MediCine

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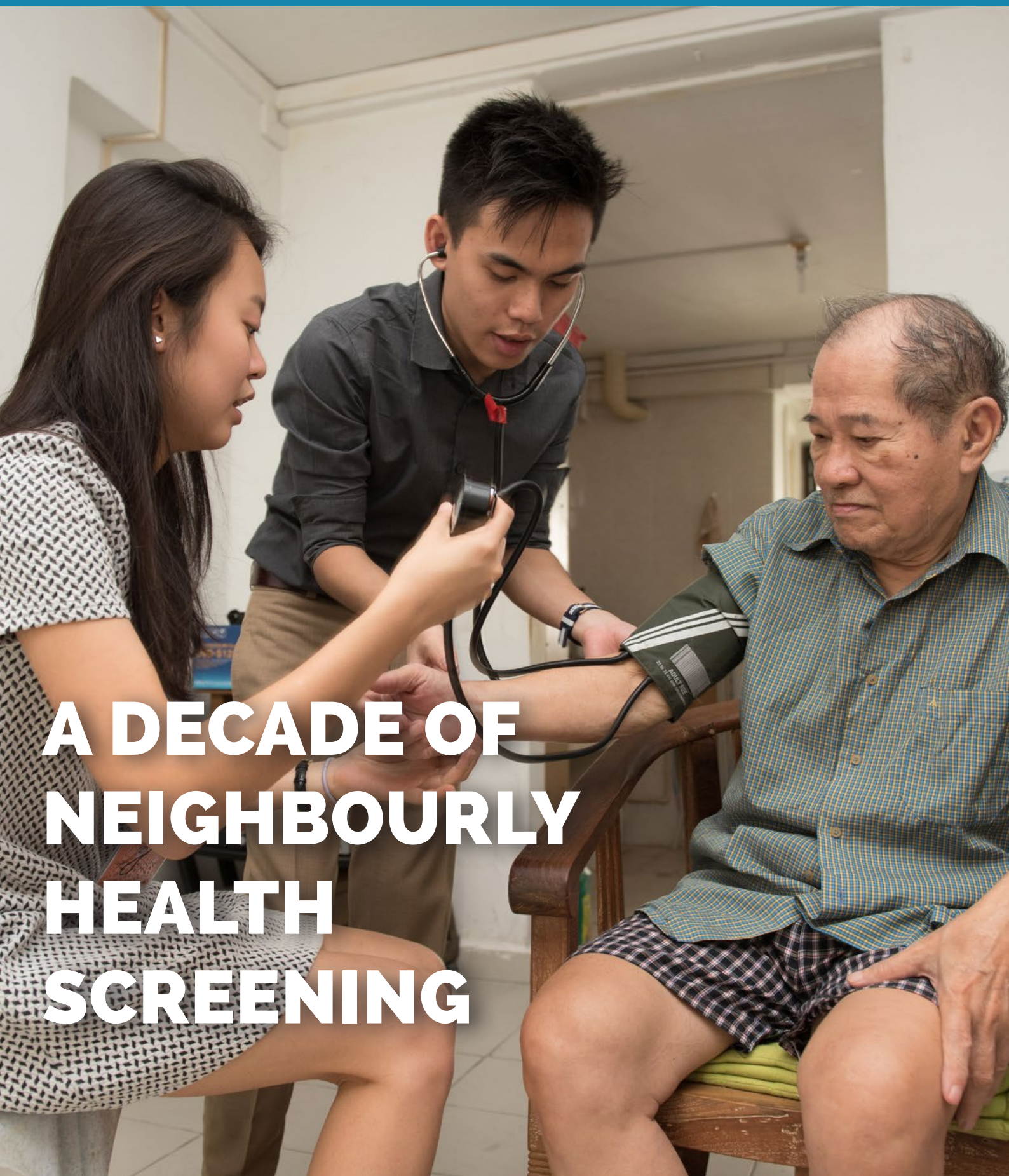

A DECADE OF NEIGHBOURLY HEALTH SCREENING

DEAN'S MESSAGE

Neighbourhood Health Service volunteers with a Marine Parade family

Dear Reader,

Compassion, commitment and an abiding concern for the health and well-being of the community are three themes which feature prominently in the articles found in this issue of MediCine.

