

A PUBLICATION OF THE NATIONAL UNIVERSITY HOSPITAL

HEALTHCARE & TECHNOLOGY

HOW HAS INFOTECH
ENHANCED PATIENT
CARE?



STATE OF MIND BENEFITS OF POSITIVE THINKING
NEMO & DIABETIC KIDNEY DISEASE IMPROVING KIDNEY HEALTH
NATIONAL MEDICAL EXCELLENCE AWARDS NUH WINS

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“Our patients are our best teachers”

Medical social worker Diana Koh is no stranger to helping patients in need. Yet, it isn't just patients who are of concern to her. The wellbeing of colleagues matter as well, so much so that the idea of a staff support system took root among the medical social work team of which she's a part of. In 2006, the CARE Buddies programme, where staff are paired with colleagues to receive peer support when they are under stress, was set up.

The SARS threat in 2003 was a lesson that highlighted the importance of a culture of care. Diana recalls the training on psychological first aid they received. “It was useful as we learnt skills to cope with daily stress as well as during major crises.”

CARE Buddies, which is incorporated in NUH CARE (a psychological response system), started in high-risk areas like the emergency department and intensive care units, and was eventually extended to all wards and outpatient clinics.

Equipped to train hospital staff on Critical Incident Stress Management (CISM) and Mental Health First Aid (MHFA), Diana, together with her team of medical social workers, conducted roadshows and met with department leaders to build on the culture of care in the hospital.

“The CARE Buddies system involves all levels of staff, from nurses to doctors, allied health and administrative,” she explains. “We put in networks for coverage and quick mobilisation structures, so that CARE Buddies and

teams can be mobilised quickly during crises.” Currently, there are more than 600 registered staff who are CARE Buddies.

For Diana, her journey as a medical social worker for the last 30 years has been one of continuous learning. She counsels patients, visits them at home, and works with colleagues at NUH and partners in the community to ensure patients get the best possible care, and above all, are given the hope and will to carry on.

She recalls an alcoholic patient who required an organ transplant. “He fell into depression and had little social support. He almost lost the will to live, but after counselling and encouraging him over several sessions, I could see a change in him and eventually, he decided to go for his transplant. I was so happy he found a new lease of life.”

For Diana, it is her patients who make her work meaningful. “To aspiring medical social workers, remember that your patients are your best teachers; your core clinical skills will build as you journey with them.”



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IS MY PREGNANCY SAFE?

If you're expecting, a new non-invasive prenatal test could provide a more accurate assessment of your baby's health

These are burning questions many couples ask when they're expecting a baby: Will my baby be normal and healthy? Will my baby be born with any congenital conditions?

Thanks to the new Non-Invasive Prenatal Test (NIPT), which can be taken in addition to the standard first trimester screening (FTS), you may be able to get clearer, more accurate answers.

FTS AND FALSE POSITIVE RESULTS

Currently, the most common test available for prenatal screening is the FTS. This involves taking a blood sample and an ultrasound to measure the thickness of the back of the baby's neck.

The FTS provides early detection of certain birth defects. An intermediate or high-risk FTS result means further testing is required to determine if the baby has Down syndrome. However,

the FTS is prone to false positive results. Of all the intermediate and high-risk FTS results, only five per cent of babies are born with Down syndrome, and the other 95 per cent are normal. For some women, they may then opt for chorionic villus sampling or amniocentesis. It is this subsequent invasive testing that poses a small risk of miscarriage.

ACCURACY IN DETECTION

Now with the availability of the NIPT, the risk is reduced. The test involves taking a blood sample from the mother that contains her baby's DNA, and analysing fragments from specific chromosomes - one of which is an indicator of Down syndrome - in the sample.

The NIPT has a detection rate of

over 99 per cent. Since it can identify babies with Down syndrome with far greater accuracy than the FTS, the NIPT can reduce the number of patients requiring invasive tests, and possibly with it, the risk of a miscarriage.

SHOULD I GO FOR THE NIPT?

Pregnant women should seek their doctor's advice on whether the NIPT is an option if:

- They have an intermediate or high-risk FTS result
- They have a previous pregnancy affected by Down syndrome or other chromosomal abnormalities

The NIPT is usually done at the tenth week of pregnancy, and results are available within 10 to 14 days. 



