With the idea of Regional Health Systems (RHS) taking shape, a key transformation will take place in the local primary care sector. Within each RHS, patients can be cared for seamlessly between primary, secondary, tertiary and the intermediate and long-term care facilities. Integration of care providers will ensure that patients are accorded the right care, at the right time, in the right care setting.
Hand-in-hand, We Bring Better Care To Patients

The patient will be cared for by a team of doctors, nurses and allied health professionals in the hospital and in the community. Besides the hospital specialists, general practitioners (GPs), the teams from the community hospitals and nursing homes, the patient's own caregiver may also be trained by the professionals to ensure the best possible care continues in the comfort of the home.

The National University Hospital (NUH) will be part of the evolution. With increasing prevalence of chronic diseases and rising workload from an ageing population, the hospital will be relooking its paradigms and care delivery model as the healthcare landscape evolves.

Over the years, NUH has been working closely with healthcare providers such as the St Luke's Hospital, polyclinics (namely, Clementi, Jurong, Bukit Batok and Choa Chu Kang) and GPs in its bid to provide holistic care to patients. In 2012, NUH will continue to reach out to the healthcare partners in the western region of Singapore, modeling an integrated system of care.

A New Public-Private Partnership Model In The Making

In the new year, NUH is looking to explore a new partnership with private primary care providers to bring care nearer to patients. The model is likely to be in the form of an off-site, step-down primary care facility which encompasses consultation suites and allied health services.

Under the new model, patients whose conditions are stable can be referred to the hospital's partners. This in turn helps to shorten the specialist outpatient clinic (SOC) appointment wait time for other new patients. Specialists at the hospital can also focus on attending to patients whose conditions are more complex and acute.

GPs will provide quality care to patients by subscribing to a common clinical governance framework and integrated care protocols and pathways for the patients referred by NUH.

Besides bringing benefits to patients, the new framework also serves to elevate the healthcare system's capability to a higher level, allowing hospital specialists to devote more time to academic and research work; and GPs to benefit professionally from the opportunity to be involved in management of chronic diseases and more training arrangements.

Building on our foundation, we are developing a network that will provide an integrated care pathway for our patients in the western part of Singapore, at the same time allowing us to expand our roles in clinical teaching and research. An integrated network will create more opportunities for us to enhance our undergraduate and postgraduate teaching. It will also allow us to research new models of care that will bring about better health outcome and cost effectiveness to both our patients and the healthcare system as a whole.

Adjunct Associate Professor Joe Sim, CEO, NUH

Seamless Care For Patients

July 2011

• NUH signs a partnership agreement with GP group, Frontier Healthcare, to embark on a pilot project to co-manage patients with diabetes and whose conditions are stable. Patients pay the same rate as they would in the hospital when they consult the GP.

October 2011

• NUH starts to refer elderly patients who require medical and nursing care as well as rehabilitation care to the Tembusu Rehab and Day Care Centre under SPICE (Singapore Programme for Integrated Care for the Elderly), a collaboration between the Agency for Integrated Care (AIC), the Sathya Sai Social Service (4S) and NUH.

NUH patients enrolled in the programme are ensured continuum of care as they will have easy access to specialists whenever they require acute medical care.

Photo: Lianhe ZaoBao © Singapore Press Holdings Ltd. Reprinted with permission.
Highlights 2011

New Premises For The National University Heart Centre, Singapore
The new three-storey centre was designed to facilitate the centre’s focus on a holistic and comprehensive approach in treating heart diseases.

One-stop New Centre For Hand & Reconstructive Microsurgery (HRM)
The HRM Centre consolidates all hand-related services under one roof to provide treatment for patients with various hand conditions. Consultation with doctors, minor surgical procedures, hand therapy sessions and fluoroscopic assessment of bones and joints of the hand are done at the one-stop centre.

NUH’s New Fertility Training Centre - 1st in Asia Pacific
The Centre for Reproductive Education and Specialist Training (CREST) is dedicated to train clinicians and embryologists and develop their skills in Assisted Reproductive Techniques. It is the first purpose-built training centre for fertility experts in Asia Pacific.

First Dual Organ Transplant Locally
Surgeons at NUH scored a first in Singapore by successfully performing a combined liver-kidney transplant in a single surgery on 16-year old Quek Weihao, who suffered from a rare genetic condition called primary hyperoxaluria.

New Indicator To Predict Risk Of Heart Disease
Persistent high levels of C-reactive protein (CRP) may point to an increased risk for heart diseases even in people who have normal levels of cholesterol. NUHS researchers who conducted a study that included 3,404 Chinese, Malays and Asian-Indians have found that a third of the population who have low levels of LDL-C (or bad cholesterol) have elevated levels of CRP. Furthermore, women and minority ethnic groups were particularly prone to develop high CRP. Weight loss and smoking cessation are key strategies for reducing CRP levels. It was part of study conducted to evaluate the effectiveness of statin therapy on people who do not have any known heart disease but face an increased risk of heart attacks and stroke due to elevated CRP levels. While it is not to be recommended as a routine test, CRP level may be useful for those who are in the borderline risk group of heart diseases and who are unsure of whether to start lipid lowering therapy.

