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A FATHER'S GIFT



Catch the heartwarming video of how a father strives to make life better for his daughter despite his failing health.



0:52 / 4:32



National
Neuroscience Institute
SingHealth

ADVISOR

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“The President’s Challenge created a platform whereby staff can engage with the community by reaching out to them beyond the boundaries of delivering care within our hospitals and institutions” – Associate Professor Ng Wai Hoe, Medical Director of the National Neuroscience Institute (NNI)

Reaching Record Highs

2017 may be the 14th year that SingHealth is raising funds for beneficiaries of the President’s Challenge, but it is also a year of many firsts.

Man on a Mission

In its 14th time running the President’s Challenge, SingHealth managed to raise a record amount of \$615,000. Mr Peter Seah, Chairman of SingHealth proudly presented a cheque for this amount to President Halimah Jacob during the finale event, which was held at Academia on 28 October, 2017.

In his address to attendees of the finale event, Dr David Low, Senior Consultant at the Department of Neurosurgery at NNI, and Chairman of this year’s SingHealth President’s Challenge Organising Committee, specially thanked the NNI team for its efforts in leading the organisation of the event for the first time.

He recognised that the record amount raised was made possible through the dedication, creativity and hard work of more than 28,000 doctors, nurses, allied health professional and healthcare administrators from across 13 institutions in the SingHealth family. Together, they came up with a series of fundraising activities held over the course of four months, including a pledge card donation drive, movie screenings, charity bazaars, a talent competition and various outreach events for the beneficiaries.

“It is heartening to see all SingHealth staff coming together to contribute to a better life for our beneficiaries. Regardless of our roles, we are all able to use our skills and creativity to lend a helping hand,” said Dr Low.

He also welcomed the participation of Changi General Hospital to the SingHealth family following the Health Ministry’s reorganisation announcement earlier this year, as well as Duke-NUS Medical School. Of the latter, he said: “We are heartened to see many of our residents and faculty taking part... This way, we hope to nurture in our next generation... the values of compassion and social responsibility.”

As part of the finale event, attendees were treated to performances by the winners of the earlier-held talent competition, as well as a song item by Claressa Monteiro and beneficiaries from KKH Health Fund, Singapore National Paralympic Council and Singapore Association of the Visually Handicapped.





HEALING HANDS, COMPASSIONATE HEARTS



The 2017 theme for the SingHealth President's Challenge is "Healing Hands, Compassionate Hearts". "Healing Hands" symbolise the healthcare professionals' role in caring for patients, while "Compassionate Hearts" reflect their spirit of giving towards raising funds and caring for the less fortunate and the community.

Beneficiaries for this year's President's Challenge are Alzheimer's Disease Association, KKH Health Fund, Singapore Association of the Visually Handicapped, Singapore National Paralympic Council and St Andrew's Mission Hospital.

**GIVE FREELY.
LIVE FULLY.**



Staff Giving: Charity Begins at Home

In an interview with SingHealth Development Communications, two of our doctors shared about why they contribute to Staff Giving.

"My patients' lives are changed in an instant. Serious accidents that cause Traumatic Brain Injury (TBI), such as falls from height, often affect healthy working adults.

The team and I do whatever we can to save our patients and set them on the road to recovery. But it's often what happens after they are discharged that determines if they will get their lives back on track.

Many want to return to work so they can support their families again, but it's a long, hard journey. To succeed they need determination, support, the right medication and months of rehabilitation. The bills quickly mount up, prompting some to quit.

I contribute to Staff Giving so I can help to ease this financial burden and give patients the best chance of reaching their goals. When a patient walks into my clinic two years after a TBI, full of confidence, with a job and plans for their future, I know my support has made a real difference."

DR JAI PRASHANTH RAO
CONSULTANT
NEUROSURGERY, NNI

"Neurological conditions such as Parkinson's Disease (PD) slowly rob patients of their independence, personality and quality of life. A morning stroll becomes a halting shuffle, a casual conversation turns into a struggle to find the right words, and once favourite dishes become tasteless without the sense of smell.

Currently there is no cure for PD. Treatment can only manage the symptoms temporarily. My research with Prof Tan Eng King, Director of Research, focuses on finding the cause of PD. Once we know which molecule triggers damage to the dopamine producing cells, new targeted therapies can be developed to treat this debilitating disease.

But a cure is still a long way off. In the meantime, I want to help patients who are currently suffering from PD and other neurological diseases. That's why I contribute to Staff Giving.

It makes me happy knowing my support is helping to improve the lives of patients and their caregivers, while I continue to seek answers that will benefit future generations."