NEW CEO AT THE NUH

Associate Professor Eugene Liu took over as Chief Executive Officer of the NUH on 1 September 2016. He succeeds Adjunct Associate Professor Joe Sim, who was CEO since March 2009

During his 19 years at the NUH, A/Prof Liu has held several appointments, including Head of the Department of Anaesthesia, leading a large expansion in clinical services and improvements in quality and safety. He also oversaw the revision of undergraduate teaching and implementation of a residency system of specialist training in anaesthesia. A/Prof Liu had also served as Assistant Dean (Academic Affairs) in the NUS Yong Loo Lin School of Medicine, working on human resource management and international relations. He was appointed Deputy CEO of the NUH in July 2015 to assist the CEO with achieving the hospital's strategic goals in clinical care, teaching and research.

MAKING PATIENT CARE A PRIORITY

During Adjunct A/Prof Sim's tenure as CEO, the NUH grew from a 935-bed hospital serving 848,000 inpatients and outpatients in 2009, to a hospital offering 1,250 beds and serving more

than one million patients annually. Its cancer, cardiac and dental departments were also granted National Specialty Centre status - namely, the National University Cancer Institute, Singapore (NCIS), the National University Heart Centre, Singapore (NUHCS), and the National University Centre for Oral Health, Singapore (NUCOHS), respectively.

He drove the redevelopment of the hospital's campus at Kent Ridge, notably the remodelling of the 30-year-old Main Building and the completion of the NUH Medical Centre, a 19-storey building housing primarily specialist outpatient facilities for subsidised care. This allowed



A/Prof Eugene Liu

A/Prof Liu's leadership in patient care, education, research and administration will steer the NUH to greater heights and shape the future of medicine"

**PROFESSOR JOHN WONG,
CHIEF EXECUTIVE, NUHS**

the hospital to cater to the increased patient volume and expanded services.

Adjunct A/Prof Sim was also the driving force behind many patient care initiatives, such as the opening of Singapore's first family medicine clinic, in collaboration with Frontier Healthcare Group. He also oversaw three successful Joint Commission International re-accreditations, including the NUH being the first Singapore hospital to attain the Academic Medical Center standards in 2013.

With the passing of the baton to A/Prof Liu, Adjunct A/Prof Sim will

assume the strategic responsibility of overseeing and advancing care integration between the NUH and the community, in his capacity at the group level as Deputy Chief Executive of the National University Health System (NUHS). Adjunct A/Prof Sim will drive the expansion of the group's primary care networks and capabilities, deepen links between healthcare professionals with patients and community partners, and strengthen its informatics capabilities.

"We thank Joe for his deep commitment to and stewardship of the hospital in advancing our mission for patients and Singaporeans. We look forward to his continued contribution at the group level," says Professor John Wong, Chief Executive of the NUHS. "With Eugene's comprehensive leadership in patient care, education, research and administration, we are confident he will build on the strong foundation to steer the hospital to greater heights and help shape the future of medicine." 



Adjunct A/Prof Joe Sim

HONOURING OUTSTANDING MEDICAL CONTRIBUTIONS

Our top medical and healthcare professionals were recognised at this year's National Medical Excellence Awards, organised by the Ministry of Health



◀ PROFESSOR CHNG WEE JOO

National Outstanding Clinician Scientist Award

A prolific clinician-scientist and haematologist, Professor Chng is director and senior consultant of the National University Cancer Institute, Singapore (NCIS). He is also deputy director of the Cancer Science Institute of Singapore.

Fuelled by an innovative mindset, Prof Chng has pioneered several ways of delivering cancer treatment. In 2011, he led the world-first outpatient stem cell transplant for myeloma (a type of blood cancer) at NCIS. In addition, he spearheaded the Bortezomib@Home programme, which allows myeloma patients to have their bortezomib (chemotherapy drug) injections administered by a nurse at home.

Patient recruitment is one of the biggest challenges in clinical research and trials. But in 2015, Prof Chng and his team became one of the world's top recruiters of patients for a global randomised controlled trial for carfilzomib, a chemotherapy drug. The trial results led to the approval of the drug for clinical use.

Today, Prof Chng's contributions to the clinical applications of genetics and genomics in blood cancer treatment and care mean that doctors can sequence and analyse the DNA of myeloma patients, stratify them into different risk groups and tailor treatments accordingly, thus improving patient outcomes.

▼ MR WU TUCK SENG

National Outstanding Clinical Quality Champion Award

Mr Wu is the deputy director and head of the NUH Department of Pharmacy and president of the Singapore Pharmacy Council. A champion of quality, safety and productivity,



Mr Wu spearheaded the implementation of OPAS (Outpatient Pharmacy Automation System), which uses RFID technology and robots, and automates box and pill picking, packing, capping and labelling processes at the NUH Pharmacy.