New Minimally Invasive Procedure To Treat Prostate Enlargement
NUH is the first hospital in Southeast Asia to offer a new minimally invasive procedure called Transurethral Needle Ablation of Prostate Gland (TUNA) to treat prostate enlargement or Benign Prostate Hypertrophy (BPH). Done under local anaesthesia in the outpatient clinic, the procedure offers faster recovery, enabling patients to return to their normal day-to-day activities within a week.

Novel Procedure To Remove Stomach Tumours
NUH’s Department of Gastroenterology & Hepatology and the Nanyang Technological University jointly developed MASTER (Master and Slave Transluminal Endoscopic Robot), the world’s first flexible endoscope with small robotic hands which can enter the body through a patient’s mouth to remove tumours from the stomach. This new procedure cuts surgery time for stomach cancer patients to 17 minutes from eight hours, does away with the need for hospitalisation and allows patients to undergo surgery without having to bear scars.

Successful Delivery And Separation Of Conjoint Twins
NUH made history by successfully delivering and separating Asia’s first pair of monochorionic & diamniotic conjoint twins who were connected by a common ileum (or last part of the small intestine attached to the large intestine), colon and bladder. There have only been four such cases reported worldwide.
**Personalised Care For Mothers**

In many Western countries, women with a relatively smooth pregnancy often rely on one-to-one care by professionally trained midwives to take care of them throughout pregnancy and labour. The midwives also help care for the newborn and coach the mother on breastfeeding.

In Singapore, obstetricians are often the main caregiver of expectant mothers, with midwives coming in only when one is in labour.

A new programme at NUH now offers mothers-to-be the additional option of being cared by both the obstetrician and a midwife.

EMMa Care or Enhanced Midwifery Maternity Care Programme, is led by a team of experienced midwives. It offers expectant mothers one-to-one care and support throughout their pregnancy, up to delivery and two months after the baby arrives.

“Research has shown that with continuous support from the same midwife, the mother is more likely to have a smoother delivery, less need for pain relief and more importantly, a higher level of maternal satisfaction with the birth experience,” says Senior Nurse Manager Lim Peng Im, who is also a trained midwife.

Madam Beata Plazura-Ingram signed up for the programme when she was pregnant with her first child, Viggo, who was born in August last year.

“The fact that I could count on an experienced midwife’s advice at any time of the day and night was very assuring. As a first time mother, I was not sure what to expect but I felt very confident when following the advice of my midwife,” she says.

**New Parenting Courses**

The University Children’s Medical Institute (UCMI) recently rolled out two new services for parents who would like a helping hand in raising their children.

### Sleep Clinic For Children

Help is now available for parents who are having sleepless nights because their children have behavioural sleep problems like refusal to go to bed and early morning wakings. Targeted at parents with children as young as four months old, the programme is designed to help parents cope better with practical steps they can take.

The team will identify the sleep problems which the child has, educate parents on the appropriate sleep behaviour and develop strategies to help overcome the identified problems.

“If a child has difficulty falling asleep because of excessive fears or worries, we will teach parents skills to calm the child when it is time for bed. Sleep-related problems should be addressed as soon as possible. If left untreated, it can lead to academic, attention and behavioural problems as well as affect the child's health,” says Ms Jessie Ooh, Lead Psychologist.

**Contact Us**
- **Location:** Children’s Clinic 2, Main Building
- **Operating hours:** Monday to Friday, 8.30am – 5.30pm
- **Tel:** (65) 6772 6157 / 6772 2470
- **Enquiries:** chi2@nuhs.edu.sg / jessie_ooh@nuhs.edu.sg
- **Website:** www.nuh.com.sg/ucmi

### “Signposts For Building Better Behaviour” Programme

Offered by the Child Development Unit, the programme is designed to equip parents of children with developmental delay or intellectual disability with the skills to manage dis-obedience, disruptive, anti-social or aggressive behaviours.

Over five sessions each lasting approximately two hours, parents will be taught practical strategies to manage the undesirable behaviours of their children which they have identified. Parents will also learn how to structure their children’s environment to bring out their best behaviour.

**Contact Us**
- **Location:** Child Development Unit @ Jurong Medical Centre
- **Operating hours:** Monday to Friday, 8.30am – 5.30pm
- **Tel:** (65) 6665 2530 / 6665 2531
- **Website:** www.nuh.com.sg/ucmi
The Circle Line Comes To NUH!

Travelling to NUH is now a breeze with the opening of the Circle Line Kent Ridge MRT Station in October 2011.

The station is connected to the Hospital’s Main Building via a sheltered walkway, offering patients, visitors and staff alike greater convenience. Patients who have difficulty walking the short distance from the station to the Hospital can make use of the wheelchairs parked within the station.

“Bringing my mother who has weak legs for check up with her doctor in NUH has never been easier, with the clinic now just a short walk away from the MRT station.”

Ms Clorine Teo

Main Building Gets A Face Lift

After a year of re-development work, the Main Building at NUH has been given a face lift, with a brighter and bigger entrance and new F&B outlets.

The new Lobby B is steps from the Circle Line Kent Ridge MRT Station. The vehicle drop-off point and taxi stand have been relocated to the lobby for the convenience of patients and visitors. Other patient care facilities completed during the period include new premises for the National University Heart Centre, Singapore (NUHCS), Centre for Hand and Reconstructive Microsurgery and the Dental Centre.

