to 800 established SingHealth clinician-educators, who focus on teaching excellence and mentorship.

Training is based on six core competencies – patient care, medical knowledge, interpersonal and communication skills, practice-based learning and improvement, professionalism and systems-based practice. The training enhances the effectiveness of doctors in these domain areas.

As the largest Sponsoring Institution for Residency programmes in Singapore, we have a total of more than 400 Residents to date, enrolled in 14 programmes of which 13 are ACGME-I accredited.

The Program saw exponential growth in 2011. We welcomed our second batch of 190 new Residents, including 24 of the first Duke-NUS Graduate Medical School (Duke-NUS) graduating cohort, and saw growth in programmes from six to 14, and a surge in faculty from 250 to 400.

Our seven Phase 2 programmes received ACGME-I accreditation: Anaesthesiology, Diagnostic Radiology, Orthopaedics, Obstetrics & Gynecology, Ophthalmology, Family Medicine and Otorhinolaryngology. This makes SingHealth Residency the most comprehensive institution in Singapore whose Family Medicine programme is ACGME-I accredited.

“SingHealth Residency plays an important educational and training role nurturing the next generation of medical professionals, our Residents. We strive to develop our Residents into highly skilled medical leaders, who are innovative, self-directed learners with a strong sense of ethics and compassion,” said Assoc Prof Lim Boon Leng, Designated Institutional Official (DIO), SingHealth Residency, and Senior Consultant, Department of Anaesthesiology, SGH.

Building on the Group’s strong teaching legacy, SingHealth Residency places an emphasis on faculty development to improve the pedagogy skills of our faculty and Residents.

With this focus, SingHealth Residency co-organised the inaugural Education and Simulation in Healthcare conference with the Singapore General Hospital’s Post Graduate Medical Institute (SGH-PGMI) in August 2011. The conference brought together clinician-educators and Residents to advance their pedagogy and clinical skills with core competencies and stimulation workshops and was attended by about 60 faculty members of SingHealth Residency.

We also saw the introduction of clinician-scientist Residents, the inaugural batch of Residents who will enhance their Residency training with an additional year of research as future clinician-researchers, drawing from SingHealth’s wide patient case-mix and research expertise.

With the addition of another 10 programmes that will undergo ACGME-I Accreditation in 2013, SingHealth Residency is poised for further transformation in graduate medical education as we continue to train our Residents into specialists for advancing patient care.

## SINGHEALTH ACADEMY

In our drive to advance healthcare education, SingHealth Academy was awarded the ‘.edu.sg’ domain status – a status usually accorded only to formal educational institutions in Singapore. The new status was a symbolic milestone for SingHealth, and cements our standing as a leader in healthcare and medical education.

In FY 2011, SingHealth Academy designed and developed 10 highly interactive Blended Learning projects. Blended Learning combines traditional classroom-based training with modern learning technologies and various pedagogical methods, thus enhancing learning efficiencies and training processes.

We saw a tremendous growth in the adoption of e-Learning users among SingHealth staff from 4,000 in FY 2010 to 7,000 users in FY 2011. A total of 329 lecture recordings were also uploaded on SingHealth Academy’s Mediasite portal.

To enhance the academic buzz in SingHealth, the SingHealth Academy Brown Bag Symposium – a quarterly lunchtime educational talk was introduced and gathered over 500 healthcare professionals from SingHealth and Duke-NUS to hear experts on various topics.

SingHealth Academy also held its inaugural Signature Lecture in September 2011 at the College of Medicine Building, Ministry of Health. A total of 270 healthcare management and staff heard from keynote speaker Prof Edward Holmes, an acclaimed scientist and thought leader in Academic Medicine, who spoke on the types of innovations that could have the biggest potential impact on medicine and care in the next decade.

In 2011, the SingHealth Academy Golden Apple Awards were launched to recognise the dedication of SingHealth’s educators to improve the quality of learning and imbue the spirit of inquiry.

Publications by the SingHealth Academy Publications Team also played an essential role in furthering healthcare education for both healthcare professionals and the general public, ranging from extensively researched publications to a variety of healthcare-related topics.



**Assoc Prof Sandy Cook** (left)  
Senior Associate Dean, Curriculum Development  
Medical Education, Research & Evaluation Department, Duke-NUS

**Assoc Prof Koo Wen Hsin** (right)  
Group Director, Education, SingHealth  
Deputy Director, NCCS  
Co-Lead, Academic Medicine Education Institute

**Prof Robert K Kamei** (centre)  
Vice Dean, Education, Duke-NUS  
Director, Academic Medicine Education Institute

Tomorrow's medicine is defined by the answers generated from today's questions. This is the maxim at SingHealth and Duke-NUS that guides the holistic education for tomorrow's medicine. "My work in education is all about enabling others with the skills to find these answers," says Prof Robert K Kamei. And there is no end to the effort: "The best individuals and organisations are always looking to improve, not because they aren't outstanding, but because that is how they stay outstanding."

The AM•EI, a Joint Institute by Duke-NUS and SingHealth, provides the tools to guide the next generation of healthcare professionals and creates a community of educators, whether they are doctors, allied health professionals, nurses or administrators. "They have been our active partners not only in patient care but in education and innovation. We must expand their good work in the community. The Education Office is committed to developing the potential of these professionals," says Assoc Prof Koo Wen Hsin, who leads the Education Council at SingHealth.

The formation of the AM•EI also marks another definitive move in Academic Medicine. "The focus on quality improvements will set a culture of training in continuous learning, continually striving for improvements, giving back to the new generation, and hopefully a life balance that enables healthcare providers to maintain their passion for their chosen careers while striving for the greater good," says Assoc Prof Sandy Cook.

In line with SingHealth's pursuit of Academic Medicine, FY 2011 saw a stronger collaboration between SingHealth Academy and the institutions to develop a wider range of learning resources. More than 50 training programmes were offered to over 5,600 participants from multi-disciplinary backgrounds.

SingHealth Academy partnered SingHealth Group Procurement Office (GPO) to organise the Singapore Healthcare Supply Chain Management Congress in August 2011, a learning platform for the region's healthcare supply chain professionals.

The Academy also worked with Singapore General Hospital's (SGH) Division of Surgery to obtain S\$3.8 million worth of sponsorship from Karl Storz for the Academia building to fit out the new clinical skills lab.

## SGH POSTGRADUATE MEDICAL INSTITUTE

Continuing its tradition of being Singapore's first postgraduate teaching hospital and principal training ground for medical specialists, the Postgraduate Medical Institute of SGH (SGH-PGMI) assisted various medical departments to run continuing medical education events.

For FY 2011, SGH-PGMI had an overall participation of more than 3,300 staff for its events and workshops. The regular General Practitioner Continuing Medical Education Programmes attracted 1,500 General Practitioners from all over Singapore.

One significant event was the 19th SGH Annual Scientific Meeting (ASM) in April 2011, the largest public institution scientific gathering in SingHealth for 2011, with 800 participants. Running for over a decade, the ASM continued to bring together SGH's various disciplines and showcase its latest development work and talents as an integrated campus, with the participation of Duke-NUS.

The SGH Formal Dinner was attended by 542 guests, in conjunction with the 19th ASM. The 18th SGH Lecture was delivered by Prof Sir Sabaratnam Arulkumaran on clinical governance to improve safety

and quality. Awards for Young Scientist, Young Investigator and Best Oral Paper were also presented to staff who submitted papers to the ASM.

The Institute hosted 47 Clinical Fellows and 68 Observers from countries including Taiwan, China, Myanmar and India for clinical training in over 30 clinical specialty departments in SGH. Fellowship attachments allow these medical professionals to have hands-on patient contact or strictly observership hands-off training, with durations lasting from a month to a year.

### **SINGHEALTH ALICE LEE INSTITUTE OF ADVANCED NURSING**

At the centre of training and nursing education excellence is the SingHealth Alice Lee Institute of Advanced Nursing (Alice Lee IAN), which provides postgraduate training of nurses and other healthcare staff locally and overseas. It has come a long way since 1997 with enrolment figures climbing steadily over the years. As of 2011, more than 9,000 nurses have been trained, of which 642 are overseas nurses from over 20 countries.

With the appointment as a Continuing Education and Training (CET) Centre by the Workforce Development Agency (WDA), Alice Lee IAN partners with WDA to conduct Workforce Skills Qualification (WSQ) training programmes for the Certificate in Health Care Support, Higher Certificate and Advanced Certificate in Health Care Support (Nursing Care, Administrative Support, Operating Theatre and Sterilisation Services). This initiative supports the national effort in training and reskilling healthcare support workers. Since 2005, about 1,000 healthcare support staff have been trained.

Alice Lee IAN conducted a train-the-trainer workshop in simulation training at the SGH Institute for Medical Simulation and Education in February 2011, with funding from SingHealth's Talent Development Fund (Education). Visiting expert trainers from the

Israel Centre for Medical Simulation trained 25 SingHealth nurses in designing and conducting simulation training for nurses.

In FY 2011, Alice Lee IAN conducted two courses in collaboration with the Ministry of Foreign Affairs. The Medical and Trauma Resuscitation Course was held in August 2011 in Calmette Hospital, Cambodia for 45 nurses and healthcare workers. Our two trainers from the Department of Emergency Medicine, SGH, shared various emergency and trauma management practices. The Maternal and Neonatal Nursing Course in September 2011 was conducted in collaboration with the Obstetrics & Gynaecology and Neonatal physicians and nurses of SGH, for 14 overseas delegates from countries including Angola, Brunei, Egypt, Qatar, Maldives, Mexico, Mauritius, Palestinian, Rwanda, Russia, Swaziland and Zimbabwe.

Twelve Registered Nurses (RNs) attended the Master Class Series in Wound Management and graduated with a Graduate Certificate in Domiciliary Nursing, in collaboration with Curtin University's School of Nursing and Midwifery, Perth, Western Australia. The inaugural Renal Transplant Nursing course, initiated in October 2011, trained 108 RNs to care for patients undergoing kidney transplantation.

Nurse Educators from Alice Lee IAN and Duke-NUS collaborated to provide Clinical Year Orientation on Basic Procedure Course to medical students in August 2011. Eleven nurses assisted in the practical workshop for about 60 medical students in the various skills stations for bag valve ventilation, venepuncture, peripheral intravenous cannulation, sharps, glucometer/injections, urinary catheterisation, nasogastric insertion and ECG recording.

### **SGH POSTGRADUATE ALLIED HEALTH INSTITUTE**

Established in 2003, SGH's Postgraduate Allied Health Institute (SGH-PGAHI) is the first of its kind in Singapore. SGH-PGAHI has been working in collaboration with various allied health departments and other reputable local and overseas educational institutions and

organisations, to offer comprehensive programmes for allied health professionals (AHPs). SGH-PGAHI offers more than 60 courses and at least 2,000 training places across allied health disciplines.

A major FY 2011 highlight was the 1st Singapore Rehabilitation Conference, themed “State-of-the-Art Advances in Clinical Rehabilitation” in February 2012. The conference was attended by more than 500 people from 15 countries, across professional groups and along the entire care continuum.

In October 2011, four members of the London South Bank University (LSBU) quality review panel met key leaders in SGH to review and audit the processes, support and quality of the delivery for the BSc (Hons) in Radiographic Studies and Postgraduate Diploma in Magnetic Resonance Imaging (MRI). SGH-PGAHI passed the academic review and audit visit as high quality partners of LSBU.

Building on its longstanding collaboration with La Trobe University, Australia, SGH-PGAHI saw the graduation of the final and 4th cohort of the Bachelor of Occupational Therapy (Advanced Standing) in February 2012. Since the degree conversion programme started in 2007, 60 alumni have been added.

Arising from SGH’s MOU with the University of Illinois, Chicago (UIC), SGH-PGAHI hosted the visit of Prof Janet Engle, Head, Department of Pharmacy Practice and Executive Associate Dean, College of Pharmacy, who is also the Overseas Allied Health Expert on SGH-PGAHI’s Advisory Board in FY 2011. During her visit, she attended the SGH-PGAHI Advisory Board meeting, reviewed the Anti-Coagulation Management Programme draft document and discussed clinical competency framework for pharmacists.

The Institute currently has four SGH pharmacists undergoing the Pharm D (Doctor of Pharmacy) at UIC with one more starting in 2012. Our strong ties with UIC will help to foster more educational collaborations, offering our healthcare professionals richer opportunities to meet their diverse learning needs.

Our strategic collaborations also include the partnership with Flinders University, Australia, to launch the Postgraduate Certificate, Postgraduate Diploma and Master in Clinical Rehabilitation courses, with two intakes a year.

Other notable developments include the first course on managing rehabilitation services and facilities for senior healthcare leaders of China, and expanding the pool of allied health educators in SGH through faculty development programmes.



## re•search

[ree-surch]

**1.** To define tomorrow's medicine is to extend the frontiers of discovery and knowledge. **2.** Central to this is the collaborations in research.

“In a way, I am also helping future cancer patients. If no one participates in trials, there will be no medical breakthroughs.”

Mdm Tan G E, 63 years old, is one of the 10 patients from NCCS currently participating in a clinical trial targeted at recurrent and advanced-stage HER2-positive breast cancer.

Previous spread (from left to right):  
Dr Charles Chuah, Senior Consultant,  
Department of Haematology, SGH;  
Dr Darren Lim, Senior Consultant,  
Department of Medical Oncology, NCCS,  
and Assoc Prof Ong Sin Tiong, Cancer  
& Stem Cell Biology Program, Duke-NUS,  
is the team behind the research  
breakthrough which identified and  
found a solution to a mutated gene  
that lessens drug effects.

## RESEARCH

Research is right at the heart of our effort to define the future of medicine. We are always seeking a better tomorrow for our patients by pushing the frontiers of medicine. Like many Academic Healthcare Clusters in the world, the partnership between a healthcare provider and university provides a synergistic framework where research, scholarly work and education can contribute to advance patient care. Our pursuit of Academic Medicine together with Duke-NUS Graduate Medical School (Duke-NUS) is fundamentally to give our patients better treatment outcomes and to transform healthcare in Singapore.

Major advances are being made, especially with our research staff and research partnerships. Since its launch in 2010, the SingHealth Investigational Medicine Unit (IMU), a dedicated early-phase clinical research outfit, has significantly increased the number of early-phase trials now conducted in Singapore. As of March 2012, it had a total of 32 active trials, with 14 completed. The unit supports the research of commercial partners and independent investigators with services such as proof-of-concept, “first-in-man” or early-stage clinical development of investigational drugs, vaccines and devices, as well as identification and validation of novel disease biomarkers.

Our clinicians continue to earn distinction. Prof Soo Khee Chee is the first clinician-scientist to be awarded the President’s Science and Technology Medal for his distinguished, strategic and far-sighted contributions to Singapore’s clinical services and healthcare landscape, particularly in spearheading research-led improvements in clinical care and catalysing research in public healthcare.

As the founding Director for the National Cancer Centre Singapore (NCCS), Prof Soo was instrumental in growing the then fledgling healthcare centre from a department in Singapore General Hospital (SGH) to an independent healthcare institution that has achieved worldwide recognition for its leading-edge cancer research, excellent clinical services as well as advanced education.



### Prof Teh Bin Tean

Principal Investigator & Director, NCCS-Van Andel Research Institute Translational Cancer Research Laboratory

“Passion” and “perseverance” is the advice that Prof Teh Bin Tean would give to aspiring researchers, and these two words also sum up his dedication to improve patient outcomes.

As a researcher for over 25 years, he has long been an advocate of translational research and adopting a team-based approach. This emphasis on collaboration has yielded significant results in scientific discoveries, each representing a quantum leap in our understanding of the studied cancer. His results are regularly published in top international journals such as *Nature Genetics*. “In every collaboration, we must work together for the benefit of all,” he says. This extends to not just the scientists and clinicians involved but to the patients as well.

Prof Teh is also a champion mentor, nurturing mentees, who range from senior consultants to research fellows. He hopes for these mentees to become principal investigators, leading research projects and teams, and to publish internationally significant research in peer-reviewed journals.

For this recipient of numerous national awards such as the STaR Award 2009, tomorrow’s medicine means “personalised medicine”, or medicine given based on the genetic makeup of the disease and the patient. And to Prof Teh, the only way to achieve this is by facilitating and encouraging translational research.

As SingHealth’s Deputy Group CEO, Research and Education, Prof Soo spearheaded the strategic centralisation of several core research resources from different healthcare institutions under the SingHealth cluster. A visionary leader with a personal interest in mentoring and grooming the next generation of clinician-scientists, he advocated the creation of Singapore’s first graduate-entry medical school, leading to the establishment of Duke-NUS where he is currently Vice Dean, Clinical and Faculty Affairs. He was also awarded the inaugural Benjamin Sheares Professorship by Duke-NUS.

Prof Tan Eng King, Senior Consultant, Department of Neurology, from the National Neuroscience Institute (NNI) was awarded the National Outstanding Clinician Scientist Award for his outstanding work in the field of Parkinson’s disease and movement disorders. His work has led to the discovery of various genetic risk factors unique to the Asian population. He was also responsible for setting up a fully integrated movement disorder programme at NNI which benefits patients with gait problems and involuntary movements.

As of FY 2011, SingHealth and Duke-NUS have 30 clinician-scientists spending at least 50% of their time on research. More clinicians will join their ranks in the years to come.

### KEY PARTNERSHIPS AND COLLABORATIONS

As our global network expands, significant partnerships and collaborations with leading institutions enable us to explore new frontiers of knowledge.

In FY 2011, five grants were awarded by Duke-NUS to the National Heart Centre Singapore, totaling close to S\$2 million, with the two most significant grants awarded to stem cells research and patient response to aspirin.

Collaborations between NCCS and Duke-NUS have led to a significant number of peer-reviewed publications. For example, an international team of scientists, led by researchers from Duke-NUS



and NCCS identified hundreds of novel genes that are mutated in stomach cancer, the second-most lethal cancer worldwide. The study, published online in April 2012 in *Nature Genetics*, paves the way for treatments tailored to the genetic makeup of individual stomach tumours.

NCCS' and SGH's collaboration with Duke-NUS has also led to noteworthy scientific advancements. For example, the multi-national team at Duke-NUS, working with the Genome Institute of Singapore, SGH and NCCS identified the reason that some patients fail to respond to some of the most successful cancer drugs. They found a common variation in a gene in people of East Asian descent that contributes to some patients' failure to benefit from tyrosine kinase inhibitor drugs, which work to fight certain blood cell cancers, and non-small-cell lung cancers.

NCCS's Lymphoma Study Group, a multi-disciplinary team led by Prof Teh Bin Tean, Principal Investigator and Director, NCCS-Van Andel Research Institute Translational Cancer Research Laboratory (NCCS-VARI), is collaborating with the National Institutes of Health from the US for the study on lymphoma. Other members of the team include Assoc Prof Tan Soo Yong, Senior Consultant, Department of Pathology, SGH and Prof Lim Soon Thye, Deputy Head and Senior Consultant, Department of Medical Oncology, NCCS.

Focus groups have also been established in cancer research, overseen by Prof Teh. Cancer-type translational research groups have been set up in peritoneal, head and neck, kidney, breast, pancreaticobiliary and sarcoma cancer. These groups are made up of scientists, pathologists as well as surgical, medical and radiation oncologists. The aim of these groups is to focus on Asian cancers that are relevant locally and to the region, understanding their genetic makeup and translating this bench-based research into clinical application.

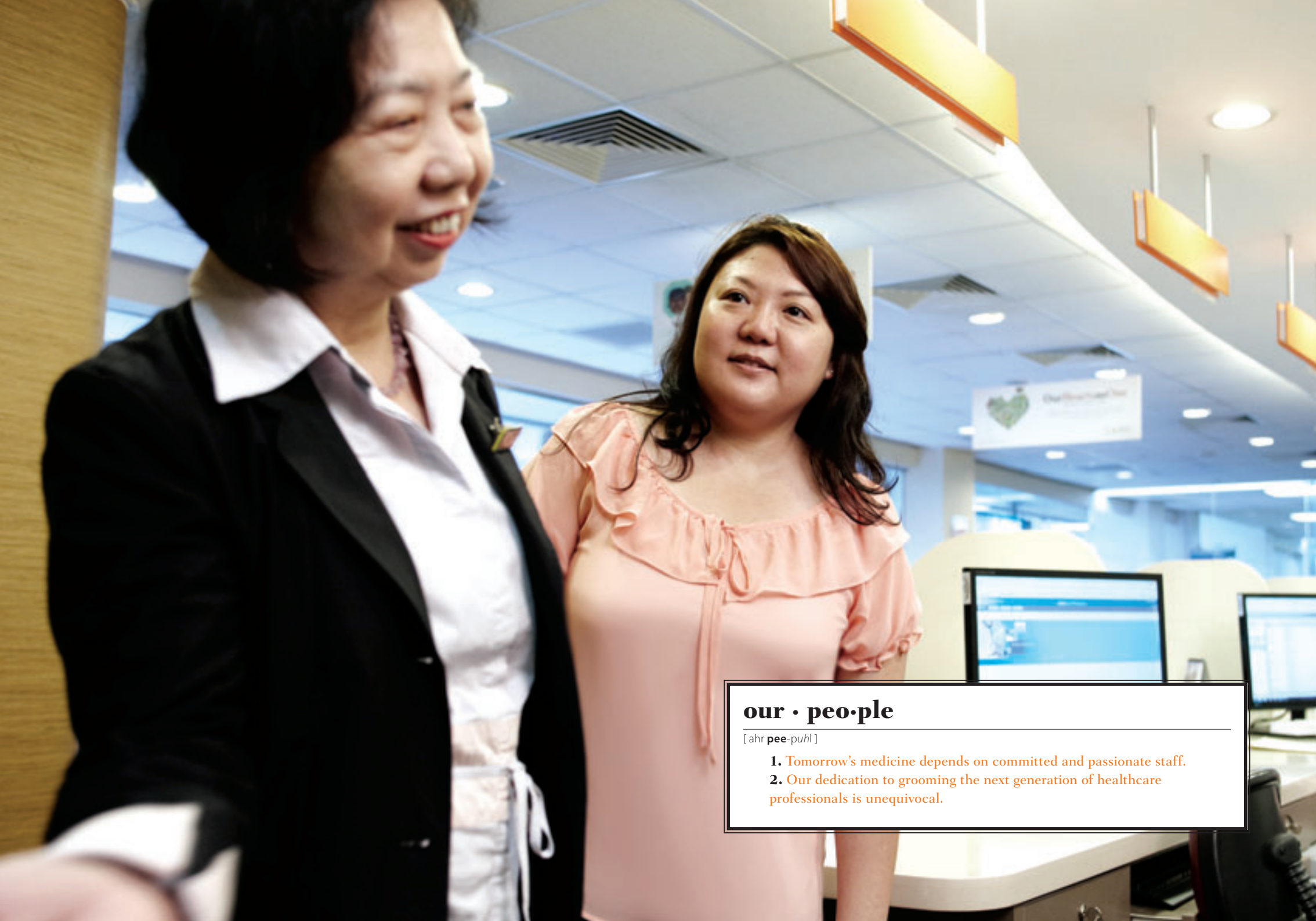
The SingHealth Experimental Medicine Centre (SEMC) is Singapore's most comprehensive animal-based research facility and

one of the main key publicly run sources for pre-clinical research for the nation. It is also the first in Singapore to be fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International, putting it on par with renowned centres such as Johns Hopkins and Mayo Foundation in the US.

SEMC supports not only SingHealth healthcare institutions, but also its strategic partner in Academic Medicine, Duke-NUS and other pre-clinical researchers from institutions such as A\*STAR and universities in Singapore.

SEMC has had success in a number of disease areas. For example, it supported the Singapore Eye Research Institute (SERI) in the development of a high intra-ocular pressure animal model. This has already had substantial pre-clinical interest and allowed SERI to verify a new treatment, which will now proceed to first-in-man trials.

SingHealth's Office of Intellectual Property successfully facilitated the licensing of a new software to measure risk of imminent heart attacks in cardiovascular A&E patients. The licensing deal was completed in 2011 and is the most significant licensing deal in the Office's history.



## our • peo•ple

[ahr pee-puhl]

1. Tomorrow's medicine depends on committed and passionate staff.
2. Our dedication to grooming the next generation of healthcare professionals is unequivocal.

“Although she was in the midst of a meeting when I called her, Linda was very patient and understanding when I explained my situation to her. Without a second thought, she promptly made arrangements to help my brother-in-law in his admission for surgery at SGH. We were touched by how she went the extra mile for us and my brother-in-law is now doing very well after surgery.”

Ms Lee Shu Fang, caregiver of Mr Koh, who was admitted to SGH for surgery in May.

Previous spread: Ms Linda Lim (left), Manager, Admitting Services, Admissions Office, SGH, recipient of the Singapore Health Quality Service Award 2012 – Superstar for Administration Category, with a caregiver.

## OUR PEOPLE

Delivering tomorrow's medicine hinges on having committed and passionate staff. The key to this is in maintaining a robust and sustainable pipeline of human talent. At SingHealth, our dedication to grooming the next generation of healthcare leaders at all levels is unequivocal. As we advance in our aspiration to define the future of medicine, we continue to invest in the development of our staff, the backbone of SingHealth.

## GROOMING TALENT

As an integral part of SingHealth's talent strategy, a Talent Management and Succession Planning Office has been set up, and a Talent Management and Leadership Competency framework established, aimed at the early identification, selection, engagement and development of talent in a holistic and systematic manner.

Based on this framework, selected staff are sent for higher executive development and leadership grooming programmes on an ongoing basis. A leadership succession framework and an associated annual planning cycle have also been established. In tandem with SingHealth's aspirations to be a leading Academic Healthcare Cluster, the framework and cycle are closely tied into a corresponding academic appointment process with Duke-NUS Graduate Medical School (Duke-NUS).

Another major initiative was the introduction of the SingHealth Medicine Scholarship – the first to be offered by a public healthcare cluster to first-year medical students keen to serve in the public healthcare sector. The scholarship is awarded to students with excellent academic results, and who have a strong calling to serve in public healthcare. Four scholarships were awarded to the Academic Year 2010/2011 cohort, and another four to the Academic Year 2011/2012 cohort of first-year students of Duke-NUS and NUS Yong Loo Lin School of Medicine.