DR ZHOU ZHIDONG
ASSOCIATE CLINICIAN SCIENTIST
TRANSLATIONAL THERAPEUTICS LABORATORY, NNI



In Memory of Mr Samuel Seong Koon

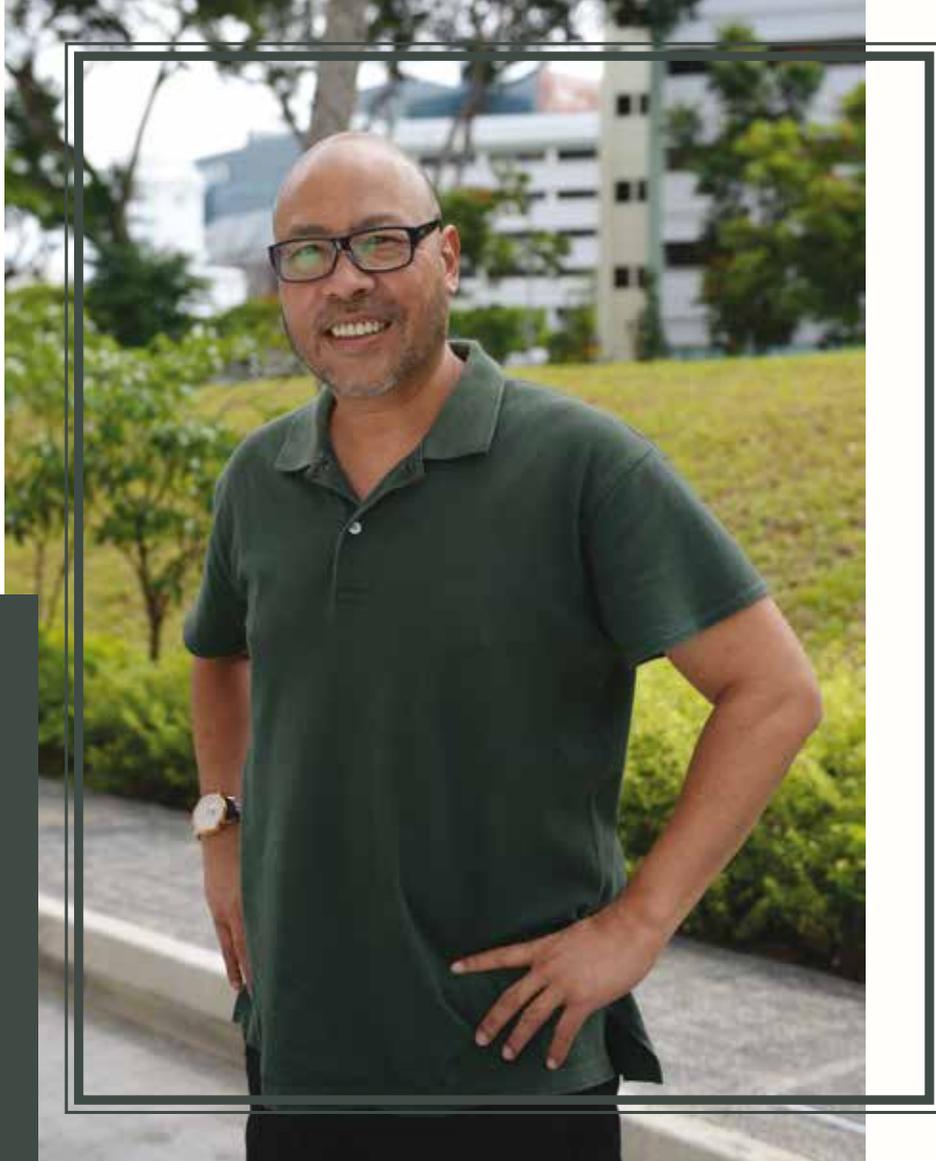
Last October, we lost a committed and invaluable volunteer with the NNI Motor Neuron Disease (MND) Support Group. Mr Samuel Seong Koon was an extraordinary man who never failed to bring smiles and laughter to the MND patients through his soulful singing and hilarious jokes.

Even while fighting a fierce battle with Stage 4 colon cancer, Samuel's desire to spread joy never diminished. He continued to volunteer at the Support Group, teach English to Bangladeshi workers, give encouraging talks and drop visits to patients at their home or the hospital.

In 2015, Samuel received the Singapore Health Inspirational Patient and Caregiver Award, a title well-deservingly conferred to him for his relentless devotion to the welfare of the others.

With his gift of music, Samuel helped raise more than \$14,000 to date. He composed the song "Yong Gan Xiang Qian" to encourage those in the midst of trials. This inspirational song is available on iTunes and all proceeds from the song go to the Support Group.

Samuel has left a deep mark in this world and is truly the embodiment of philanthropy. Even though he is no longer with us, Samuel still continued in his mission to help others. He had requested for all memorial donations to his wake to be given to the MND Support Group. A total of \$22,000 was donated to the support group.



His life is one that we should all strive to emulate. Let us carry on the good work that Samuel has done and keep his spirit of giving alive.

ABOUT THE MND SUPPORT GROUP

The Motor Neuron Disease (MND)/ Amyotrophic Lateral Sclerosis (ALS) Support Group meets quarterly, and aims to provide a platform for peer-to-peer and inter-professional learning. This is run by healthcare professionals and volunteers to provide education, care and support for carers and people living with motor neuron disease, and provide a network for service provision. Each meeting includes an introductory talk, mass exercise and discussion around a pre-identified topic of interest.