They are sounded in the traditional White Coat Ceremony welcoming freshmen Medicine students to the School at the start of their studies, and echoed in the annual, student-led Neighbourhood Health Service that is into its 10th year. We hear these 3Cs reiterated in the sharing of a specialist-in-training and see them expressed in our students' outreach to migrant workers.

These themes are also the values of the Yong Loo Lin School of Medicine and they inform the way we train and educate our students to become caring and competent medical and healthcare professionals of the future. They also guide the scientific discovery work that is done here at NUS Medicine.

One could go as far as to say that the 3Cs make up the DNA of our School, which rounds off yet another stimulating and satisfying year with the news that the School continues to be ranked highly by indexes such as the Times Higher Education World University Rankings. Their 2016-2017 rankings by subject (Clinical, Pre-Clinical and Health) put NUS Medicine as Asia's No. 1 medical school and 31st in the world. The 2016/2017 Quacquarelli Symonds World University Rankings by subject (Medicine) also put us as No. 1 in Asia and 22nd globally.

I am also pleased to tell you that NUS Medicine has once again, for a fourth consecutive year, clinched the NUS Inter-Faculty Games title. It underlines something that all of us here know well – our students excel just as well as on the sports field and in community service. Their zest and zeal hearten and inspire us: may they go on to encourage and uplift those whose lives will one day be placed in their trust as medical and healthcare professionals.

That these young men and women are able to do so is due in no small part to the dedication and effort of their teachers as well as the generous, unstinting support of our donors. The School owes much to them and we are truly grateful.

With best wishes for Christmas and the New Year.

Khay Guan

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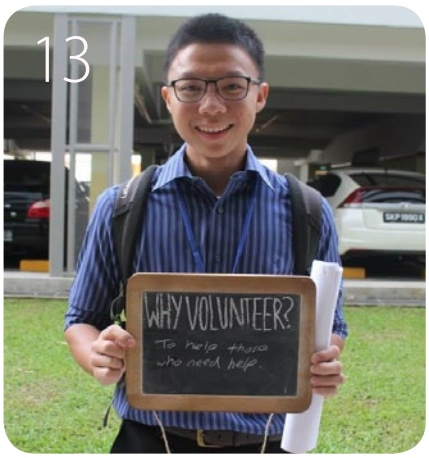