### **Ms Tan Soh Chin**

Deputy Group Director, Nursing, SingHealth  
Director, Nursing, KKH

Tan Soh Chin epitomises the dedication and spirit honoured each year at the SingHealth Excellence Awards. She believes that strong partnerships, collaborations and synergies among all healthcare teams are crucial to advancing tomorrow's medicine. Her unwavering commitment to excellence in healthcare is shown in her efforts to strengthen the care, research and teaching culture in nursing to improve patient care and clinical outcomes.

The recipient of the Distinguished Leader Award – People Leader in 2012, Soh Chin advocates a team-based culture for leadership excellence. "As leaders, we must strive to create a work environment in which people feel important and appreciated. This motivates our staff and colleagues to do their best in patient care, research and educating the next generation. Ultimately, this will benefit our patients."

Soh Chin is a strong advocate of service from the heart, and urges healthcare professionals to see the person, not just the patient. "As we strive together to achieve the highest level of health for individuals, families and the community at large, it is our compassion, kindness and willingness to serve from the heart that makes patients feel that they are at the heart of all we do. This lives in their memories long after they have recovered."

## **STAFF EXCELLENCE**

Recognising staff excellence is of paramount importance in our effort to nurture the best human capital for tomorrow. In line with this, the 2nd SingHealth Excellence Awards, presented in March 2012, was aimed at recognising distinguished and exemplary leaders at the Group level. The event saw more than 200 guests coming together to honour the best in SingHealth.

This year's SingHealth Excellence Award recipients included Prof London Lucien Ooi Peng Jin, Chairman, SingHealth Infrastructure Development Advisory Workgroup, Chairman, Division of Surgery & Senior Consultant, Department of General Surgery, Singapore General Hospital (SGH), and Director, SingHealth Transplant, Academic Chair, Surgery Academic Clinical Program, who received the Visionary Leader award; Ms Tan Soh Chin, Deputy Group Director, Nursing, SingHealth, and Director of the Division of Nursing of KK Women's and Children's Hospital (KKH), who won the People Leader award; Assoc Prof Chow Wan Cheng, Senior Consultant and Head of Internal Medicine of SGH, who received the Champion of Change Leader award; and Prof Ong Yong Yau, Emeritus Consultant, Internal Medicine of SGH, who won the Golden Achievement award.

At the same event, 39 clinicians, nurses, allied health professionals (AHPs), ancillary and administrative staff across all SingHealth institutions received the prestigious GCEO Excellence Awards for their exemplary contributions.

To advance our support for continuing education, the SingHealth Health Manpower Development Plan awards were presented in March to 145 healthcare professionals, including 21 team-based awards, in line with our focus on integrated patient-centric care across specialties and professions.

Under the Talent Development Fund (TDF) programme, 66 Scholarships (including 15 Pre-service Scholarships) were awarded in support of SingHealth's four strategic areas of Leadership and

Organisation Development, Education, Research, and Service. Newly-developed TDF initiatives will also provide sponsorship for undergraduate programmes for administrative staff and postgraduate programmes for healthcare research and medical informatics staff, as well as enhance the teaching skills of our faculty staff.

To equip potential Advanced Practice Nurses with expert knowledge and skills for the clinical management of patients as well as the ability to use research findings for effective practice, SingHealth has been sponsoring nurses for the Masters of Nursing programme at the National University of Singapore. Twenty-four nurses have completed the programme, while 29 are currently pursuing their studies.

In recognition of their significant roles and contributions, our AHPs were honoured at the 2nd SingHealth Allied Health Community Day in February 2012. SingHealth has about 2,600 AHPs and many of them are pioneers and leaders in establishing evidence-based practice, in teaching and developing residency training programmes, as well as in participating in innovative research to further improve patient care.

The 5th Allied Health Innovative Practice Award was presented to three winning teams at the same event. Their projects included introducing an early intervention programme for children with mild developmental needs at KKH; promoting the use of virtual reality such as the Wii game to encourage active learning for stroke patients at SGH; and initiating a test to provide physicians with an evidence-based treatment option for multidrug-resistant bacterial infections at SGH.

Dr Celia Tan, Group Director, Allied Health, SingHealth, and Director, SGH Post-Graduate Allied Health Institute, had the honour of being the first AHP in SingHealth and from Curtin University to be appointed as Adjunct Associate Professor, in recognition of her invaluable contributions to the Physiotherapy and International Health faculties at Curtin University.

Our trailblazers were also recognised for their outstanding work at the 2011 National Medical Excellence Awards (NMEA), a national-level award by the Ministry of Health. The Awards are given in recognition of the exemplary efforts of clinicians, clinician-scientists and other healthcare professionals for their clinical, education and research work.

Dr C. Sivathanan, Co-director, Heart and Lung Transplant, National Heart Centre Singapore (NHCS) was conferred the National Outstanding Clinician Award, in recognition of his pioneering work in heart and lung transplant in Singapore. Prof Tan Eng King, Senior Consultant, Department of Neurology, National Neuroscience Institute (NNI), was awarded the National Outstanding Clinician Scientist Award for his leadership in the field of Parkinson's disease and movement disorders. Prof Tan has also been instrumental in setting up a fully integrated movement disorder programme at NNI, which benefits patients with gait problems and involuntary movements.

In recognition of her exceptional leadership and outstanding contributions to the nursing profession, Assoc Prof Lim Swee Hia, Director, Special Projects, SGH, and Senior Director, SingHealth Alice Lee Institute of Advanced Nursing, was the first nursing professional in Singapore to be conferred an Honorary Doctor of Science degree by Curtin University.



## com·mu·ni·ty · en·gage·ment

[ kuh-myoo-ni-tee en-gej-muhnt ]

1. We embrace the opportunity to serve society in and beyond Singapore.
2. We empower the community to support themselves.

“My sincere gratitude to you for all your help during my transplant. I am doing very well now and I hope you will continue to bring joy to other patients as you have to me and my family.”

Mr Tan Peng Yang, 21 years old, a haematopoietic stem-cell transplant recipient at SGH, who has received psychoemotional support from Ms Khoo.

**Previous spread: Ms Olivia Khoo, Principal Medical Social Worker, Medical Social Services, SGH, recipient of the Healthcare Humanity Award 2012, explaining to a patient on the help available.**

## COMMUNITY ENGAGEMENT

As we push ahead building on our strong foundation of combining the best of research and education to deliver quality patient care, we also embrace the opportunity to serve society and empower the wider community to support themselves.

At SingHealth, this means engaging the community at home and beyond Singapore's shores through humanitarian relief efforts, fundraising and community education.

## SINGHEALTH HUMANITARIAN RELIEF PROGRAMME

SingHealth's Humanitarian Relief Programme (SHRP), launched in 2009 aims to promote volunteerism and build an altruist culture within the organisation. Our healthcare volunteers work together with our partner relief organisations to provide humanitarian relief to disaster stricken areas in the region.

Discussions have been ongoing with non-government organisations (NGOs) such as Mercy Relief, Singapore Red Cross and Medecins Sans Frontieres (MSF) (Doctors Without Borders) to firm up collaboration opportunities. SHRP has also begun working with International NGOs to explore how SingHealth staff can be involved in more structured and longer term missions in post-disaster recovery and rehabilitation phases.

As part of the programme's collaboration with MSF, Mr Jagmohan Singh, MSF's human resources director, gave a presentation on MSF's field activities and projects as well as in-depth details of their humanitarian missions to our healthcare volunteers in December.

Assoc Prof Mark Leong, Head, SHRP, Head and Senior Consultant, Department of Emergency Medicine, Singapore General Hospital (SGH), was instrumental in the work with the Singapore Civil Defence Force (SCDF) in Operation Lionheart, the codename for a dedicated contingent maintained by SCDF on standby to provide rescue, fire-fighting and services to handle hazardous materials in



### **Dr Arif Tyebally**

Deputy Head and Consultant, Department of Emergency Medicine, KKH

Dr Arif Tyebally believes that tomorrow's medicine is best achieved through inspiring and motivating doctors to reach their peaks of excellence, to continue with medical progress and research to bring the best available care to patients. With a deep passion to care for those in need, he uses his gifts as a clinician to make a difference to people's lives.

Beyond his roles as a clinician, a faculty member in both the SingHealth Paediatric and Emergency Medicine Residency Programmes and an adjunct instructor at the Duke-NUS Graduate Medical School, Dr Tyebally has been active in humanitarian work since his first relief mission to earthquake and tsunami-stricken communities in Banda Aceh, Indonesia, in January 2005. "It was an unforgettable experience. I felt that the skills I had as a healthcare professional were a gift – one that was badly needed – and I realised that it takes so little on our part to give and make a big difference to the lives of others."

"The saying about medicine being both an art and a science could never be more true," Dr Tyebally says. "Patients have a lot more expectations and we cannot ignore them as our primary duty is to heal and comfort. Contributing to the community and working with underprivileged populations constantly reminds us of our primary duty and prevents us from being distracted by less important tangible gains."

disaster stricken countries. Since May 2011, SingHealth has provided a doctor for the Medical Element of Operation Lionheart.

In April 2011, Dr Arif Tyebally, Deputy Head and Consultant, Department of Emergency Medicine, KK Women's and Children's Hospital (KKH), attended the Australian Medical Humanitarian Course in Melbourne, to learn more about mission craft for disaster relief operations.

### **SINGHEALTH FOUNDATION**

The SingHealth Foundation, an Institution of Public Character, is a non-profit grant-making organisation committed to supporting healthcare programmes. The Foundation manages financial contributions and awards grants in support of medical research and education, and healthcare services for Singaporeans and the community at large. In FY 2011, the Foundation managed close to S\$170 million in funds and awarded approximately S\$30 million in new grants.

The Singapore Cord Blood Bank (SCBB), an internationally accredited public cord blood bank, has been receiving support from the Foundation since its opening in 2005. SCBB facilitated a total of 31 transplants in FY 2011. The Foundation also supports the Arts for Health programme, which organises artistic and cultural activities to help provide therapy comfort and healing to patients.

In line with the commitment to improve patients' lives, the Foundation supports researchers through funding efforts. This could help our researchers to catalyse the bench-to-bedside progression of fundamental discoveries in healthcare applications, potentially improving patient outcomes.

The Health and Manpower Development Programme (HMDP), co-funded by SingHealth Foundation and the Ministry of Health, provides opportunities for our healthcare professionals to train and acquire new knowledge and skills from renowned medical training



centres overseas. A total of 145 healthcare professionals received the HMDP awards in FY 2011.

### **PRESIDENT'S CHALLENGE**

Since 2004, the SingHealth family has been a supporter of the annual President's Challenge national campaign. Now in its eighth successive year, the Group has raised a total of close to S\$2.5 million for the charity.

This year, the SingHealth family continues to lend our support through pledge card donation drive and fundraising activities. With the theme "Heart of Caring", we show who we are – an organisation committed to caring, not only for our patients but also the community at large.

Some of these fundraising activities include the first ever Nurses' Day Musical, *Hey Florence!*, staged by SingHealth nurses in July 2011. A total of S\$30,000 was raised from ticket sales for President's Challenge beneficiaries.

SGH Volunteers also raised funds to build a library at Beyond Social Services, with storytelling by our volunteers and gifts of books and stationery items donated by SGH staff.

KKH staff rallied together for the President's Challenge in June 2011 at the "Heart of Caring" Bazaar, with S\$32,000 raised from more than 15 stalls and volunteers pitching in to make baked goods for sale.

In all, a total of S\$260,000 was raised for President's Challenge beneficiaries in 2011.

### **PROMOTING HEALTH EDUCATION AND LITERACY**

In January 2012, the Marketing Communication and Partnership Development team spearheaded the launch of a mobile app, *Health Buddy*, in collaboration with the Integrated Health Information Systems (IHIS) development team. Offering smartphone users a new platform for free access to a myriad of useful health-related

information, the app provides easy and instant contact to the Group's hospitals, national centres and polyclinics.

Key features of the app include weekly health tips; a full listing of GP clinics in Singapore, complete with opening hours, and a searchable glossary of medical conditions and treatments. The app has achieved about 25,000 downloads to date and was awarded a Bronze Medal in the Mobile Applications category at the prestigious Singapore Infocomm Technology Federation (SITF) 2012 Awards.

KKH and IHIS also jointly produced the *Woman & Child HealthPedia* free mobile application in May 2011, the first-of-its-kind app providing on-the-go information on pregnancy, women's and children's health in an Asian context. Features of the app include the "Pregnancy FAQ" section which addresses topics ranging from the types of care during pregnancy to diet and information surrounding fetal screenings and tests. The app was awarded the Excellence Award at the Asian Hospital Management Awards in September 2011.

The inaugural SingHealth Silver Years English Health Forum "Spring to Life!" hit a record success in November 2011, with 569 attending the forum to learn more about dementia, pain management, nutrition for the elderly, and colon health.

In April 2011, the SingHealth Women Forum, "Fabulous From 40", saw the highest attendance of 480 participants since its inception in 2005. Special interactive sessions for health tips covered weight management, skin rejuvenation and aesthetics, and bone-building.

*Singapore Health*, SingHealth's bilingual (English and Mandarin) health newspaper, was launched in 2009 to advance health literacy among Singaporeans. Jointly produced by SingHealth Group Communications and SGH Communications, it is partially funded by the SGH Integrated Fund and SingHealth Foundation.

Circulation of the publication now stands at 50,000 copies with an estimated readership of 250,000. It is available at all SingHealth

institutions, selected external healthcare institutions and designated distribution points around the island.

Recognising that women are the primary healthcare decision-makers for their families, SingHealth worked with *Simply Her* magazine to produce a *Singapore Health* supplement to support women in this role. Following the popularity of the first supplement in the May 2011 *Simply Her* issue, the newspaper saw an extension of its reach when 10,000 copies of the second special eight-page English supplement were distributed with issues of *Simply Her* magazine in February 2012.

To reach the Malay-speaking community, a special four-page Malay supplement, with stories on healthcare topics and issues relevant to the community, was produced to accompany the year-end issue of *Singapore Health* in November 2011.

## sing·health · in·sti·tu·tions

[sing-helth in-sti-too-shuhns]

1. Singapore General Hospital.
2. KK Women's & Children's Hospital.
3. National Cancer Centre Singapore.
4. National Dental Centre Singapore.
5. National Heart Centre Singapore.
6. National Neuroscience Institute.
7. Singapore National Eye Centre.
8. SingHealth Polyclinics.
9. Bright Vision Hospital.



**sin·ga·pore · gen·er·al · hos·pi·tal**

[SGH]

**1. Singapore's largest tertiary hospital. 2. An academic hospital with a bent for education and research to improve patients' outcome.**



Singapore  
General Hospital  
SingHealth

“After treatment, I have better control over my bladder functions, and my kidneys are not swollen anymore. I have regained the freedom to be active and no longer shy away from simple acts like going to work, taking trips, and having outings with my husband.”

Mdm Tan Beng Lee, 65 years old, who had chronic infection and inflammation of the bladder.

Previous spread: Asst Prof Ng Lay Guat (left), Head, Department of Urology, SGH, with her patient, Mdm Tan (right).

We continue to live our mission as an academic hospital, leveraging on the collective strengths of the SingHealth cluster and our partnership with Duke-NUS Graduate Medical School to advance our research capabilities and establish multi-agency, multi-institutional collaborations. A result of this collaboration is a clinical trial by our Singapore General Hospital (SGH) doctor and researchers from Duke-NUS Graduate Medical School on the efficacy of Celgosivir as a treatment for dengue fever, potentially the world’s first anti-viral drug to treat the disease.

We made progress on the education front, having received accreditation by ACGME-I for another seven SingHealth Residency programmes, bringing the total accredited programmes managed by SGH doctors to 13. We organised the 1st Joint Asia-Pacific Wound Conference led by our nurses and 1st Singapore Rehabilitation Conference that reached out to a regional audience. We added the University of Illinois to our allied health education network to enhance pharmacists’ training and research.

Patient safety and good clinical outcomes remain a priority. Reaccreditation by the Joint Commission International (JCI) reaffirmed the Hospital’s commitment to high standards of patient care and safety. We started on various construction and upgrading work to improve our facilities and build capacity. The Academia, due to open in 2013, will house SGH Pathology’s new state-of-the-art laboratories which will deliver faster and highly accurate results to support clinical decisions.

Hospital processes were also made more efficient with technology. The new Outpatient Pharmacy Automation system to pick, pack and label medicines boost patient safety and productivity, while the new mobile@SGH allows patients to view through their smartphones the payment modes and queue length at our A&E Department.

We are constantly moving forward in our endeavours to improve care for our patients. We provide clinical and nursing leadership at Bright Vision Hospital and are planning for a regional 1,400-bed Sengkang General Hospital and 500-bed Community Hospital on SGH Campus. These developments will ensure that patients receive the appropriate level of care in a conducive environment, which will enhance their recovery.

We continue to innovate to keep ourselves at the forefront of Medicine, constantly thinking of new ideas and better ways of doing things so that our patients can receive the best care, outcome and experience.

**PROF ANG CHONG LYE**  
**CEO, SINGAPORE GENERAL HOSPITAL**  
**DEPUTY GROUP CEO, CLINICAL SERVICES & INFORMATICS,**  
**SINGHEALTH**

## **SINGAPORE GENERAL HOSPITAL**

As Singapore's flagship tertiary hospital, SGH, with an 8,000-strong multi-generation diversified workforce, is driven by a public mission to serve the healthcare needs of the nation and provide the best in patient care and outcome.

Staying true to the spirit of an academic hospital, we take pride in teaching the next generation of healthcare professionals, innovating care and driving research, and translating findings into breakthroughs and improvements in clinical care and processes.

## **PATIENT CARE**

We are constantly looking at ways to streamline our processes and bring better care to our patients. For example, visiting patients at SGH has become easier after the Automated Visitor Management System was implemented at Blocks 4, 5 and 7 in January 2012. Visitors can self-register at kiosks, on the Internet, or at our manned visitor registration counters. This new system also facilitates contact tracing in the event of a disease outbreak, enhancing our patient safety measures.

In February, a new e-meal ordering service was rolled out, allowing our nurses more time to focus on patient care. Patients order from a menu with pictures of the different meals, giving their choice to a nurse who registers them on a "computer-on-wheels". The initiative came from seven nurses who were inspired by the hand-held devices used for taking meal orders at a fast food chain.

Bright Vision Hospital, a community hospital, came on board the SingHealth family in April 2011, with SGH providing the management as well as clinical leadership and expertise. We started planning for a regional 1,400-bed Sengkang General Hospital, and 500-bed Community Hospital on SGH Campus. All these will add to the number of hospital beds available as an ageing population increases the demand for healthcare. More importantly, patients will be able to receive the right level of care at the most appropriate institution.



**Mr Lim Tze Peng**

Senior Pharmacist, SGH

Even at a young age, Lim Tze Peng was intrigued by how the doctor prescribed his medication from a wide variety of drugs, and decided to become a pharmacist after he learnt that they are the true drug experts behind these prescriptions. Part of a research team at SGH, he sees tomorrow's medicine as creating new frontiers, focused ultimately on the well-being of patients.

"Tomorrow's medicine means personalised medicine for the next generation", he says, which means a better understanding of what each person really needs. As an example, the research team he is on has been working on antimicrobial combination therapy for hospital acquired infections since 2007. They started from identifying effective combinations for various bugs in the early years to developing methods to identify unique antibiotic combinations. "The challenge lies in identifying the optimal combination in each patient in the shortest possible time. This will dispel the myths and current practices that a 'one size fits all' antibiotic therapy will suffice for most infections."

Tze Peng adds: "Through clinical practice, we hope to accord the best care to patients using groundbreaking results from research and to inspire more aspiring clinicians and staff through education to better improve the next generation of healthcare professionals."

A new Outpatient Pharmacy Automation system to pick, pack and label medicines has given a boost to patient safety and hospital productivity, while the new mobile@SGH allows patients to view through their smartphones the payment modes and queue length at our A&E Department.

The introduction of a technologically-advanced system to safely lift and move patients who have suffered a stroke or have other neurological conditions reduces the risk of hurting them. It also helps our nurses avoid straining their backs when moving the patients. The system was first introduced at the neurology ward in 2011 and will be installed in intensive care units by 2013.

Surgeons at SGH became the first in Southeast Asia to be able to remove hard-to-reach cancers of the throat, tongue and tonsils using the da Vinci robot-assisted surgical system to perform minimally invasive procedures. The minimally invasive TransOral Robotic Surgery (TORS) method enables doctors to reach the tumour site through the mouth without having to make an external incision. With TORS, patients with advanced stage cancers also need not undergo chemotherapy, which is usually required after open surgery.

Type 1 diabetes patients had their lives changed with a new programme, the first and only in Asia that gives them the freedom to manage their diabetes better. DAFNE, or Dose Adjustment for Normal Eating, is a five-day course that teaches diabetic patients how to match their insulin to the carbohydrate they eat day-to-day and meal-to-meal. Thus, they can eat what they like, and, more importantly, when they like. SGH patients refer to a carbohydrate portion booklet produced by the SGH team for use in Singapore and Southeast Asia, that lists some well-loved local foods such as bubor cha-cha and chapatti which diabetic patients usually have to avoid.

SGH received JCI reaccreditation in August 2011, reaffirming the hospital's commitment to ensuring the highest standards of patient care and safety.

## EDUCATION

As we build a vibrant culture within our Academic Healthcare Cluster for the sharing of knowledge and care innovation, we draw on the collective strengths of each and every clinical specialty, including nursing and allied health.

We worked closely with our academic partner, Duke-NUS Graduate Medical School, to establish Academic Clinical Programs (ACP) in the fields of Medicine, Obstetrics & Gynaecology, and Surgery. This collaboration brought together experts in the same speciality area to enhance research, teaching and clinical care.

As the largest Sponsoring Institution for the SingHealth Residency Program with 36 clinical specialties and a diverse patient load, SGH provides an ideal environment for graduate medical education. Our commitment to nurturing the next generation of healthcare professionals took a leap forward in October 2011 with seven Phase II programmes under the SingHealth Residency Program obtaining the Accreditation Council for Graduate Medical Education-International (ACGME-I) accreditation, bringing the total number of accredited programmes to 13. The accreditation reaffirmed SGH's efforts and commitment in educating the next generation of doctors to deliver even better patient care in Singapore.

The conference scene this year saw two firsts. The first Singapore Rehabilitation Conference in February 2012, jointly organised by SGH and Tan Tock Seng Hospital, successfully positioned Singapore and SGH at the forefront of rehabilitative medicine. In the spotlight were trials in virtual reality and interactive media, the use of sensors, weight-support devices and robots for gait training, as well as improved workflows to provide early rehabilitation to people recovering from stroke and traumatic brain injury.

The first Joint Asia-Pacific Wound Conference in September 2011, organised by SGH and the Wound Healing Society of Singapore, brought together clinicians, nurses and allied health professionals



**Assoc Prof Marcus Ong Eng Hock**

Senior Consultant, Department of Emergency Medicine, SGH

*"I actually wanted to study law but decided that medicine was a more direct way that I could help people." For Clinician Scientist Assoc Prof Marcus Ong, tomorrow's medicine means integrating the practice of medicine with research and education to achieve better patient outcomes. "There are things that frustrate us every day because we know it can be done better. That is where research can come in to improve patient care."*

*As a clinician, researcher, leader and educator, preparing the next generation to tackle tomorrow's challenges is vital. His advice for young professionals: always ask questions about what is happening around you.*

*A better tomorrow depends on reflection, much study and scrutiny. "We will not improve unless we are willing to take a hard look at ourselves, identify areas where we are lacking, and invest in the future."*



**Ms Liow Siew Ch'ng Eunice**

Senior Nurse Clinician (Specialty Care), SGH

Seeing the love and dedication that her aunt and uncle, both nurses, put into the care of her grandmother inspired Eunice Liow to join the nursing profession. Today, she is an accomplished nurse specialising in care for diabetic patients. She constantly keeps abreast of developments and discoveries, and sharpens her skills and knowledge so that she can apply evidence-based care to her patients.

A strong advocate of our common purpose, 'Patients. At the heart of all we do', Eunice believes that we should "treat every patient as if they are your loved one," and that we must be sincere and give our best care. She envisions Academic Medicine as a journey that will further collaborations among healthcare professionals providing a higher level of care and vigilance in placing patients at the centre of our care.

Her advice for the next generation of nurses: "Nursing provides an abundance of opportunities to develop your skills and knowledge. Never be complacent with the current practice. Constantly challenge yourself in expanding your role in clinical areas and enhancing your leadership role. Bring out the best in you and your patient."

from Singapore and the region to share expertise and knowledge in advances in wound care management.

Our doctors, nurses and allied health professionals play a pivotal role in education and hold academic appointments in the NUS-Yong Loo Lin School of Medicine, Duke-NUS Graduate Medical School, polytechnics and overseas universities. Eight SGH Advanced Practice Nurses received Adjunct Lecturer appointments at the National University of Singapore. One was appointed as a Tutor with Curtin University and Associate Educator for the Year 4 Musculoskeletal Core Rotation at Duke-NUS Graduate Medical School. The appointments are testament to the many contributions SGH nurses make in educating the next generation of nurses – through structured curriculum, and with the benefit of their experience and knowledge, in the continued pursuit of improving patient care.

Greater professional education opportunities for our allied health professionals opened up with SGH-Postgraduate Allied Health Institute (SGH-PGAHI) signing an MOU with the University of Illinois, Chicago, for courses in pharmacy, and gaining approval for the London South Bank University courses in radiography.

## RESEARCH

Another key area in our journey towards better patient outcomes lies in research and innovative care.

A study by Dr Charles Chuah, Senior Consultant, Department of Haematology, Assoc Prof Ong Sin Tiong, Cancer & Stem Cell Biology Program, Duke-NUS, and Dr Darren Lim, Senior Consultant, Department of Medical Oncology, National Cancer Centre Singapore, identified and found a solution to a mutated gene that lessens drug effects. This means that patients found to have this mutated gene can be given other forms of treatment.

Results from another study, led by Assoc Prof Tay Sun Kuie, Senior Consultant, Department of Obstetrics & Gynaecology, enable



the early detection and diagnosis of clear cell ovarian cancer to allow patients to receive specific treatment earlier. The study hopes to help doctors better diagnose clear cell cancer to improve patient outcomes.