To learn more about how you can help our patients and caregivers at NNI, please visit:
www.nni.com.sg/giving

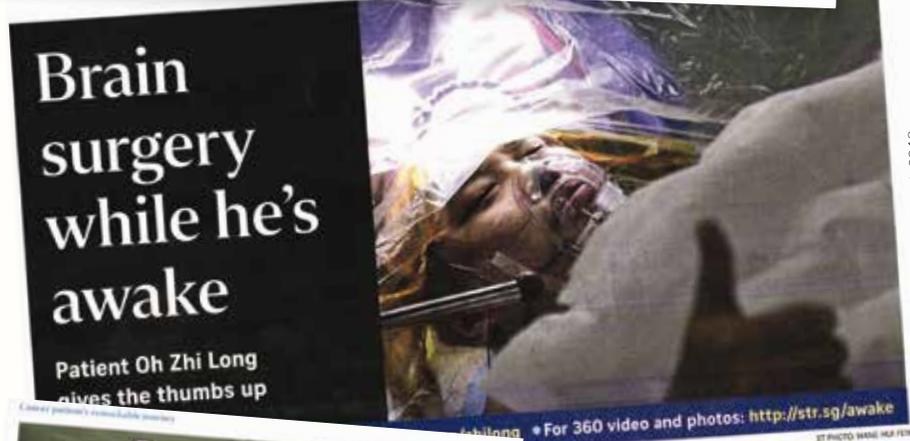


Awake Craniotomy

In 2017, Oh Zhi Long was roped in by his sister, principal radiographer Oh Hui Ping, to do a trial run on the National Neuroscience Institute's (NNI) new Magnetic Resonance Imaging (MRI) machine. It was during this trial that they discovered the tumour in Zhi Long's brain.

An awake craniotomy, where a disc of bone is removed from the skull while the patient is conscious, had to be performed to remove the tumour. The surgical team included NNI doctors Associate Professor Ng Wai Hoe, Medical Director, NNI, and Dr Nicolas Kon Kam King, Consultant, Department of Neurosurgery. Zhi Long had to be awake during the surgery so that the doctors were able to talk to him to assess the effects of the surgery.

From surgery to care after treatment, the Straits Times documented Zhi Long's year-long journey towards recovery with NNI's multi-disciplinary care team. The Straits Times also spoke with A/Prof Ng Wai Hoe who shared the importance of considering patients' perspectives when delivering care, proving that neurosurgery truly is both an art and a science.



Source: The Straits Times, B01, 22 March 2018

Source: Shin Min Daily, p01 to p02, 22 March 2018

Moving towards holistic care



Delegates and guests from around the region and beyond gathered in Singapore recently to discuss ways in which care could be improved for patients suffering from muscular diseases.

In the days leading up to Singapore's 52nd birthday in early-August, NNI Singapore had the privilege and honour of organising and hosting the 16th Asian and Oceanian Myology Center (AOMC) Annual Scientific Meeting.

Patient-Centred Focus

In his opening address, A/Prof Umapathi Thirugnanam, Senior Consultant from the Department of Neurology, NNI and co-chairman of the organising committee, introduced the theme for this year's conference - "Enabled living - Disabled but not Handicapped".

Expanding on the theme, A/Prof Umapathi said: "We have decided to focus the conference this time around, besides the usual scientific content, on patients. That is why this year's theme is 'Enabled living'. We are going to explore dealing with disability without its associated handicaps."

It was therefore extremely apt that the Guest-of-Honour for the conference was Singapore national swimmer, and gold medalist at the recent Paralympic games in Brazil - Ms Yip Pin Xiu.

Addressing delegates, Ms Yip, shared her story of how the supportive environment that she grew up in contributed to her success. She said that instead of her parents coddling her or allowing her to sit out of things because of her disability, she was treated no different from her siblings, which enabled her to think that there wasn't anything she couldn't do.

"As a person with disability, the world tells us the many things we cannot do... I have come to realise that a person is not disabled because of physical disadvantages but because of what they believe they can or cannot do."

"As a person with disability, the world tells us the many things we cannot do...I have come to realise that a person is not disabled because of physical disadvantages but because of what they believe they can or cannot do," she said.

As a token of appreciation, Ms Yip was presented with a water colour painting by Mr William Ngo, whose artwork incidentally was used for this year's programme booklet (see his story on pg 13).

Providing an Eco-System of Support

The conference, which was held at the Grand Copthorne Waterfront Hotel from the 6th to the 8th of August, was attended by a wide array of professionals including doctors, scientists, therapists and administrators from around the world.

Co-chairman of the organising committee, A/Prof Josiah Chai, Senior Consultant at the Department of Neurology, NNI, shared that an important objective of the conference was to garner the support of the medical community to reach out to the under-served parts of Asia.

"AOMC is a great platform towards providing a more comprehensive view of myology in Asia. At this year's conference, we have colleagues coming from places such as Canada, Iran, Laos, and Myanmar to share their experience and expertise," he said.

In addition to medical professionals, this year's conference also saw faculty representing social enterprises and support groups. One such person was Mr Koh Seng Choon, Executive Director and Founder of Dignity Kitchen - a social enterprise that provides support to disabled and disadvantaged people through its innovative hawkker training programme.

It is people and enterprises like Mr Koh and Dignity Kitchen, who contribute to the eco-system of support by providing those suffering from muscular diseases with an avenue to pursue full and meaningful lives outside of the hospital.

Mr Koh regularly receives requests from medical professionals such as A/Prof Umapathi to help patients suffering from disability to develop skillsets that they can use to remain employable.

"It's important for people suffering from disability to feel a sense of purpose. It's only then that they develop a sense of dignity and are able to contribute to society. Often times, they work even better than those without disability," said Mr Koh.