From January 2012, the hospital embarks on Phase 2 of the remodelling works. Areas affected include Lobby A, part of the Emergency Department, courtyard, public amenities as well as food and retail outlets on the ground level.

The new food court is scheduled for completion in mid 2012. Meanwhile, visitors may patronise other food outlets within and around NUH. For more information, please visit www.nuh.com.sg
Mr Rahman, 68, never had regular meals and would only eat as and when he felt hungry. A usual meal was either take-away food from the neighbourhood coffee shop, or simple self-cooked dishes. Little did he know that his eating habits were leading him down the road to malnutrition.

In October 2010, he was admitted to NUH for chronic breathing difficulties. At the ward, nurses identified the 52-kg retired police officer to be at nutritional risk using a quick diagnosis-screening tool and he was referred to and seen by a dietitian within 24 hours.

Developed by a team of dietitians and nurses at NUH in 2003, the 3-Minute Nutrition Screening (3-MinNS) tool is a non-invasive nutritional assessment that screens the nutritional state of newly admitted patients in just three minutes. The scores allow staff to determine if a patient is at risk of moderate or severe malnutrition. Generally, patients are referred to a dietitian within the same day. On average, some 30 patients admitted to the hospital are referred to the dietitians using the screening tool daily.

According to Ms Lim Su Lin, lead designer of the 3-MinNS tool, existing nutritional screening tools require the patient’s body mass index (BMI) for a complete assessment, and it usually involves measuring the patient’s weight and height. However, this method may not be practical for screening bed-ridden or immobile patients. Several studies have shown that up to 50% of inpatients cannot be weighed during admission to the hospital.

“The 3-MinNS tool is designed for staff to complete nutrition screening quickly and with ease. The ‘tick the circle and score in a table’ format saves time and nutritional scores can be tallied at a glance, without having to measure the patient’s BMI,” said Ms Lim.

“Given that most hospitals face high patient-to-nurse-ratios, a test that is quick and as hassle-free as possible would help in increasing staff efficiency,” she added.

Today, Mr Rahman is a picture of health and sports a hearty appetite. In a span of four months after enrolling in a malnutrition programme, the 1.6m tall man gained close to 8kg and now weighs a healthy 60 kg. Under this programme, patients are followed-up closely by the dietitian after being discharged from the hospital through telephone calls and even home visits.

“I learnt from the dietitian how to improve on my nutritional status. I also received a book on nutrition. My wife has been following closely the advice of the dietitian on what to cook for me.

“Now that I have improved to a well-nourished state, my wife has to remind me not to overeat!”

A three-year study conducted by the National University Hospital has shown that malnourished patients stayed on average two days longer in hospital, were almost twice as likely to be re-admitted within 15 days of discharge and faced almost a four-fold and three-fold increase in risk of death at one-year and three-year follow-up respectively.

The study, a first-of-its-kind that examines the impact of malnutrition on patient outcomes led by Ms Lim Su Lin, Chief Dietitian at NUH, clinched a Gold award at the Singapore Health and Biomedical Congress 2011.
Vaccine – The Way Forward For Bladder Cancer Treatment?

According to the Singapore Cancer Registry, bladder cancer currently ranks as the 10th most common cancer among men in Singapore. It usually affects smokers and those who are exposed to industrial chemicals.

There are two types of bladder cancer - muscle invasive and non-muscle invasive. In muscle invasive bladder cancer, the tumour has a high chance of spreading to other parts of the body. In non-muscle invasive bladder cancer, the tumour rarely spreads and can generally be cured.

Patients with non-muscle invasive bladder cancer usually undergo a procedure known as TransUrethral Resection of the Bladder Tumour (TURBT), whereby a small wire loop is passed through the urethra to the bladder to burn away the cancer cells with an electric current. After TURBT, chemotherapy or immunotherapy may be given.

However, the existing therapies have been found to be somewhat limited in reducing the risk of recurrence and disease progression.

Urologists at NUH are now looking at a new cancer vaccine therapy which may change the way patients with non-muscle invasive bladder cancer and who have undergone TURBT are treated in the future. This vaccine therapy has proven to be effective in inducing the body’s own immune cells to specifically attack the bladder cancer cells, based on an earlier study done in Japan, on patients who did not respond well to the current standard therapy.

For more information on the trial, please call (65) 9855 1464.

If successful, this vaccine therapy can help induce the body’s own immune cells to target only the bladder cancer cells, leaving the other healthy cells intact. This will help reduce the recurrence risk and slow or even stop the disease progression.

Professor Kesavan Esuvaranathan, Head and Senior Consultant, Department of Urology at NUH and principal investigator of a vaccine therapy trial on bladder cancer

Training Caregivers To Cook Healthy

To eat when one is hungry is intuitive. Yet, to some people, eating is a considered move, requiring more effort than usual. Think of a person with diabetes who has to regulate his carbohydrates intake; or a patient with dysphagia or difficulty in swallowing who needs her food texture modified to avoid risking coming down with aspiration pneumonia or chest infection.