In addition, cardiac arrest patients who are brought to SGH's Emergency Department with severely abnormal heart rhythm will be enrolled in a trial – the first in the world – to find out if delivering electrical shocks (defibrillation) at a specific time during cardiopulmonary resuscitation can improve survival. The study, led by Assoc Prof Marcus Ong, Senior Consultant, Department of Emergency Medicine, aims to increase patients' chances of survival and improve clinical outcome, and may affect the current practice in resuscitation significantly.

Other areas where research delivered improvements in patient care included early physiotherapy intervention at the A&E department to drastically reduce the time taken to treat patients who go to A&E with non-urgent back and neck pain, enhancements in the quality of life of patients noted after successful knee replacement surgery, and improving survival rates for heart attack patients through faster door-to-balloon time for treatment on arrival at the hospital.

## OUR PEOPLE

SGH empowers all employees to learn, improve and excel through various career development initiatives and leadership development programmes. As of FY 2011, 192 staff had attended leadership and healthcare management programmes. Sixty medical, nursing and allied health professionals received overseas skills attachment training in various specialty and sub-specialty areas, including Advanced Head and Neck Imaging and Intervention, Management and Rehabilitation of Persons with Acquired Brain Injuries, Orthopaedic Sports Medicine Fellowship in Sports Related Hip Injuries and Endoscopic Submucosal Dissection.

A total of 138 nurses underwent Advanced Diploma in Nursing

programmes to develop specialty skills. Eleven nurses started on a Master of Nursing programme and 34 others went for further studies on Diploma or NITEC in Nursing. Another 46 nurses were awarded sponsorships to pursue their Bachelor of Nursing and a nurse on the Postgraduate Diploma in Higher Education. In addition, 42 scholarships and sponsorships were offered to allied health professionals and medical and administrative staff for their degree upgrade and postgraduate clinical specialisation.

Through the Talent Development Fund (TDF) for education, 48 doctors involved in the SingHealth Residency Program participated in local conferences or workshops while 10 doctors responsible for driving these programmes attended overseas conferences to improve their teaching skills and raise the level of excellence for our Residency programmes. Sixteen SGH nurses and allied health professionals also benefited from the TDF (Education) to attend conferences or courses to enhance their teaching skills.

Our allied health professionals visited academic medical centres in the UK and US to establish collaborations with well-known overseas institutions in healthcare education and study their best practices.

Translating learning into patient care, a team consisting of a doctor, nurse and physiotherapist underwent team-based training in a multidisciplinary programme for the management of patients with rheumatoid arthritis. After their return, they set up the Musculoskeletal and Ultrasound Service Clinic in the Department of Rheumatology & Immunology to provide specialised care for patients with this condition.

## COMMUNITY

At SGH, we believe in giving back to the community. The Hospital is committed to helping the less privileged through community outreach activities, public education, fundraising and overseas humanitarian relief efforts.

At the annual SGH Community Day, 300 staff volunteers reached out to 500 residents living in one- and two-room flats in the Queenstown, Henderson and Bukit Merah neighbourhoods.

SGH staff raised more than \$50,000 to fund outreach programmes for the year, including Project Groomover where 130 SGH volunteers repainted and spruced up homes of needy families in the Bukit Merah and Central region, and built a library at Beyond Social Services as part of the President's Challenge 2011 outreach. Gifts of books and stationery items were also donated to the library.

To help patients navigate the SGH Campus to get to their various points of care, we built a bigger team of volunteers through the warmly-received Guider's Programme, designed to guide our elderly patients around the Hospital. Our 60 volunteers, identified by their "Friends of SGH" badges, help patients to perform self-registration at the automated registration kiosks and also offer support at the Specialist Outpatient Clinics, Diagnostic Radiology Department and Department of Emergency Medicine. Our volunteers have touched the hearts of more than 20,000 patients and visitors since the programme was launched in 2010.

## KEY FIGURES

SINGAPORE GENERAL HOSPITAL	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Size</b>		
Licensed Beds (as at end Mar)	1,579	1,590
Beds in Service	1,582	1,579
<b>Workload per annum</b>		
Bed Occupancy Rate	80.7%	79.0%
Inpatients	76,061	74,627
Total Patient Days	467,278	455,586
Average Length of Stay (days)	6.1	6.1
Total Surgical Operations	78,413	80,797
Day Surgeries	44,607	46,748
Inpatient Surgeries	33,806	34,049
Specialist Outpatient Clinic Attendances	694,067	698,689
Accident & Emergency Attendances	146,228	144,973
<b>Staffing (as at end Mar)</b>		
Total	8,188	7,879
Doctors	936	875
Nurses	3,803	3,622
Allied Health Professionals	1,354	1,273
Others	2,096	2,108

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

## AWARDS & ACCOLADES

### PATIENT CARE

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#### Singapore Health Quality Service Award

- 1003 Silver Award
- 302 Gold Award
- 83 Star Award

#### Superstars

- Prof Tang Choong Leong
- Dr Loh Lih Ming
- Linda Lim Heng Moy

#### Best Team Award: Service Initiative Improvement

- The Challengers:  
Goh Meh Meh, Tan Shi Wei,  
Marhaini Bte Mohd Zain, Lim Poh Yan,  
Boh Tuan Boey, Santha Devi D/O Tangavalu,  
Mohd Rashid A. Kadir, Tang See Eng

#### PS 21 Award

##### Distinguished Star Service Award

- Toh Siew Pang

#### National Day Awards 2011

##### The Commendation Medal

- Tan Ah Pang
- S Somanesan

##### The Efficiency Medal

- Seng Eng Hong
- Wong Yoke Sim Shirley
- Gormit Kaur D/O Bachan Singh
- Ho Hwee Kim
- Sanda D/O Thangarajoo
- Tan Siok Bee
- Ng Lai Chun
- Yap Soon Ghee

##### The Long Service Medal

- Chan Kit Cheng (retired)
- Chan Tai Sung
- Chia Mui Hiang
- Koh Bee Hua
- Loh Fang Choo
- Mary Hazel D/O Mathew Yagappan
- Mohamad Shah Bin Walat
- Mohamed Jamil Bin Abbas
- Ng Lan Yu (retired)

- Yuen Wai Sim
- Prof Venkataraman Anantharaman
- Assoc Prof Abhilash Balakrishnan
- Assoc Prof Foo Chee Liam
- Koay Saw Lan
- Chew Yau Hou
- Hamidah Binte Ahmad
- Hamisah Binte Noordin
- Indurani D/O Malayandi
- Jarajah D/O S Narayanasamy
- Joharah Bee D/O K Meera Hussein
- Kamariah Bte Gaffoor
- Ng Lei Beng@Tan Geok Hua
- Song Choi Kay
- Tay Mei Ling
- Wong Ngan See Nancy
- Zanib Bte Othman
- Ng Suat San
- Ng Lai Chun
- Chan Mei Ho
- Chee Pek Hoon

##### The Public Administration Medal (Bronze)

- Ang Hui Gek

#### Courage Fund Healthcare Humanity Award 2011

- Mohammad Nazri Bin Johri
- Salimah Bte Mohd Ayoob
- Lim Wen Ting
- Chua Bee Har
- Loh Yit Lan Susan
- Chen Xiaozhen
- Glyn Ytang Bonalos
- Toh Siew Pang
- Leow Siew Tin
- Lim Hwee Ling
- Cheng Lay See Peggy
- Lee Chin Chew
- Tay Yong Bee

#### Healthcare Humanity Award 2012

- Ho Yoke Kum Lillie
- Hone Swee Mui
- Jamnarani D/O Kannusamy
- Khoo Ruey Lin Olivia
- N Tave
- Neo Ah Hoe

- Ng Li Li Deborah
- Ruyani Binte Abu Yamin
- Tan Siew Choo
- Tay Pei Fang
- Yap Chew Theng
- Yeap Theng Hui Stephanie
- Yeo Kee Cheng
- Yuan Longxia

#### GCEO Excellence Awards 2011

##### Outstanding Clinician

- Assoc Prof Ong Biauwei Chi

##### Outstanding Nurse

- Sanda D/O Thangarajoo

##### Outstanding Allied Health Professional

- Lee Soo Boon

##### Outstanding Administrative Staff

- Ong Yok Kiaw Judy

##### Outstanding Ancillary Staff

- Samsiah Binte Ali

#### SingHealth Excellence Awards 2011

##### Visionary Leader

- Prof Ooi Peng Jin London Lucien

##### Champion of Change

- Prof Chow Wan Cheng

##### Distinguished Mentor

- Rosie Kwan

##### Distinguished Golden Achievement

- Prof Ong Yong Yau

#### MOH Merit Award 2011

- Tan Choon Yen
- Marina Bte Ahmad
- Loy Chye Kiaw
- Khong Kum Chue
- Liow Peck Hoon
- Lim Poh Yan
- Thenmolzi Arumugam
- Nurshifa Shaik Hussain
- Lim Mei Lian
- Lim Peng Muay

#### CEO Best Clinical Nurse Award

- Winner: Siah Chiew Jiat
- 1st runner up: Seah Xueli Eileen
- 2nd runner up: Juweita Bte Arba'in

#### President's Award for Nurses

- Chong Lai Ling

#### 5th Tan Chin Tuan Nursing Award 2011

- 2nd Prize Award: Leow Siew Tin

#### NTUC 50 Model Partnership Awards 2011

##### Individual Category

- Mohd Ghazali Bin Haji Idris

### EDUCATION

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#### SingHealth-Lee Foundation Nursing Award

- Tay Ai Choo
- Wong Mee Ching
- Zaiton Osman
- Hamizaton Hashim
- Hartini Osman
- Hafidah Zainal

### RESEARCH

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#### PS21 ExCEL Awards 2011

##### Best Ideator

- Phua Tien Beng

##### Outstanding Activist

- Christina Lim

### HUMAN RESOURCE

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#### Singapore HR Awards 2011

- Leading CEO Award – Prof Ang Chong Lye
- Leading HR Professional Award – Tan Li Na
- HR Advocate Award for E-HR Management
- Leading HR Practices for Performance Management
- Leading HR Practices for E-HR Management
- Leading HR Practices for HR Communications & Branding

#### 10th Asian Hospital Management Awards

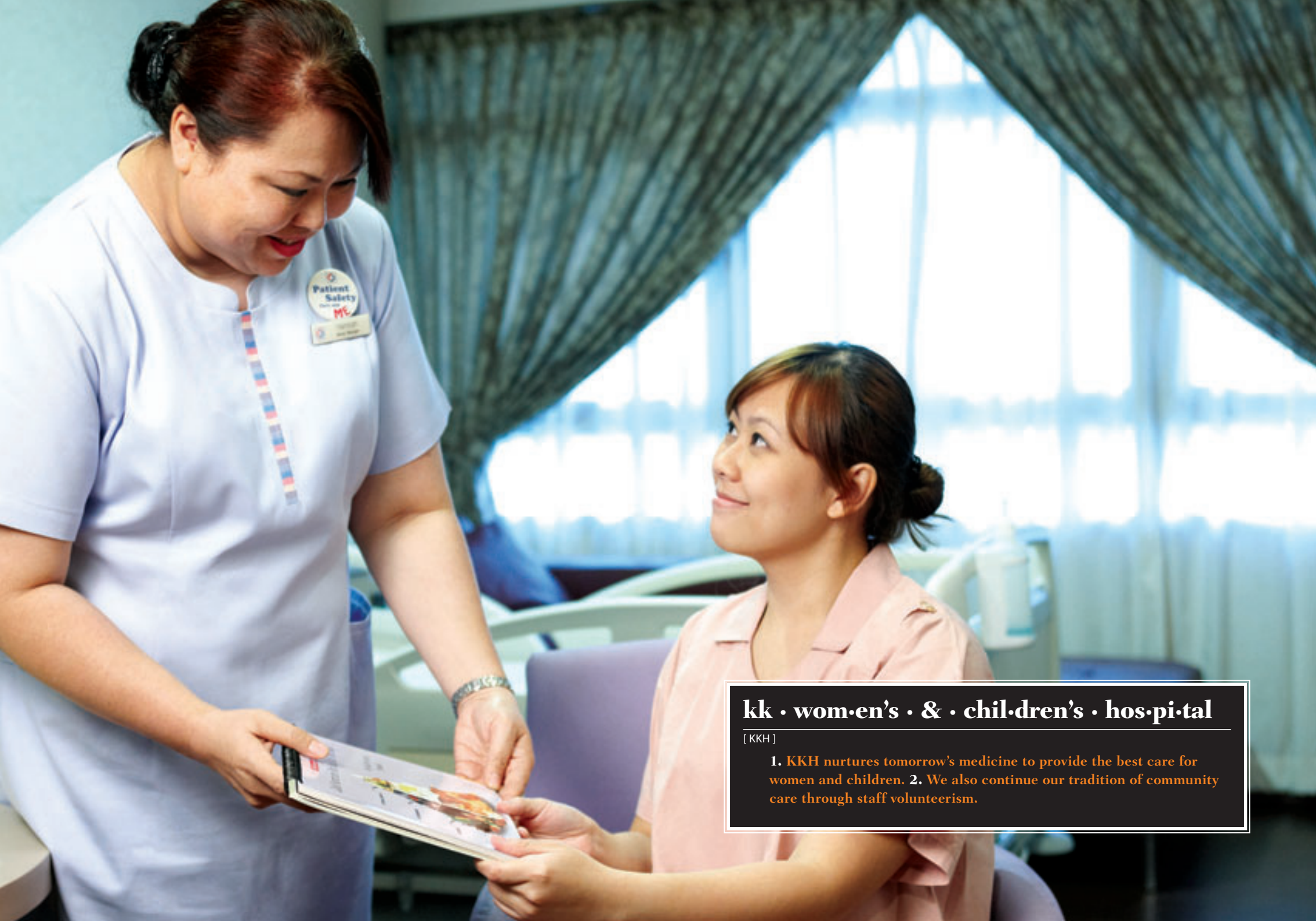
- Outstanding Award in Human Resource Development

#### NTUC Plaque of Commendation

- Model Company in Making Re-employment Sustainable

#### Community Chest SHARE Award 2011 – Gold

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## kk · wom·en's · & · chil·dren's · hos·pi·tal

[ KKH ]

1. KKH nurtures tomorrow's medicine to provide the best care for women and children. 2. We also continue our tradition of community care through staff volunteerism.



KK Women's and  
Children's Hospital  
SingHealth

“I was given the death sentence of being a diabetic during pregnancy. I went to KKH's O&G 24 Hours Clinic where I broke down and was admitted. How glad I was that I did so! I was assigned a dietitian, a diabetes nurse educator and a gynaecologist, who worked together as a team to help me in my recovery. It was hope given to me and I held on to it dearly.”

Ms Faith Leong, who was diagnosed with diabetes during pregnancy, welcomed a new lease of life with help and support from her healthcare team in KKH.

Previous spread: Ms Hanisah Barudin, Nurse Manager, Specialist Outpatient Clinic C, KKH, explaining a diet chart for diabetics to a patient.

KK Women's and Children's Hospital (KKH) has a long history and a strong legacy as a tertiary referral centre for women's and children's health issues, as well as being a preferred centre for clinical education, medical research and innovation. This focus is true to our vision to be the healthcare leader for women and children. KKH has a unique responsibility and opportunity to rise to this challenge, to take the initiative and to drive higher standards of excellence in patient care and safety for our patients.

Raising the bar for excellence in clinical care, teaching and research, KKH pioneered the OBGYN and Paediatric Academic Clinical Programs (ACPs) in partnership with Duke-NUS. The ACPs have begun to make an impact in forging close collaborations between clinicians, educators, researchers and scientists to work together to achieve clinical excellence.

The Academic Medical Research Institute at KKH (AMRI@KKH) was founded, providing a home and additional resources for our clinicians to engage in scientific research that translates into new methods, discoveries and care innovations that will enhance patient care and clinical outcomes. This provides a matrix, binding researchers from different programmes and departments within KKH as well as researchers from the larger SingHealth and Duke-NUS family.

KKH continues to be the main institution for medical training in Paediatrics and Obstetrics & Gynecology for the NUS Yong Loo Lin School of Medicine, Lee Kong Chian School of Medicine, Duke-NUS

Graduate Medical School and Residency programmes. We continue to strengthen our academic partnerships, allowing us to better equip and share knowledge with our future doctors, nurses and allied health professionals, developing training methodologies and inspiring them to push the boundaries of medical excellence that will engender future medical breakthroughs.

Our pursuit of Academic Medicine is a journey that spans KKH's history, and the team in KKH remains dedicated to challenging the possibilities of medicine and improving the health of generations to come.

**PROF KENNETH KWEK**  
**CEO, KK WOMEN'S AND CHILDREN'S HOSPITAL**

## **KK WOMEN'S & CHILDREN'S HOSPITAL**

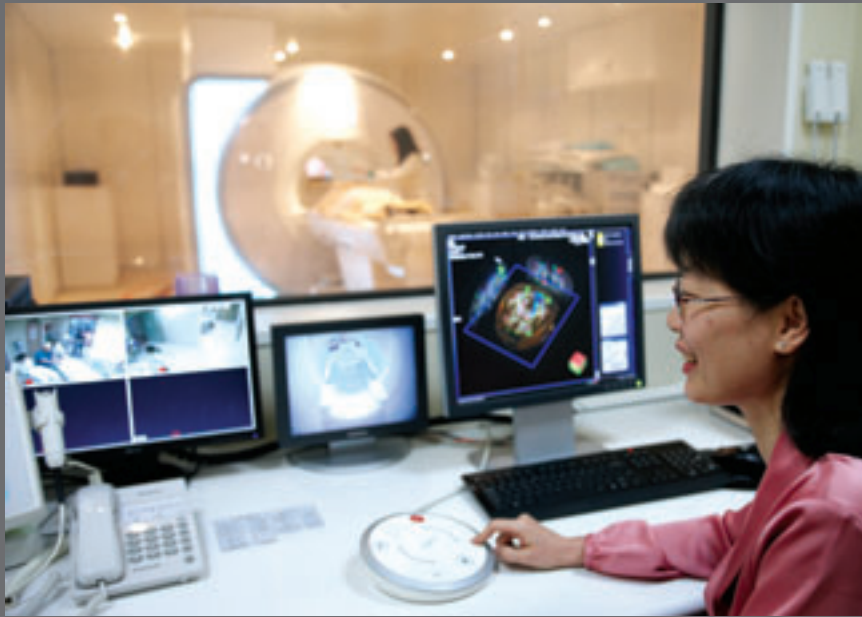
Defining tomorrow's medicine takes on added meaning at KKH, where our priority is the well-being of women and children – the very people who represent our future.

KKH is committed to providing our patients the highest quality of healthcare. As the only hospital in Singapore dedicated solely to the care of women and children, we continue to lead the way in medical research and innovative care, in pursuit of a better tomorrow for women and children.

## **PATIENT CARE**

There have been numerous advances in clinical care, in line with our continuous quest to improve patient outcomes. In July 2011, our Department of Paediatrics, Neurology Service, led by Head and Consultant Dr Derrick Chan; together with the Neurosurgical Service, led by Head and Senior Consultant Dr Seow Wan Tew, performed the first paediatric extra-operative subdural electroencephalography (EEG) monitoring for children with medically refractory epilepsy in Singapore. This new procedure facilitates more accurate evaluation for patients with medically refractory epilepsy. A specialist Epilepsy Clinic and Epilepsy Monitoring Unit was also established to evaluate and determine the best modality of treatment for children whose epilepsy cannot be controlled with medicine.

Dr Joyce Lam, Consultant, Department of Paediatric Subspecialties, Haematology & Oncology Service, spearheaded the establishment of the Bleeding Disorders Clinic to provide outpatient follow-up services for patients with bleeding disorders. The multidisciplinary clinic provides access to paediatric haematologists, haematology resource nurses and paediatric physiotherapists in a single appointment. To provide emergency treatment for children with active bleeds, the Paediatric Haemophilia Treatment Centre at KKH was also established in October 2011.



### **Dr Tang Phua Hwee**

Deputy Head, Magnetic Resonance Imaging Service, KKH  
Consultant, Department of Diagnostic & Interventional Imaging, KKH

Dr Tang Phua Hwee believes that Academic Medicine drives cost-effective advances in healthcare for patients by incorporating medicine's best practices into routine clinical care. These enrich clinicians' skills and knowledge, and translate into higher quality care and better outcomes for future generations of patients.

As Deputy Head of the Magnetic Resonance Imaging (MRI) Service at KKH and a Khoo Clinical Scholar with Duke-NUS, Dr Tang sees her roles as opportunities to make a positive difference in the lives of others who need help. To that end, she encourages collaborations between disciplines and institutions as a cost-effective and efficient way of pursuing increasingly sophisticated medicine and evaluating new therapies.

True to her passion, Dr Tang is currently conducting two Khoo Clinical Scholars Pilot Award projects in conjunction with Singapore Bioimaging Consortium, A\*STAR, to explore a non-invasive way of measuring perfusion of the brain in children with focal epilepsy and magnetic resonance spectroscopy in children with soft tissue masses. "Every diagnostic imaging test you carry out impacts patient management, whether the result is positive or negative."

KKH also launched the Child Development Integrated Care System to facilitate the timely transaction of patient information between members of multidisciplinary teams, greatly facilitating decision-making at the point of care. The facility also provides staff access to electronic health records and electronic services such as e-publishing and e-learning for staff.

In September 2011, doctors from our Division of Obstetrics and Gynaecology performed the first robotic gynaecologic surgery at KKH, a robot-assisted laparoscopic myomectomy to remove uterine fibroids. This surgery was performed using a robotic system to facilitate surgery, providing surgeons with a three-dimensional view through a tiny but powerful camera on the end of a robotic arm. The system also features articulated wrist movements, which enable precise stitching. This is particularly useful for complex procedures, providing better outcomes for patients. KKH plans to establish a regional centre for training in robotic surgery for Obstetrics and Gynaecology conditions, to enable the technology to be available to more patients.

The first Laser Therapy to treat Twin to Twin Transfusion Syndrome (TTTS) in Singapore was performed in June 2011 by the KKH team, led by Prof George Yeo, Head and Senior Consultant of the Department of Maternal Fetal Medicine. TTTS occurs in monozygotic multiples, and has a mortality rate of 60-100% for the fetuses. The Laser Therapy uses endoscopic instruments to rescue fetuses with TTTS, and has been associated with a 50% survival rate of at least one fetus and a 5% risk of cerebral palsy (in comparison to a risk of 20% when one twin dies without treatment).

### **EDUCATION**

Continuing our longstanding legacy in education and teaching, KKH launched a leadership mentoring framework for 78 clinicians and nursing staff, with the objective of encouraging a culture of learning, nurturing and development across KKH. These positive mentoring

relationships help to provide holistic development to mentees and provide support and guidance during the learning process.

In August 2011, the Department of Psychological Medicine launched Perinatal Depression training workshops for Obstetrics & Gynaecology nurses to actively promote early access to perinatal mental healthcare. Training included skills in identifying patients with perinatal depression, providing frontline counselling, and encouraging early intervention through referrals to psychiatric services.

To prepare and groom the next generation of doctors, Dr Tan Thiam Chye, Consultant, Department of Obstetrics & Gynaecology, has mentored several third-year Duke-NUS students in research. His mentorship was instrumental in enabling four of his mentees to win awards related to their research. Dr Tan was awarded the SingHealth Academy Golden Apple – Outstanding Young Educator Award 2011, in recognition of his outstanding commitment to excellence in educating the next generation of healthcare professionals.

The Paediatric and Obstetrics & Gynaecology Resident Nurse Training Programmes were established in 2011 to equip Registered Nurses with advanced nursing knowledge and skills to provide supervised medical care for patients in conjunction with medical teams. Resident Nurses are able to perform common medical procedures including intravenous cannulation, blood sampling, blood cultures and electrocardiograms. With Resident Nurses broadening their spectrum of capabilities, patients are attended to within a shorter time, and doctors are better able to attend to patients with more critical conditions. KKH continues to develop more Resident Nurse programmes and expand the roles nurses can fulfil in different areas of the hospital. The Paediatrics Resident Nurse Training Programme was recognised with the Best Poster Award at the SingHealth Quality Improvement Poster Competition in September 2011.

In February 2012, the research guide book, 'Neural Tube Defects – Role of Folate, Prevention Strategies and Genetics', edited by



#### **Assoc Prof Tan Kok Hian**

Chairman, Division of Obstetrics & Gynaecology, KKH  
Senior Consultant, Department of Maternal Fetal Medicine, KKH  
Head, Perinatal Audit and Epidemiology Unit, KKH  
Academic Chair, OBGYN Academic Clinical Program

Assoc Prof Tan Kok Hian's holistic approach to patient care is inspired by the fascinating combination of the art and science of healthcare and its application. For him, "the healthcare profession is primarily about caring for another human being – that is the art. It is also about learning and improving your skills, knowledge and concepts continually as technology advances, to give better care to our patients – that is the science."

His research reflects his belief that "the best way to define tomorrow's medicine is to create it". Currently, Assoc Prof Tan is working to improve pregnancy outcomes for mothers by creating new ways of predicting, assessing and reducing adverse risk factors. His recent research collaboration with scientists at A\*STAR and Nanyang Technological University on pregnancy disease biomarkers resulted in several applications for new patents.

As the academic chair of the OBGYN Academic Clinical Program, Assoc Prof Tan believes that Academic Medicine is the best pathway for healthcare professionals to enjoy diversity and synergy in their roles, and reach their fullest potential according to their strengths. "This is what is required to create tomorrow's medicine."





### Dr Han Wee Meng

Principal Dietitian, Department of Nutrition and Dietetics, KKH

Dr Han Wee Meng foresees one of the challenges facing tomorrow's medicine to be a new generation of patients, who expect the best quality, up-to-date and innovative care, and constantly question and seek answers elsewhere. Dr Han, who is part of the Inpatient Dietary Counselling Service in KKH, believes that Academic Medicine is the best means of preparing the next generation of healthcare professionals for the road ahead.

"In addition to building strong clinical skills and knowledge, we must focus on inculcating the value of continuously seeking out innovation to help improve the quality of care for patients. Embrace new evidence, and never forget that every small thing you do helps another individual to improve their life."

Her work also complements medical care through relevant integration of lifestyle and dietary factors. Driven by the passion to improve patients' lives, she is currently working on nutrition education and training programmes for staff to ensure the consistency of dietary advice, as well as to provide accessibility to basic lifestyle and dietary advice.