Mr Koh believes that AOMC is taking a step in the right direction by expanding beyond the scientific arena towards a more holistic approach of patient care.

"Over the years, I've seen support for the disabled slowly improving. With the internet age, there's now greater awareness, and through meetings such as this, non-medical personnel such as myself also have a platform to learn more about the scientific aspects of diseases, as well as build engagement by interacting with experts in the field."

6 - 8 AUGUST, 2017

16th AOMC Annual Scientific Meeting

tribute



TRIBUTE TO Dr Yee Woon Chee

During the opening ceremony, President of AOMC, Dr Ikuya Nonaka, paid tribute to the late Dr Yee Woon Chee, whom he considered a good friend and one of the pioneers of AOMC.

A/Prof Umapathi went on to call Dr Woon the father of myology in Singapore, and acknowledged that he was the person responsible for bringing Singapore into AOMC.

A minute of silence was observed as a touching slideshow of Dr Yee at various AOMC conferences over the past two decades was projected on screen.

Dr Yee was the Deputy Director (Research) at NNI and a Senior Consultant at the Department of Neurology, NNI.



MOUTH ARTIST

William Ngo

Present at this year's AOMC Scientific Meeting was 52-year-old, mouth artist William Ngo, who picked up water colour painting just four years ago. William, who suffers from muscular dystrophy, shares that from a young age he fell more easily than others, and this was often taken advantage of by his friends while playing.

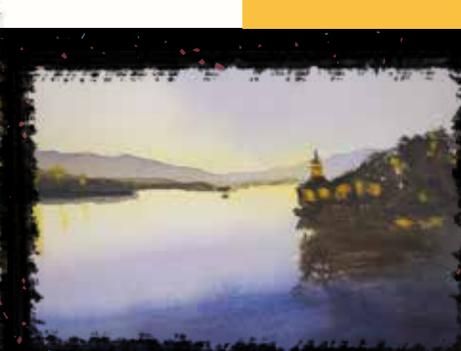
However, his condition remained undiagnosed until the age of 16, during a routine check-up for National Service. Despite his condition, he tried his best to live a normal life, finding work in a jewellery factory. He would see his condition deteriorate over the next 10 years, but was reluctant to tell anyone for fear that he would lose his job and livelihood.

Eventually, his arms became too weak and he had to stop working. He then went on to sell lottery tickets.

His friend, Raymond Tan, also a mouth artist, suggested that he try painting. William was apprehensive, and wondered how someone at his age could suddenly pick up painting, but decided to give it a shot anyway.

Fortunately, it worked out well. Today, William goes around selling his art and sharing with others how he's managed to overcome his disability to do something meaningful with his life.

He says: "Through my art, I've gained new self-confidence. Even though the path I went through was hard, I hope that I've done my part in making it a little easier for others to follow."





Heroes in Lab Coats

The Neuromuscular Laboratory (NML) at NNI has been around since 1998, but how much do you know about what they really do?

Working Behind the Scenes

Mention healthcare workers and people invariably think of doctors, nurses, therapists, administrative staff, and even cleaners and porters. Not often though will one think about the people who work in the laboratories.

The importance of lab staff, however, cannot be understated. "To the casual observer, lab work may seem like just dealing with blood and tissue. But without the laboratory technologists and the people running the tests, clinicians will not have results. Without the results, the clinician will not be able to treat patients," says Angelia Koe, Deputy Laboratory Manager at NML.

In addition, the team at NML often faces the misconception that their work is not patient-centred. This, however, couldn't be further from the truth. In

fact, for Medical Laboratory Technologist Karine Tay, this is the very reason why she chose to apply for a job in the hospital.

"I studied science and can work in any lab, but I find it so much more meaningful to work in a hospital."

Senior Medical Laboratory Technologist Chen Yan agrees: "When you do a test and discover something new or different, you help doctors in making a diagnosis. They may suspect something else, but because of the tests you do, you can help to discover the true reason behind the patient's sickness. That's very fulfilling."

Indeed, it is this deeper meaning that keeps the NML team going, because as Angelia explains: "People don't really know what goes on in the labs."

"Usually it's the front-liners, the doctors and the nurses who are being remembered. To the patient, that's the person who saved me," she says.

Nevertheless, she appreciates that there is a greater focus on allied health today. "We are heartened to know that our work is acknowledged and to be given recognition as a group of professionals who are serving patients. Working hard, but not necessarily remembered."

"Now people know more about what lab techs do. And, it's more than just playing with test tubes. That recognition is nice," she says.

Growing the Lab

Started in 1998 by the late Dr Yee Woon Chee with just two laboratory staff, the NML team has been growing steadily, both in numbers as well as service offerings.

Today, Dr Josiah Chai, who took over the laboratory in 2007, leads a team of four medical laboratory technologists and one laboratory assistant. In addition, there are also seven doctors who regularly assist with the reading of reports.

Together, they serve patients at NNI, as well as hospitals and clinics across the island with an ever-growing list of clinical laboratory services related to areas such as Muscle and Nerve Biopsy Histopathology, and Neuroimmunology.

Yan, who has been with the lab for 17 years attests to how far NML has come. "In the past, we used mouse cells to run tests. Everything was tedious. We needed to kill the mouse and do a lot of work to get the test completed," she says.