The initiative - which has won numerous accolades including the HIMSS-Elsevier Digital Healthcare Award 2015 - helps boost staff productivity, reduces waiting time, and improves patient care and safety.

In 2009, Mr Wu played an instrumental role in the implementation of CLMMS (Closed Loop Medication Management System) across the NUH wards - a first-of-its-kind initiative in Asia Pacific - to increase patient safety and operational efficiency. He was also the driving force behind the National Pharmacy Residency Programme for Post Graduate Year 1 at NUH in 2012, a first in Singapore.

▶ NEPHROLOGY EVALUATION MANAGEMENT AND OPTIMISATION (NEMO) PROGRAMME

National Clinical Excellence Team Award

In 2010, a team from the NUH and National Healthcare Group Polyclinics (NHGP) - headed by Professor A Vathsala, co-director Assistant Professor Loh Ping Tyug, and team members Ms Samantha Ong Shih Hui and the NHGP's Dr Lim Chee Kong - embarked on a mission to provide optimal care for diabetic kidney disease (DKD) patients at the primary care level in a bid to prevent progression of the condition.

The Nephrology Evaluation Management and Optimisation (NEMO) programme helps patients manage levels of blood pressure and protein in their urine, an early sign of kidney disease.

As part of the programme, the team identified drug optimisation

and treatment challenges faced by patients; established protocols to meet blood pressure targets; and developed tailored solutions for each of the nine polyclinics under NHGP.

Selected polyclinic doctors were appointed "renal champions" and tasked with driving the programme. Ten NEMO coordinators were deployed to each polyclinic to evaluate and recruit patients into the programme. This included counselling DKD patients, assisting doctors in optimising drug dosage and tracking patient outcomes.

Of the 10,500 patients enrolled in

the programme since 2011, the team analysed about 3,300 patients who completed the treatment optimisation programme. Of these, about 51 per cent were found to have either no more, or a significant decrease in, protein leakage in the urine. Doctors also saw a 28 per cent lower rate of worsening kidney function compared to diabetic patients not enrolled in the programme. This success has led to plans for the programme to be implemented across SingHealth polyclinics and other healthcare institutions. 📈





Technology has made our lives more efficient than ever before. It's integral to how we work, live and play. And it's no different in healthcare. Behind every patient and medical team at NUH is a network of automated systems that work hard in the background to ensure safer and more reliable healthcare processes.

These range from an elaborate medication administration system with multiple levels of built-in checks for increased safety, to an efficient mobilisation system to ensure patients get the attention they need.

GETTING THE RIGHT DOSE, EVERY TIME

The process of administering medication used to be a complicated affair.

“The CLMM also detects changes in the patient’s records in real time, so if a patient’s condition has changed such that any drugs currently administered may no longer be safe, the system will alert the relevant staff at once”

The doctor would order the prescription on a piece of paper, which was sent to the pharmacist, who would have to decipher the doctor’s handwriting and prepare the medication. Next, the nurse would administer the correct dosage to the patient. Such a system was slow and prone to errors.

Thankfully, these processes are now a thing of the past with NUH’s Closed Loop Medication Management (CLMM) system, which is currently being used for all oral medications.

Consider the case of Mr A, who is warded at NUH for cellulitis. His doctor prescribes paracetamol to alleviate his fever through an electronic prescription. The CLMM automatically checks



Mr A’s electronic medical records and alerts if he is allergic to the drug. The pharmacist then reviews the medication based on the e-prescription. Since all medications are barcoded and the inventory automatically updated, there will be enough paracetamol for Mr A in the ward, because the system will notify the staff to restock any medication before it runs out.

When the nurse on duty brings the medication to Mr A, she first scans the barcode on his wristband to verify his identity, then scans the medication to ensure the dosage is accurate before giving it to him.

“We designed the CLMM with many levels of checks to reduce errors for our patients’ safety,” says Associate Professor James Yip, Chief Medical Information Officer, NUH. “The CLMM also detects changes in the patient’s records in real time, so if a patient’s condition has changed such that any drugs currently administered may no longer be safe, the system will alert the relevant staff at once.”

WHEN EVERY MINUTE MATTERS

Patients who are found to be at critical risk from the results of their blood, X-ray or ECG tests require immediate

MAKING IT WORK

Here’s how technology is improving patient care at the NUH

medical attention. This is where the Critical Results Routing System (CRRS) comes in to ensure these patients are tended to quickly – it relays the correct information to the correct person in a timely manner.