Often, the caregivers are unsure of what to prepare. And for the patients, the fear of side effects from eating the wrong food can be so overwhelming that one may just avoid eating whenever possible, giving rise to other complications which engulf into a viscous cycle of poor health.

In a first-of-its-kind programme, dietitians at NUH are now teaching caregivers to prepare nutritious meals for patients who have special dietary needs.

“In class, we will share tips on meal and groceries planning, how to cook for the family including the person requiring modified texture. We also bring the woks, pans and blenders into the classroom for the hands-on session. Participants will also have a chance to taste blended food, the food that they learn to prepare for their loved ones,” says Catherine Koh, Senior Dietitian.

The main goal of this programme is to empower the caregivers with skills and knowledge in planning and preparing of meals for the patient as well as the whole family.

In the near future, the programme will be extended to healthcare professionals from voluntary welfare organisations who conduct home visits or caregiver training.

For more information, please call (65) 6772 5166.
Saluting The Best Among Us

In October, more than 20 NUH staff were recognised for their outstanding contributions to clinical care, teaching and research at the inaugural NUHS Leadership Awards.

Lifeline speaks to some of the award winners to find out what inspires them at work.

**MASTER CLINICIAN AWARD**
**Professor Wong Hee Kit**
(Chair, University Orthopaedics, Hand & Reconstructive Microsurgery Cluster and Head & Senior Consultant, University Spine Centre)

One of the first few surgeons in Singapore to specialise in spinal surgery, Professor Wong is a forerunner in the management of spinal disorders. In his 28 years of practice, Professor Wong has introduced numerous new surgical procedures, clinical services and programmes in spinal surgery that have benefited countless patients.

**EMERITUS CONSULTANT AWARD**
**Associate Professor Roy Joseph**
(Senior Consultant, Department of Neonatology)

In his career spanning more than 30 years, Associate Professor Joseph has made significant contributions to the development of neonatology in both NUH and Singapore. Widely recognised as a role model and mentor for neonatologists in Singapore, he has spearheaded many new initiatives, including newborn screening for congenital hypothyroidism and hearing impairment.

“The title is very humbling and it encourages me to maintain professional currency and better serve the institution in the future.”

**MASTER CLINICIAN AWARD**
**Professor Lim Tow Keang**
(Head & Senior Consultant, Division of Respiratory & Critical Care Medicine)

Professor Lim Tow Keang is a pioneer in respiratory medicine in Singapore. He was instrumental in the development of disease management programmes that have improved the quality of life and reduced the mortality rates of patients with asthma, chronic obstructive pulmonary disease (COPD) and pneumonia in Singapore. Under his leadership, the Singapore National Asthma Programme has received international recognition from World Health Organisation’s Global Initiatives Against Asthma for its systemic quality improvement programme.

He was also part of the team which received the National Medical Excellence Award in 2010 for pioneering the use of Non-Invasive Ventilation for patients with COPD during a relapse, resulting in better patient outcomes.

“Quoting Mohandas Gandhi - The best way to find yourself is to lose yourself in the service of others.”

**MASTER CLINICIAN AWARD**
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CLINICIAN MENTOR AWARD
Associate Professor Quah Thuan Chong
(Head & Senior Consultant, Division of Paediatric Haematology/Oncology & Bone Marrow and Cord Blood Transplantation)

A believer in the old British tradition of employing all senses in the practice of medicine, Associate Professor Quah always teaches his students and young doctors to maintain this tradition.

He has always felt blessed to have the opportunity to work among great colleagues and has tried to share this blessing by helping his peers from nearby countries to develop their expertise in paediatric oncology. Associate Professor Quah is in charge of the development of a structured two-year training programme to equip trainees from the region with the skills to start independent practices in their home countries. This is now the second paediatric sub-specialty diploma endorsed by the College in Paediatrics and Child Health, Academy of Medicine, Singapore.

“Unto whomsoever much is given, of him shall be much required.”

CLINICAL INNOVATOR (INDIVIDUAL) AWARD
Professor Lawrence Ho Khek Yu
(Chair, University Medicine Cluster and Head & Senior Consultant, Department of Gastroenterology and Hepatology)

The senior clinician is an avid researcher who has been credited with being the brain behind numerous innovations, one of which is the development of the world’s first flexible robotic endoscopy system, MASTER (Master And Slave Transluminal Endoscopic Robot), which can perform gastric surgeries without any incisions. It involves a flexible endoscope, with small robotic arms being inserted through the patient’s mouth to the stomach to remove cancerous tumours. This groundbreaking technology has opened up new possibilities for minimally invasive surgery involving other intricate organs by utilising the natural paths or orifices of the body.

“To treat is to change the life of someone at present. To innovate is to improve the lives of many in future.”

Shirin Khor
Senior Nurse Clinician, Operating Theatre

Shirin’s vast experience and knowledge gained from her years of working in the operating theatre has enabled her to coach and guide her younger colleagues. With her experience, she played a key role in the development of the Singapore Nursing Board accredited in-house peri-operative nursing programme which has been running for more than three years.

Tan Chai Eng
Nurse Manager, Ward 27

Chai Eng is experienced in critical care nursing and constantly improves herself through continuing nursing education. When she was tasked to set up a new high dependency unit, she took up the challenge even though there were many uncertainties. Chai Eng took it upon herself and put in many more hours out of her official time to ensure that the ward could open on schedule.