Angelia, who joined NML in 2016, adds that it's a much different ballgame today. "Since then there have been many developments and we have progressed to using commercial kits."

Compared to many other labs, however, NML is still considered a small-scale lab, and as such faces its fair share of challenges.

One such challenge is the lack of awareness of the NML name among other medical institutions. Another challenge is the adoption of automation. Nevertheless, plans to introduce automation for tasks such as staining slides are in the pipeline.

"In my short time here, I have already noticed a significant increase in our workload. Hopefully, we will soon be able to expand our lab to have all the tests pertaining to all neurological conditions," she says.

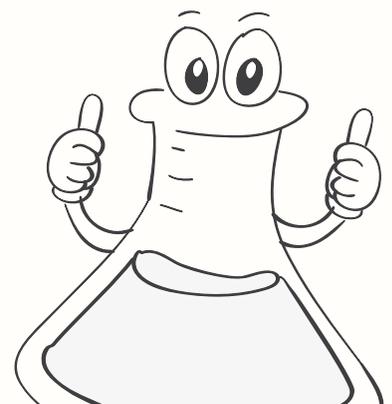


(From left): Ms Angelia Koe, Deputy Laboratory Manager, Ms Karine Tay, Medical Laboratory Technologist, Ms Chen Yan, Senior Medical Laboratory Technologist, Ms Patricia Wong, Medical Laboratory Technologist and Ms Lian Jia Ning, Laboratory Assistant.

Going beyond our shores, NML has also begun to expand its footprint by participating in international conferences. Most recently, NML assisted with the 16th Asian and Oceanian Myology Center (AOMC) Annual Scientific Meeting in helping to set up slide reviews.

Preparing slides brought along by a range of international doctors, the team at NML helped to provide a platform in which doctors and medical professionals attending the conference could exchange ideas and collaborate on advancing treatment methodologies for a host of neuromuscular conditions.

While their part in the conference may be easily overlooked, it's just another perfect example of the type of meaningful, behind-the-scenes work that has come to characterise the NML team.





Serving Patients through ✨ Cleanliness

A group of dedicated staff at NNI are ensuring that cleanliness and hygiene are maintained at world-class standards.

Responding to the call by the Ministry of Health to introduce infection control and prevention measures across medical institutions in Singapore, a group of dedicated staff at NNI stepped forward in November 2016.

Led by Dr Goh Jia Jun, Principal Resident Physician, Department of Neurosurgery, the Infection Control Team (ICT) is made up of staff from the various departments of NNI including administrative staff, allied health workers, doctors, nurses and researchers. They in turn help to ensure that infection control is being enforced across NNI's three main patient service areas: Neuroscience Clinic (NSOC), Neuroradiology and Neurodiagnostic Laboratory."

Setting the Bar High

Even though cleanliness and hygiene is a common practice at NNI, lapses sometimes still occur, leading to unnecessary spread of infection and compromised safety for patients.

The setting up of a dedicated infection control team at NNI therefore helps to create an environment

where staff are made more conscious of areas which run the risk of cross-infection.

Nur-Nazaria Baharudin, Senior Staff Nurse, Neuroscience Clinic, and nurse lead for ICT shares that through this initiative, team members were able to learn more about the importance of environmental cleanliness and hand hygiene.

"We learn that even dust can cause serious problems for those with weakened immunity, leading to issues such as pneumonia," she says.

Of course, responsibility for good infection control doesn't just fall on ICT. "It is the responsibility of everyone from staff to housekeeping," says Roslina Binte Rahim, Senior Enrolled Nurse, Neuroscience Clinic.

Nazaria agrees: "Our job is to attend meetings and update team members of the latest practices and news about outbreaks... but all staff have to be diligent in monitoring their area of responsibility."

Phua Ziqun, Senior Medical Technologist, Neurodiagnostic Laboratory, adds that in addition to disseminating information down to staff, "We also help to raise questions for our colleagues if they have any concerns regarding infection control."

The other advantage of ICT is the opportunity for cross-collaboration between the various SingHealth institutions. Nazaria, for example, was appointed as a SingHealth Cross Institutional Infection Control (CIC) auditor, where she was able to observe different practices.

"Through that experience, I learnt more about the audit process - where to look and where dust tends to accumulate. So now, I bring all these best practices back to NNI," shares Nazaria.

Enforcing Good Infection Control

Ever since the introduction of ICT, NNI has been consistently performing well at quarterly audit checks by SingHealth.

The reason for this success is due largely to the efforts of the ICT. One of the regular tasks of ICT is to conduct their own monthly internal audit checks on hand hygiene and environmental cleanliness within the various departments.

Roslina shares that making cleanliness a habit was more effective than simply slogging at the last minute just before SingHealth audit checks.

"By making this a regular practice, we lessen the workload. In our monthly internal audits, staff will report if there's anything wrong, and we'll sit down and discuss solutions and try and rectify it there and then," says Roslina.

"We also conduct monthly audits with our housekeeper to check cleanliness of the environment," adds Chong Pau Khee, Senior Staff Nurse, Neuroradiology.

A particularly effective initiative Roslina notes is the use of visual cues to remind staff to adhere to the right practices.

"For example, we put up pictures of offences such as improper waste disposal near bins to remind staff. Within a few weeks, we were able to see incidents lessen," she says.