When a high-risk result is discovered, the system automatically searches and notifies via SMS the appropriate staff to evaluate the results.

Take the example of Mdm S, a patient whose blood sample was found to contain abnormal levels of cardiac enzymes – an indicator of a heart attack. The CRRS immediately sent an SMS to the doctor who ordered the test.

“If the SMS is not acknowledged within 10 minutes, the system will escalate the case and assign another staff to handle it,” says A/Prof Yip. “The CRRS is much faster than the old system where the operator had to manually call the staff in charge.”

Should Mdm S require an emergency heart operation, the hospital can quickly assemble a team. As the messaging system has a roster of all personnel on duty, it can SMS the relevant staff concurrently, saving Mdm S precious minutes – and her life. The same messaging system can be used to send an SMS to the patient’s loved ones to inform them of the outcome, as well as the new ward and bed she will be assigned to.

CARING FOR PATIENTS ANYTIME, ANYWHERE

The CLMM and CRRS are not the only IT initiatives supporting patients’ wellbeing and recovery. Hypertension, heart failure and diabetes are common conditions that are interrelated, where



“The CRRS ensures critical-risk patients are tended to quickly, by relaying the correct information to the correct person in a timely manner”

one condition could lead to or worsen the other. Thankfully, these conditions can be managed by tracking the patient’s blood pressure, blood sugar and weight regularly. Abnormal readings can indicate imminent organ failure or the need for immediate intervention, which may well save a patient’s life.

However, it is not easy to monitor patients’ vital statistics after they are discharged from hospital. Enter NUH’s own telehealth monitoring service. Take the case of Mr P, a diabetic patient with hypertension. After being discharged from hospital, he is sent home with a Bluetooth-enabled blood pressure set, weighing scale, glucometer and a 3G router. With these tools, he has to chart the numbers twice daily for up to a month.

“We keep the setup simple for our

elderly patients,” says A/Prof Yip. “With the router, all the patient needs to do is plug it into the wall socket, and it will work seamlessly in the background.”

Still, even the most diligent patient may forget to record his or her readings. If Mr P does not submit his results within two days, the telehealth service will notify the staff, who will then give him a reminder call. “We are learning what works, what doesn’t and are finding ways to extend the benefits of technology into other areas to better care for our patients,” says A/Prof Yip. “For example, we intend to use the CLMM system for our pump medications; we’re constantly improving on our CRRS, which has evolved into a smartphone app; and we plan to include video and even temperature-sensing in our telehealth service.”

SHUTTERSTOCK



Mr Lim presented with gifts from Si Jia

SHARING THE GIFT OF LIFE

Singapore’s first non-directed liver donor hopes to inspire others to make living organ donations to benefit more people

When Mr Peter Lim Kok Seng decided to give away part of his liver, it was not to help anyone he knew. The 54-year-old, who’s been a volunteer for clinical trials for more than 10 years, simply wanted to save a life when he informed the National Organ Transplant Unit (NOTU) last January of his wish to donate part of his liver.

His act of giving sets a precedent as he is the first truly altruistic, non-directed liver donor in Singapore. “It’s the first time someone said ‘I want to donate, it doesn’t matter to whom,’” says Professor Krishnakumar Madhavan, Co-director, National University Centre for Organ Transplantation, NUH. Until recently, all living donor transplants have been directed, with the donor naming the recipient.

At first, Mr Lim was concerned that he was too near the cut-off age to make a living organ donation, which is set at 55 because many medical conditions tend to set in after this age. But as Prof Madhavan notes, the potential donor’s health is also an important factor: “People over 55 who are very fit can also be considered [for living organ donations].”

GOING THROUGH WITH SURGERY

Mr Lim underwent a detailed assessment, including counselling and medical tests, to ensure he was in good physical and mental health and fully understood the risks. He was also interviewed by a Transplant Ethics Committee and given a one-month cooling-off period to consider his decision.

During the simultaneous marathon 10-hour surgeries at NUH in March 2016, 60 per cent of Mr Lim’s liver was removed and transplanted to 16-year-old Lim Si Jia, who had glycogen storage disease (GSD), a rare genetic condition. It stunted her growth and caused a tumour that could become cancerous to develop in her liver. The landmark transplant was successful and though she needs to take anti-rejection medication for life, Si Jia is now cured of GSD. Asked what she most looks forward

to, she shyly replies, “To grow taller.” As for Mr Lim, his wish is simple: “I hope this encourages people to be compassionate and step forward to help shorten the wait list of those in need of transplants.”