MediCine

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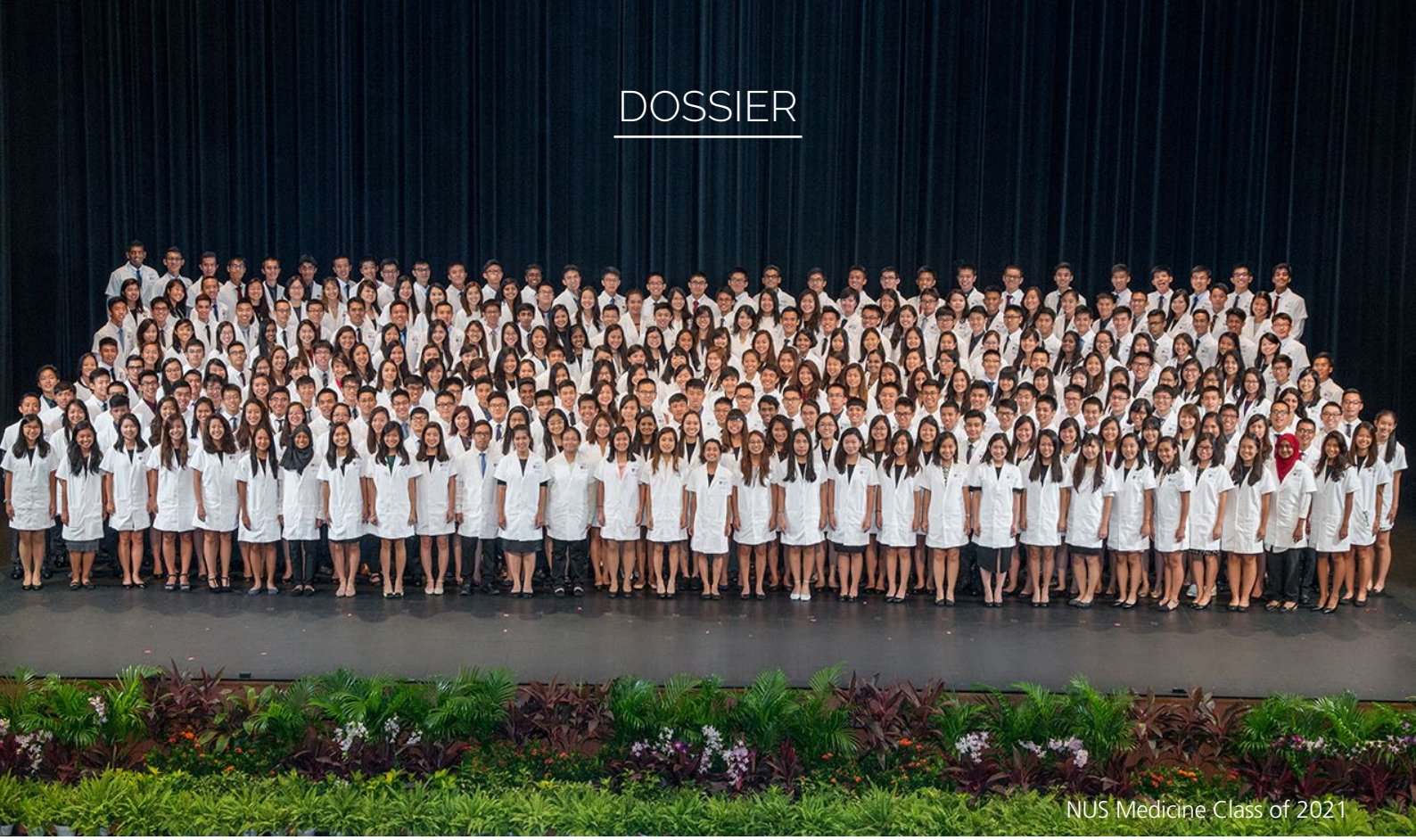

NUS Medicine Class of 2021

WHITE COAT CEREMONY 2016

It was a defining moment for the 300 medical freshmen of the Class of 2021 as they were officially welcomed to the NUS Yong Loo Lin School of Medicine at the White Coat Ceremony on August 10. The Ceremony was introduced by the School in 2008 and is an annual highlight on the academic calendar.

Faculty members helped the students to don their white coats – traditional symbols of the physician – as the audience of proud and happy parents and family members looked on. Earlier, the audience heard from NUS Medicine Dean, Associate Professor Yeoh Khay Guan as well as the Guest of Honour, NUH Chair of the Medical Board, Associate Professor Aymeric Lim, on the time-honoured values and traditions of the medical profession – and which the freshmen are also now bound to uphold as doctors-to-be.

The ceremony ended with the recital of the Medical Students' Pledge, led by the President of the NUS Medical Society and Phase 5 student, Mr Wong Wen Kai.

Students from the Class of 2021 reciting the Medical Students' Pledge

Teachers helping students to don their white coats

PUBLIC HEALTH SERVICE 2016

The annual Public Health Service (PHS) organised by NUS medical students took place on October 8 and 9 at Clementi Central. PHS was first initiated in 2004 as a simple screening event comprising four stations. The event has expanded to twice the number of screening modalities, with the majority of its operations carried out through an electronic platform, allowing for efficient and accurate capture of participant information.

This year's screening served more than 1350 residents over two days and saw 900 volunteers dedicating their time and service to provide free health checks to the community. Residents had the opportunity to find out more about their health status and seek advice on how to take better care of their health. Education booths by partner organisations were also set up in a joint effort to promote the importance of early detection and being responsible for one's own health.

For more information on PHS, visit ***www.publichealthservice.org*** or ***facebook.com/medsocPHS***

Mr Wong Niap Leng, also affectionately known as Ah Leng, was a hero to earlier generations of NUS medical students because of his kindness to cash-strapped students who couldn't pay for their meals, or even their school fees.

HERO OF NUS PIONEERS HONOURED WITH BURSARY

When the National University of Singapore (NUS) celebrated National Day last year, it paid special tribute to NUS Everyday Icons - loyal and long-serving present and former staff members who have served the University over the years.