Nazaria adds: "And, we also put posters at strategic positions such as near the personal computer (PC) to remind staff to practice good hand hygiene according to the four moments*."

*Four moments at NNI is adapted from the World Health Organization's original "5 Moments for Hand Hygiene" - before touching a patient; before aseptic procedures; after body fluid exposure, after touching a patient; and after touching patient surroundings. The last moment has been omitted as services at NNI revolve around out-patient settings.

Before they touch the PC or after doing patient examination, or even before writing notes, they have to sanitise their hands first."

Beyond the regular audit checks, ICT also organises a special event for Hand Hygiene Day each year.

"For such events, there will be a speaker to share more about the importance of infection control. And, we also organise interesting programmes such as UV light demonstrations to check the effectiveness of the hand hygiene protocols, as well as quizzes," says Pau Kee.

Roslina adds: "The first year, we started small with NSOC and had to do everything ourselves from the catering to the goodie bags. But by the second year, thanks to additional help from Michelle Wee and Chaw Chit from Medical Affairs and Quality Management, we were able to involve the whole NNI."



MS NUR-NAZARIA BAHARUDIN
SENIOR STAFF NURSE,
NEUROSCIENCE CLINIC



MS ROSLINA BINTE RAHIM
SENIOR ENROLLED NURSE,
NEUROSCIENCE CLINIC



MS PHUA ZIQUN
SENIOR MEDICAL TECHNOLOGIST,
NEURODIAGNOSTIC LABORATORY



MS CHONG PAU KHEE
SENIOR STAFF NURSE,
NEURORADIOLOGY



Overcoming Challenges and Moving Ahead

Since its inception, ICT has had to overcome several challenges, including standardising variances in practice, which inadvertently occur due to NNI's unique setting within Tan Tock Seng Hospital (TTSH).

Fortunately, the presence of ICT has provided a system where issues can be identified and raised to senior management in coming up with fixed Standard Operating Procedures (SOPs).

Also, unlike bigger institutions which have dedicated infection control departments, NNI's ICT consist of staff who have to juggle other full-time duties.

"Initially, it was difficult and not everyone was cooperative. However, over time, when they began to understand the implications of poor hygiene, everyone readily embraced infection control," Nazaria says.

Roslina adds: "Ultimately, doing a good job will ensure that out patient's health and safety are placed at the forefront. That's what's most important."



On 29 October, 2017, the Stroke Services Improvement (SSI) team, from the Ministry of Health (MOH), launched the 2nd National Stroke Campaign, "Spot Stroke", in line with World Stroke Day.

The 2017 campaign builds upon 2016's campaign objective of recognising stroke using FAST (see sidebox), with the launch of StrokeHub, an online portal that provides stroke patients and caregivers in Singapore with information and resources on the disease.

Speaking at the launch event, which was held at Hong Kah North Community Club, Dr Amy Khor, Senior Minister of State for Health, said that raising public awareness about stroke not only increased the chances for a stroke patient to make a full recovery, but was also particularly relevant in Singapore where the number of acute stroke cases was projected to increase with an ageing population.

"(Through this portal), every one of us can learn more about what we can do to protect ourselves and our loved ones and assist those in need," said Dr Khor.

Fighting stroke through greater community awareness

Hoping to build upon the success from last year's inaugural stroke awareness campaign, a 2nd nationwide campaign was launched on 29 October 2017

A study done by the National Neuroscience Institute (NNI) following the 2016 national stroke awareness campaign found that the number of patients arriving to the hospital early for stroke treatment had increased significantly*.

Associate Professor Deidre Anne De Silva, Senior Consultant at the Department of Neurology at NNI said that she was heartened to see more patients arrive earlier at the hospital due to heightened awareness, but that more effort was still needed to educate Singaporeans on the need for urgency in calling an ambulance when a stroke occurs. "... instead of ignoring symptoms by sleeping them off or waiting and hoping for spontaneous resolution."

That is why this year's campaign seeks to reach out to a wider audience by spreading the FAST message even further with advertisements at bus-stops, train stations, HDB block void decks, community centres and healthcare institutions. "The campaign will also extend to the online sphere through the use of social media," shared Dr Khor.

Also present at the launch event was Eugene Escanan Jayme, stroke survivor and Vice President of the Singapore National Stroke Association (SNSA). Having suffered his first stroke 11 years ago, he understands first-hand the need for greater awareness about stroke in the community. Sharing that his stroke was largely a result of a poor diet and a lack of exercise, he stressed on the importance of a healthy lifestyle, consisting of a good diet and proper exercise for everyone.

"Stroke can happen to anyone so visit your doctor for a health check regularly," he said. And for those who suffer from stroke, he had these words of encouragement: "Stroke can be corrected and improved. You can have a new life even after stroke."

*The proportion of patients arriving within 3.5 hours (the window for eligibility for clot busting treatment) increased from 28% to 41%, and within 7 hours (the window for eligibility for interventional treatment) increased from 42% to 58%.

29 OCTOBER, 2017

world stroke day • stroke awareness campaign



goodtoknow

To spot a Stroke think F.A.S.T.

**SPOT
STROKE**
Fast discovery helps recovery



Face drooping
Is the person's smile uneven?



Arm weakness
Can the person raise both arms and keep them up?