WANT TO BE A NON-DIRECTED DONOR?

Contact NOTU at organ.transplant@notu.com.sg or 6321 4390

Learn more about organ donation:

- nuh.com.sg/nucot
- moh.gov.sg
- liveon.sg

ACTING TO SAVE LIVES

In 2004, the Human Organ Transplant Act (HOTA) was amended to allow living donor organ transplants for the very first time. The aim was to enlarge the donor pool to save more lives. An organ transplanted from a living donor is also less likely to be rejected by a recipient’s body.

Further amendments to HOTA in 2011 also mean donors can now be reimbursed for transplant-related expenses such as follow-up medical tests. However, the organ transplant rate remains low and the number of living organ transplants has not increased significantly either. According to the Ministry of Health, 60 people were waiting for new livers as of end-June – almost three times the number in 2012.

TOP UP YOUR HAPPINESS!

Maintain a healthy emotional “bank account” for mental and emotional wellness



Many people believe they won't find true joy until they achieve something they don't have. This could be many things: A fat paycheck, good grades, someone to love, a baby... the list goes on.

While there is nothing wrong in working hard to achieve our goals, we are often so caught up in pursuing them that we forget to live for the present. One good way to change or reframe the way you think and approach life is to practise mindfulness – it's easier than you might imagine.

“Mindfulness means paying attention to your sense of the present – choosing to put away distractions and being in the here and now,” says Dr P Buvanawari, an associate consultant in NUH's Department of Psychological Medicine. “For example, I tend to eat quickly when I have lunch on my own, and I usually keep myself occupied by reading something on my phone. But not today. I put my phone away and practised mindfulness while I ate. I paid

“Mindfulness means paying attention to your sense of the present, choosing to put away distractions and being in the here and now. It's what positive thinking is about”

DR P BUVANASWARI, ASSOCIATE CONSULTANT, DEPARTMENT OF PSYCHOLOGICAL MEDICINE, NUH

attention to the taste of my food, and I observed the trees rustling in the wind as I looked out of the window. I focused on my breathing and my posture. When I returned to work after lunch, I felt relaxed and refreshed.”

According to Dr Buvanawari, we can look after ourselves both physically and mentally by imagining that we all have an emotional and psychological “bank account”. “When we keep this bank account topped up, we feel that our lives are enjoyable and meaningful. So when there are ‘withdrawals’ due to negative experiences, such as getting retrenched or doing badly in an exam, our account will not get depleted.”

FOCUS ON THE GOOD STUFF

How do we do it? By accumulating positive experiences, big and small. Even exercises in mindfulness that help us reflect and relax would count as a “deposit”. This, in a nutshell, is what positive psychology is about. “It's not just about avoiding the negative but moving into the positive, playing to our strengths as much as possible, such as having hobbies and engaging in our community,” says Dr Buvanawari.

Research on positive psychology has found that the happiest people are good in something they enjoy, they use their skills in the service of a cause they believe in, and they are sociable, with friends and family to count on for support.

So do something you love or find meaningful – not only will you reap the benefits of a positive mindset, you'll find that joy isn't elusive after all. 🌱



LIVE IT UP!

Boost your mind – and emotions – with these simple activities:

- Take up a favourite exercise such as yoga or walking amid nature
- Catch up with old friends and colleagues
- Learn a new skill such as photography, or pick up a new language
- Join an interest group or support group
- Volunteer for a good cause



SHUTTERSTOCK



VACCINATIONS FOR ADULTS

Often overlooked, some inoculations are important in maintaining good health in adulthood

Think you've outgrown vaccines after childhood? You might be surprised to know that many adults require vaccinations as well to prevent various diseases and with increasing travel, to stay healthy while on the go.

GENERAL WELLBEING

These vaccines should be taken to make up for missed routine childhood shots or for immunity against common diseases like the flu.

TDAP VACCINE

This vaccine prevents tetanus, diphtheria and whooping cough, and all adults who have not previously had a dose should get inoculated. Booster shots are once every 10 years.

INFLUENZA VACCINE

All adults and children above six should receive an influenza vaccine annually.

PNEUMOCOCCAL VACCINE

Targeted at adults above 65, this vaccine prevents pneumococcal pneumonia, a bacterial lung infection that, if not treated, can lead to hospitalisation and may be fatal. Adults below 65 with conditions such as heart disease or diabetes, or have lower immunity due to organ transplant, HIV or cancer, should also get vaccinated.