Retired canteen operator Mr Wong Niap Leng, affectionately known as Ah Leng to several generations of students from the University's Outram campus, was one of the staff members to receive the honours. Mr Wong was a hero to the pioneers in the NUS medical fraternity because of his legendary kindness to cash-strapped students who couldn't pay for their meals, or even their school fees.

His story is so inspiring that alumni have come together to honour Ah Leng by giving to the bursary that is named after him.

"I have heard of so many heartwarming stories about Mr Wong Niap Leng and his willingness to help medical students in need of financial assistance. Just as NUS Medicine celebrates its 110th anniversary, it was timely to honour him as an outstanding individual who has contributed to the school's history and development with a named bursary. I am glad to be able to do my part in helping to set up the Wong Niap Leng Medical Bursary. This bursary will provide much needed financial assistance to these needy medical students, just like how Ah Leng did in the past," shares Professor PC Wong, Department of Obstetrics and Gynaecology, NUS Yong Loo Lin School of Medicine, who championed the fundraising for the Bursary.

Ah Leng's canteen was a popular hangout for medical, dentistry and pharmaceutical undergraduates. Associate Professor A Ilancheran, a medical alumnus, was a frequent visitor. "I have seen him help many of the medical students who would eat in his canteen on "loan". He kept their accounts in his very famous "555" small notebooks and the students could pay back when they could. It was his empathy and trust of the students that has remained in my memory all these years," he recollects.

When asked why he saw a need to help the students Mr Wong said, "I see the students every day and they are like family. I empathised with the students who had to cope with the hard work and hardship in pursuing their studies. They asked and I could not refuse. For residents of the Federated Malay States Hostel and later King Edward VII Hall, it was like a home away from home."

Over the years, many have showed their appreciation of Mr Wong, who receives numerous invitations to medical class anniversary dinners and which he occasionally attends.

The notebook that was used to keep track of money owed to him by medical students is on display at the Singapore General Hospital Museum.

To make a gift to the "Wong Niap Leng Medical Bursary", visit our online donation portal (https://nus.edu/2feVGx4) or contact us at giving_med@nuhs.edu.sg or call 6772 3737

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Dr Benjamin Hooi (centre) with
Prof Tan Chorh Chuan, NUS President (right) and
Assoc Prof Yeoh Khay Guan, NUS Medicine Dean (left)

THE BEST MEDICINE

Dr Benjamin Hooi (MBBS 2011 and M Med 2016) shares his views on what patients really want.

'You matter because you are you, and you matter to the end of your life. We will do all we can, not only to help you die peacefully, but also to live until you die.'

— Dame Cicely Saunders, nurse, physician, writer, and founder of hospice movement (1918 - 2005)

When I was a medical student, much of my learning concerned the treatment of diseases; the best way to "make a patient's sickness better." As a junior doctor, the focus was largely similar – most of the discussions during ward rounds involved subjects such as "the antibiotic of choice for this patient's urinary tract infection," or "the best imaging modality to look for the source of sepsis."

The first time I recall talking about a patient's goals of care was as a house officer in the respiratory ward. An elderly man who was bed-bound, uncommunicative and fed through a nasogastric tube (due to previous strokes) had been admitted from his nursing home with pneumonia.

I planned to start the patient on Pip-tazo, to cover for a healthcare-associated Pseudomonas infection. However, the ward consultant looked at the patient and said, "Given this patient's condition, he will continue to be at risk for respiratory infections no matter what we do. Let's not escalate beyond Augmentin." I struggled initially to understand the logic of his decision – how could we allow a patient to receive anything "less" than the "best" treatment?