Dr Kannan Laksmi Narasimhan, Consultant, Department of Paediatric Surgery, was published online. The book explores the genetics of neural tube defects, prevention strategies and evidence that folic acid reduces the incidences of neural tube defects when administered to pregnant mothers. The book is written for scientists and basic researchers who are involved in studies of occurrence of neural tube defects.

### RESEARCH

KKH's academic culture for new research discoveries, care innovation and sharing of knowledge for the improvement of patient care and outcomes was formalised in February 2012, when the Academic Medicine Research Institute (AMRI@KKH) was launched at the KKH campus. AMRI@KKH is a joint initiative between KKH, Duke-NUS and SingHealth.

AMRI@KKH collaborates with the Directors of Research in the current Academic Clinical Programs (ACPs), and provides training, mentoring, support and resources for clinicians who want to develop into clinician investigators or clinician scientists. It also facilitates education and research career development for KKH residents and faculty members.

On-going research projects pursuing advances in patient treatment and outcomes include a study on biomarkers that can predict ovarian reserve/response in women undergoing in-vitro fertilisation; and the Khoo Clinical Scholars Pilot Award projects, which explore a non-invasive way of measuring perfusion to the brain in children with focal epilepsy and magnetic resonance spectroscopy in children with soft tissue masses.

Noteworthy amongst accolades received for research was the Furuse Award, received by Dr Masakazu Nakao, Associate Consultant, Cardiothoracic Surgery, at the Annual Meeting of the Asian Society for Cardiovascular and Thoracic Surgery in March 2012. Together

with fellow researchers from the Nanyang Technological University and Singapore Polytechnic, Dr Nakao created a new design for the Single Point Attached Commissure (SPAC) stentless pericardial valve, featuring anatomically-corrected, molded leaflets geometry. The new valve design is potentially life-saving for patients suffering from heart valve diseases, in particular smaller patients, such as children and smaller-sized women in the Asian population.

## OUR PEOPLE

KKH believes that our people are integral in the delivery of the highest quality of care for our patients. In recognition of their dedication to service excellence, 384 healthcare professionals from KKH won the Singapore Health Quality Service Award in 2012, for their exemplary professionalism and service to public healthcare. Other key accolades include a Commendation Award presented to Ng Gaik Nai, Deputy Director, Nursing, Division of Nursing – at the National Day Awards 2011.

KKH was awarded the inaugural Enabling Employers Award by the Singapore National Employers Federation (SNEF) in March 2012. The award recognises the hospital's efforts to integrate persons with disabilities into the workplace and retain talent through good employment practices.

## COMMUNITY

For best practices in volunteerism and philanthropy in public sector organisations, KKH was awarded the Public Sector Volunteer of the Year Award at the National Volunteerism and Philanthropy Awards in November 2011. Continuing our time-honoured tradition of community care, KKH continues to dedicate on-going efforts to improving healthcare in the community and region.

In December 2011, KKH signed a Memorandum of Understanding (MOU) with the Singapore International Foundation to train

healthcare professionals in the region. Under the MOU, KKH medical volunteers lend their clinical expertise to a train-the-trainers programme for maternal and child healthcare professionals in Cambodia, Indonesia, Laos, Myanmar and Vietnam.

Many KKH staff also regularly contribute their personal time and professional expertise to humanitarian relief missions such as Operation Smile, the Paediatric Cardiac Care Project and Neonatal Education, in countries such as Bangladesh, Cambodia, Indonesia, Myanmar and Vietnam.

FY 2011 saw the launch of a book, *What Happens to Me at the Hospital?* by Assoc Prof Anette Jacobsen, Senior Consultant, Department of Paediatric Surgery, and Associate Dean for the NUS Yong Loo Lin School of Medicine. The book helps young patients and their families to understand the different experiences and procedures that they may encounter at the hospital, and was presented to 150 patients on Children's Day in October 2011.

## KEY FIGURES

KK WOMEN'S AND CHILDREN'S HOSPITAL	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Size</b>		
Licensed Beds (as at end Mar)	819	832
Beds in Service	758	760
<b>Workload per annum</b>		
Bed Occupancy Rate	76.7%	73.4%
Inpatients	67,847	65,137
Total Patient Days	212,761	203,560
Average Length of Stay (days)	3.1	3.1
Total Surgical Operations	36,344	35,751
Day Surgeries	15,810	16,039
Inpatient Surgeries	20,534	19,712
Specialist Outpatient Clinic Attendances	533,902	507,469
Accident & Emergency Attendances	177,414	165,526
<b>Staffing (as at end Mar)</b>		
Total	4,261	3,915
Doctors	519	471
Dentists	5	3
Nurses	1,903	1,685
Allied Health Professionals	657	599
Others	1,176	1,156

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

## AWARDS & ACCOLADES

### PATIENT CARE

#### Asian Hospital Management Award 2011

Excellence Award (Runner-up) –  
Marketing, PR or Promotional Project Category

- iPhone App – Woman & Child HealthPedia

#### Director of Nursing Award 2011

- Ding Na
- Ong Ling Ling
- Tan En En Anna

#### WorldSkills Competition

Gold Medal (Caring Category)

- Li Kaiyun Jaslyn

#### Healthcare Humanity Awards 2011

- Lim Lee Nghoh
- Maria Binte Jumhasan
- Quek Wei Ern Grace
- Keu Kim Hwa

#### National Day Awards 2011

Commendation Medal

- Ng Gaik Nai
- Juliana Lim

#### The Efficiency Medal

- Loke Chui Yee
- Yong Lee Kin Jaxii
- Esther Low
- Lim Sok Lian
- Thilagamangai
- Rani Krishnan

#### Public Sector Volunteer of the Year Award 2011

- KKH

#### Rosalind Chelliah Award 2011

- Lim Shu Jing Rosanna

#### GCEO Excellence Awards 2011

Outstanding Administrative Staff

- Parameswari d/o Nagalingam V

#### Outstanding Allied Health Professional

- Tang Hui Nee

#### Outstanding Ancillary Staff

- Chee Kim Heng

#### Outstanding Clinician

- Dr Helen Chen

#### Outstanding Nurse

- Chia Soon Noi

#### GCEO Excellence Awards 2012

##### Outstanding Administrative Staff

- Chong Pik Wan

##### Outstanding Allied Health Professional

- Satyaki Sengupta

##### Outstanding Ancillary Staff

- Low Shook Hann

##### Outstanding Clinician

- Assoc Prof Bernard Chern

##### Outstanding Nurse

- Julia Eng

#### SingHealth Excellence Awards 2011

##### Distinguished Mentor Award

- Assoc Prof George Yeo

##### Distinguished People Leader Award

- Lee Heng Pheng

#### SingHealth Excellence Awards 2012

##### Distinguished Leader Award (People Leader)

- Tan Soh Chin

##### Distinguished Leader Award (Young Leader)

- Dr Janil Puthuchery

##### Distinguished Educator Award

- Prof Chay Oh Moh

#### Singapore Health Quality Service Awards 2011

- 236 Silver Award
- 102 Gold Award
- 46 Star Award

#### PS21 Star Service Award

- Dr Irene Chua

## EDUCATION

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### DUKE-NUS Faculty Awards 2011

#### Outstanding Educators

- Assoc Prof Loh Tsee Foong
- Dr Janil Puthucheary
- Dr Tan Thiam Chye

#### Pioneer Awards

- Prof Chay Oh Moh
- Assoc Prof John Tee
- Assoc Prof Loh Tsee Foong
- Dr Janil Puthucheary
- Dr Tan Thiam Chye

### SingHealth-Alice Lee Scholarship Awards 2011

#### Bachelor's Degree

- Shen Hongyu

#### Master's Degree

- Maria Binte Jumhasan

### SingHealth-Lee Foundation Nursing Awards 2011

#### Enrolled Nurse Category

- Ramonaliza Binte Ramli

#### Nursing Leader Category

- Thilagamangai

#### Registered Nurse Category

- Lim Rong Xiu Cynthia

### SingHealth Academy Golden Apple Awards 2011

#### Outstanding Educator

- Dr Tan Thiam Chye
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## RESEARCH

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### 14th World Congress on Controversies in Obstetrics, Gynecology and Infertility

#### Young Scientist Award

- Dr Shivamalar Vijayagiri  
*"Placental Growth Factor (PLGF) and Soluble FMS-Like Tyrosine Kinase-1 (SFLT-1) in early-onset and late-onset Pre-Eclampsia – A Preliminary Analysis"*

### 17th Asean Congress of Anaesthesiologists

#### Best Oral Poster Award (Regional Anaesthesia Category)

- Dr Mukesh Kumar Chimanlal Shah  
*"The analgesic efficacy of ultrasound-guided modified rectus sheath block compared with wound infiltration in reduction of post-operative morphine consumption in women undergoing open hysterectomy or myomectomy: a randomised trial"*

### International Society of Paediatric Surgical Oncology Conference

#### Best Poster Award

- Dr Chua Horng Yieing Joyce
- Dr Loh Hong Pheng Amos  
*"AFP diagnostic accuracy in ovarian tumor"*

### MOH HQI Poster Competition

#### Commendation Award

- *"Screening Programme for At-Risk Kids – A nurse-based preschool screening programme for learning difficulties in children with chronic medical illnesses"*
- *"Evaluation of a 24-hour pharmacist verification service"*

#### Merit Award

- *"Mission I'm Possible: Building and Supporting A Community-Based Model Of Care for Pre-schoolers with Mild Developmental Needs"*

### SingHealth Quality Convention 2011

#### Best QI Project

- 3rd Prize – *"To reduce vaccination errors and near-misses in Children's Specialist Outpatient Clinics"*
- Merit – *"To improve the 30-Day device-retention rate for implanted central venous devices in children receiving chemotherapy at KKH to 100% in 6months"*

## Poster Competition

- *"Inpatient Fall Prevention Measures in KKH"*
- *"Paediatric Resident Nurse: The Expanded Role of the Registered Nurse"*
- *"To Improve Efficiency in Reporting Incidents in the Hospital"*
- *"Successful Hearing Screening of 100,237 newborns in Singapore"*

### Team Excellence Symposium

#### Star Award

- *"To improve efficiency in submission and processing of allowance claims"*
- *"To improve patient safety by reducing medication errors during dispensing and serving to patients"*
- *"To improve efficiency in server and PC patching process to reduce vulnerability risk"*

#### Gold Award

- *"To increase transparency in IT service request process at Information Systems department"*
- *"To reduce vaccination errors and near-misses in paediatric Specialist Outpatient Clinics"*
- *"To improve high availability of Children's Emergency System (OPEC)"*
- *"To improve efficiency in merging patient's multiple electronic records registered under different numbers"*
- *"To Reduce Wrong Outpatient Billings to Third Party Payers at Specialist Outpatient Clinics"*

## HUMAN RESOURCE

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### Commendation Plaque for Re-Employment Practices

### Enabling Employers Awards 2011

### Leading HR Practices in Strategic HR (Special Mention)

### E-HRM (Special Mention)

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## OTHERS

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### Achieved Stage 6 of the HIMSS Analytics™ EMR Adoption Model

### Fire Safety Excellence Award 2011

### National Security and Safety Award 2011

### Service Class Award 2011

### Joint Commission International Recertification 2011

### Singapore Quality Class Recertification 2011

### People Developer Recertification 2011

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na·tion·al · can·cer · cen·tre · sin·ga·pore

[ NCCS ]

1. NCCS has broadened horizons further for tomorrow's medicine.
2. We will do even more for our patients' holistic well-being.



National Cancer  
Centre Singapore  
SingHealth

“The Advanced Practice Nurse (APN) is a very good consultant. With their knowledge, caring and friendly attitude, I am well and cheerful; all thanks to APNs’ efforts.”

Ms Ang is one of the breast cancer survivors who has benefited from NCCS’ Breast Cancer Survivorship Programme.

Previous spread: Ms Tan Beng Le, Advanced Practice Nurse, NCCS, with Ms Justina Ang, a breast cancer survivor who received treatment in 2003.

2011 was a very good year for Research at the National Cancer Centre Singapore (NCCS). Of the more than 190 research papers published during the year, more than a third had a Journal Impact Factor of >5, including highly influential publications such as Nature and Cancer Cell. On the Clinical Trials front, NCCS continues to lead the nation in cancer clinical trials, with 18 trials completed and a further 112 trials in progress. Ninety-six of these were multi-centre multi-national trials. Subjects recruited for the year alone was in excess of 350, out of the more than 3000 which NCCS had recruited since its inception.

The NCCS continues to lead in bringing the latest cancer treatments to patients in Singapore. This year we began treatment using Intra Operative Radiotherapy – a multidisciplinary approach to cancer treatment utilising the skills of both radiation and surgical oncologists. Other new treatments and techniques deployed include Peritonectomy, and the latest Image Guided Radiotherapy modalities.

Moving forward, we will be building a new NCCS building to ease the current space crunch and to prepare the Centre for the clinical, research, and educational challenges ahead. Integral to the building will be the National Proton Therapy Centre. Proton Therapy, which is fast becoming a crucial mainstream radiation modality, will enhance the armamentarium of our radiation oncologists.

All these advances have led to a very exciting climate of cancer care in the NCCS, which has resulted in many new clinical and research staff coming on board the team. We look forward to the stage of growth and advances, especially as we prepare for the new building to come.

**PROF SOO KHEE CHEE**  
**DIRECTOR, NATIONAL CANCER CENTRE SINGAPORE**  
**DEPUTY GROUP CEO, RESEARCH & EDUCATION, SINGHEALTH**

## NATIONAL CANCER CENTRE SINGAPORE

At NCCS, we have always been single-minded in our battle against a major health threat, to bring a better tomorrow to our patients.

Now, we are setting our sights on a broader view of the future. We are doing more beyond direct treatment, to enhance the holistic well-being of patients and to share and expand our expertise even more effectively.

## PATIENT CARE

Among the 6,000 Singaporean women treated at NCCS from 2004 to 2010, a significant 5,060 (84%) are on the road to recovery. With 94% of these patients showing no cancer recurrence, NCCS aims to help them to continue to live healthily.

To support our breast cancer survivors, a Breast Cancer Survivorship Programme was launched. Among the features introduced are value-added services for survivors when they come for annual review, including being attended to by a specially trained oncology Advanced Practice Nurse (APN) for a more holistic review of patients' overall health.

For men, prostate cancer is the third most common cancer in our rapidly greying population, afflicting those even in their early 40s. Four in 100 prostate cancer patients die from this disease. In Singapore, prostate cancer is occurring four times more frequently compared to 30 years ago.

In March 2011, NCCS and Singapore General Hospital (SGH) pioneered a new non-invasive treatment for prostate cancer, the Magnetic Resonance Guided Focused Ultrasound, with seven patients starting on a clinical trial. This is a single session therapy with real-time MR thermometry monitoring and non-ionised radiation.

The use of real-time 3D MR thermometry provides accurate monitoring of the treatment outcome and the adjusting of the treatment according to specific patient physiology. Other major expected benefits



**Dr Yap Yoon Sim**

Senior Consultant, Medical Oncology, NCCS

In the eyes of Dr Yap Yoon Sim, tomorrow's medicine is about always trying to extend the boundaries of the possible. For the future of oncology, she foresees an era of more "personalised medicine", with much more scope in discovering how people are all different, and so are their tumours.

This means that treatment of cancer in the future might need to be increasingly tailored according to each patient's genetic or tumour profile, hence the need for greater collaboration among practitioners to gather and harness such knowledge. This is evident in a global study of new treatment for breast cancer codenamed "CLEOPATRA", a trial with 808 patients in 25 countries participating, including 10 from NCCS. Although stage four cancers in the context of most cancers are not curable, Dr Yap firmly believes in supporting, conducting and participating in research to facilitate further discoveries.

She says: "With improvement in treatment options, it may not be impossible in the future for certain conditions. Without research, no advances in knowledge and no improvements in treatment outcome will be achieved."



### Dr Kwek Jin Wei

Senior Consultant, Department of Oncologic Imaging, NCCS

The whole of Academic Medicine is greater than the sum of its parts for Dr Kwek Jin Wei. As he says, "Individually, we are limited but with teamwork, we can harness the synergy that should exist between teaching, research and clinical care."

Collectively, this will result in effective policies at the national level, and best practices that advance research and education in the health sciences. For example, Dr Kwek was part of the team that conducted clinical trials and pioneered a new non-invasive treatment, the magnetic resonance guided focused ultrasound, to treat prostate cancer patients.

He adds: "We must work together as a team as we continue to seek out new ways of making diagnosis earlier and more accurately, of providing accessible and better treatment for our patients, as well as continuing to provide comfort and care for those who are suffering. That will define tomorrow's medicine."

of the treatment include a low complication rate and that patients can resume their daily activities within a day or two.

### EDUCATION

At NCCS, we emphasise on teaching and imparting knowledge to raise the standards of oncology care, not just in Singapore but also in the region, which is in line with our goal to be a global centre of excellence. Towards this end, 45 doctors delivered presentations at overseas oncology conferences to share from our wealth of knowledge and expertise.

The Post Graduate Education Unit hosted 16 fellows from the region in 2011. Each spent between six months to a year, during which they shadowed our clinicians on ward rounds, attended clinics and tumour board meetings, and assisted in surgery.

In line with NCCS' efforts to nurture a teaching culture and a spirit of inquiry, the Humphrey Oei Distinguished Lecture invited Prof Michael Rudolf Stratton from the Wellcome Trust Sanger Institute to Singapore. Prof Stratton delivered the 12th lecture which was on the evolution of the cancer genome.

A Cancer Symposium was held in November 2011 which had doctors from NCCS, Duke-NUS Graduate Medical School (Duke-NUS) and King's College London sharing on their research in cancer. The sessions covered basic and translational research, bio imaging and innovative clinical trials.

### RESEARCH

NCCS oncologists led the pack from Asia when they presented eight research abstracts at the American Society of Clinical Oncology (ASCO). The presentation in June 2011 was to an audience of 30,000 world renowned cancer experts who gathered at Chicago, Illinois, USA and covered topics such as diagnostics, patient outcomes, novel therapeutics and drug development relating to sarcoma, breast, stomach and colon cancers.



Associate Consultant Dr Iain Tan of the Department of Medical Oncology, won the ASCO Merit Award for his research on gastric cancer, earning himself an ASCO award in two consecutive years. This brought the award tally to six for NCCS. He was conferred the ASCO Young Investigator Award in 2010.

Potentially groundbreaking research conducted during the year includes the “CLEOPATRA” trial, where 10 patients from NCCS participated. They are part of a global study involving 808 patients from 25 countries by the Roche pharmaceutical group of a new anti-HER2 antibody used to treat advanced stage breast cancer.

NCCS has been active in a number of significant collaborations with Duke-NUS, a partnership that plays a seminal role in our pursuit of tomorrow’s medicine. The NCCS-Duke-NUS collaboration saw a team led by researchers from NCCS and Duke-NUS identifying hundreds of novel genes that are mutated in stomach cancer, and published online in April 2012 in Nature Genetics.

NCCS also collaborated with SGH and Duke-NUS, together with the Genome Institute of Singapore to identify the reason why some patients fail to respond even to some of the most powerful cancer drugs.

NCCS’ Lymphoma Study Group is also collaborating with the National Institutes of Health from the US on a study for lymphoma. The multidisciplinary team is led by Prof Teh Bin Tean, Director and Principal Investigator of the NCCS-Van Andel Research Institute Translational Cancer Research Laboratory (NCCS-VARI), and includes Assoc Prof Lim Soon Thye, Deputy Head and Senior Consultant, from the Department of Medical Oncology.

Other focus groups have also been established in cancer research, overseen by Prof Teh. Cancer-type translational research groups have been set up in lymphoma, peritoneal, head and neck, kidney, breast, pancreaticobiliary cancer and sarcoma. These groups focus on Asian cancers relevant both locally and in the region, to understand

their genetic makeup and to translate this bench-based research into clinical application.

## OUR PEOPLE

The Centre firmly believes that the development of our staff is integral to the delivery of better patient outcomes and improving their survival rate. In FY 2011, NCCS sent 143 doctors on overseas conferences and 21 staff (including doctors, nurses, paramedical staff, and research staff) on fellowship, study trips and other training to enhance treatment for our patients.

Among them, Dr Ravindran Kanesvaran, Associate Consultant, Department of Medical Oncology, was on a Health Manpower Development Programme (HMDP) Fellowship in Geriatric Oncology and Genitourinary Cancer Service at Duke University Medical Center. Nurse Manager, Mr Goh Chee Kun was sent on a HMDP Fellowship in Updates on Oncology Surgical Nursing at Memorial Sloan-Kettering Cancer Center and The Institute for Johns Hopkins Nursing.

Also in 2011, NCCS received the People Developer Recertification, which recognises organisations with a total approach to managing people and achieving high performance through its people systems. The recertification demonstrates that NCCS has a motivated workforce and that it continuously brings out the best in people and achieves business performance through its people.

## COMMUNITY

In our efforts to serve and connect with the community, we conducted 13 CancerWise workshops and five public forums on different types of cancer and how to manage them. These workshops and forums aim to raise cancer awareness and educate the public on the importance of early screening.

The first Liver Cancer Patient Support Group in Singapore was set up in September 2011 to help patients and their loved ones cope with

the disease before, during and after treatment. The support group will organise activities for members ranging from educational talks to social networking. Their activities will benefit about 80 patients with newly diagnosed liver cancer at NCCS each year.

## KEY FIGURES

NATIONAL CANCER CENTRE SINGAPORE	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Workload per annum</b>		
Day Surgeries	10,208	10,494
Specialist Outpatient Clinic Attendances	131,408	129,692
<b>Staffing (as at end Mar)</b>		
Total	634	591
Doctors	135	126
Nurses	130	119
Allied Health Professionals	149	133
Others	220	214

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

## AWARDS & ACCOLADES

### PATIENT CARE

#### President's Science and Technology Medal

- Prof Soo Khee Chee

#### GCEO Excellence Award

##### Outstanding Clinician Award

- Dr Joseph Wee

##### Outstanding Nurse Award

- Connie Ong

##### Outstanding Allied Health Professional Award

- Chang Yok Ying

##### Outstanding Ancillary Staff Award

- Jennifer Chin

##### Outstanding Administrative Staff Award

- Lorraine Yip

#### College of Surgeons, Academy of Science Singapore

##### Young Surgeon's Award

- Dr Lee Ser Yee

### EDUCATION

#### Duke-NUS Graduate Medical School

##### Benjamin Sheares Professorship

- Prof Soo Khee Chee

### RESEARCH

#### SingHealth Excellence Award

##### Distinguished Researcher Award

- Prof Kanaga Sabapathy

#### American Society of Clinical Oncology (ASCO)

##### Merit Award

- Dr Iain Tan

#### International Research Promotion Council

##### Eminent Scientist of The Year

- Dr Melvin Chua



**na·tion·al · den·tal · cen·tre · sin·ga·pore**

[ NDCS ]

**1. NDCS stays at the cutting-edge of discovery by engaging more experts in research and education. 2. We support our staff to build their capabilities.**



National Dental  
Centre Singapore  
SingHealth

“Dr Bien Lai was patient and showed care throughout the treatment for my one-year-old son who had bad nursing caries and a chipped tooth. She understands my concerns as we discussed the treatment options. I was glad that I made the right choice to go to NDCS.”

Mrs Phua Yong Yong, mother of Arthur Phua, 18 months, a patient who is part of NDCS Infant Oral Health and Community Outreach Programme.

Previous spread: Dr Bien Lai, Registrar, Pediatric Dentistry Unit, Department of Restorative Dentistry, NDCS, with a very young patient.

The National Dental Centre of Singapore (NDCS) continues to focus its efforts on our patients, in care delivery, education and research.

Interdepartmental project teams started several process enhancement initiatives to reduce appointment slot waste, improve waiting times in the current challenging operational conditions and to improve clinical outcomes. A centre of excellence educates professionals for the future. We honour committed mentors who pass on their rich professional experience to pave the way for young clinicians to achieve their aspirations in our institutional practice. When two of our oral surgeons achieved their PhD titles in November 2011, an entire circle of mentors and supporting staff celebrated the achievement.

As we expand our capabilities in the upcoming years, such teamwork will ensure our growth as a leading organisation to achieve excellence, for our patients.

**DR KWA CHONG TECK**  
**EXECUTIVE DIRECTOR, NATIONAL DENTAL CENTRE SINGAPORE**

## NATIONAL DENTAL CENTRE SINGAPORE

At NDCS, we pursue the promise of tomorrow's medicine to benefit our patients across the whole age spectrum, from preventive care for young children to cutting seniors' waiting time for dentures.

We stay at the cutting-edge of tomorrow's discoveries by engaging many international experts in our ongoing research and education. We support our staff to learn new skills and build up their capabilities to equip them to deliver the best care to our patients.

## PATIENT CARE

Prioritising oral health for young children is a key focus in our Paediatric Dentistry Unit's collaborations with healthcare partners. As part of this effort, a community outreach project in February 2012 helped to raise healthcare partners' awareness of early childhood caries (ECC). The best prevention against ECC is parental education and infant oral health assessment. Last year alone, paediatric dentists at NDCS saw 1,000 cases of ECC, some needing surgery.

The programme first educates nurses and family physicians who see young children and their parents. These healthcare partners are educated on identifying at-risk children, and on early referral. The programme, which even includes pre-school teachers, reached more than 200 health partners.

In line with improving access to care and making our clinical outcomes more transparent, NDCS continues to make more information available. It is currently the only dental institution to publish its clinical outcomes for public view. Behind the outcomes statistics are systems that rigorously review and improve clinical processes to ensure quality care in a safe environment.

We are constantly improving our operational systems to enhance access to care. This includes efforts to reduce waiting times for appointments. We attend to patients with dental emergencies on the



**Dr Lye Kok Weng**

Consultant, Department of Oral & Maxillofacial Surgery, NDCS

Dr Lye Kok Weng believes that the future of medicine means moving from "eminence-based" to "evidence-based" medicine. This means embracing constant change and not being satisfied with current standards. It also means imparting an innovative spirit to the next generation of healthcare professionals, engaging them to have an inquisitive mind and a craving for continuing improvement.