MENINGOCOCCAL VACCINE

This vaccine prevents meningococcal meningitis, a bacterial brain infection. Adults living in dormitories, or travelling to Saudi Arabia or parts of Africa are advised to have this shot. Booster shots should be taken once every three to five years.

TRAVEL VACCINES

These should be administered 10 to 14 days before departure, and are suitable for both adults and children.

HEPATITIS A VACCINE

Travelling to a developing country? This vaccine prevents you from contracting hepatitis A, a viral infection of the liver. A booster shot should be taken six months after the initial dose.

TYPHOID VACCINE

Typhoid is a bacterial blood infection typically contracted from contaminated food or water, which is often common in developing countries. You need a booster shot every three years thereafter.

JAPANESE ENCEPHALITIS VACCINE

Present in rural areas of Southeast Asia and India, Japanese encephalitis is a mosquito-borne viral infection that can lead to brain inflammation. A booster shot should be taken one to two years after the initial dose, and subsequent booster shots should be administered once every 10 years.

RABIES VACCINE

Transmitted through mammal bites, rabies can be fatal. Those embarking on long-term travel to countries with incidence of rabies, as well as those who work with, or are exposed to, animals should receive a dose of this vaccine. The primary course involves three shots taken over one month.

YELLOW FEVER VACCINE

Those travelling to South America or Africa should get inoculated to prevent yellow fever, a mosquito-borne viral infection that could be fatal. A single vaccine is valid for life. As the vaccine is a live virus vaccine, there is a very small risk of causing yellow fever-like illness that can result in hospitalisation.

Expect some temporary bruising, swelling and a slight fever after some vaccinations. Patients should remain in the clinic for 15 minutes after vaccination to check for any allergic reaction, although these are rare. If in doubt, do consult your doctor. 🏥

GETTY IMAGES



CHILDREN'S HAND CONDITIONS & INJURIES

Learn about the common types and what can be done to treat them

Hand appearance and function don't usually rank high on the list of parenting concerns – until a child is born with a hand anomaly, also known as a congenital hand condition, or has an accident that results in a hand fracture or fingertip injury.

CONGENITAL HAND CONDITIONS

About two in 1,000 babies are born with hand anomalies, and the most commonly treated conditions are extra fingers (polydactyly) and joined fingers (syndactyly). Such anomalies can escape detection during ultrasound tests, but “many are relatively minor and do not affect function,” says Dr Alphonsus Chong, head and senior consultant at the NUH's hand and reconstructive microsurgery department. “The deformity is not usually caused by anything done, or not done during pregnancy.”

Treatment options vary according to the extent of the anomaly, and the goal is to help children gain optimum use of their hands. Some may require surgery – but the focus is on improving

hand function, not appearance, adds Dr Chong. Non-invasive treatments include stretching exercises and splinting (similar to casting, where the hand is immobilised), which may correct mild conditions or improve hand dexterity.

HAND INJURIES

Hand fractures are the most common injuries sustained by children. At the NUH, there's a higher incidence of fractures among school children, especially if they play sports. Fractures are diagnosed through an X-ray, with most paediatric hand fractures healing completely, says Dr Chong. Treatment may involve using a splint or cast to immobilise the hand, while in some cases, surgery is needed to help the bone heal.

Fingertip injuries are also common, and treatment may involve cleaning the wound, removing the fingernail, and a course of antibiotics or an injection to prevent infection. An NUH study of child patients with fingertip injuries from 2008 to 2011 found that 50 per cent also had to be treated for

associated fractures. Children aged two were also found to be more likely to sustain fingertip injuries compared to other age groups.

Most fingertip injuries at the NUH are crush injuries, with door-related accidents being the most common cause. In severe cases, accidents can lead to amputation of the fingertip. The priority of treatment would be to preserve the amputated part and see if reattachment is possible; if not, reconstruction surgery may be needed.

“The importance of proper safety education cannot be overemphasised, given that most childhood fingertip injuries can be easily prevented,” says Dr Chong. “Door stoppers, placed near the lock or at the base of the door, and plastic hinge protectors are simple techniques that may prevent door crush injuries in children.”

Whether mild or severe, Dr Chong says the condition or injury can cause extreme distress to both child and parent. “Consult a doctor as early as possible. They can provide reassurance for minor cases and prompt referral for specialist treatment, if required,” he says.