Jeffrey Yoo
Nurse Clinician, Emergency Medicine Department

Jeffrey has contributed significantly in the area of mass casualty management at NUH’s Emergency Medicine Department (EMD). Not only did he develop the clinical standard and standard operating procedure in the management of mass casualty incidents, he is also the lead trainer for mass casualty introductory programme for inpatient nurses. He is also responsible for establishing the Evidence-Based Nursing Team for EMD.
Other winners include:

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<td>Faculty Teaching Excellence</td>
<td>Associate Professor Denise Goh&lt;br&gt;Associate Professor Tan Kong Bing&lt;br&gt;Dr Nga Min En&lt;br&gt;Dr Roger Ho Chun Man&lt;br&gt;Dr Su Lin Lin&lt;br&gt;Dr John Tam</td>
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NUH Lauded For Efforts To Enhance Patient Safety And Patient Care Coordination

Several NUH staff were recognised at the PS21 ExCEL Awards held in November 2011 for their efforts in enhancing patient safety and care coordination. The PS21 ExCEL Convention is an annual platform to recognise and showcase innovative ideas and efforts of public officers which have created value in the public service.

Outstanding Activist Award
Associate Professor Sophia Ang, Vice Chairman, Medical Board (Patient Safety and Operations), received the award for her outstanding contributions in promoting patient safety. Associate Professor Ang has spearheaded several landmark patient safety projects in NUH. Among them, a system which ensures patients’ critical blood test results are reported to the doctors so that prompt treatment can be given.

Many of my colleagues in NUH are deserving of the efforts in this area and I am grateful to have been nominated. I receive the award on behalf of the patient safety and quality activists in NUH and urge everyone to keep up the good work!

Associate Professor Sophia Ang

Outstanding Activist Award (Certificate Of Recognition)
Associate Professor Dale Fisher, Head, Division of Infectious Diseases, received a Certificate of Recognition for his active involvement in improving patient safety, access to care and work efficiency in NUH. As the Chair of NUH’s Infection Control Committee since 2006, Associate Professor Fisher together with his team have succeeded in driving down the MRSA infection rate at the hospital. He has been instrumental in the set up of several outpatient facilities which help to reduce patient admission. These include the Outpatient Parenteral Antibiotic Therapy (OPAT) Service and Dengue Outpatient Monitoring Clinic.

"This award really belongs to the teams that I am privileged to be a part of."

Associate Professor Dale Fisher

Best Ideator
Ms Lim Su Lin, Chief Dietitian, won the gold award for her research and efforts to improve the quality of care provided to patients who have malnutrition. She is also credited for leading a team to develop a quick and simple test that helps pick up newly admitted inpatients who are at risk of malnutrition.

"I am honoured to receive this award. I believe in teamwork and I must thank my colleagues from the various departments for this cross-functional collaboration, without which a good idea would have remained a dream."

Ms Lim Su Lin

Best PS21 Project
NUH’s Closed Loop Medication Management System (CLMMS) which ensures the right medication in the right dosage is given to the right patient at the right time, received the gold award in this category. Since its implementation in 2009, the CLMMS has helped enhance patient safety and improved operational efficiency so our staff can focus on direct patient care.

Triple Win For NUH At National Healthcare Quality Conference

In October 2011, NUH clinched three awards at the 8th National Healthcare Quality Improvement Poster Competition held in conjunction with the MOH Healthcare Quality Improvement Conference. The number of projects received by MOH this round was a record high, with close to 180 entries from both public and private healthcare institutions vying for 25 awards.

NUH’s project, “Total Lean Transformation in the Renal Unit to Achieve Better Patient Safety and Care Coordination”, received the Merit Award. This initiative succeeded in cutting the number of inpatients completing their long haemodialysis sessions late into the evening. In addition, more inpatients are now able to start their haemodialysis on time.

Commendation Awards were presented to two other projects. One enables patients at risk of malnutrition to be assessed by dietitians timely under a new workflow which sees nurses empowered to refer patients using a screening tool. Another project was commended for its success in discharging more patients who are stable to step-down care, which in turn allows the hospital’s rheumatologists to see more new referrals earlier.
A Special Camp

School camps are a big part of a child’s school life and for many, a much anticipated experience because it is often the only time they are away from the comforts of home. Yet, for a group of children, camp eludes them because of their medical condition.

17-year-old Charmaine Tan is one of them.

Diagnosed with retinitis pigmentosa (abnormal cells in the retina) at the age of two and end stage renal failure at 13, Charmaine has always found it a challenge to take part in physical activities.

“I went to a school camp when I was in primary school but I wasn’t allowed to participate in the activities; I pretty much sat around watching the others enjoying themselves,” she recounted wistfully.

In December, Charmaine finally had a chance at a real camp - an annual event organised by the NUH’s Division of Paediatric Nephrology, Dialysis and Renal Transplantation. Majority of the children who attended the three-day camp have renal diseases, diabetes, or an organ transplant.

“I went to the outward bound school and tried rock climbing and jetty jump. It was all very exciting!” said Charmaine.

“The camp gave me the opportunity to do a lot of things and learnt to be independent and more confident. It also allowed me to develop leadership skills.”