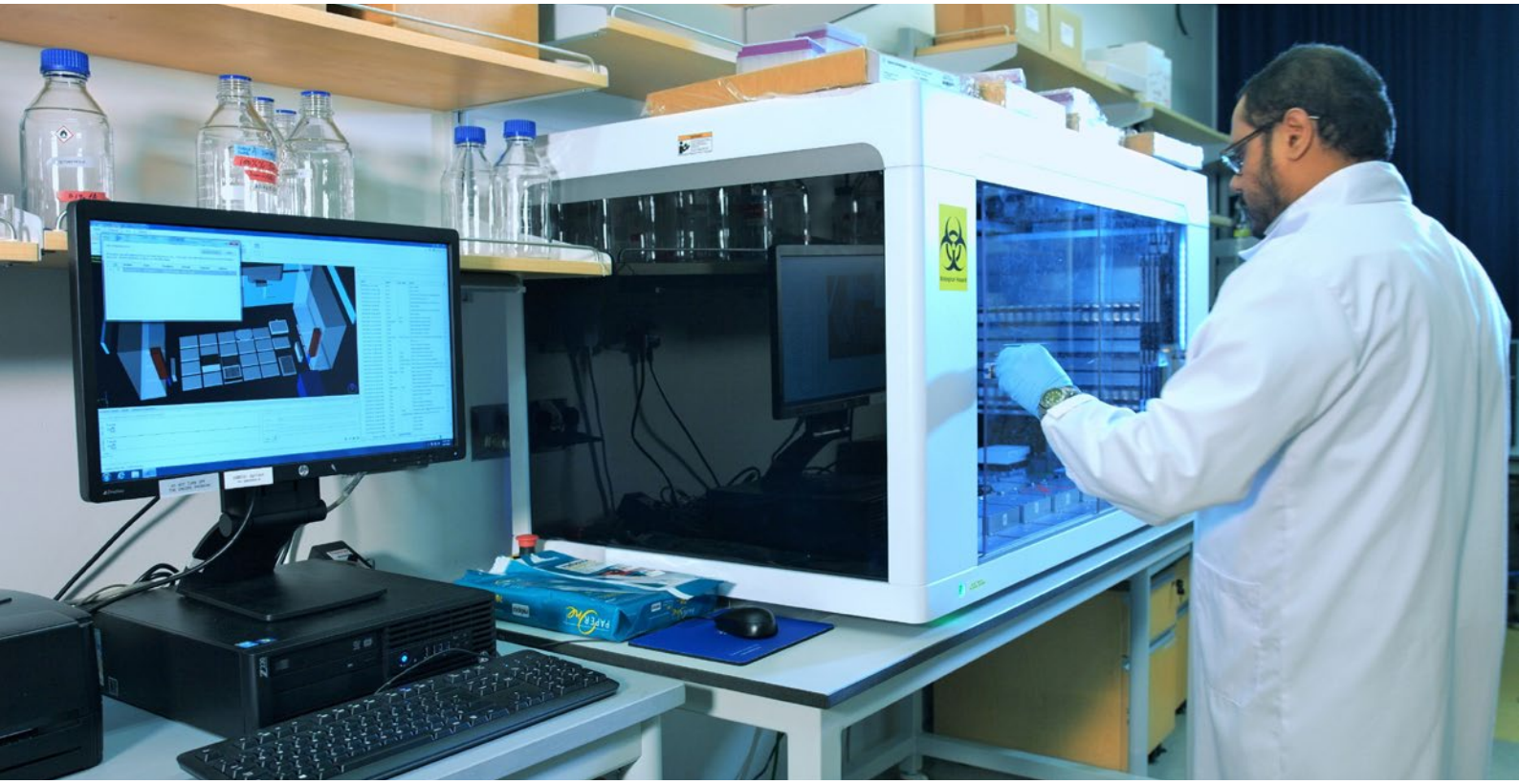
Over time, though, I began to appreciate the wisdom of applying such principles in clinical practice. I saw many frail, debilitated patients admitted repeatedly to the wards, receiving increasingly complex antibiotics as they developed infections with resistant organisms.

For many of these patients, family members would readily tell us how they felt they were suffering, how they would not have wanted to go on living in this way, and how they themselves were "prepared to let them go." In a way, it was the doctors who could not "let go." Every time these patients came to the hospital, the medical teams would feel obliged to prescribe treatment that would "keep them going for as long as possible." Often, this would involve tubes, injections and lines, with little thought given to whether the patients themselves would have wanted them. Many of these patients would eventually pass on uncomfortably, with all of these interventions still in place.