Given support and encouragement, these children can view their differences as strengths, and find creative ways to overcome challenges and live life to the fullest. 🏡

GETTY IMAGES

FIGHT EARLY DIABETIC KIDNEY DISEASE

The NEMO programme aims to reduce kidney deterioration in diabetic patients with kidney disease

If, like Madam Lyda Bakar, you have an uncontrollable sweet tooth, you may be at risk of getting diabetic kidney disease (DKD) – a condition where the kidney’s filters are damaged and abnormal amounts of protein are leaked from the blood into the urine.

Madam Bakar, 65, who has early DKD, made changes to her diet and lifestyle after she enrolled in the NEMO (Nephrology Evaluation Management and Optimisation) programme launched by the NUH and National Healthcare Group Polyclinics (NHGP). Through NEMO, she was able to manage her condition and even lost more than 10kg, dropping from 85kg to 70.9kg at her last check-up.

She is not alone. Some 11.3 per cent of Singaporeans have diabetes, and DKD is one of the top complications for those whose diabetes is poorly controlled. DKD

is also the main cause of end stage kidney disease (ESKD) – a condition where less than 15 per cent of kidney function is still present, and which could prove fatal unless the patient undergoes dialysis. The numbers are hard to ignore: In 2014, Singapore had the second highest incidence of ESKD due to diabetes, with figures rising to 65 per cent compared to 46 per cent in 1998.

BRINGING HOPE

Armed with these sobering facts, the NUH and NHGP established a kidney disease work group in 2010, and the NEMO programme was developed. With funding from MOH, the work group implemented strategies in 2011 to cut the rate of DKD progression. Through urine tests for protein leakage, diabetic patients with early DKD are identified and evaluated by a trained NEMO coordinator. From October 2011 through March 2016, nearly 100,000



diabetic patients were evaluated, and out of this, about 10,500 patients were enrolled in the programme. Among these patients, about 3,300 completed the treatment optimisation programme in 2015. And the results are promising: 51 per cent have either no more, or a significant decrease in, protein leakage into the urine. Additionally, doctors saw a 28 per cent lower rate of deteriorating kidney function.

“We are confident that [NEMO]

GETTY IMAGES

will help stem the rising incidence of ESKD due to DKD. Kidney disease is a disease multiplier: it increases the risk of stroke, cardiovascular and other vascular diseases. The benefit of preventing kidney disease progression goes beyond just kidney disease alone,” says Professor A Vathsala, director of the NEMO programme and senior consultant at the Division of Nephrology, NUH.

“[With NEMO], patients are able to

The NEMO programme’s team-based approach and NHGP’s IT system have allowed doctors in the polyclinics to work seamlessly with NEMO coordinators to efficiently flag out, manage and follow up with patients”

receive timely treatment and holistic care within the primary care setting, which can help slow progression of kidney disease and manage their chronic

conditions better in the long term,” adds Dr Lim Chee Kong, co-director of the NEMO programme and deputy director, Clinical Services, NHGP. 📍



LIFE AFTER A STROKE

Singapore's first dedicated wellness centre for stroke survivors offers a programme that promotes self-reliance among survivors and their caregivers



When 54-year-old Mr Tommy Sing Jwee Hang woke up in the wee hours of May last year, he found that he couldn't move his hands and legs and his speech was slurred. His son called an ambulance and later, a diagnosis confirmed Mr Sing had just suffered a stroke.

A stroke survivor, Mr Sing was referred to the Stroke Support Station (S3) at Bukit Merah's Enabling Village by his doctor at NUH. He now goes there once a week and participates in wellness programmes tailored for

stroke survivors and learns strategies to cope with his condition. "I do gentle and stretching exercises such as flexing and extending my feet and hands. I also attend talks on how to eat healthily," he says. "At S3 I get to talk to people, make friends, reduce stress and forget negative thoughts about my condition. We learn from each other's experience – I want to get better and learn to be more independent," he adds.

Officially opened in May 2016, the S3 wellness centre offers a platform for stroke survivors and their caregivers to join in a host of support

programmes within the activity centre. To increase awareness about stroke and promote advocacy to enable an inclusive society, S3 and NUHS signed an MoU to formalise a partnership. S3 is supported by the NUH, where doctors, nurses, therapists and medical social workers provide guidance on programme development and staff training. "The aim of S3 is not to provide post-stroke rehabilitation that typically occurs in community hospitals, home care with early supported discharge programmes, day rehabilitation centres, and some

day care facilities," says Dr Effie Chew, senior consultant, Division of Neurology, NUH, who works closely with S3. "Rather, S3 seeks to bridge the gap between rehabilitation and reintegration into the community. We aim to train stroke patients from being reliant on healthcare providers to being self-reliant."