Into its 12th year, the special camp aims to allow the youngsters to enjoy physical activities with the assurance that they are taken care of medically. Beside fun, doctors also hope that through the camp, the young ones know that they are not alone and will learn to look beyond themselves and care for others.

Said Dr Kang Ying Qi, a volunteer of the camp, “The empathy and sensitivity they displayed for each other’s limitations such as physical disabilities, dietary restrictions, are rare and very inspiring.”

“Treating a patient goes beyond just taking care of his or her health. It is also about the emotional and social needs. We realised that this was an area of lack so we decided that the camp will be our annual ‘extra-curriculum activity’ for our young patients,” said Professor Yap Hui Kim, Head of the Division of Paediatric Nephrology, Dialysis and Renal Transplantation.

The camp is run by staff volunteers including some 20 doctors and nurses. To ensure the children are well taken care of, it is a norm for the team to lug some 400kg of supplies and more than 500 bags of medicines for each camp. And for the children, they only need to be there to make sure they are prepared for the days of fun.

“Going to the renal camp is always a privilege for me... it is very fulfilling as a physician to see the children leading near-normal lives because at the end of the day, this is what our daily work hopes to achieve,” said Dr Kang, who has volunteered for the last three years.

Tis The Season Of Giving!

In the midst of the festive mood in December, a fundraising event, the NUHS Giving Tree, was held to raise funds for the NUH Patientcare Charity Fund (PCF).

It was organised for the second year in a row, in partnership with the Chinese Women’s Association.

Throughout the month, activities such as caroling, musical performance and balloon sculpturing were lined up to bring festive cheers to both our patients and staff alike.

Set up in 1986, the NUH PCF has helped many needy patients. Over the last four years, close to $4.9 million was disbursed to help 1,391 patients pay for their medical treatment.

One of the recent beneficiaries is 21-year-old Alvina Neo. Born with a deformed spinal cord, Alvina cannot walk with ease and is prone to falls. With financial help from the NUH PCF, she now has walking braces to help her lead a normal and active lifestyle, which includes being a volunteer swim coach to autistic children.

To make a donation to the NUH PCF, please call (65) 6772 3983.
New Treatment For Moderate Pelvic Organ Prolapse

Pelvic Organ Prolapse is a common condition, particularly among older women. What exactly is pelvic organ prolapse? What are the current treatment options? How can a woman progress into her golden years comfortably without the risk of having this condition? Dr Roy Ng, Senior Consultant, Department of Obstetrics & Gynaecology, shares more.

Pelvic organ prolapse occurs when a pelvic organ, such as the uterus, bladder, small intestine and rectum drops from its normal position in the pelvis and pushes against the vaginal walls, causing considerable discomfort and problems like stress incontinence, voiding difficulty and constipation. It is estimated that between 5 - 20 per cent of the women in the world have pelvic organ prolapse, with up to 70 per cent of them diagnosed with having a moderately serious form of the condition.

According to Dr Ng, the causes of this condition, which typically affects women in their 50s to 70s, are multi-factorial.

“The causes include weakness of the fascia, ligaments and muscles of the pelvic floor which support the pelvic organs. These usually result from childbirth, coupled with the progressive thinning of tissues surrounding the pelvis region as a woman ages, which in turn can be congenital or genetic due to insufficient collagen or poor collagen quality,” explains Dr Ng.

Other factors that weaken the pelvic floor muscles include obesity, straining from chronic constipation, occupations that require frequent heavy lifting and cough-related illnesses like chronic obstructive airway disease resulting from smoking and bronchial asthma.

Women with pelvic organ prolapse are usually offered conventional surgery using sutures to repair the stretched, torn, detached or weakened tissues that support the pelvic organs. With conventional surgery, the same organ may prolapse again. Such surgery to strengthen one part of the pelvis can strain and weaken another part, causing a prolapse which needs to be corrected with another operation.

While the synthetic meshes are more effective in treating pelvic organ prolapse, doctors have to make do with larger pre-cut mesh kits which are more suited for patients with more severe prolapse. The meshes also come in non-standard sizes which need to be cut before they are used in patients with moderate prolapse.

The larger pre-cut mesh kits are inserted through incisions in the body with the help of trocars. “This is technically more challenging and there is always a risk of injuring a pelvic organ,” says Dr Ng.

Now, a new pre-cut mesh kit that comes with a support device can help up to 90 per cent of patients with moderate prolapse avoid a second operation.

The new procedure involves the insertion of a moderate-sized polypropylene mesh with two short arms through the vagina into the area of the prolapsed organ, such as the bladder or the rectum, to support it.

“This mesh, which can stay inside the body permanently, is secured with a silicone vaginal support device sutured inside the vagina for at least three weeks. This allows time for the body’s fibrous scar tissue to grow into the mesh,” explains Dr Ng.

To date, more than 30 patients have been successfully treated with the new surgical method.

Madam Liew S M, a housewife in her 50s, was a canteen stall operator until she retired a few years ago. Her previous job often required her to carry heavy objects. Little did she know that this would increase her risk of prolapsed bladder. A fall at home triggered a string of symptoms that eventually led to her diagnosis. After undergoing the new procedure in NUH late last year, Madam Liew has since returned to her active lifestyle which includes swimming or brisk walking at least three times a week. And, she is now free from incontinence, one of the symptoms that was affecting her quality of life.