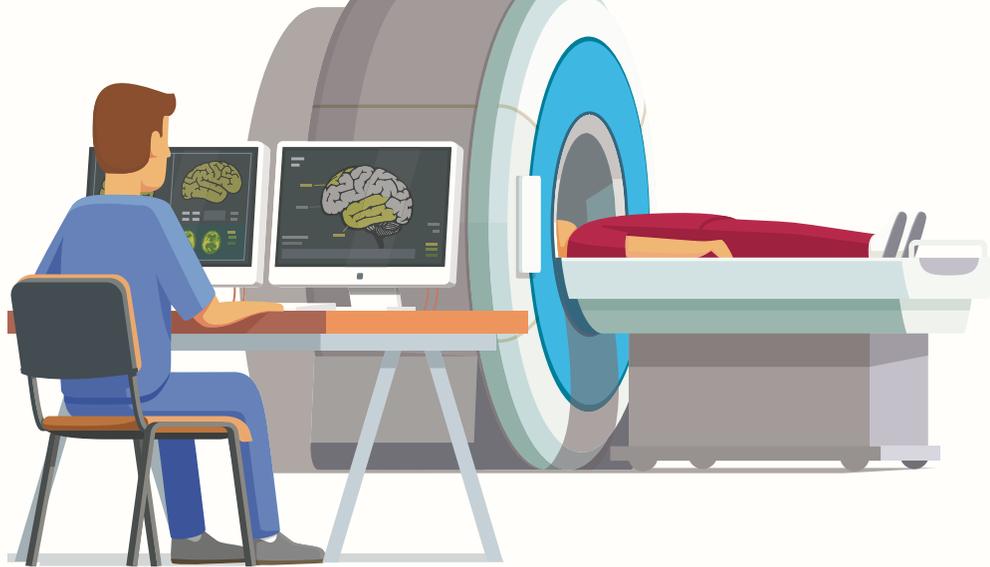


Speech difficulty
Does the person's speech sound slurred or unclear?



Time to call 995
If the person shows any of these signs, they need to be rushed to the hospital immediately.

Synergising Clinical and Engineering Perspectives



A Memorandum of Understanding signed between the National Neuroscience Institute (NNI) and Nanyang Technological University (NTU) aims to pave the way for the development of enhanced treatment methods for neurological diseases.

A collaboration between the top engineering minds from NTU's College of Engineering (ranked 4th in the world), and clinicians and scientists from Singapore's premier neurological institute - NNI, marks a huge step forward into the future of treatment for neurological diseases.

The signing of the MOU was held on 21 August 2017, and was witnessed by NNI Medical Director, A/Prof Ng Wai Hoe, NNI Deputy Medical Director (Clinical), A/Prof Au Wing Lok, Dean for NTU's College of Engineering, Professor Chen Tsuhan, and Executive Director of HealthTech NTU, Professor Russell Gruen, as well as various other staff from NNI and NTU.

Professor Lam Khin Yong, NTU's Chief of Staff and Vice President for Research, said that the partnership created a unique multidisciplinary research environment by integrating healthcare with both medical and engineering expertise.

"This will not only nurture next-generation doctors armed with a multidisciplinary skillset to meet Singapore's healthcare needs, but also enhance medical technologies to diagnose and treat neurological conditions more effectively," he said.

Using Machine Learning to Enhance Treatment

For the first year of this partnership, two senior residents from NNI have been awarded one-year fellowships to work full-time with NTU professors on campus. As part of their fellowship, they will also receive S\$100,000 to complete and commercialise their projects.

The first fellowship awardee is Dr Justin Ker, Senior Resident at the Department of Neurosurgery. His project involves the development of an artificial intelligence system that can automatically and accurately identify different types of traumatic brain injuries from computed tomography (CT scans).



DR JUSTIN KER
SENIOR RESIDENT,
DEPARTMENT OF
NEUROSURGERY

Speaking at the signing ceremony, Dr Ker shared that head injury was the leading cause of disabilities and deaths in adults below 40 years old, and that NNI saw between 20 to 30 of such cases each week.

"The main benefit of this project would be in reducing the time needed to initiate treatment. When it comes to injuries that affect the brain, delays of a few minutes can mean the difference between a good and poor outcome," he said.

While CT brain scans are traditionally interpreted by doctors, Dr Ker said that with deep machine learning, computers now had the ability to outperform humans in complex tasks.

A/Prof Ng further noted that not all hospitals in the world had access to highly-trained and specialised neuroradiologists, and that this was an area where technology could be used to enhance patient care.

The other fellowship awardee is Dr Wan Kai Rui, Senior Resident at the Department of Neurosurgery. Her project involves coming up with a computing algorithm for more precise identification of tissues during brain surgeries.

In her presentation, she used the surgical procedure of deep brain stimulation for Parkinson's Disease patients as an example of how the algorithm could be applied to good use.

"For such procedures, we currently use electrodes to determine target areas in the brain to implant a medical device that sends out electrical impulses to block abnormal nerve signals that cause tremors and movement difficulties. Through this project, we aim to help doctors identify the location for the implant more precisely through machine learning," she said.

A/Prof Ng added that if successful, operating time could be significantly reduced, resulting in improved comfort for patients.

"Right now, the process of determining the target area using microelectrode recording accounts for about two of the six hours of surgery time. During the entire surgery, patients are conscious and taken off medication, which can be an uncomfortable experience for them," he explained.