With the aim of enhancing resilience and improving coping skills, S3 conducts Mindfulness Awareness Practice sessions for stroke survivors and their caregivers. To regain better coordination in their limbs, stroke survivors at the centre are also taught how to play musical instruments such as drums and modified *tai chi*. They also learn to conduct daily activities confidently so as to lead independent lives. "Chronic disease self-management empowers stroke survivors with knowledge and skills to improve control of their chronic diseases," adds Dr Chew. "This lowers the risk of developing debilitating and costly complications, which can be a big burden on the individual, family and healthcare system."

PROVIDING EMOTIONAL SUPPORT

Stroke is a major cause of death and disability in Singapore. The National Registry of Disease Office (NDRO) reported 6,642 cases of stroke in Singapore in 2013 – that's a 12 per cent increase from 2010. According to a study by NUH doctors, only 27 per cent of stroke survivors continue to attend centre-based rehabilitation at the one-year mark post discharge. As such, it is important to raise awareness of stroke and post-stroke support in the community.

According to Mr Donovan Lo, S3's centre director, many stroke survivors find it difficult to accept the sudden



loss of their mobility and the need to depend on a caregiver during the recovery process. "That's where S3 comes in to give rehabilitation emotional support where our volunteers will befriend stroke survivors and their caregivers," he explains. "Social connectivity motivates stroke survivors to be more determined to continue improving their skills."

One such volunteer is NUH Advanced Practice Nurse (APN) Betty Kek, who works with adolescents with diabetes and eating disorders at the hospital's paediatrics department.

Having started her nursing career in 1985 with stints in adult general medicine, orthopaedics and paediatrics, APN Kek said volunteering with the S3 programme is her way of giving back to the community. "Through S3, I've learnt strategies and new activities to help our patients through their difficult moments," she says.

Going forward, the NUH and S3 hope to collaborate to explore cooperation with other agencies to facilitate return to work for stroke survivors, as well as work with employers to advocate employment opportunities for survivors. 🌱

Find out more about S3 at s3.org.sg

The aim of S3 is to bridge the gap between rehabilitation and reintegration into the community for stroke survivors"

DR EFFIE CHEW, SENIOR CONSULTANT, DIVISION OF NEUROLOGY, NUH



SIGNS OF STROKE

- One side of the face, mouth or eye may droop or you may not be able to smile
- You have difficulty lifting both arms and keeping them overhead due to weakness or numbness in one arm
- Your speech may be slurred or garbled, or you can't speak at all
- Complete paralysis of one side of the body
- Sudden loss or blurring of vision

For immediate medical attention, call 995.



SPEECH THERAPIST JOCELYN TAN

Mealtimes may be a joy for many of us, but they can be tough for some. Jocelyn Tan, speech therapist at the NUH Department of Rehabilitation, not only helps patients with communication, but also works with infants and children to overcome feeding and swallowing problems.

Why speech therapy?

I first came across careers in allied health in junior college and was attracted to speech therapy as it was not widely known then. I liked the prospect of meeting different people and wanted to help others.

Tell us about your work with premature babies and children with feeding difficulties.

Most people are surprised to hear that speech therapists work with preterm babies. Feeding difficulties can affect a child's growth and development.

Premature babies may not have the skills to coordinate sucking, swallowing and breathing. While feeding, they face frequent coughing, their breathing rate increases and they take a long time to feed. I may try out different bottle systems that best support the baby's skill. I may also recommend restricting the amount of milk and/or duration of feeding so the baby does not tire out and have problems swallowing and breathing.

Older children may have difficulties progressing to solid food textures, poor chewing skills or are extremely selective with foods. I may recommend appropriate food textures and strategies to help improve their feeding skills.

What are the most rewarding and challenging aspects of your work?

Implementing measures to help children eat better is a process that takes time.

Worried parents often expect the problems to be resolved quickly. The challenge is managing their expectations and getting them to follow through with our recommendations. Ultimately, it's rewarding to see children discover the joy of eating and making mealtimes enjoyable for them and their families.

Can you share an inspiring moment?

I am taking care of a little girl who needed a feeding tube, which resulted in her developing an eating aversion. Through songs and play-based activities, we increased her affinity towards food by exploring its taste, texture, smell and consistency. I remember the first time she licked a piece of food – her mother was so happy, she was lost for words! The girl is now starting to enjoy pureed food. 🍎

Interested in a career in healthcare? Visit nuh.com.sg to find out more.