And this will benefit patients. "Research will create new knowledge and treatment, and well-designed academic programmes will teach the most updated evidence-based knowledge. Over time, when this culture is pervasive and accepted, there will be an ingrained desire for new and better treatment, and maybe to be part of its creation", says Dr Lye.

Such focused effort is based on the belief that tomorrow's medicine will be better and is constantly changing with advances in technology and knowledge. "We must embrace this concept and not be satisfied with our current standards. As a researcher, I will constantly seek better methods to achieve better outcomes and as a mentor, I hope to influence and guide others towards this vision."



### **Ms Saudha Bte Sadimin**

Senior Clinic Coordinator and Dental Surgery Educator, NDCS

Beyond transferring skills and knowledge, Saudha Bte Sadimin also imparts important values such as respect and responsibility to her students and mentees.

Saudha has been in the dental profession since 1974 and has witnessed dentistry in Singapore grow from strength to strength, through her many roles from assisting dentists, managing staff teams in multi-chair dental clinics and directly serving patients and their families. For her, tomorrow's medicine means healthcare professionals coming together to update and develop new skills for patients' benefits. This is to improve patient safety, care quality and efficiency, and to reengineer processes to enhance service integration.

Tomorrow's medicine is also about developing good leadership, which has at its heart the desire to motivate people and create employees who have a sense of purpose. As she says, "healthcare is about lifelong learning and thus it challenges me as a teacher to stay current in our practice. I enjoy the opportunity to make a difference in a student's life and patients will also benefit from this ultimately."

same day whilst offering patients requesting elective appointments for initial consultations within 19 days on average.

FY 2011 also saw NDCS working to reduce waiting time for dentures. A Clinical Practice Improvement Project Team, led by Dr Seetoh Yoong Liang, Prosthodontic Unit, introduced a series of measures to improve dentures waiting time. Since the introduction of these measures, we have reduced waiting times by 30%.

At the Centre, we installed new four self-registration kiosks to lessen registration waiting for repeat patients, who now just have to scan the barcode on their identity or appointment cards. Of the 550 attendances daily, 85% are repeat patients who can benefit from this.

### **EDUCATION**

To be the centre of excellence that leads specialty care in Singapore, we continue to be the local Continuing Professional Education (CPE) leader, providing over 230 hours of learning opportunities in training and events, often open for private practitioners. Of these, NDCS also hosts many international faculty who share their rich clinical experience.

Notable education events this year include the NDCS Annual Scientific Meeting in September 2011 on geriatric-focused dentistry. The plenary speaker was Assoc Prof Inger Wårdh, Karolinska Institute, Sweden.

Other events included a lecture on complete denture therapy in July 2011 by Prof Thomas Dean Taylor, Professor and Head, Department of Reconstructive Sciences, University of Connecticut School of Dental Medicine, USA.

In March 2012, we hosted an education lecture on critical elements in endodontic therapy, by Prof Gunnar Bergenholtz who is the Professor Emeritus & Former Chair, Department of Endodontology and Oral Diagnosis, at the Sahlgrenska Academy, Gothenburg University.

NDCS continues to lend its facilities for dental auxiliary and

technicians' training, which provides frontline patient care opportunities that is valuable to their professional growth. Trainees also participate in learning events such as the Infection Control Symposium in December for dental assisting and allied health staff.

## RESEARCH

NDCS ceaselessly seeks to push ahead in the discovery of methods to deliver better patient outcomes. The Centre aims to further build human capabilities, infrastructure and framework in research to advance the science of dentistry, to benefit patients.

In FY 2011, the Centre secured a total grant of S\$43,750 in addition to one external research grant. There are currently 27 research projects. Staff from NDCS made 17 local and overseas presentations in the past year. Dr Enrica Sham, Registrar, Department of Orthodontics, received the "European Orthodontic Society Best Poster Award" at the 87th European Orthodontic Society Congress for her poster on a magnetic resonance imaging study.

Ongoing research projects include a study of the biomechanics of reconstructed mandibles with modular endoprosthesis based on research at NDCS, Singapore General Hospital (SGH), the SingHealth Experimental Medicine Centre, WorlayParsons Advanced Analysis Group, Instron Singapore and Radboud University Nijmegen with testing and analysis at the College of Engineering, University of Michigan, USA.

Nasopharyngeal carcinoma (NPC) is the sixth most common cancer affecting Singapore males. Of the 300 new cases each year, National Cancer Centre Singapore (NCCS) referred 260 new cases to NDCS for pre-radiotherapy oral health assessment and clearance. NDCS collaborated with NCCS to conduct a pilot study on dental caries biomarkers funded by a NDCS Research Grant.

Other collaborators include microbiologists from the Department of Pathology, SGH, a biostatistician from the Singapore Clinical

Research Institute and a collaborator from Melbourne University, Australia. The study paves the way for us to provide the best possible and highest standard of care to our patients based on evidence-based research.

## OUR PEOPLE

NDCS commits significant efforts to nurture and develop our staff in various career tracks of their choice. In addition to all the necessary support structure and resources, mentors are on hand to guide young clinicians in their fledgling careers.

Two clinicians – both Consultants of the Department of Oral & Maxillofacial Surgery – were conferred PhD titles by Radboud University, the Netherlands, for their research. Dr Lye Kok Weng completed his thesis on mandibular reconstruction, and Dr Raymond Wong Chung Wen on the biomechanics of various dental fixation methods.

The collaboration with the Karolinska Institute (KI) of Sweden enters its fifth year. Our joint Teacher Exchange programme has seen 16 teachers from across disciplines participating. Faculty members are arranged for exchange from KI and NDCS for a week every year. This allows our clinicians to expand their pedagogy experience and deliver better care to our patients.

NDCS' Executive Director Dr Kwa Chong Teck taught at KI in November 2011, covering management leadership and communications. Dr Teoh Khim Hean, Senior Consultant and Department Director, Department of Restorative Dentistry, also presented a lecture series on maxillofacial prosthetics, an area new to the residents from the Karolinska University Hospital in Solna, Sweden.

Our overseas training attachments included a Health Manpower Development Programme attachment for two staff at KI, in the areas of patient-centred service in orthognathic, cleft and craniofacial orthodontics and diagnostic histopathology.

Fifteen staff benefited from NDCS sponsorship for the National Institute of Technical Education Certificate (NITEC) in Dental Assisting in FY 2011. The scholarship covers the cost of training dental surgery assistants during their certificate level course.

## COMMUNITY

In FY 2011, the Centre disbursed over S\$240,000 in financial aid, benefiting 837 patients. The funding came from the SingHealth Foundation, and direct remission of fees from the Centre. A charity bazaar organised by staff also helped raise funds for needy patients.

NDCS opened its doors to students aspiring to be dentists at Open Houses in December 2011 and March 2012. Through the interaction opportunities, the students had a better understanding of dental care delivery and their career options and opportunities for continuing research and education.

## KEY FIGURES

NATIONAL DENTAL CENTRE SINGAPORE	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Workload per annum</b>		
Day Surgeries	5,977	7,083
Dental Attendances	149,664	156,788
Dental Procedures	156,026	162,563
<b>Staffing (as at end Mar)</b>		
Total	348	343
Dentists	77	76
Nurses	13	15
Allied Health Professionals	48	44
Dental Surgery Assistants	70	61
Others	140	146

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

## AWARDS & ACCOLADES

### PATIENT CARE

#### National Day Award 2011

#### Long Service Medal

- Dr Chen Nah Nah
- Dr Chua Ee Kiam
- Dr Tan Wee Kiat
- Dr Lim Sor Kheng
- Dr Teh Luan Yook
- Rita Bte Abdul Rahman
- Huang Ngoi Yin
- Lee Ah Geok
- Karupaiyathevar Maruthapandian
- Habsah Binte Mohammad Salleh
- Teo Chin Hong

#### Commendation Medal

- Leow Suat Lay
- Habsah Binte Mohammad Salleh

#### Efficiency Medal

- Lee Mun Choo
- Rita Bte Abdul Rahman

#### GCEO Excellence Award

#### Outstanding Clinician Award

- Dr Chew Ming Tak

#### Outstanding Nurse Award

- Ms Teo Soh Hiong

#### Outstanding Allied Health Professional Award

- Mr Seah Kin Huat

#### Outstanding Ancillary Staff Award

- Ms Tan Geok Eng

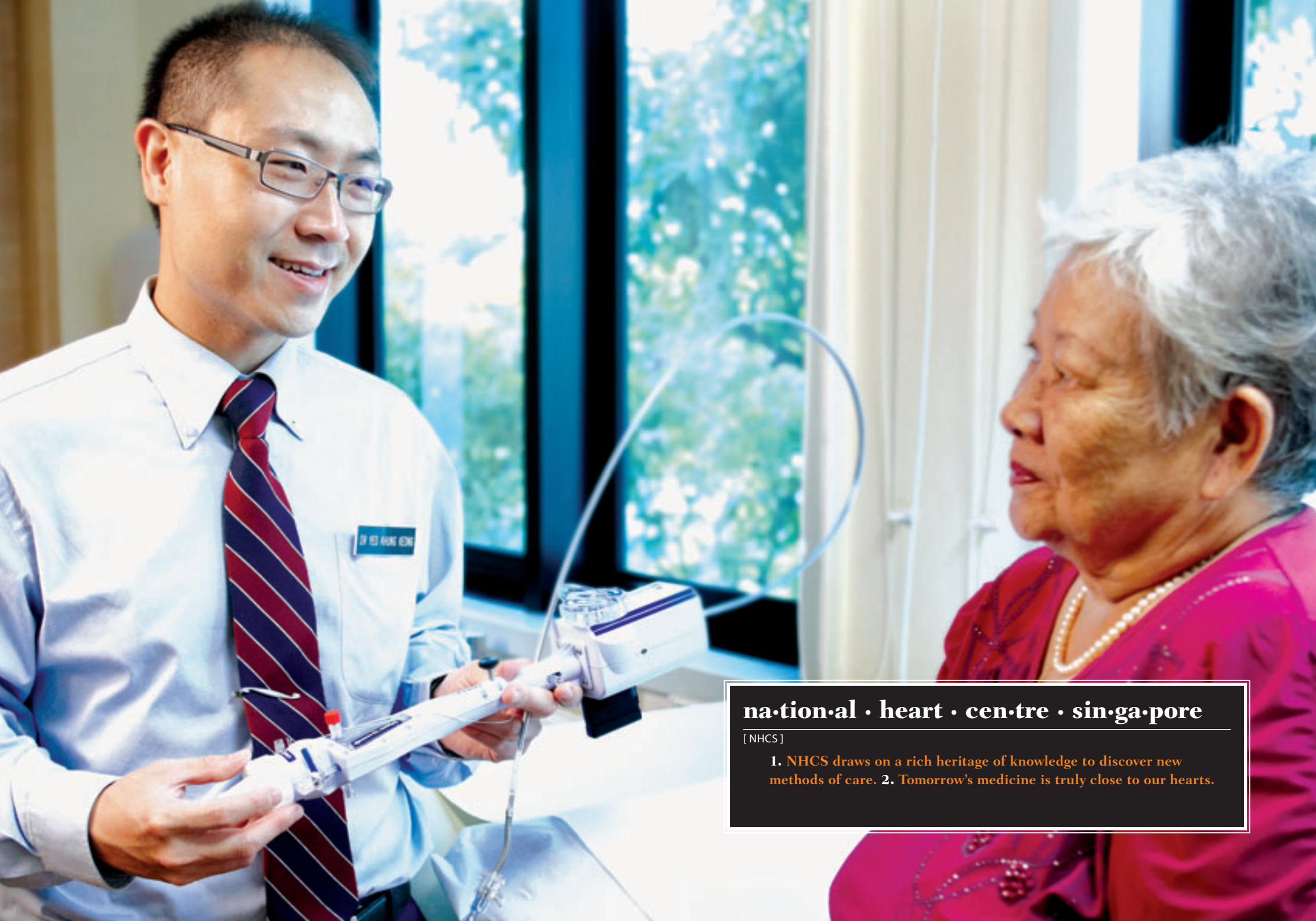
#### Outstanding Administrative Award

- Ms Lim Lai Hong

#### Singapore Health Quality Service Awards 2012

- 2 Gold Award
- 28 Silver Award





na·tion·al · heart · cen·tre · sin·ga·pore

[ NHCS ]

1. NHCS draws on a rich heritage of knowledge to discover new methods of care. 2. Tomorrow's medicine is truly close to our hearts.



National Heart  
Centre Singapore  
SingHealth

"I don't feel any pain after the procedure. Previously, I was always tired and breathless. Now, I feel more energetic and I can do the household chores and go out with my friends."

Mdm Margaret Lim, 68 years old, after her MitraClip procedure in April 2011 at NHCS.

Previous spread: Dr Yeo Khung Keong (left), Consultant, Department of Cardiology, NHCS, with Mdm Lim, who was the first patient in Asia to undergo the minimally invasive procedure for mitral regurgitation.

FY 2011 was yet another fulfilling year for National Heart Centre Singapore (NHCS).

To give our patients a viable alternative, NHCS introduced several new, cutting-edge treatment modalities. These include the minimally invasive MitraClip procedure and Aquapheresis treatment, which were firsts in Asia. Our National Cardiovascular Homograft Bank also became the first tissue bank outside North America to be accredited by the American Association of Tissue Banks.

On our Academic Medicine journey, we continue to learn and impart our knowledge to improve cardiovascular care. Our annual interventional meeting, AsiaPCR/SingLIVE, drew an impressive turnout of 1800 participants from around the world.

NHCS succeeded in creating an interesting stem cell from skin, called the iPSC (Induced Pluripotent Stem Cell), which is capable of developing beating heart cells outside the body. These cells may be used to repair damaged heart tissue, test new drugs or for cardiovascular research.

We continue to invest in the professional development of our people. Four of our doctors underwent the HMDP fellowship at leading overseas medical institutions to further our collective clinical expertise. Our co-director for Heart and Lung Transplant, Dr C Sivathasan was awarded the National Outstanding Clinician Award, a top accolade for medical practitioners.

Our new building, which was awarded the BCA Green Mark Platinum Award, will be ready towards the end of 2013. This will provide us the opportunity to deliver patient care seamlessly in one location.

**ASSOC PROF KOH TIAN HAI**  
**MEDICAL DIRECTOR, NATIONAL HEART CENTRE SINGAPORE**

## NATIONAL HEART CENTRE SINGAPORE

At NHCS, tomorrow's medicine is truly at the heart of everything we do. Drawing from our heritage of knowledge and skills, we work towards tomorrow with confidence.

As we strive to make each day's dawn brighter than the one before for our patients, nothing warms our hearts more than discovering and deploying new methods of care to bring relief and comfort to them.

## PATIENT CARE

NHCS successfully performed Asia's first minimally invasive heart valve repair in April 2011, using the MitraClip system, on a 68-year-old female patient. The new treatment is a safer alternative to open heart surgery for high-risk patients whose mitral valves do not close tightly, allowing blood to flow backwards into their hearts. Patients who underwent the MitraClip procedure had improved heart function, shorter hospital stays and recovery time, and faced less risk of complications.

Another first in Asia was NHCS' introduction of Aquapheresis in October 2011. This is a form of ultrafiltration to help heart failure patients with fluid overload remove excess salt and water from the body safely and effectively, and it is targeted at those who do not respond well to diuretics. Aquapheresis helps to relieve symptoms such as weight gain and swelling in the legs, arms and abdomen. This will help heart failure patients reduce their hospital re-admissions, length of stay, unscheduled clinics and emergency room visits.

In November 2011, NHCS performed the renal denervation procedure on a 62-year-old man. This new treatment lowers stubborn hypertension which does not respond well to drugs.

In yet another first, NHCS saved a 14-year-old boy with a heart-assist device in September 2011, the youngest case in Asia. The patient had severe heart failure and was implanted with a HeartMate II left ventricular assist device that helps the heart pump blood to the



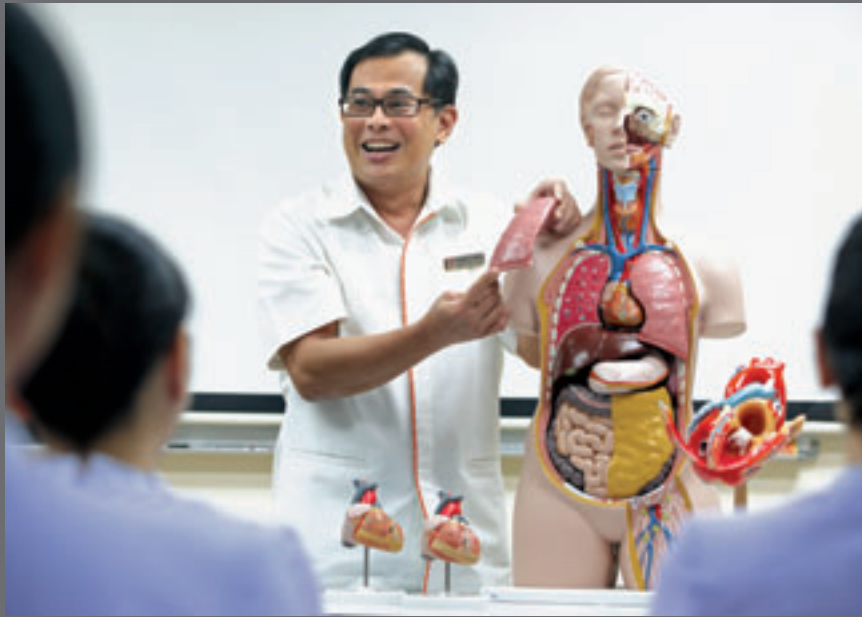
**Dr Kenny Sin** (extreme right)

Head and Senior Consultant, Department of Cardiothoracic Surgery, NHCS  
Director, Quality Management, NHCS

*"Tomorrow's medicine is just round the corner," says Dr Kenny Sin, emphasizing the focus on operating at the cutting-edge of knowledge. He is convinced that healthcare in the near future will be more connected, up-to-date, consistent and safer. Despite all the changes, to him, the fundamental ethos of healthcare "has remained constant in its basic form of alleviating suffering and providing comfort, and the ability to practise medicine in its pure form has not lost its allure."*

Academic Medicine provides a structured integration of excellent clinical care, education, and research as a lead-up to enhanced quality care. This enables all healthcare professionals to focus on patients – the people at the heart of what they do. "Ultimately, our patients would be the greatest beneficiaries. My work helps to prepare the next generation to deliver that promise," he says.

And today's hard work brings a better tomorrow. Dr Sin looks forward to greater innovation, a more efficient translation of research from bench to bedside, and providing the next generation of doctors with the medicines, equipment and techniques to deliver tomorrow's medicine, today.



**Mr Jonathan Sim Guan Hua**

Assistant Director, Nursing Development Unit, NHCS

Jonathan Sim sees the future of medicine extending to the holistic patient care experience. He believes that, in today's context, merely having the required skills and knowledge is not enough. His role as a nurse educator has taught him that young nurses "must develop critical thinking skills and be brave in asking questions, which will guide them when undertaking research work in future." He adds, "Nurses have started initiating and participating in research projects, and this will have a great impact on patient care in the long run."

To share his passion as an educator, he focuses on developing nurses to become better educators themselves. The impact of this has expanded, as nurses today play many diverse roles in research, advanced management of patients and education. He says: "To lead future nurses, we have to look ahead in advancing the capacity of nurses to develop teaching skills. These are transferable skills that nurses can apply to patient education, education for nurses, and self-development."

Indeed, the influence nurses can have extends to wide society. Jonathan observes that "as we move towards advancements in technology and an ageing society, nurses play a pivotal role in educating the public and moving the people's mindset towards a more compassionate society."

rest of the body. On average, about three heart transplants are done in Singapore every year. Fifty-six patients have received a heart-assist device since NHCS launched the programme in 2001.

The National Cardiovascular Homograft Bank (NCHB) was the first tissue bank outside North America to be accredited by the American Association of Tissue Banks (AATB) in February 2012, meeting the international definitive benchmark for tissue banking. The accreditation signifies NHCS' commitment in promoting the safety, quality and availability of donated human tissue for heart patients.

All NCHB staff are also Certified Tissue Bank Specialists – a professional mark conferred by the AATB to those who have met the requirements in education, examination, experience, ethical conduct and familiarity with its tissue banking standards.

To cater to patients' needs and in anticipation of rising demand with a rapidly ageing population, the NHCS new building is also on track to be opened in late 2013. It will create a conducive environment for seamless care delivery, and enable us to promote greater synergy in research, education and patient care.

## EDUCATION

A highlight of our vision to be at the leading edge of medicine was the AsiaPCR/SingLIVE cardiology conference in January 2012. The three-day event had 82 sessions on the latest complex coronary therapies and clinical trials, and drew more than 1,800 participants from 61 countries.

NHCS organised two other international courses in October 2011 – the Singapore MitraClip Symposium which focused on the new minimally invasive approach to mitral regurgitation, and the second annual Chronic Total Occlusions (CTO) Interventions Live Course, which featured two prominent CTO specialists from Japan who demonstrated the different techniques in treating blocked arteries to more than 160 attendees from the region.

As a leading cardiovascular centre with a strong tradition and reputation, NHCS also plays an active role in the training of local and regional healthcare professionals through structured training programmes to impart valuable knowledge and skills to succeeding generations for better care delivery.

## RESEARCH

Among the research breakthroughs this year, NHCS clinicians, clinician scientists and researchers have collaborated to create a stem cell from skin, called the Induced Pluripotent Stem Cell (iPSC), which can go on to develop beating heart cells outside the body. These cells may be used to repair damaged heart tissue, as a 'test bed' for new drugs, and in the study of certain cardiovascular genetic diseases outside the body.

The NHCS Research & Development Unit is one of only a handful of basic research labs worldwide capable of using this technique. The project, which will benefit Singapore's ageing population, is funded by a National Research Foundation research grant of about S\$9 million for five years.

In FY 2011, NHCS published a record of 91 papers. The sharing of these research findings allows for advancements in patient care.

## OUR PEOPLE

As part of the Centre's committed efforts in staff development, our clinicians continued to further their professional development abroad at leading medical institutions. Dr Soon Jia Lin, Consultant, Department of Cardiothoracic Surgery, completed a fellowship on adult cardiac and thoracic surgery with emphasis on transcatheter heart valve therapies and heart failure surgery at John Radcliffe Hospital, Oxford, UK, and St Paul's Hospital, Vancouver, Canada from 2009 to 2011. The new knowledge gained will complement the range of minimally invasive cardiac surgeries offered at NHCS.

Dr Ewe See Hooi, Consultant, Department of Cardiology, completed her two-year fellowship at the Leiden University Medical Centre, Netherlands, in September 2011. Besides gaining competency in multimodality imaging for percutaneous valve surgery and structural heart diseases, Dr Ewe was also actively involved in clinical research. This will help with the introduction of research protocols at NHCS for a better understanding of myocardial mechanics and early detection of myocardial dysfunction in patients with valvular diseases or cardiomyopathy.

Dr Angela Koh, Associate Consultant, Department of Cardiology, spent a year in Boston, USA, training in advanced non-invasive cardiac imaging techniques at Brigham and Women's Hospital, a teaching affiliate of Harvard Medical School. She was also involved in several research projects, and this experience will enable her to work on understanding and providing the evidence base for improved management strategies for cardiac diseases.

Over 18 months, Dr Ho Kay Woon and Dr Ho Kah Leng, both Consultants, Department of Cardiology, trained at Toronto General Hospital in Ontario, Canada, in interventional cardiology and invasive clinical electrophysiology respectively. Dr Ho Kay Woon's attachment allowed him to further his training in percutaneous coronary interventions, especially for structural heart disease, which he plans to develop further in NHCS. Dr Ho Kah Leng intends to provide electrophysiology support with greater competence in the management of patients with arrhythmias that arise from adult congenital disease.

In preparation for the setting up of the short stay unit and ambulatory cardiac services at the NHCS new building, Senior Staff Nurse Norwati Hussin from Ward 44 underwent a one-month attachment, at Brigham and Women's Hospital's Ambulatory Cardiac Services and the Short Stay Unit at Massachusetts General Hospital. Her stint focused on workflows, policies and procedures, and patient education.

Our NHCS staff also received recognition for their work excellence. Dr C Sivathanan, a pioneer of heart and lung transplant in Singapore, did NHCS proud in receiving the National Outstanding Clinician Award in 2011 at the National Medical Excellence Awards. He was instrumental in the development of robotic-assisted minimally invasive cardiothoracic surgery and the mechanical heart device programme at NHCS.

## COMMUNITY

In our Specialist Volunteers Overseas Project with Vietnam National Heart Institute, Hanoi, an audit on areas including infection control, patient education and training of new nurses was conducted in March 2012. This is part of our efforts to help our regional neighbours build institutional capacity by imparting skills using the train-the-trainer concept.

Our outreach activities also included the Lunar New Year celebration for more than 200 residents of Apex Harmony Lodge. They were entertained with a lion dance and staff performances and treated to a sumptuous buffet and a cash contribution to aid their daily provisions. At the NHCS Heart2Heart Fund Donors' Appreciation Ceremony in June 2011, 125 children of needy heart patients received education bursaries of S\$200 each.

## KEY FIGURES

NATIONAL HEART CENTRE SINGAPORE	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Size</b>		
Licensed Beds (as at end Mar)	185	185
Beds in Service	185	185
<b>Workload per annum</b>		
Bed Occupancy Rate	67.5%	71.9%
Inpatients	9,511	10,281
Total Patient Days	45,648	48,566
Average Length of Stay (days)	4.8	4.7
Total Procedures*	6,624	6,968
Day Procedures*	20	34
Inpatient Procedures*	6,604	6,934
Specialist Outpatient Clinic Attendances	107,870	107,228
Total Non-invasive Cardiac Investigations	105,780	108,076
<b>Staffing (as at end Mar)</b>		
Total	963	894
Doctors	100	88
Nurses	418	406
Allied Health Professionals	159	131
Others	286	269

\* 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.