Two-Way Exchange

In addition to the fellowships, NTU engineering students can also expect to embark on attachment programmes to work alongside neurosurgeons at NNI.

Noting that the availability of data was something that NTU's College of Engineering faced, Professor Chen Tsuhan said that the joint partnership would enable engineering students to move beyond the lab, to work with real data and come up with better and more meaningful applications.

Recognising the natural synergy between the two institutions, A/Prof Ng said that the unique collaboration provided an environment where imagination was encouraged in the form of technological advances and capabilities.

"Innovation occurs at the intersections of disciplines, knowledge and expertise. This partnership, therefore, has great potential to be an innovation launchpad for Neurotechnology."



NNI Supports the Arts in Raising Awareness about Dementia



From 2 to 18 March 2018, local theatre company Pangdemonium staged a production of The Father, which explores the mind of a man with dementia. NNI assisted with providing medical expertise and research materials.



Preparing for the Play

Adrian Pang, Artistic Director of Pangdemonium, first became aware of *The Father*, when it was performed in London some years back. As he went on to read the script, he felt that it was something that suited the company well. His wife and Pangdemonium's co-Artistic Director, Tracie Pang shared similar sentiments. "It's not straightforward in the way it's written. It's intriguing... the writing is very clever in the way that it uncovers what it's like to have dementia," she said.

Thus began the journey to put together a cast and commence research into the mindset of dementia patients and their caregivers. Through this preparation process, Pangdemonium got in touch with the NNI, which was an obvious choice given its role as the national centre for the treatment, education and research in the neurosciences.

Leveraging on their involvement with support groups, NNI decided that the best way forward was to facilitate a

sharing session. Hence, on 31 January 2018, cast and production team members met up with patients and caregivers to gain insight into what it was like to live with dementia.

Tracie said that the session was eye-opening in that you move beyond second-hand stories from friends, into interacting with people who have to deal with dementia daily and in a very personal way. "Although what they go through may not necessarily be identical to what is in the script, it gave us really good reference points," said Tracy.

Using the Arts as a Platform to Educate

Besides helping with research materials, NNI's neurologists, Dr Chiew Hui Jin, Dr Ng Kok Pin and Dr Adeline Ng, also assisted as panellists in several of the post-show dialogue sessions held at the end of each play. The purpose of these dialogue sessions was to promote greater understanding of dementia and how it affects patients and caregivers.

Acknowledging the synergy, Associate Professor Ng Wai Hoe, Medical Director, NNI, said that the play provided a unique opportunity where entertainment, business, culture, public awareness and social cause came together to provide an educational experience for people to understand more about dementia.

"Education and understanding will hold the key for us to cope better and for us and for us as a society to understand these patients better. Arguably one of the most effective treatments for patients... is actually social integration. [This] social engagement will slow down the progression, keep them engaged, and improve their quality of life for as long as possible," he said.

A Night of Fundraising

In addition to the regular shows, a special fundraising night for neuroscience research was jointly hosted by NNI and Pangdemonium on 8 April 2018.

Proceeds for ticket sales went to the Health Research Endowment Fund (HREF), which supports activities and programmes that promote the advancement of neuroscience in Singapore.

The fundraising evening raised a total of \$52,218.

About the Play

The Father is an award-winning play by French playwright Florian Zeller, which explores the deteriorating mind of André, a 70-year-old man with dementia. The story brings audiences on a journey, as André's mind unravels and his reality begins to warp. It is not long before André is no longer able to find comfort through his loved ones or sanctuary in his own home.

Through the staging of this play, Pangdemonium hopes to shed light on dementia and inspire greater outreach to dementia patients, as well as their caregivers.

EVENT LISTING

28 - 30
JUN 2018
(Thur - Sat)

8th Singapore International Parkinson Disease and Movement Disorders Symposium

8.30 AM - 5.30 PM

Academia, 20 College Road

17
AUG 2018
(Fri)

Neuroscience Nursing Seminar 2018

8.30 AM - 5.30 PM

Civil Service Club Auditorium, 60 Tessensohn Road

1 - 9
SEP 2018
(Sat - Sun)

NNI Neuro-Awareness @ Changi Airport Terminal 3

ALL DAY

Changi Airport Terminal 3

4 - 6
OCT 2018
(Thu - Sat)

17th Singapore International Stroke Conference

8.30 AM - 5.30 PM

Academia, 20 College Road

11 - 12
OCT 2018
(Thu - Fri)

18th Advanced Neuroradiology Course

8.00 AM - 5.00 PM

Tan Tock Seng Hospital, Theatrette, Level 1

10
OCT 2018
(Wed)

4th Interventional Neuroradiology Workshop

8.00 AM - 5.00 PM

Tan Tock Seng Hospital, Theatrette and Conference Room, Level 1

6 - 9
DEC 2018
(Thu - Sun)

NNI EEG-EMG-AFT and Neuromuscular Ultrasound Workshop

8.00 AM - 6.00 PM

Tan Tock Seng Hospital, Theatrette, Level 1



National
Neuroscience Institute
SingHealth

"We make a living by
what we get, but
we make a life by
what we give."

- Winston Churchill



For more information,
please visit www.nni.com.sg/giving

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