At the same time, I also started to see that there was a better way. When medical teams realise the importance of centering their treatment around the patient's preferences and goals, the story often plays out in a far more meaningful manner.

I remember one such case I saw as a medical officer on the nephrology team: a patient with end-stage kidney disease had been admitted with pneumonia and uraemic symptoms. Her family members were initially distressed over whether she should be started on dialysis. They had been told that it could extend her life, but were also aware that she herself had never wanted it. Through several conversations, we gently encouraged them to honour her preference in the matter. They agreed and eventually opted to bring her home to pass away – which was also her wish. In consultation with the inpatient palliative care team, she was started on Fentanyl for comfort and terminally discharged from the hospital. The family was deeply appreciative, and the entire experience left a profound impact on me.

It is of utmost importance that we be doctors who treat patients, not just their diseases. Our care becomes immeasurably more effective and compassionate when it revolves around what is important to the person that we are treating.



The SRPs utilise advanced technology and equipment to generate quick and accurate results.

THE NUHS SUMMIT RESEARCH PROGRAMMES

Research at its most intense, involving multi-national teams of investigators focused on understanding and developing lasting and meaningful solutions to some of the most challenging medical and health issues. Programmes that train, test and stretch the capabilities of young, budding clinician scientists working under the supervision of experts in their respective fields.

These are the broad objectives of the Summit Research Programmes (SRPs) that were launched on October 21 by the National University Health System (NUHS).

Spearheaded by its Chief Advisor Professor Lee Eng Hin, the SRP is a new initiative by the NUHS that draws on the participation of clinician-scientists and medical experts of the NUS Yong Loo Lin School of Medicine. Five programmes have been launched, focusing on Cancer, Cardiovascular Diseases, Tuberculosis, Metabolic Diseases and Synthetic Biology.

The Cancer SRP focuses on developing improved treatment methods that lower treatment resistance and long-term side effects, while the SRP in Cardiovascular Disease aims at diagnosing new conditions and signals to study the response of heart cells to stress signals and develop improved treatments.

SRP Chief Advisor Professor Lee Eng Hin

Its Metabolic Disease counterpart looks at developing innovative diagnostic tools and mobile applications that improve healthcare provision to diabetic patients.

The SRP in Tuberculosis (TB), a highly prevalent disease in Southeast Asia, seeks to improve the existing treatments through drug discovery, new drug combinations and treatment delivery.

In the Synthetic Biology programme, researchers aim to enhance and deploy microbiome therapy to new disease areas. They will also work with industrial partners to develop new probiotics and methods for sustainable production of therapeutic chemicals.

L-R: Ms Terina Tan, NUH medical social worker, Assoc Prof Rathi Mahendran and Dr Lim Siew Eng

MALE CAREGIVERS OF CANCER PATIENTS MORE STRESSED THAN COUNTERPARTS IN CANADA, BRITAIN, THE UNITED STATES

Men who have to look after loved ones suffering from cancer are more stressed than their counterparts in the West.

They were more affected by disruptions to their daily routine, had more difficulty coping with sleep loss and were more worried about the financial strain involved in caring for a patient, a recent two-year long study by NUS researchers of 258 caregivers' emotional and physical states here has shown.

Four in 10 participants in the survey were men. They reported being overwhelmed by the task of looking after a loved one who was struck with cancer. Male spouses of patients for example, face additional strain as they have to deal with household chores usually handled by their ailing wives, even as they hold down full-time jobs, said Dr Lim Siew Eng of the National University Cancer Institute, Singapore. She is the co-author of the study, which was published online in the Singapore Medical Journal in April.

In comparison, similar studies of cancer patients' caregivers in Britain, Canada and the United States showed they fared better. This was likely because patients in those countries relied less on family members. Added her co-author, Associate Professor Rathi Mahendran from the NUS Yong Loo Lin School of Medicine: "Whereas here, due to principles like filial piety being very strong, the family will come together when an individual has a problem and, as a result, take on a lot of the caregiving burden."

The 35-question survey also asked respondents about the levels of support that they received. Stronger support services and extended caregiver leave could therefore also explain why care providers in those countries fared better. For instance, a caregiver in Canada can take up to eight weeks of unpaid job-protected leave per calendar year for each specified family member. There is no national caregiving leave in Singapore on the other hand, though civil servants get two days of parent-care leave each year, while some companies do provide a few days of family-care leave.