“Now I don’t have to worry about not being able to find a toilet in time at shopping centres,” she says.

### Types of Pelvic Organ Prolapse

- **Cystocele (bladder prolapse)**
  
  When the bladder prolapses, it falls towards the vagina and creates a large bulge in the front vaginal wall. It’s common for both the bladder and the urethra (see below) to prolapse together. This is called a cystourethrocele.

- **Urethrocele (prolapse of the urethra)**
  
  When the urethra (the tube that carries urine from the bladder) slips out of place, it also pushes against the front of the vaginal wall, but lower down, near the opening of the vagina. This usually happens together with a cystocele (see above).

- **Enterocoele (prolapse of the small intestine)**
  
  Part of the small intestine that lies just behind the uterus may slip down between the rectum and the back wall of the vagina. This often occurs at the same time as a rectocele (see below).

- **Rectocele (prolapse of the rectum or large bowel)**
  
  This occurs when the end of the large bowel (rectum) loses support and bulges into the back wall of the vagina.

- **Uterine prolapse**

  This happens when the womb drops down into the vagina.

### Contact Us

**Location**

Clinic G – Main Building Level 1  
NUH Women’s Clinic (Emerald/Ruby)  
– Kent Ridge Wing Level 3

**Operating Hours**

Monday to Friday, 8.30am – 5.30pm

**Appointments**

Tel: (65) 6772 5403/2255/2277  
Fax: (65) 6774 4352/6778 8683  
Email: womens_clinic@nuhs.edu.sg

**Enquiries**

www.nuhgynae.com.sg
Thank you for your letters of appreciation.
Your words of encouragement will spur our staff to continue to do their best for our patients.

**Impressed**

“Surgeons visited my mother after surgery, including Sunday.”

MR KEVIN WONG: “I thank National University Hospital vascular surgeons Peter Ashley Robless and Gimao Caesar who cared for my mother last month. Professor Robless was meticulous in ensuring that she was fit for surgery, and showed her care and concern. He and Dr Caesar visited my mother after surgery, including Sunday, to ensure that she was recovering well. I also thank the day surgery centre staff of Ward 76 who helped ease her pain and fear of surgery.”

(This letter was first published in The Straits Times in November 2011.)

**I am very thankful for having such a committed doctor.**

Dr Denise Goh (Senior Consultant, University Children’s Medical Institute) always provides a listening ear to her patients. I feel free to ask whatever questions I may have about my daughter’s condition and Dr Goh will always answer all my queries, and at times, including those which may not be directly related to her specialty.

In the last six years that she has been treating my daughter, she has shown to be a very committed doctor. I am very thankful for having such a committed doctor.

Ms Christine Teo

**Many thanks to caring transplant team, NUH staff.**

MY MOTHER had a successful kidney transplant at the National University Hospital (NUH).

The complex process took more than a month, and I thank the transplant team headed by Professor A Vathsala, with great teamwork from Dr Timothy Koh Jee Kam and Dr Lim Eng Kuan; the surgeon, Dr Tiong Ho Yee, all the renal transplant coordinators and the nurses at NUH.

As it was not a straightforward transplant case, my mother was admitted a week before the operation for pre-transplant treatment, and Prof Vathsala, Dr Koh and Dr Lim were constantly checking on her, even on weekends and public holidays.

When there were some complications in my mother’s case, the team handled the situation professionally, taking time to patiently answer our queries.

Our journey, pre- and post-transplant, has been a pleasant, tiring and yet rewarding one and we are impressed by the caring attitude of the doctors and nurses – not only towards my mother but also towards us, her family.

Miss Vera Halim

(This letter was first published in The Straits Times Forum Online in December 2011.)

**In my view, they are assets to the hospital.**

I would like to express my gratitude to Dr Anna Tan Wee Tien (Consultant, Department of Ophthalmology) for her immaculate performance of laser surgery done to my right eye. I was initially reluctant to accept her suggestion for surgery because I was fraught with worry, anguish and fear of being blind. Dr Tan took great effort to enlighten me and assured me that surgery would eventually alleviate my astigmatism.

Dr Tan is a very humble and patient-oriented doctor. I also want to thank Patient Service Associate Mdm Adelene Tan Siew Leng and Mdm Faridah Binte Abdul Latiff, Senior Staff Nurse Chua Siew Geok, Staff Nurse Chua Yan Sia, Pharmacist Mr Khu Jia Vui for their service. In my view, they are assets to the hospital.