## AWARDS & ACCOLADES

### PATIENT CARE

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#### JCI Re-Accreditation

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#### Healthcare Humanity Awards 2011

- Khatijah Binte Kassim
  - Manisah Binte Marseety
- 

#### MOH Nurses Merit Award 2011

- Chua Lee Kheng
  - Abirami D/O Nagarasan
- 

#### GCEO Excellence Awards 2012

##### Outstanding Clinician

- Assoc Prof Lim Soo Teik

##### Outstanding Nurse

- Tay Ai Liu

##### Outstanding Allied Health Professional

- Tan Hwee Thiang

##### Outstanding Ancillary Staff

- Chia Li Sen

##### Outstanding Administrative Staff

- Amber Yeong
- 

#### Singapore Health Quality Service Award 2012

- 147 NHCS staff –  
1 Superstar, 8 Star, 32 Gold & 106 Silver
  - Team Award –  
1 Best Team Merit Award  
(Clinical Practice Improvement)
  - Superstar – Lim Chuan Kah
- 

#### National Day Awards 2011

##### Commendation

- Chan Siok Tian

##### Efficiency

- Ang Saw Khim
- Goh Sye Lin
- Sally Kok

##### Long Service

- Tan Lay Yong
- 

#### PS21 Star Service Award 2011

- Foo Lee Lian
- 

#### 8th MOH Healthcare Quality Improvement (HQI)

##### Poster Competition

###### Merit

- Hearts Team from Ward 44, NHCS  
*"To Improve the Effective Door-to-Balloon Time During After-Office Hours"*
- 

#### SingHealth Quality Convention 2011

##### Quality Improvement Poster Competition

- Hearts Team from Ward 44, NHCS  
*"To Improve the Effective Door-to-Balloon Time During After-Office Hours"*
- 

#### Healthcare Quality Forum 2012, Best Poster Award (Organised by Healthcare Quality Society of Singapore)

- PACE Team from Ward 44, NHCS  
*"Radio Frequency Identification (RFID) Tracking Of Cardiac Patients In SGH Campus"*
- 

#### National Medical Excellence Award 2011

##### National Outstanding Clinician

- Dr C Sivathanan
- 

### EDUCATION

---

#### SingHealth-Lee Foundation Nursing Awards

- Jonathan Sim Guan Hua
  - Maliga D/O Raiki Chinniah
- 

#### SingHealth-Alice Lee Institute of Advanced Nursing Scholarship

- Yanly
- 

### RESEARCH

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#### Goh Research Fund

- Dr David Sim
  - Dr Wei Heming
  - Dr Reginald Liew
- 

#### National Medical Research Council Grant

- Dr Zhong Liang
- 

#### National Research Foundation Grant

- Assoc Prof Tan Ru San
- 

### HUMAN RESOURCE

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#### Work-Life Excellence Award 2010

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#### Singapore Health Award 2011 – Gold

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### OTHERS

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#### National Safety and Security Watch Group (SSWG) Award 2011 – Cluster Category

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#### BCM Recertification

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#### BCA Green Mark Platinum Award (for NHCS New Building)

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**na·tion·al · neu·ro·sci·ence · in·sti·tute**

[ NNI ]

1. At NNI, the best neuroscience goes beyond medical breakthroughs.
2. It is about discovering and delivering the best patient care.





National  
Neuroscience Institute  
SingHealth

“If I had known that Dementia would present in ways other than as memory loss, I might have taken her to a doctor earlier.”

Dr Steven Tan, caregiver to Mdm Sim Lee Tiang, 55 years old, who is encouraged by NNI's efforts in raising awareness on the signs and symptoms of Dementia, as early detection can help in slowing down the progression of the disease and help maintain quality of life.

Previous spread: Ms Esther Vanessa Chua (left), Nurse Clinician, Department of Neurology, NNI, with Mdm Sim, who was diagnosed with Dementia.

National Neuroscience Institute (NNI) continues to grow in more ways than one. While we have seen our efforts come together with the commitment “to be there for our patients” while continuing to strive to deliver the best in science, education, and medicine of tomorrow.

In the last Financial Year, NNI continued to deliver accessible and affordable patient care with the expansion of our Neuroscience Clinic and the upgrading of our Neurodiagnostic Laboratory, with the addition of automated appointment systems and upgraded queue management. Patient care was further enhanced with the introduction of new services in the areas of young onset dementia and surgery for pain disorders.

NNI hosted numerous international medical conferences led by experts from the field of Neuroscience to bring the latest neurological and neurosurgical care to fellow colleagues and specialists in the region.

On the research front, breakthroughs have been made with the collaboration between our clinicians and research scientists, uncovering the role of a new tumour suppressor in brain cancer that promises to shed insights into why certain brain tumours are more aggressive than others.

We have always been immersed in a strong culture of academia and research, and we continuously move ahead to align ourselves with the academic mission of driving innovation in Patient Care, Research, and Education, which make up the three pillars of what we stand for, and towards the vision of Defining Tomorrow's Medicine.

**PROF LEE WEI LING**  
**DIRECTOR, NATIONAL NEUROSCIENCE INSTITUTE**

## NATIONAL NEUROSCIENCE INSTITUTE

At NNI, our efforts continue to be focused on discovering and delivering the science and medicine of tomorrow. Our primary mission is to give the best neuroscience care we can to our patients. It is not just about medical breakthroughs but about giving our patients the best treatment outcomes.

## PATIENT CARE

In a major advance to tackle Parkinson's disease, our first Advanced Practice Nurse (APN) clinic for the disease was established in January 2012 by APN Li Wei, under the supervision of movement disorder consultants. This new facility allows patients to be reviewed more comprehensively at each clinic session.

At NNI, we see approximately 250 to 300 new cases of cognitive impairment per year, with half our patients below 65 years of age. To address this trend, the Young Onset Cognitive Impairment (YOCI) service at NNI was introduced in August 2011, with dedicated sessions to provide information on diagnosis and prognosis of dementia to patients and caregivers. In December 2011, a monthly support group for caregivers was launched, with the Ministry of Health approving a five-year funding to further develop this programme.

A new portable ultrasound machine in the Neuroradiology Department was introduced in November 2011. Patients can now have advanced treatments, including thyroid scans at their bedside and at the Nuclear Medicine room, and this has significantly reduced waiting times.

FY 2011 also saw NNI investing in improved facilities for patients. These include the upgraded Neurodiagnostic Laboratory being relocated from Level 1 to Level 2, and the expansion of the Neuroscience Clinic, with more consultation rooms, an automated appointment system, and an upgraded queue management system.



### Assoc Prof Tan Choon Kiat, Nigel

Senior Consultant, Department of Neurology, NNI  
Education Director, NNI

Assoc Prof Nigel Tan articulates and exemplifies the vision for education in the pursuit of tomorrow's medicine. He feels it is important to apply evidence-based methods in designing an education system that allows all healthcare professionals to learn education skills to enhance the capabilities of healthcare professionals and thus improve the health of patients and society, today and tomorrow.

In the area of education, he sees his main role as facilitating education improvement and innovation by bringing people together and getting them to interact. As he says, "education, like most of medicine, is a deeply humanistic endeavour. It works only when people have conversations with one another – faculty to faculty, nurses to residents, patients to doctors." He believes healthcare professionals can be wonderful teachers if they are given opportunities to reflect, discuss and exchange ideas through conversations, which can then be translated into concrete actions that improve education for all.

Education is now well-recognised as an important part of one's job scope, and a viable career track. Humanistic medical education, scientifically valid research and good clinical care are the three areas that Academic Medicine represents. This makes Academic Medicine vital in defining tomorrow's medicine, as it can ultimately improve patient and societal health outcomes. "It is a lofty aspirational goal, but something which we can all aim towards."

## EDUCATION

NNI strongly believes that the key to quality patient care is through education for both our healthcare professionals and the public.

A team of healthcare professionals led by Assoc Prof Deidre De Silva, Consultant, Department of Neurology, won a global award in September 2011 for their preventive health education project to promote public awareness of atrial fibrillation (AF) or heart rhythm disorder. The NNI team are among 32 winners in the global campaign, 1 Mission 1 Million – Getting to the Heart of Stroke, which drew over two million public votes, organised by the pharmaceutical company Boehringer Ingelheim.

AF patients have a four to five times higher risk of stroke and the number of AF patients is expected to rise with our ageing population. This project will result in the production of educational material which will be distributed to AF patients across various institutions in Singapore, promoting greater awareness of the condition.

The Office of Neurological Education (ONE) is a subdivision within the NNI – Tan Tock Seng Hospital (TTSH) Neurology Department that focuses on education. ONE is staffed by Assoc Prof Nigel Tan, Education Director and Senior Consultant; Dr Kevin Tan, Consultant and Head of ONE; and Dr Nagaendran Kandiah, Consultant.

The ONE team won the SingHealth Academy Golden Apple Programme Innovation Award 2011 for their programme “Team Based Learning for Undergraduate Neurology Education”.

The programme uses Team Based Learning (TBL) to help medical students from the NUS Yong Loo Lin School of Medicine (YLLSOM) learn clinical neurology. The ONE group successfully used TBL to teach two core topics – Neurological Localisation and Neurological Emergencies – to over 200 third and fifth year YLLSOM medical students who demonstrated improved learning and retention of knowledge after TBL. The group plans to expand the use of TBL to other topics in clinical neurology in the future.



**Assoc Prof Tchoyoson Lim**

Senior Consultant, Department of Neuroradiology, NNI

Academic Medicine brings together research, education and patient care in an integrated way. For neuroradiology this means following through all the way from the basic anatomy, physics, maths and pooled population data to the patient. Assoc Prof Lim feels that doctors and healthcare professionals need to ask questions constantly. “Progress is about asking questions: Where is the problem? Who said that? How can we do that? Why not? And perhaps most importantly: so what?”

The search for tomorrow’s medicine is a mindset and a lifestyle, as it has to be lived day-to-day, even if answers are unsatisfactory. It has to be spurred on by an insatiable curiosity. “There is always something interesting, something to learn, something good; but I’ll never find it if I don’t wonder and I don’t ask questions,” he says.

Such dedication to the search for new knowledge finds its greatest value when it is passed on to the next generation as NNI develops itself into an international training institute of excellence in the field of neurosciences. Assoc Prof Lim sums it up aptly: “It is a curiosity to be shared.”

## RESEARCH

The ONE group has also received two education research awards at the 2012 Asia-Pacific Medical Education Conference (APMEC). The group won the first prize and the runner-up prize in the Best Paper (Platform) category for two different education research studies.

The first prize was awarded to a study examining an assessment tool called the Script Concordance Test that assesses clinical reasoning in neurology in trainees. The runner-up prize was awarded for a study that was done by two YLLSOM students together with the ONE group. This study examines the fear of clinical neurology, termed “Neurophobia”, in undergraduates and postgraduate doctors.

Continuing to expand its research efforts, NNI Neurology received a SingHealth Foundation grant to study the effects of Vitamin D deficiency among patients with mild cognitive impairment. This study was completed in January 2012 with 95% recruitment rate. In addition, three abstracts have been accepted for the 2012 International Conference on Alzheimer’s disease.

NNI and Nanyang Technological University (NTU) jointly organised the first NNI-NTU Research Workshop in July 2011. The objective was to facilitate interaction between clinical researchers and scientists from medical institutions and NTU, as well as promote collaborative efforts in translational neurosciences. “The forum provided a good opportunity for the clinicians and researchers to exchange ideas and establish network for future collaborations,” commented Assoc Prof Christopher Ang Beng Ti from NNI, who co-chaired the workshop together with Prof Mark Featherstone, Interim Dean, College of Science, NTU.

A team of neurologists led by Dr Au Wing Lok, Senior Consultant, Department of Neurology, published a paper to study the interaction between levodopa and the feedback process on set-shifting in Parkinson’s disease. The NNI team included Assoc Prof Louis Tan, Senior Consultant, Department of Neurology, Dr Paulito Palmes,

Department of Research, and Dr Sitoh Yih Yian, Senior Consultant, Department of Neuroradiology. The rest of the team included researchers from the Bioinformatics Research Centre, NTU.

## OUR PEOPLE

NNI believes in developing our staff to their fullest potential. For example, Dr Kalpana Prasad, Registrar, Department of Neurology, received a fellowship in Clinical Neurophysiology at Johns Hopkins University School of Medicine, Maryland, USA, in 2011.

Other recipients included Dr Kamal Verma, Senior Consultant, Department of Neurology and Mr Johnny Eng, Medical Technologist, Neurodiagnostic Laboratory, for the Health Manpower Development Plan awards in Neuromuscular Sonography, which will help NNI develop this new service in our Neurodiagnostic Laboratory. A Talent Development Fund award was presented to Ms Oh Hui Ping, Senior Radiographer, Department of Neuroradiology, for a Masters degree in magnetic resonance imaging.

In recognition of his exemplary work in research, Prof Tan Eng King, Research Director and Senior Consultant, Department of Neurology received the National Outstanding Clinician Scientist Award 2011 at the National Medical Excellence Awards. The award is given to individuals with outstanding contributions to clinical and translational research work. Dr Carol Tang, Research Scientist, was awarded the Ministry of Education Outstanding Mentor Award, for her work in educating and grooming the next generation of healthcare professionals.

## COMMUNITY

Learning how to cope with the non-motor symptoms of Parkinson’s disease was the focus of a public forum in April 2011, organised by NNI, together with TTSH and the Parkinson’s Disease Society of Singapore in conjunction with World Parkinson’s Day. The panel

of speakers comprising neurologists, nurses, therapists and dietitians shared with the 300-strong audience the types of non-motor symptoms and coping techniques.

NNI held its fourth Dementia Awareness Day in November 2011. The memory assessment sessions, with cognitive questionnaires by trained staff, attracted over 170 participants aged 50 years and above. The other highlight of the day was a Public Forum, “Understanding The Forgetful Brain”, for over 180 participants.

In conjunction with World Stroke Day in October 2011, NNI and the Health Promotion Board introduced its stroke awareness campaign, with doctors from the Neurology Department of NNI-Singapore General Hospital (SGH) Campus holding interactive sessions with secondary school students.

## KEY FIGURES

NATIONAL NEUROSCIENCE INSTITUTE	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Workload per annum</b>		
Specialist Outpatient Clinic Attendances	40,795	38,282
<b>Staffing (as at end Mar)</b>		
Total	239	211
Doctors	82	72
Nurses	31	29
Allied Health Professionals	42	33
Others	84	77

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

## AWARDS & ACCOLADES

### PATIENT CARE

#### The National Medical Excellence Award

- Prof Tan Eng King

#### National Day Awards 2011

##### Long Service Medal

- Assoc Prof Tjia Tjoei Lian Helen
- Dr Chumpon Chantharakulpongsa

#### GCEO Excellence Award

##### Outstanding Clinician Award

- Assoc Prof Loh Ngai Kun

##### Outstanding Allied Health Professional Award

- Wee Liang Kwee

##### Outstanding Nurse Award

- Low Hwee Huang

##### Outstanding Ancillary Staff Award

- Patricia May Blunden

#### Singapore Health Quality Service Award 2012

##### Gold Category

- Farah Julieanna Bte Md Saleh

##### Silver Category

- Ng Hwee Lan
- Tan Chew Seah
- Amy Chew Yee Pheng
- Roslina Binte Rahim
- Mahalakshmi Sangaran
- Thng Wei Wei Eunice
- Ng Ham Moi
- Neumala Devi
- Tay Lian Bee

### EDUCATION

#### SingHealth Academy Golden Apple Awards

- Assoc Prof Nigel Tan
- Dr Kevin Tan
- Dr Nagaendran Kandiah

### RESEARCH

#### SingHealth Medical Research Publication Award

- Assoc Prof Deidre De Silva

#### MOH National Outstanding Clinician Scientist Award 2011

- Prof Tan Eng King

#### MOE Outstanding Mentor Award

- Dr Carol Tang

#### NMRC-IRG Grant

- Dr Liao Ping
- Assoc Prof Deidre De Silva
- Prof Lee Wei Ling
- Dr Nagaendran Kandiah
- Dr Prakash Kumar
- Assoc Prof T Umapathi

#### A\*STAR SERC Grant

- Assoc Prof Ng Wai Hoe

#### National Healthcare Group Small Innovative Grant 1

- Dr Kevin Tan

### HUMAN RESOURCE

#### SingHealth Talent Development Fund Awards

- Assoc Prof See Siew Ju
- Dr Seow Wan Tew

#### Fellowship in Sonography of the Peripheral Nervous System

- Dr Kamal Verma
- Johnny Eng

#### Master of Medical Radiation Science

- Oh Hui Ping

#### Fellowship in Minimally Invasive Spine Surgery

- Dr Shree Kumar Dinesh

#### Fellowship in Behavioural Neurology

- Dr Ting Kang Seng Simon

#### Fellowship in Clinical Neurophysiology

- Dr Kalpana Prasad



**sin·ga·pore · na·tion·al · eye · cen·tre**

[ SNEC ]

**1. SNEC is about always seeking outcomes beyond today. 2. Our focus is to enable our patients to see a brighter tomorrow.**



Singapore National  
Eye Centre  
SingHealth

“These eye and health screenings are very useful as they help pick up eye conditions or other health problems such as diabetes and high blood pressure early so we can take the necessary precautions and interventions early.”

Mr Hamzah Bahri, 59 years old, participated in Singapore Malay Eye Study 2 (SiMES 2), a follow-up study to help the researchers achieve a better understanding of the natural history and prognosis of major eye diseases and how to prevent them.

Previous spread: Senior Staff Nurse  
Jennifer Leong, Day Ward, SNEC,  
instilling eye drops for a patient before  
an eye examination.

In FY 2011, Singapore National Eye Centre (SNEC) introduced two new procedures – a first-in-Asia Descemet's Membrane Endothelial Keratoplasty (DMEK) advanced technique for corneal transplantation with a potential for 100 percent success, and bladeless cataract surgery that offers greater precision. These are already improving outcomes for our patients.

Enhancements to services over the year included the opening of an operating theatre at our branch clinic in Balestier, a new pharmacy home delivery service by courier, and new self-registration kiosks.

In research, SNEC together with Singapore Eye Research Institute (SERI) continue to be at the forefront, enriching patients and the community through comprehensive population based studies and hi-tech medicine such as in biodegradable drug carriers, slow release drugs for glaucoma.

In education, another member of the SNEC faculty has been promoted to a full professor by the National University of Singapore, a testament to our strong culture of integrating care, education and research as we develop our capabilities even further in our journey to be a centre of excellence in Academic Medicine.

It was a successful year for SNEC and SERI but it would not have been possible without the dedication and hardwork of all staff. Looking to the future, we will continue to build on our strengths and continuously seek to improve the eyecare of our patients, as we aim to define tomorrow's medicine.

**PROF DONALD TAN**  
**MEDICAL DIRECTOR, SINGAPORE NATIONAL EYE CENTRE**

## SINGAPORE NATIONAL EYE CENTRE

At SNEC, we aim to help our patients see a better future. We constantly question what we can do better today to deliver the best treatment outcomes for our patients tomorrow. We strive to impart this vision to the next generation of medical professionals, as part of our longstanding investment in education, in partnership with the best academic institutions.

## PATIENT CARE

With better patient care as our utmost priority, we achieved a few milestones in FY 2011. SNEC surgeons pioneered Asia's first new form of corneal transplantation, an innovative minimally invasive procedure from Europe called Descemets Membrane Endothelial Keratoplasty (DMEK), in September 2011, with only an incredibly delicate sheet of corneal cells on a very thin membrane transplanted. With this procedure, patients now can attain 100% vision within a few weeks. SNEC is one of the few centres globally offering advanced corneal transplantation techniques and it performs the current Descemets Stripping Automated Endothelial Keratoplasty (DSAEK) method with a high rate of 90-95% vision restored. In Singapore, SNEC is the leading centre for corneal transplantation, performing 85% of the 350 transplants a year.

Other developments include the introduction of the next-generation Femtosecond Laser Platform for greater precision in cataract surgery, and acquiring the VICTUS platform from Technolas Perfect Vision of Germany with a major R&D collaboration on the latest bladeless technology. The benefits include better reliability and safety, reduced risk of complications, especially in more complicated forms of cataract, and better visual results.

Enhancements to our facilities and services included the opening of an operating theatre in Balestier Branch in October 2011, a new pharmacy home delivery service by courier, and new self-registration kiosks at SNEC Main Centre and Balestier branch.



### Adjunct Assoc Prof Jodhbir Mehta

Senior Consultant and Head (Research), Cornea Service, SNEC  
Senior Consultant, Refractive Surgery Service and General Cataract and Comprehensive Ophthalmology Service, SNEC

Assoc Prof Jodhbir Mehta has his focus firmly on tomorrow, and his eye on continuous advancement. As he says, "In order to perform successfully in the future, clinicians will have to continually examine themselves academically."

Tomorrow's medicine is becoming more evidence-based. Patients will have access to a lot of information on the Internet and can increasingly see who the leaders in different fields are. As technology improves, this will affect medicine even further. "As a researcher, it is important to be objective and keep up with this pace of change. Not all change will be for the better and that's where research will play a vital role in assessing new medical and surgical modalities compared to existing systems."

The impact of what can be achieved was brought home to Assoc Prof Mehta at a meeting last year in Vienna, Austria. A doctor he had never met from the UK grabbed his arm and thanked him for a device for corneal transplantation developed at SNEC three years ago. "Something we developed was having an effect on patients all round the world."





### **Dr Daniel Su**

Consultant, Glaucoma Service and General Cataract and Comprehensive Ophthalmology Service, SNEC  
Deputy Head, Training and Education, SNEC

The key to tomorrow is to impart knowledge and inspire emulation at the same time. This is how tomorrow's medicine can continue to provide high-quality medical care to our population at primary, secondary and tertiary levels.

Dr Daniel Su, who has been involved in research projects and clinical trials investigating the treatment of glaucoma and other eye diseases, believes that the key to tomorrow's medicine is to harness the collective strengths of all team members.

Working for a brighter tomorrow requires everyone to be knowledgeable, competent and compassionate. As he says: "Each of us is challenged to provide better clinical care for our patients, find ways to be more effective teachers to our students and pursue relevant and meaningful research which will modify practices and improve outcomes."

The winner of the Singapore Health Quality Service Gold Award in 2012 is certainly clear about the task at hand: "Mentors and educators must set the example for younger doctors to follow, even as we impart knowledge and train them to fulfil their roles. We must be role models that they aspire to emulate."

## **EDUCATION**

To raise awareness of the research work at the SERI as well as to educate public on the need to maintain eye health, "Eyes that Tell Stories" was a unique exhibition held at the Red Dot Museum in June 2011. The 10-day exhibition featured eye images of prominent people in Singapore which are photographed with cutting edge ophthalmic equipment. Those featured include former Prime Minister and Minister Mentor Lee Kuan Yew, actress Fann Wong and former Olympic medalist Tan Howe Liang.

Other public education efforts included the Vision Awareness Week in September 2011, featuring eye conditions and experiential sessions on what it is like to be blind. SNEC Low Vision Team organised a 'Café in the Dark' for staff to experience dining in complete darkness, to educate on the needs of the vision-impaired. Talks were also held in January 2012 on myopia, good eye care and contact lens practices at primary and secondary schools.

## **RESEARCH**

Among the year's research highlights, SERI introduced the Singapore Integrated Diabetic Retinopathy Programme (SiDRP), a national comprehensive and enhanced Diabetic Retinopathy (DR) screening programme at polyclinics. The programme is based on the concept of centralised assessment of DR via retinal photographs, leveraging on the capabilities and expertise of SERI's ocular imaging research group, and supported by a robust tele-ophthalmology platform. SiDRP, a translational research programme, enables prompt service delivery of DR screening in Singapore and a larger patient outreach.

SERI also conducted three landmark community-based studies to systematically document the frequency, causes and impact of low vision and major eye diseases in Malay, Indian and Chinese ethnic groups in Singapore. This is the most comprehensive population-based study on vision-threatening eye diseases affecting half the world's

population. In FY 2011, SERI has commenced with a follow-up on the same study participants to better understand the natural history of major eye diseases and new therapeutic and prevention strategies.

In September 2011, a novel research using “smart” contact lenses to test patients’ eye pressure round the clock was initiated. This may lead to preventive strategies for high-risk patients to be screened early to prevent glaucoma, an eye condition where damage to the optic nerve may cause blindness overtime.

Biodegradable drug carriers that can remain in the eye and slowly release drugs over 60 days was developed by SERI through the “nano-medicine” technology. This new way of administering eye drops will lead to a better quality of life for our patients as they need not carry multiple bottles of eye drops daily.

## OUR PEOPLE

Prof Aung Tin, Senior Consultant and Head (Research Development), Glaucoma Service, was conferred professorship by the National University of Singapore. This makes SNEC the only specialist centre in Singapore with three full professors, the others being Prof Donald Tan, Medical Director, SNEC, and Prof Wong Tien Yin, Executive Director, SERI.

SNEC staff are being recognised and motivated via our mystery shopper programme. Staff with the highest compliments as recommended by our Mystery Shopper will be awarded with a voucher and letter of commendation for providing quality service.

## COMMUNITY

For the 12th consecutive year, SNEC organised the National Eye Care Week in November 2011 jointly with the Health Promotion Board. The theme was “Healthy Eyes, Healthy Children”, with a focus on preventing myopia, which affects almost every child.

Other notable events included diabetic eye screening at the World

Diabetes Day by SNEC. Also, in partnership with Tan Tock Seng Hospital’s Eye Department, eye screening at the Lions Home for the Elders, Bedok, and St Theresa’s Home was conducted, benefiting residents who would otherwise not receive regular eye checks.

To combat preventable blindness, SNEC partnered grassroots organisations in Eunos, Lions SaveSight Centre (Singapore), Lions Clubs International District 308-A1, Lions Club of Singapore Eunos, Lions Clubs of Singapore and Leo Clubs of Singapore to organise the Lions World Sight Day in October 2011. Eye screening was done for 500 residents from Eunos, Bedok Reservoir-Punggol, Changi-Simei and Kaki Bukit.