The experience of Mr William Kho, who cared for his late wife, Phelane, illustrated the pressures that the survey respondents indicated they were under. He had to use his lunch hours to take her to medical appointments. He also took over the household chores and quit his job at a bank a month before she passed away to look after her around the clock. "There is a need for better financial support and better information on the disease and where to seek help from," he said.

The researchers hope their study will lead to better support for caregivers. They are also running support groups, which includes giving advice to caregivers on looking after their own emotional and mental health. A conference organised by NUS Medicine, the NUH and the National University Health System in November this year will look at support for cancer patients, their care providers as well as the healthcare professionals involved in their care. "We need to identify and assess not just patients' needs but caregivers' needs (too)," Prof Mahendran said. Added Dr Lim, "If we don't take care of the caregiver, there is really no one to look after the patient."

Dr Chen Zhixiong with Ms Choo Zhang'e, first author of the paper

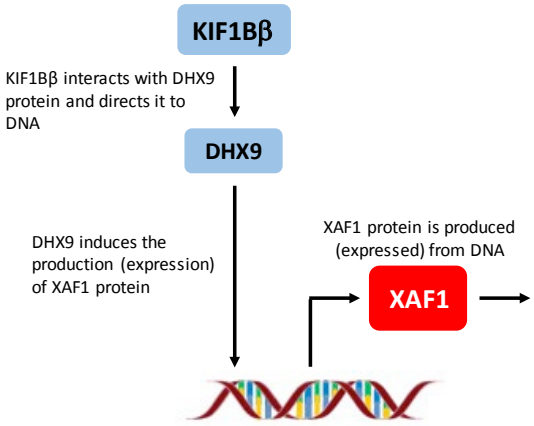
FOUND - TUMOUR SUPPRESSOR THAT MAY LEAD TO MORE ACCURATE PROGNOSES, NEW TREATMENTS FOR CHILDHOOD NEUROBLASTOMA

Neuroblastoma is a rare but aggressive cancer that affects immature nerve cells in the sympathetic nervous system in infants and young children. The system comprises nerve cells and fibres that control body functions such as heart rate and digestion.

Currently, neuroblastoma is usually treated with cytotoxic agents that kill the cancer cells but are not personalised for the specific tumours in an individual patient. To help address this, the roles of several genetic changes in neuroblastoma tumours are being deciphered. Researchers had previously found that deleting one of these genes, KIF1B, results in an especially aggressive type of cancer with a very poor prognosis.

Intrigued, an international team of researchers set out to understand what happened when KIF1B is deleted, or absent. Dr Chen Zhixiong of the Department of Physiology at NUS Medicine, Dr Kenneth Chang, Dr Amos Loh and Dr Soh Shui Yen from the KK Women's and Children's Hospital, along with researchers at the Ludwig Institute for Cancer Research in Switzerland and the Moffitt Cancer Center in the U.S. examined neuroblastoma cell lines, animal models, and tumours from neuroblastoma patients and found that a form of KIF1B known as KIF1Bβ was responsible for the expression of another protein called XAF1.

When the researchers suppressed the expression of XAF1 in neuroblastoma cells, more tumour cells survived. Similarly, when XAF1 expression was suppressed in animal models, tumour growth increased dramatically over that found in control mice. Doing the reverse and increasing the amount of XAF1 caused the tumours to shrink. Going a step further, the research team showed that the absence of XAF1 was responsible for the aggressive tumour growth in neuroblastoma patients with the KIF1B gene deletion. This discovery explained why the tumours in these patients grew so uncontrollably.



After they had uncovered the tumour suppressive effect of XAF1 in cells and mouse models, the team moved to determine whether the same effect would be seen in human tumours. As they expected, the level of XAF1 corresponded with the 5-year survival rate for patients. Patients with tumours which had higher levels of XAF1 had a higher survival rate (87%) than those with tumours which had low or no XAF1 (70%).

Equally striking, almost all of the survivors who showed evidence of disease had low or no XAF1, suggesting that XAF1 may also correspond to the quality of survival. Their findings were published in *Oncotarget* in April this year.