Mr Foo Hee Chen
Welcome Aboard

DR SOON TUCK LOONG, DEREK
Consultant
Department of Medicine, Division of Neurology
Qualifications: MB ChB from the University of Cambridge Medical School, 1995
Member of The Royal College of Physicians, UK, 2001
PhD in Neuroscience from the University College London, 2010
Previously with: Nottingham University Hospital NHS Trust, UK

DR JULIAN WONG CHI LEUNG
Senior Consultant
Department of Cardiothoracic Vascular Surgery, National University Heart Centre, Singapore
Qualifications: MB ChB from the University of Aberdeen, 1991
Fellow of The Royal College of Physicians and Surgeons, Glasgow, 1996
Fellow of The Royal College of Physicians and Surgeons, Glasgow (General Surgery), 2004
Certificate of Completion of Specialist Training, 2005
Fellowship of The Royal College of Surgeons, England, 2010
Previously with: University Hospital of North Staffordshire, UK

DR TAN POH SENG
Associate Consultant
Department of Gastroenterology and Hepatology
Qualifications: MBBS (Hons) from the University of Melbourne, 2003
MRCP from the Royal College of Physicians, UK, 2007
Master of Medicine (Internal Medicine), Singapore, 2007
Fellow of the Academy of Medicine, Singapore, 2011
Previously with: Changi General Hospital

DR THIRUGNANAM AGASTHIAN
Senior Consultant
Department of Cardiac, Thoracic & Vascular Surgery, National University Heart Centre, Singapore
Qualifications: MBBS from the National University of Singapore, 1984
Master of Medicine in Surgery from the National University of Singapore, 1990
FRCS from Royal College of Surgeons of Glasslow, 1989
Royal College of Surgeons of Edinburgh, 1990
Previously with: Mount Elizabeth Medical Centre, National Cancer Centre, Singapore

DR WONG PAK KWONG, BENJAMIN
Associate Consultant
Department of Pathology
Qualifications: MBBS/BA from the University of Melbourne, 2002
Fellow of The Royal College of Pathologists of Australasia, 2011
Previously with: Box Hill Hospital and the Alfred Hospital, Australia

DR ARUMUGAM RAJESH KANNAN
Associate Consultant
Department of Anaesthesia
Qualifications: MBBS in Anaesthesiology, 1993
Diploma in Anaesthesiology from the Tamil Nadu. M. G. R. Medical University, 1999
FCARCSI in 2007
Certificate of Completion of Training, 2010
Previously with: Barts and the The London NHS Trust London, UK

DR LIM ZI YI
Consultant
Department of Haematology-Oncology, National University Cancer Institute, Singapore
Qualifications: MBChB from the University of Edinburgh in 1999
Previously with: King’s College Hospital, London

DR THIAN YEE LIANG
Associate Consultant
Department of Diagnostic Imaging
Qualifications: MBBS from the National University of Singapore, 2002
FRCR from the Royal College of Radiologists, UK, 2009
Master of Medicine (Diagnostic Imaging), Singapore, 2009
Advanced Specialist Training in Diagnostic Radiology, Singapore, 2011
Previously with: Tan Tock Seng Hospital


dr_wong_pak_kwong_001.jpg
dr_julian_wong_chi_leung.jpg
dr_tan_poh_seng.jpg
dr_thirugnanam_agasthian.jpg

**Ask The Expert**

**Understanding Radiation**

Michael Tong, Senior Radiographer with the Department of Diagnostic Imaging, answers some frequently asked questions on radiation.

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**Q: What is radiation? Can I avoid it?**

**A:** Radiation comes from both natural and man-made sources that provide many of the conveniences of modern living, such as handphones, TVs and microwave ovens. It is all around us, every minute of the day. So in reality, there is no way to escape from radiation.

It is important to note that there are two types of radiation: ionising and non-ionising radiation. Ionising radiation is radiation with enough energy to break chemical bonds to damage cells and DNA while non-ionising radiation does not. Most of the radiation around us is non-ionising.

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**Q: How can we protect ourselves against radiation?**

**A:** We can protect ourselves against radiation by remembering these points:

- The lesser the time spent near the radiation source, the lower the amount of radiation exposure.
- The greater the distance from the radiation source, the lesser the radiation exposure.
- Having a material that will absorb radiation between you and the source of the radiation.

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**Q: Will the cells in my body be killed by radiation?**

**A:** Radiation causes ionisation in the molecules of living cells. At high doses, the cells may either be altered permanently or die.

The human body can replace most cells that die. Cells that become altered permanently may produce abnormal cells that become cancerous. The risk of being exposed to such high doses is very low for most people, and definitely not from diagnostic x-ray procedures.

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**Q: How much radiation exposure is safe?**

**A:** For the general public, the dose limit is 1 mSv per year.

The dose limit for radiation workers has been recommended by the International Commission on Radiological Protection (ICRP) in 1990, to be 20 mSv a year over five years.

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**Q: My child just had an x-ray procedure done last week. Today he is going for another one. Is he being over-exposed to radiation?**

**A:** Doctors generally will not order x-ray procedure unless necessary. If you are concerned, you may want to discuss with your child’s doctor:

- Is the x-ray procedure necessary?
- What difference will it make to the treatment?
- Are there alternatives such as ultrasound or MRI which do not use radiation?

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<table>
<thead>
<tr>
<th>Sources</th>
<th>Amount of radiation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest x-ray</td>
<td>0.2 mSv/ exposure</td>
</tr>
<tr>
<td>Eating one banana</td>
<td>0.0001 mSv</td>
</tr>
<tr>
<td>Airplane flight from Singapore to Shanghai, China or Delhi, India</td>
<td>0.04 mSv</td>
</tr>
<tr>
<td>Average radiation exposure due to all natural sources</td>
<td>2.4 mSv/year</td>
</tr>
</tbody>
</table>


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