## KEY FIGURES

SINGAPORE NATIONAL EYE CENTRE	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Workload per annum</b>		
Day Surgeries	29,617	28,403
Specialist Outpatient Clinic Attendances	280,031	273,730
<b>Staffing (as at end Mar)</b>		
Total	584	562
Doctors	96	89
Nurses	182	179
Allied Health Professionals	91	79
Others	216	216

*Note: Staffing figures refer to Filled Posts, in terms of Full-Time Equivalent, and may not add up to total due to rounding. SNEC workload figures included cases seen at SNEC Eye Associate Clinics.*

## AWARDS & ACCOLADES

### PATIENT CARE

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#### National Day Awards 2011

##### Commendation Medal

- Lim Mein Chee

##### Efficiency Medal

- Loh Huey Peng
- Patrick Ng

#### Healthcare Humanity Award 2012

##### The Courage Fund

- Dr Marcus Ang

#### Professorship, National University of Singapore

- Prof Aung Tin

#### GCEO Excellence Awards 2012

##### Outstanding Clinician Award

- Assoc Prof Chee Soon Phaik

##### Outstanding Nurse Award

- Belinda Toh Tze Ing

##### Outstanding Paramedical Award

- Slow Kalin

##### Outstanding Ancillary Staff Award

- Irene Lee

##### Outstanding Administrative Staff Award

- Ravi Chandran

#### Rotarian Vocational Service Award

- Low Siew Ngim

#### Capitaland Healthcare Frontliners Award and Singapore Nurses Association Silver Medal for Diploma in Nursing 2011, Nanyang Polytechnic

- Wee Bee Choo

#### Ministry of Health Nurses' Merit Award

- Isabella Lim

#### Singapore Health Quality Service Award 2012

##### Superstar Award

- Dr Ian Yeo

##### Gold Award

- Dr Daniel Su
- Dr Kelvin Lee

- Linda Chan
- Corrine Teng
- Annie Yeo

##### Silver Award

- Prof Donald Tan
- Prof Aung Tin
- Dr Sonal Farzavandi
- Dr Alicia How
- Dr Audrey Looi
- Ms Tay Li Kheng
- Zelyn Sim
- Leong Tuck May
- Jenny Ng
- Evelyn Yeo
- Tan Siok Kian
- Tan Geok Eng
- Lim Yen Leng
- Li Feng Xia
- Lim Su Li
- Zabarria bte Yusoff
- Karen Liew
- Madeline Tan
- Carin Tan
- Kalaraine d/o Thanapal
- Adeline Ho
- Nurhayati bte Tahir
- Shirlyn Sam
- Tay Soh Wah

#### American Academy of Ophthalmology (AAO) – The Ophthalmic Photographers Society 2011

##### Best of Show, Stereo Division

- Kasi Sandhanam

##### Best Poster Award

- Dr Chelvin Sng

Team Members: Dr Federico Luengo, Adjunct Assoc Prof Jodhbir Mehta and Prof Donald Tan

### EDUCATION

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#### SingHealth-Lee Foundation Nursing Awards

- Santhi d/o Perumal

### RESEARCH

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#### National University of Singapore, Faculty Research

##### Excellence Award 2011

- Prof Donald Tan

#### Singapore General Hospital 19th Annual Scientific Meeting – Frontiers of Medicine

##### Young Investigator Award (Clinical)

- Lilian Foo

#### 27th Malaysia-Singapore Joint Ophthalmic Congress 2011

##### Best Oral presentation

- Lan Wanwen

##### First prize in Oral/Free Papers Presentation

- Evelyn Png

#### SingHealth Synergy

##### SingHealth Outstanding Publication Award

- Prof Wong Tien Yin

#### National University of Singapore – Lee Kuan Yew Postdoctoral Fellowship 2011

- Dr Mohammad Kamran Ikram

#### Asia-Pacific Academy of Ophthalmology – American Academy of Ophthalmology 2011

##### Best Poster Award

- Adjunct Assoc Prof Jodhbir Mehta
- Prof Donald Tan
- Dr Federico Luengo

##### International Ophthalmologist Education Award

- Adjunct Assoc Prof Jodhbir Mehta

#### Ophthalmology Research Day 2011

##### Best Paper Presentation Norvatis Travel Award 1st Runner up & Best Innovative Research Idea Award

- Zheng Ce

##### Best Paper Presentation Norvatis Travel Award 1st prize & Outstanding Charismatic Speaker Award & Best Slides Presentation Award

- Tham Yih Chung

##### Best Paper Presentation Award 2nd Runner up

- Dr Monisha E. Nongpiur

#### Netherlands Organization for Scientific Research

##### National prestigious Veni grant 2011

- Dr Mohammad Kamran Ikram

#### AFER-ARVO 2011

##### 2011 AFER/Vistakon Dry Eye Fellowship

- Dr Andrea Petznick

#### 2011 Merlion France-Singapore Programme – PhD Project

- Evelyn Png

#### Carl Zeiss International User Group Meeting 2011 – Best Paper

- Adjunct Assoc Prof Jodhbir Mehta

#### Association of Vision and Research in Ophthalmology (ARVO) 2012

##### Silver Fellow in the Class of 2012

- Prof Saw Seang Mei

##### Travel Grant Awardees

- Dr Monisha E. Nongpiur
- Dr Peggy Chiang
- Dr Ainur Rahman Bin Anuar
- Dr Arun Kumar Narayanaswamy

#### Clinician Scientist Program – CSA

- Dr Mohammad Kamran Ikram

#### 2nd Yong Loo Lin School of Medicine Annual Graduate Scientific Congress 2012

##### Best Oral Presentation

- Tham Yih Chung
- Dr Monisha E Nongpiur

#### Australia and New Zealand Corneal Society 2011

##### Doug Coster Award

- Prof Donald Tan

#### Canadian Society of Ophthalmology 2011

##### Bruce Jackson Award

- Prof Donald Tan



## sing·health · pol·y·clin·ics

[SHP]

**1. SHP keeps raising benchmarks with the world's best. 2. This spurs us to deliver even better patient care tomorrow.**



Polyclinics  
SingHealth

“It was my first time having to inject insulin on my own. The nurses of the TeleCare service gave me assurance through the phone calls and helped to ease my anxiety and overcome my fears.”

Mr De Vries Glenn Arnold Gerrard, 62 years old, has shown improvement in managing his diabetes since the enrolment into Family Physician Clinic and TeleCare.

Previous spread: Ms Tan Beng Poh (right), Senior Staff Nurse, SHP-Queenstown, with Mr Gerrard, who was diagnosed with diabetes and has started insulin therapy recently.

2011 was a significant year for SingHealth Polyclinics (SHP) as we achieved a number of key milestones. SHP was the first primary healthcare institution in Singapore to attain the Joint Commission International (JCI) accreditation for Primary Care Standards on 15 September 2011. The accreditation affirms our ongoing efforts to provide better and safer care to our patients.

Over the years, we have redesigned and transformed our care delivery models to cater to the healthcare needs of our patients. Our multi-tiered care delivery services such as the Family Physician Clinic and Nurse Clinician Service had seen an increase in patient attendance. Advanced Practice Nurse and TeleCare services were also introduced to manage patients with different care needs.

At SHP, we are committed to innovation and improvement in patient care. In view of the future challenges of the rapidly ageing population, we have implemented Population Care Management (PCM) – a care model that stratifies our patient population according to risk and complexity, and determines the type of care that they require.

We are also very proud to be the first healthcare institution in Singapore to achieve the ACGME-I accreditation for Family Medicine Residency Programme for both Foundational and Advanced programme. SHP has assumed greater roles in Academic Medicine, and scaled up the Family Medicine Residents intake for 2012. Our research publications and presentations have progressively increased over the years. We are also receiving more approved grant this year to pursue research projects.

Our pivotal role in support of the nation's vision to create a seamless and integrated healthcare system motivates us to seek out initiatives that will transform primary healthcare delivery in the next few years. Looking ahead, we will continue to engage in research and innovate care delivery to improve the lives of our patients.

**DR TAN CHEE BENG**  
**CEO, SINGHEALTH POLYCLINICS**

## SINGHEALTH POLYCLINICS

At SHP, we are focused on delivering the best patient care, drawing on a wealth of knowledge and expertise from our research, that is honed and passed on to the next generation through our expansive efforts in education.

## PATIENT CARE

SHP continually seeks to benchmark its standards of patient care against the world's best institutions. Our efforts were recognised this year as SHP was the first primary healthcare institution in Singapore to attain the Joint Commission International (JCI) accreditation for Primary Care Standards in September 2011, affirming our relentless efforts to provide better and safer care.

Over the years, we evolved from doctor-centric to team-based care, and from running single-tier clinics to multi-tier clinics. Besides the general clinic, we now have Family Physician Clinic (FPC) and Nurse Clinician Service (NCS). Having a multi-tier care delivery system allows patients with chronic diseases of differing medical complexities to be managed at the appropriate level of care.

The FPC and NCS have seen an upward trend in take-up. This is a good indicator that patients embrace the changes in managing their chronic diseases. Between March 2011 and April 2012, FPC attendances increased by 35% to more than 33,000 while NCS attendances increased by 30% to over 7,600.

Two Registered Nurses had completed their Master of Nursing training programme at the National University of Singapore and had been certified as Advanced Practice Nurses (APNs). They have embarked on their clinical roles at SHP-Bukit Merah and SHP-Geylang since December 2011.

The APNs play an important role in collaborating with the doctors and other members of the healthcare team in chronic disease management which includes the assessment of patient's healthcare needs, ordering and



**Dr How Choon How**  
Clinic Director, SHP-Sengkang

"Being a doctor will be great" was the first thought that spurred Dr How Choon How to apply to medical school. On his choice to specialise in Family Medicine, Dr How believes that this would give him more direct access to helping patients at the frontline. His convictions were reaffirmed during the SARS episode in 2003 which has deepened his understanding of the purpose and responsibilities of the profession.

"Family physicians continue to carry the yoke of first detection of any unknown and potentially dangerous diseases that may surface daily," says Dr How, who has assumed various roles in family medicine. His roles as a clinician, clinic director, clinical investigator, clinician educator and sub-editor (Family Medicine) of a medical journal allow him to practice Academic Medicine across the full spectrum of family medicine.

For Dr How, the commitment to better patient care requires belief and dedication. As he says: "It is important to believe that better care for our patients is coming in the near future. We need to seed that belief in ourselves, germinate the curiosity to innovate, grow our energy for change, and cross-pollinate ideas through learning and sharing. This will bear the fruit of better care for our patients tomorrow."

interpretation of laboratory investigations, evaluation of patient's response to medications and recommendation of management plan.

Six more Registered Nurses had recently completed similar training and are now undergoing their APN internship since July 2012.

In view of a rapidly ageing population, it is important that we transform the care delivery in SHP. Population Care Management (PCM) is a comprehensive approach to patient care that stratifies our patient population according to risk and complexity, and matches each level with appropriate care processes.

Under a PCM delivery option called Telecare (TLC), various patient profiles are generated to allow more targeted care. With an initial focus on patients with well-controlled chronic conditions and patients with diabetes who require insulin initiation, our nurses will call to follow-up with the review and actions required.

SHP-Geylang piloted TLC for patients with well-controlled chronic conditions in October 2010. This programme has been rolled out to SHP-Queenstown and SHP-Pasir Ris. More than 480 patients have participated in the programme.

Another TLC programme for patients new to insulin therapy was first introduced at SHP-Geylang, SHP-Queenstown and SHP-Pasir Ris in September 2010. Under this programme, nurses will provide follow-up care to patients with diabetes who require insulin therapy. To date, 370 patients with diabetes have gone through the programme.

## EDUCATION

2011 also marked a significant milestone for SHP in its education efforts. SHP is the first institution in Singapore to achieve the Accreditation Council for Graduate Medical Education-International (ACGME-I) accreditation for the Family Medicine Residency Programme to offer both Foundation and Advanced programmes. With this accreditation, SHP scaled up the intake for Family Medicine Residency from 10 residents in 2011 to 32 in 2012.



**Ms Chee Ching Yee**

Principal Medical Social Worker, SHP

Chee Ching Yee sees tomorrow's medicine as much more than just science and technology but also service centred on the individual, helping to alleviate patients' discomfort by enhancing their coping behaviour and helping them find help from the appropriate agencies. "It is about humanity where healthcare workers serve and help patients with sensitivity and sensibility. Improving patients' lives has gone beyond treatment and cure. It is also making their ailing years more tolerable."

As a Non-Clinical Physician Member, Family Medicine, for the SingHealth Residency Programme since November 2011, Ching Yee conducts training for medical students and residents, introducing them to the roles and job scope of medical social workers in polyclinic settings. During the training, she also highlights the needy patient profiles and the challenges faced by them in the community.

In these ways, it enables her to share her experience of the needs and challenges of patients and their families with these budding healthcare professionals. And what motivates her is making a difference to patients. "Success is not measured by social status, wealth or popularity. It is measured by how many hearts you have touched."

This allows us to take a huge leap forward in grooming the next generation of doctors to deliver better patient care.

To meet the increasing training needs, SHP's training arm, PRiME, opened a new training centre at SHP Head Office, well-equipped with technologies such as webcast and audience response system.

As part of our continuing efforts to groom the trailblazers of tomorrow's medicine, SHP trained a total of five batches of medical students in 2011 from NUS Yong Loo Lin School of Medicine (YLLSoM).

The new curriculum with a two-week attachment includes learning activities such as sit-in sessions, case observation, centralised ophthalmology and dermatology teaching and a newly added activity – case clerking sessions. Besides medical students from YLLSoM, SHP continued the teaching position with Duke-NUS Graduate Medical School. The training centre also saw more requests for overseas student attachments and the number has doubled compared to previous years.

Following the success of our Clinical Update Symposium last year, PRiME's third SHP Clinical Update Symposium in July 2011 saw a turnout of close to 230 participants, a 30% increase over 2010. Topics covered include dyslipidemia, diabetes mellitus, neurology, paediatrics, gastroenterology, musculoskeletal and otolaryngology.

SHP's education efforts went beyond our shores. The two-year training programme for Fujian, China medical professionals concluded in August 2011, with the opening of the Fujian (Xiamen) – Singapore Friendship Polyclinic. SHP shared expertise on areas such as patient safety and patient experience, and operation workflows.

## RESEARCH

SHP continued to push ahead in developing its research endeavours in 2011. SHP research publications and presentations have increased gradually over the years. Approved SHP Research Grants saw a significant increase by 50% compared to 2010.

Our staff plays an integral role in advancing our research objectives.

Dr How Choon How, Clinic Director, SHP-Sengkang, completed his Masters of Clinical Investigations (MCI) in 2011, joining Dr Joanne Quah and Dr Tan Ngiap Chuan, who graduated in 2010. Dr Andrew Wee, Senior Family Physician, SHP-Marine Parade, will complete his MCI in 2012.

SHP's Research Workshop has also increased to two sessions per week. The Research Workshop is conducted by our research committee to introduce our new Family Physicians to research methodology. Participants will form teams and are guided and supported to complete a project. SHP will continue to scale up the number of these research workshops.

## OUR PEOPLE

In 2011, SHP continued to invest in employee development. Twenty-five staff were supported and completed programmes including the Graduate Diploma in Family Medicine, Fellowship and Master in Medicine (Family Medicine), and Advanced Diploma in Nursing (Chronic Disease Management, Gerontology and Community Health). Eleven other employees were sponsored for formal training programmes. Two nurses were sponsored for the NUS Master Degree in Nursing, and have assumed their new roles as Advanced Practice Nurses.

In recognition of their exemplary service and contributions, 27 SHP employees were honoured for their achievements in 2011. Ms Lim Lee Choo Regina, Nurse Manager, and Ms Ang Gek Sin, Senior Enrolled Nurse, both received the MOH Nurses Day Merit Award. A total of 18 SHP staff received the National Day Long Service Medal and two staff received the National Day Efficiency Medal.

## COMMUNITY ENGAGEMENT

As part of our annual outreach efforts, SHP raised close to S\$15,500 through the Pledge Card donation drive in June 2011 for beneficiaries of SingHealth-President's Challenge 2011.



## KEY FIGURES

SINGHEALTH POLYCLINICS	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Workload per annum</b>		
Polyclinic Attendances	1,721,327	1,683,414
Dental Attendances	30,810	29,697
Dental Procedures	72,885	64,644
<b>Staffing (as at end Mar)</b>		
Total	929	902
Doctors	145	145
Dentists	11	11
Nurses	287	276
Allied Health Professionals	139	138
Dental Surgery Assistants	12	12
Others	336	320

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

## AWARDS & ACCOLADES

### PATIENT CARE

#### Joint Commission International (JCI)

- Joint Commission International (JCI) Accreditation for Primary Care Standards

#### MOH Nurses Day Merit Award 2011

- Lim Lee Choo Regina
- Ang Gek Sin

#### National Day Award 2011

##### Efficiency Medal

- Saidah Binte Shariff

##### Long Service Medal

- Ainon Bte Abdul Hamid
- Ali S/O Mohamed Naina Marican
- Chian Lay Chee
- Faridah Binte Mohamed Noor

- Dr Leow Kee Fong @ Leow Kee Foong
- Dr Lim Gek Muay
- Munahwarah Bt Mokhtar
- Dr Ngoh Yew Sing
- Noraini Binte Hamzah
- Png Soon Huat
- Roimah Binte Kasbola
- Sabaliah Binte Shaaban
- Sapa Atoon Binte Shafii
- Sik Poh Kim (Mrs Sim Boo Kim)
- Wong Meu See
- Wong Yoke Kwai Carol
- Yong Kheng Hwa
- Late Ang Bee Loh

#### Singapore Health Quality Service Award 2012

- 3 Gold Award
- 74 Silver Award

#### Merit Award for Clinical Practice Improvement

- SingHealth Polyclinics – Queenstown

#### SingHealth Excellence Awards 2012

##### Outstanding Clinician Award

- Dr Tan Ngiap Chuan

##### Outstanding Nurse Award

- Tan Ai Meng

##### Outstanding Allied Health Professional Award

- Goh Chin Chin

##### Outstanding Ancillary Staff Award

- Ong Choon Ngoh

##### Outstanding Administrative Staff Award

- Lau Mei Chiang Janet

#### SingHealth Quality Convention 2011

##### SingHealth Award for Best Quality Improvement Project

- 2nd Prize –  
Dr David Ng Chee Chin, Dorothy Phang Hoke Guan, Ooi Chai Wah, Angela Lee Wing Yan, Nourfiaziah Bte Abu Kassim, Tan Guat Cheoh  
*"Blood Pressure Treated to Target"*
- Merit Award –  
Dr Ian Phoon Kwong Yun, Dr Peter Moey, Dr Tan Chee Wei, Chau Man Kum, Zulidiah Bte Mohd Mokhtar, Anna Purani D/O Raman Singarasoo, Goh Chin Chin, Mas Riza Bte Mohd Razali  
*"Improving the Management of Poorly Controlled*

*Diabetes at Pasir Ris Polyclinic"*

#### Best Quality Improvement Poster Competition

- Merit Award –  
Dr Low Sher Guan, Dr Hwang Siew Wai, Dr Soo Wern Fern, Tina Phua, Lau Siew Meng, Tan Swee Keng  
*"Reducing Prescription Errors at Bukit Merah Polyclinic"*

## EDUCATION

### ACGME-I

- ACGME-I accreditation for Family Medicine Residency Programme

#### Masters of Clinical Investigations (MCI)

- Dr How Choon How

#### SingHealth Nursing Debate 2011

##### Team

- 1st runner up

##### Individual – Best Speaker Award

- Anna Purani

## RESEARCH

#### Eastern Health Alliance Inaugural Scientific Meeting

##### Nursing Paper Award 2nd Prize

- Tan Ai Meng  
*"Translating research clinical findings into clinical application"*

#### Translating Research Clinical Findings into Clinical Application

##### Best Research Proposal

- De Roza Jacqueline Giovanna  
*"Motivational interviewing to increase exercise level and improve lipid profiles in a primary care setting: A Randomized Controlled Trial"*



**bright · vi·sion · hos·pi·tal**  
[ BVH ]  
**1. The most conducive environment for full-spectrum care is our focus at BVH. 2. Our work embraces emotional and psychological well-being.**

“Thank you for taking care of all the little needs and requests. Without your care and concern in these 1½ months, I might not have recovered so quickly. All the time that you have spent taking care of me, and checking every so often that I’m alright is much appreciated. May every patient that come under your charge experience the same love, care and concern that I had...”

Mdm Lim, a patient at BVH, Compassion Ward.

Previous spread: Mdm Magheshwari Subapathy (extreme right), Assistant Director of Nursing Department, BVH, and Ms Remezel Oliveros De Leon (extreme left), Nursing Aide, BVH, with Mr Loh Meng Charn, a palliative patient at BVH.

The year 2011 marked a new beginning for Bright Vision Hospital (BVH) as it became a subsidiary of SingHealth. Importantly, BVH continues in its tradition to be committed to providing cost-effective quality care for our community, respecting the dignity of the individual, and serving the needs of all people, including the poor and disadvantaged. As such, BVH remains a charity and maintains its status as an Institution of Public Character.

Being part of SingHealth certainly opened up new opportunities in the continued transformation of the hospital. Senior managers were seconded from Singapore General Hospital and SingHealth to manage the hospital. Under new clinical leadership, immediate emphasis was placed on clinical quality and patient care. This past year has seen active recruitment of new talents and the building of a BVH team dedicated to serving the changing needs of our patients and their caregivers.

New service initiatives and enhanced workflows complimented by new physical facilities, provided for better patient care and safety, and a more pleasant patient experience. Added patient care areas such as a dedicated rehabilitation gymnasium and communal spaces were created to support the prompt recovery of patients and to meet the needs of patients’ families and caregivers.

Staff development and training was given strong focus and will be fundamental to developing a BVH culture where staff are encouraged to grow professionally and personally, to think beyond themselves and better serve the community. The new relationship with SingHealth has also allowed for broader training opportunities, better patient care coordination and skill upgrading across all categories of staff. As part of SingHealth, new season is upon BVH and we look forward to greater achievements in service to our patients.

**MR CHUA PUAY HIAN**  
CEO, BRIGHT VISION HOSPITAL

## BRIGHT VISION HOSPITAL

At BVH, we continuously strive to know more and do more for our patients, not just in medical care and physical comfort, but also in emotional and psychological well-being. We believe that a conducive environment for the delivery of the full continuum of care for our patients is integral to our pursuit of tomorrow's medicine.

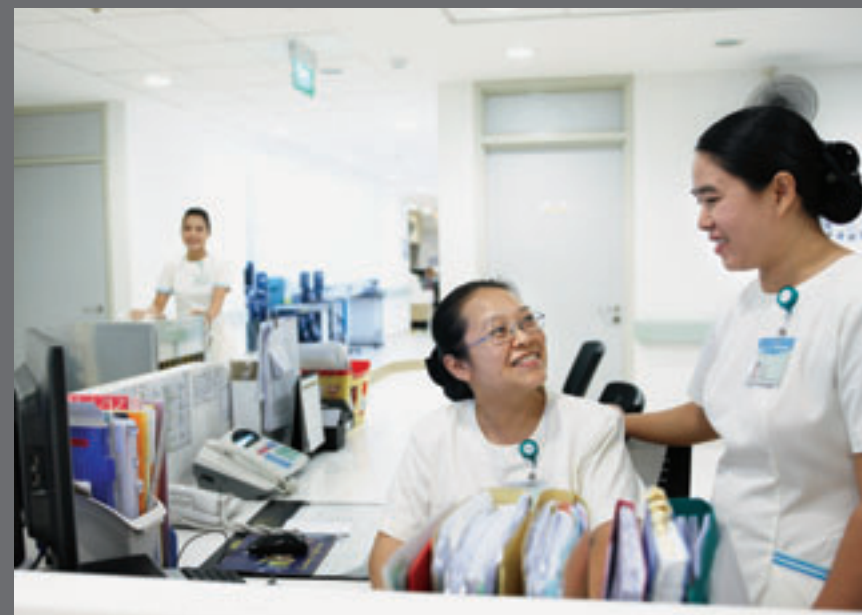
## PATIENT CARE

Providing holistic healthcare services to patients has always been the utmost priority at BVH, driving many new programmes and initiatives. Information Technology, for one, has been enhanced to bring better care to our patients.

The existing system was upgraded in FY 2011 with a Multidisciplinary Notes (MDN) feature to provide a more structured and efficient data management of inpatient records. All Heads of the Medical, Nursing, Medical Social Services and Rehabilitation Departments meet weekly to assess and review each inpatient's condition. Treatment plans are discussed and notes from the discussions are updated into the system for all medical staff to have a common view of patients' information.

Driven by the commitment to improve patient care, two teams from BVH's Nursing Department led quality improvement initiatives in October 2011. The team called Strategy to Ensure Medication Safety (STEMS) looks into enhancing the delivery of medication to patients, while the team called Bring Victory to Health (BVH) looked into the root causes of falls and reviewed all fall prevention precautions in place.

Our nurses also introduced the 'Night Riders' programme in November 2011. The 'Riders', encompassing Senior Staff Nurses, deputise as Acting Nursing Officers during the absence of a Nursing Officer. They provide solutions to arising issues, attend to emergency situations and ensure the safety of patients and staff. Since the



**Madam Liew Lee Foong**

Senior Staff Nurse, BVH

Dedicated to delivering the highest quality of patient care, and nurturing tomorrow's healthcare professionals, Liew Lee Foong plays crucial roles in the partnership between hospitals, clinics and healthcare professionals with medical schools.

She sees her task in the field of wound care extending beyond medical treatment. "I can comfort our patients during their stressful times and see from their faces that they were reassured when I held their hand while giving explanations. It touches my heart that I am able to alleviate my patients' fears or worries and see them smiling."

Lee Foong believes that as healthcare needs evolve, nurses will have to become more skilled to meet patients' specific needs. As nurses take on more specialised and leadership roles, they also need continuing education – and this is now an integral part of professional development at BVH. In turn, with their experience in evidence-based care, nurses can also play a part in research to better diagnose and treat our patients.



**Mr Joel Tham**  
Occupational Therapist, BVH

Joel Tham exemplifies the vision of BVH, to give patients a brighter tomorrow in the most holistic way. As a palliative care specialist, he helps patients right through to the last phase of their lives, and walks alongside them – figuratively and literally. “I have to be very empathetic and patient; allowing ample space and time for my patients to express themselves on what they would like to do on their final journey.”

Using his skills and equipped with the tools provided, Joel helps patients to improve their physical status and master various tasks including simple ones like brushing their teeth. He also guides patients and their caregivers with knowledge and resources to cope with, and rise above, their condition.

For Joel, tomorrow’s treatment should target not just the disease but help patients raise their quality of life and realise their aspirations. He recalls a patient he met on attachment in Perth, Australia, who did not just want standard therapy, but wanted to recover enough to ride a horse again. “It is natural for palliative patients wanting to live their life to the fullest and therapists can play a role in helping them to reach the standard.”

introduction of the programme, the fall rate has fallen to two cases during the period from December 2011 to March 2012.

The hospital also started a series of renovation and upgrading projects in 2011 to provide better quality care for our patients. One project involves the conversion of the existing administrative office into an enhanced palliative ward. Another highlight of the renovation is the development of a new inpatient rehabilitation gym and an expansion of the Day Rehabilitation Centre.

## EDUCATION

For eight months, two exemplary nurses from BVH attended the Advanced Diploma programme at Ngee Ann and Nanyang Polytechnics. Following their training, the nurses will apply their new skills to help transform the way we deliver safer, quality patient care and further inculcate a culture of learning at BVH.

In collaboration with National Cancer Centre Singapore (NCCS) and Singapore General Hospital (SGH), BVH’s nurses were attached to the institutions to learn and adopt best practices. Five Staff Nurses were attached to NCCS and another two to SGH’s Orthopaedic Surgery and Infection Control Departments for two weeks.

BVH worked closely with local tertiary institutions and offered their students an opportunity to be attached with the hospital. Six Nanyang Polytechnic students undergoing the physiotherapist course joined the attachment programme at BVH in 2011 where they were given practical experience in a healthcare setting. This is BVH’s commitment to serve as a training and education centre for community care of the elderly and infirm.

## OUR PEOPLE

Our staff did us proud at the Singapore Health Quality Service Awards (SHQSA) in January 2012. The eight recipients of the SHQSA (Gold) were: Mr Ching Hock Hai, Senior Enrolled Nurse; Ms Maricris

Bangeles Consabo, Health Attendant; Ms Predah Anam Binte Hashim, Senior Nursing Officer; Ms Rodona Dela Paz Labuanan, Senior Staff Nurse; Mdm Liew Lee Foong, Senior Staff Nurse; Mdm Magheshwari Sabapathy, Senior Nursing Officer; Ms Serene Sim Siew Hoon, Senior Ward Clerk; Mdm Tan Chye Ngo, Senior Enrolled Nurse. Seventeen Silver awards were also received this year. The SHQSA is a national award to honour dedicated healthcare professionals who are committed to raising the service standards of public healthcare.

## COMMUNITY

At BVH, as we serve needy patients who require intermediate and long-term medical care, we also inspire others to step forward and volunteer.

The Community Engagement team (CE team) started recruiting and engaging volunteers through the SG Cares online portal and has successfully built a pool of committed volunteers. The Weekend Befriender programme with SG Cares volunteers began in May 2011 and the programme was increased from once a month to twice a month to meet patients' needs. These sessions are essential in providing emotional support to long-term patients.

With continued focus on promoting community healthcare, BVH partnered with AsiaMalls and held two roadshows at their Community Corner in Hougang Mall in 2011. This collaboration is an ongoing effort to reach out to heartland residents while raising awareness for the Hospital.

During the International Volunteer Day in November 2011, our team of Occupational Therapists and Physiotherapists participated in an interactive Experiential Centre named 'Experience with Me' to raise awareness on patients' needs.

Throughout the year, volunteers from various organisations such as Singapore Chinese Chamber of Commerce & Industry – Young Entrepreneurs Network, Standard Chartered and Ministry of

Community Development, Youth and Sports, visited the hospital and performed for our patients.

Through the Community Involvement Programme (CIP), BVH established long-term partnerships with schools in the community. Teachers and students from Bowen, Xin Min, Hougang and Temasek Secondary Schools have supported BVH's activities. These partnerships help raise awareness for community healthcare needs while promoting volunteerism among youth.

Students from the National University of Singapore (NUS) Community Service Club initiated a six-month programme with BVH, named 'Project Love'. It was the hospital's first long-term engagement with tertiary students. Students helped raise awareness for the hospital on campus and were actively involved in patients' group activities.

Being the only community hospital that provides medical care for palliative patients, it is BVH's responsibility to help bring attention to palliative patients' needs. In March 2011, a book documenting the life stories of two of BVH's palliative patients and patients from Assisi Hospice was completed. The book, Project Unwritten, was an initiative by five Singapore Management University (SMU) students.

In 2011, we engaged our community partners and held several fundraising activities for needy patients. These include the first Charity Bazaar at Heartland Mall in July, a first Charity Walkathon in September, and a Charity Netball event for Primary Schools in February and for Secondary Schools in March. BVH also extended its fundraising effort to send out quarterly ad-mailers in May 2011.

## KEY FIGURES

BRIGHT VISION HOSPITAL	Year ended 31 Mar 2012	Year ended 31 Mar 2011
<b>Licensed Beds</b> (as at end Mar)	302	302
<b>Staffing</b> (as at end Mar)		
Total	256	233

Note: Staffing figures refer to Filled Posts, in terms of Full-Time Equivalent.

## AWARDS & ACCOLADES

### PATIENT CARE

#### Singapore Health Quality Service Award 2012

##### Gold Award

- Ching Hock Hai
- Maricris Bangeles Consabo
- Predah Anam Binte Hashim
- Rodona Dela Paz Labuanan
- Liew Lee Foong
- Magheshwari Sabapathy
- Serene Sim Siew Hoon
- Tan Chye Ngo

##### Silver Award

- Hezlin Bt Adenan
- Ma Aung May Lwin
- Marites Nievera Carganillo
- Reynold Gella Gella
- Noor Azlina Binte Kamsani
- Lau Moh Leng
- Dr Ma Sabai @ Lee Cheong Mei
- Dr Myint Myint Nwe
- Ann Ou
- Narayanasamy Sakkaravarthy
- Siew Kam Poh
- B Tamilselvi
- Teong Tian Min
- Kathleen Martin Teoxon
- Saw Gay Blu Thuang
- Thaw Dar Shwe Sin Ye
- Zhao Ruihong

# board · of · di·rec·tors · and · sen·ior · man·age·ment

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## Board of Directors

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### Mr Peter SEAH Lim Huat

Chairman of the Board  
Chairman, Staff Committee



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A senior banking veteran who retired as Vice Chairman and CEO of OUB Pte Ltd in 2001, Mr Seah joined the SingHealth Board in October 2008 and was appointed Chairman in April 2009. Currently, Mr Seah is also the Chairman of DBS Group Holdings Ltd, Singapore Technologies Engineering Ltd and LaSalle College of the Arts Limited. He also serves as Deputy Chairman of CapitaLand Limited and Director of several local and international companies including the Government of Singapore Investment Corporation Pte Ltd, StarHub Ltd and Level 3 Communications Inc. Mr Seah currently sits on the board of the Defence Science and Technology Agency. He was awarded the Distinguished Service Order Award in 2012.



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**Mrs Christina ONG**

Board Member  
Chairman, Service Excellence Committee  
Member, Property Committee



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Mrs Ong was appointed to the Board in April 2006. She presently serves as Chairman of the National Parks Board, and also sits on the Board of Singapore Airlines Limited. As Managing Director of the upmarket Club 21 fashion empire, Mrs Ong is well-known as a fashion entrepreneur and high-end hotelier with the Como brand of hotels, resorts and spas. She was awarded the Cavaliere Award by the Italian Government and Italian Fashion Hall of Fame Award in 1995.

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**Mr Ernest WONG Yuen Weng**

Board Member  
Chairman, Risk Oversight Committee  
Member, Budget & Investment Committee



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Mr Wong joined the Board in April 2006. He started his career in 1967 with the Economic Development Board and the Ministry of Finance before joining United Overseas Bank (UOB) in 1972. He was appointed Group President of UOB from 1990 to 2000 and served as Group CEO of MediaCorp from 2000 to 2005. Since 2005, he has been a Member of the Temasek Advisory Panel and is currently Chairman of Fullerton Financial Holdings Pte Ltd, Invida Group Pte Ltd and Nucleus Connect Pte Ltd. He also sits on the Boards of Nanyang Technological University, SingBridge Group of companies, Pavilion Capital Holdings, Bank Danamon Indonesia and the Casino Regulatory Authority.

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**Dr Michael B. WOOD**

Board Member  
Member, Research Committee  
Member, Risk Oversight Committee



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A physician and orthopaedic surgeon by training, Dr Wood joined the Board in April 2006. Dr Wood is the former CEO of Mayo Clinic, US and the current President Emeritus of the Mayo Foundation, US, since 2003, as well as Professor of Orthopaedic Surgery in Mayo Clinic since July 1989. Dr Wood is also Director of two publicly listed healthcare companies in the US.

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**Prof Edward W. HOLMES**

Board Member  
Chairman, Research Committee



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Prof Holmes joined the Board in December 2007. A highly regarded physician-scientist, he received the prestigious Honorary Citizen Award in April 2011 for his contribution to biomedical sciences in Singapore. He is currently Deputy Chairman for the Translational and Clinical Sciences Group at the Biomedical Research Council of the Agency for Science, Technology and Research and Chairman of the Translational and Clinical Research Oversight Committee. Prof Holmes was also appointed Executive Chairman of the National Medical Research Council. Prior to these appointments, he was the Vice Chancellor for Health Sciences and Dean, School of Medicine, at the University of California, San Diego. He has held senior leadership appointments in some of the best universities in the US and plays a major international leadership role, serving on numerous universities, industrial, and national advisory boards.

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**Prof Victor J. DZAU**

Board Member  
Member, Research Committee



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Prof Dzau joined the Board in October 2008. He is the Chancellor for Health Affairs at Duke University and President and CEO of Duke University Health System. Prof Dzau is also James B. Duke Professor of Medicine. He had served as the Bloomfield Professor and Chairman of Department of Medicine at Stanford University, and most recently as the prestigious Hersey Professor of Theory and Practice of Medicine and Chairman of Medicine at Harvard Medical School. With an academic interest in cardiovascular translational research and global health, he is the recipient of many awards and has been honoured by Harvard University with the naming of the “Victor J. Dzau Lectureship in Global Health” and the establishment of the “Victor J. Dzau Professorship in Medicine”. Prof Dzau also serves on numerous committees and advisory boards including the National Institutes of Health in the US.

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**Mr Gerard EE Hock Kim**

Board Member  
Member, Staff Committee  
Member, Service Excellence Committee



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Mr Ee joined the Board in April 2009. An accountant, Mr Ee practised as an Auditor and retired as a partner of Ernst & Young in 2005. He is the Chairman of Eastern Health Alliance, of which Changi General Hospital is a founding member. Mr Ee also serves as Chairman of Singapore Institute of Management, St Joseph’s Institution Board of Governors and Canossian School for the Hearing Impaired. He sits on the boards of MOH Holdings Pte Ltd, and Symasia Foundation Ltd. Mr Ee is active in the field of social service and chairs a range of social service organisations and programmes.

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**Mr Philip ENG Heng Nee**

Board Member  
Chairman, Audit Committee  
Member, Property Committee



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Mr Eng joined the Board in April 2009. He spent 23 years with Jardine Cycle & Carriage Group before retiring in 2005 as Group Managing Director. Currently, Mr Eng is Singapore’s Ambassador to Greece and High Commissioner to Cyprus. He is non-Executive Chairman of mDR Limited and Frasers Centrepoint Asset Management Ltd. He serves on the board of several local and regional companies which include Asia Pacific Breweries Ltd, Ezra Holdings Limited, Hup Soon Global Corporation Ltd, NTUC Income, OpenNet Pte Ltd, The Hour Glass Ltd, Heliconia Capital Management Pte Ltd and Hektar Asset Management Sdn Bhd.

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**Prof Raj M. NAMBIAR**

Board Member  
Member, Staff Committee  
Member, Risk Oversight Committee



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Prof Nambiar joined the Board in April 2009. A surgeon for more than 40 years, he is Visiting Consultant to Singapore General Hospital, Tan Tock Seng Hospital and Khoo Teck Puat Hospital, Senior Consultant with the Ministry of Health and Emeritus Consultant to Changi General Hospital. He also sits on the board of Alexandra Health Endowment Fund. Actively involved in postgraduate medical training, he serves as Member of the Specialist Accreditation Board and Chairman of the Residency Advisory Committee for General Surgery under the Ministry of Health. Prof Nambiar served as the President of the Singapore Medical Council for four years until 2008.

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**Mr Willie CHENG Jue Hiang**

Board Member  
Chairman, IT Committee  
Member, Budget & Investment Committee



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Mr Cheng joined the Board in April 2009. He retired as managing partner of Accenture Singapore in 2003 and is currently a director of Integrated Health Information Systems Pte Ltd, the IT subsidiary of MOH Holdings Pte Ltd. He sits on the boards of United Overseas Bank Limited, Singapore Press Holdings and FEO Hospitality Asset Management Pte Ltd. Active in the non-profit sector, he serves on the boards of councils of several civic and charitable organisations, such as Caritas Humanitarian Aid & Relief Initiatives Singapore, Council for Third Age, The Courage Fund and SymAsia Foundation.

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**Mr KHOO Boon Hui**

Board Member  
Chairman, Budget & Investment Committee  
Member, Sengkang Project Committee



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Mr Khoo joined the Board in September 2010. He is the Senior Deputy Secretary for the Ministry of Home Affairs. He began his career in the Singapore Police Force (SPF) in 1977 and served as Commissioner of the Singapore Police from 1997 to 2010. Mr Khoo is also President of the INTERPOL Executive Committee and sits on the boards of Temasek Foundation CLG Limited and Singapore Technologies Engineering Ltd, chairing its Risk Review Committee. He is also the Director of the Singapore Eye Centre Board. Mr Khoo is Deputy Chairman to Singapore Island Country Club and the Singapore Quality Award Governing Council and alternate Chairman of the Home Team Academy Board of Governors. He is also a member of the YMCA Advisory Council, the Singapore Symphony Orchestra Council and the International Centre for Sports Security, Cambridge University Police Executive Programme and Oxford Journal of Policing Advisory Boards.

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**Mr YATIMAN Yusof**

Board Member  
Member, Service Excellence Committee  
Member, Risk Oversight Committee



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A former Member of Parliament and Senior Parliamentary Secretary who retired from politics in 2007, Mr Yatiman joined the SingHealth Board in April 2009. He is Singapore's High Commissioner to Rwanda and Kenya. He sits on the board of the Singapore Press Holdings Foundation, National Kidney Foundation and the Public Guardian's Board. Mr Yatiman is also actively involved with the Singapore Scouts Association and the Malay Language Council.

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**Prof TAN Ser Kiat**

Board Member  
Chairman, Sengkang Project Committee  
Member, Audit Committee  
Member, Property Committee  
Member, Risk Oversight Committee



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Prof Tan Ser Kiat joined the Board in January 2012. Formerly the Group Chief Executive Officer of SingHealth, Prof Tan is currently Emeritus Consultant to Singapore General Hospital and the Chairman of SingHealth Foundation. He is also the President of the Singapore Medical Council. Prof Tan serves on various national-level committees that have shaped Singapore's healthcare system. He was the President of the Movement for the Intellectually Disabled of Singapore (MINDS) from 1994 to 2003, and Chairman of his alma mater, Raffles Institution from 1999 to 2010. Prof Tan has recently received the Meritorious Service Medal among other awards which include the Public Administration Medal (Gold) in 1999, May Day Medal of Commendation in 2004, Public Service Medal in 2006, and the Hudson Award for Champion of HR in 2011.

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**Mrs TAN Ching Yee** (wef 1 April 2012)

Board Member  
Member, SingHealth Staff Committee



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Mrs Tan joined the Board in April 2012. She is Permanent Secretary of the Ministry of Health, overseeing the development of health services in Singapore. Before her appointment to the Administrative Service in 1991, Mrs Tan was a Statistician and Research Economist in the Ministry of Trade and Industry. She also served as Second Permanent Secretary of the Ministry of Education in 2005 and as its Permanent Secretary in 2007. Mrs Tan was the Chief Executive Officer of InfoComm Development Authority of Singapore in 2002 and was appointed as Deputy Secretary (Infocomm and Media Development) at the Ministry of Information, Communications and the Arts. She was awarded the Public Administration Medal (Silver) in 1999 and the Public Administration Medal (Gold) in 2008.

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**Mr Lucien WONG** (wef 1 July 2012)

Board Member  
Member, Risk Oversight Committee



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Mr Wong joined the Board in July 2012. A practising lawyer of more than 32 years, Mr Wong is currently the Chairman and Senior Partner of Allen & Gledhill LLP. He was appointed Chairman of the Maritime and Port Authority of Singapore in 2009. Mr Wong is a Board member of the Monetary Authority of Singapore as well as a Member of the Board of Trustees of Singapore Business Federation, and is also Director of various local and regional companies which include Cerebos Pacific Limited, Hap Seng Plantations Holdings Berhad, Singapore Airlines Limited and Singapore Press Holdings Limited.

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**Ms KOH Lin-Net** (wef 1 July 2012)

Board Member  
Member, Budget & Investment Committee  
Member, Audit Committee



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Ms Koh Lin-Net joined the Board in July 2012. She is currently the Chief Executive Officer of the Media Development Authority of Singapore. Prior to this, she has served in various capacities in the Economic Development Board, Singapore Tourism Board, Infocomm Development Authority, A\*STAR, and Ministry of Law. She was also the Deputy Secretary (Infocomm, Media and the Arts) in the Ministry of Information, Communications and the Arts from 2007 to 2008, and the Deputy Secretary (Trade) of the Ministry of Trade and Industry from 2008 to October 2012. Ms Koh has served on various Boards including the Singapore Land Authority, The Esplanade Co Ltd, and the School of the Arts. Ms Koh was awarded the Public Administration Medal (Silver) in 2009.

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**Ms YONG Ying-I** (till 31 March 2012)

Board member  
Member, Staff Committee

**Mrs Arfat SELVAM** (till 30 June 2012)

Board Member  
Member, Audit Committee  
Member, Risk Oversight Committee

**Mr CHAN Heng Kee** (till 30 June 2012)

Board Member  
Chairman, Budget & Investment Committee  
Member, Staff Committee  
Member, IT Committee

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## Chief Executive Officers, Chairmen, Medical Boards and Directors of National Specialty Centres

### Prof Ivy NG

Group Chief Executive Officer, SingHealth  
Co-chair,  
Academic Medicine Executive Committee

### Prof ANG Chong Lye

Deputy Group Chief Executive Officer,  
Clinical Services & Informatics, SingHealth  
Chief Executive Officer,  
Singapore General Hospital  
Member,  
Academic Medicine Executive Committee

### Prof SOO Khee Chee

Deputy Group Chief Executive Officer,  
Research & Education, SingHealth  
Director,  
National Cancer Centre Singapore  
Vice Dean, Clinical & Faculty Affairs,  
Duke-NUS Graduate Medical School  
Member,  
Academic Medicine Executive Committee

### Prof Kenneth KWEK

Chief Executive Officer,  
KK Women's and Children's Hospital

### Dr KWA Chong Teck

Executive Director,  
National Dental Centre Singapore

### Assoc Prof KOH Tian Hai

Medical Director,  
National Heart Centre Singapore

### Prof LEE Wei Ling

Director,  
National Neuroscience Institute  
Academic Chair,  
Neuroscience, Academic Clinical Program

### Prof Donald TAN

Medical Director,  
Singapore National Eye Centre  
Co-Director, SingHealth Transplant  
Academic Chair,  
Ophthalmology, Academic Clinical Program

### Dr TAN Chee Beng

Chief Executive Officer,  
SingHealth Polyclinics

### Prof NG Han Seong

Chairman, Medical Board,  
Singapore General Hospital  
(till 31 October 2012)  
Group Chief Risk Officer, SingHealth  
(wef 1 November 2012)  
Senior Director, Chief Executive Officer's Office,  
Singapore General Hospital  
(wef 1 November 2012)  
Senior Associate Dean,  
Duke-NUS Graduate Medical School  
(till 31 October 2012)

### Prof TAY Boon Keng

Chairman, Medical Board (International),  
SingHealth

### Prof Christopher CHENG

Pro-Tem Chief Executive Officer,  
Sengkang Health

### Mr CHUA Puay Hian

Chief Executive Officer,  
Bright Vision Hospital

### Prof FONG Kok Yong

Chairman, Division of Medicine,  
Singapore General Hospital  
(till 31 October 2012)  
Chairman, Medical Board,  
Singapore General Hospital  
(wef 1 November 2012)  
Group Director, Medical, SingHealth  
Co-opted member,  
Academic Medicine Executive Committee  
Academic Chair,  
Medicine, Academic Clinical Program  
(till 31 October 2012)  
Senior Associate Dean,  
Duke-NUS Graduate Medical School  
(wef 1 November 2012)

### Prof Alex SIA

Chairman, Medical Board,  
KK Women's and Children's Hospital  
Senior Associate Dean,  
Duke-NUS Graduate Medical School

### Dr Joseph WEE

Chairman, Medical Board,  
National Cancer Centre Singapore

### Dr Francis HUI

Chairman, Medical Board,  
National Neuroscience Institute  
Academic Vice Chair,  
Neuroscience, Academic Clinical Program

### Assoc Prof ONG Biauwei Chi

Pro-Tem Chairman, Medical Board,  
Sengkang Health

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## Corporate Office Directors

### Mr SIA Kheng Hong

Group Chief Financial Officer,  
SingHealth

### Dr Edwin LOW Cheng Tee

Group Director,  
Joint Office of Academic Medicine  
Group Director,  
Strategic Human Resource, SingHealth  
Senior Associate Dean,  
Academic Medicine,  
Duke-NUS Graduate Medical School

### Mr TAN Jack Thian

Group Chief Operating Officer &  
Group Chief Procurement Officer,  
SingHealth  
Chief Operating Officer,  
KK Women's and Children's Hospital

### Prof WONG Tien Yin

Group Director, Research,  
SingHealth  
Executive Director,  
Singapore Eye Research Institute  
Academic Vice Chair (Research),  
Ophthalmology, Academic Clinical Program  
Senior Consultant Ophthalmologist,  
Singapore National Eye Centre

### Assoc Prof KOO Wen Hsin

Group Director, Education, SingHealth  
Deputy Director,  
National Cancer Centre Singapore  
Co-Lead,  
Academic Medicine Education Institute  
Senior Consultant,  
Department of Medical Oncology,  
National Cancer Centre Singapore

### Dr Tracy Carol AYRE

Group Director, Group Nursing,  
SingHealth  
Director, Nursing,  
Singapore General Hospital

### Assoc Prof Celia TAN

Group Director, Group Allied Health, SingHealth  
Director, Postgraduate Allied Health Institute,  
Singapore General Hospital

### Mr Benedict TAN

Group Chief Information Officer,  
Information Technology, SingHealth

### Assoc Prof LOO Chian Min

Group Chief Medical Informatics Officer,  
SingHealth  
Director, Education,  
Medicine, Academic Clinical Program  
Head and Senior Consultant,  
Department of Respiratory and  
Critical Care Medicine,  
Singapore General Hospital

### Prof FOCK Kwong Ming

Group Chief Risk Officer, SingHealth  
(till 31 October 2012)

### Mrs TAN-HUANG Shuo Mei

Group Director,  
Communications & Service Quality,  
SingHealth & Singapore General Hospital

### Dr LEE Ee Lian

Director, Strategic Medical Manpower,  
SingHealth  
Senior Consultant, Department of Psychiatry,  
Singapore General Hospital

### Dr CHOW Mun Hong

Director,  
Clinical Governance & Quality Management,  
SingHealth  
Director, Quality Management,  
SingHealth Polyclinics

### Ms YONG Seow Kin

Director, Facilities Development,  
SingHealth

### Ms Elizabeth CHOO

Director, Legal, SingHealth

### Mr TAY Sin Hwa

Director, SingHealth Academy

### Mr Peter TAN

Director, Business Development,  
SingHealth

## KEY FIGURES

SINGHEALTH – OVERALL	Year ended 31 Mar 2012	Year ended 31 Mar 2011*	Change
<b>Size</b>			
Licensed Beds (as at end Mar)	2,583	2,607	-0.9%
Beds in Service	2,525	2,524	0.04%
<b>Workload per annum</b>			
Bed Occupancy Rate	78.5%	76.8%	1.7% pts
Inpatients	153,419	150,045	2.2%
Total Patient Days	725,687	707,712	2.5%
Average Length of Stay (days)	4.7	4.7	–
Total Surgical Operations	167,183	169,496	-1.4%
Day Surgeries	106,239	108,801	-2.4%
Inpatient Surgeries	60,944	60,695	0.4%
Specialist Outpatient Clinic Attendances	1,788,073	1,755,090	1.9%
Accident & Emergency Attendances	323,642	310,499	4.2%
Dental Attendances	180,474	186,485	-3.2%
Dental Procedures	228,911	227,207	0.7%
Polyclinic Attendances	1,721,327	1,683,414	2.3%
<b>Staffing (as at end Mar)</b>			
Total	16,758	15,702	
Doctors	2,012	1,866	
Dentists	93	90	
Nurses	6,767	6,332	
Allied Health Professionals	2,649	2,431	
Others	5,237	4,983	

\* Comparative figures are restated to exclude Changi General Hospital, which was divested on 1 Apr 2011.

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

## FINANCIAL INFO

	Year ended 31 Mar 2012 S\$ million	Year ended 31 Mar 2011* S\$ million
<b>ASSETS BY MAJOR CATEGORIES</b>		
Plant and Equipment	445	440
Trade and Other Receivables	582	464
Other Assets	600	613
<b>Total</b>	<b>1,627</b>	<b>1,517</b>
<b>LIABILITIES BY MAJOR CATEGORIES</b>		
Trade and Other Payables	674	595
Other Current Liabilities	97	88
Non Current Liabilities	447	429
<b>Total</b>	<b>1,218</b>	<b>1,112</b>
<b>SHARE CAPITAL AND RESERVES</b>		
	409	405
<b>REVENUE BREAKDOWN BY MAJOR CATEGORIES</b>		
Patient Revenue	1,065	1,024
Subvention	968	895
Other Revenue	302	271
<b>Total</b>	<b>2,335</b>	<b>2,190</b>
<b>EXPENDITURE BY MAJOR CATEGORIES</b>		
Manpower	1,271	1,196
Supplies and Consumables	371	353
Other Operating Expenses	574	524
Depreciation and Amortisation	115	113
<b>Total</b>	<b>2,331</b>	<b>2,186</b>

\* Comparative figures are restated to exclude Changi General Hospital, which was divested on 1 Apr 2011.

# di·rec·to·ry



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## NATIONAL SPECIALTY CENTRES



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