The work elegantly demonstrates that XAF1 is a tumour suppressor involved in neuroblastoma. Besides holding promise as a prognostic marker for neuroblastoma, XAF1 could also be a target for new treatments to be tested in pre-clinical models that are currently being developed in conjunction with the KK Women's and Children's Hospital. Treatments that restore XAF1 expression or mimic its function could be effective for this rare but devastating childhood cancer.

- Story by Dr Khor Ing Wei and Cher Boon Meng

Reference
Choo Z, Koh RY, Wallis K, Koh TJ, Kuick CH, Sobrado V, et al. XAF1 promotes neuroblastoma tumour suppression and is required for KIF1Bβ-mediated apoptosis. *Oncotarget.* 2016 Apr 15. Epub ahead of print.

Medical students sharing BMI information with a foreign worker

MEDICAL STUDENTS' OUTREACH TO MIGRANT WORKERS TALKS HEALTH AND WINS HEARTS

Story by Joy Teo Su-Yue & Teo Jun Hao
Pictures by Charisse Loh & Tho Nian Qin

"Let us not forget those who left their homes to build ours" – these were the words which echoed in our hearts as we began our journey in the Freshmen Orientation Camp Community Involvement Project (FOCCIP) 2016. An annual event organised by the NUS Yong Loo Lin School of Medicine, FOCCIP is a programme that starts incoming medical freshmen off on their formative years by serving the community and helping them to gain a heart for service and people. It also helps to facilitate bonding among medical students and introduces the hard and soft skills required for the profession. This year, we were inspired to serve a relatively unreached group of people; a group that toils away at construction sites, shipyards and on our roads. They are the migrant workers, the 'faceless' people who do so much to keep Singapore humming, clean and green.

FOCCIP 2016 saw 377 volunteers from Phase I and Phase II reaching out to at least 585 migrant workers at the Woodlands and Mandai Westlite dormitories over two nights. On July 12 and 14, migrant workers from both dormitories streamed back to their quarters after a long day at work. They were surprised to see our students welcome them with warm smiles and a meaningful programme of activities planned for them. Our student volunteers accompanied them around the five health booths that were set up, namely Blood Pressure, Body Mass Index (BMI), First Aid, Physiotherapy and Eye Care. At each booth, our volunteers conducted basic screening for the migrant workers and gave customised health advice to the individual, based on his screening results.

The Blood Pressure station was popular among the migrant workers as they were keen to find out their current pressure readings. It is a common misconception that their blood pressure readings would be normal as they work in physically demanding positions. However, it was later discovered that a primary source of unhealthy blood pressure readings was their unhealthy diets where there was a high intake of salt, oil, sugary beverages and energy drinks. Our volunteers offered tips on how to cope with high blood pressure, including diet and lifestyle changes.

Migrant workers with high BMI were also educated on the possible health risks which they may face and how they can reduce such risks through exercise and healthier diets. At the First Aid station, our volunteers shared with the migrant workers on the correct way to tie an arm sling and wrist bandage, proper wound care techniques as well as hand and eye washing techniques.

We were also privileged to have enthusiastic and knowledgeable physiotherapy students and alumni from Nanyang Polytechnic joining us at the Physiotherapy station. With their help, our migrant guests had the opportunity to seek advice for any work-related pain or discomfort, while learning exercises and stretches to help alleviate the pain.
After completing the health checks, some of our student volunteers

A physiotherapy session conducted by Nanyang Polytechnic students and alumni

sat to talk with some of the workers, while others set off for a game of basketball, soccer, cricket and even limbo. Through such simple interaction, we aimed to break down the walls that exist between us, and hoped that our medical students would be able to see our migrant brothers for the fathers, sons and brothers that they are.

We began this journey of planning for FOCCIP with a simple idea in mind – bring healthcare to the minority group of people who were so often neglected while instilling empathy and cultural awareness in our medical students. Planning and executing such an event on such a massive scale was by no means an easy feat. From securing sponsorships to planning operational flow to the exact minute, the FOCCIP committee spent many sleepless nights working tirelessly to ensure the success of the event, and that any and all possible contingencies were pre-empted and planned for.

Standing in the dormitory grounds on both nights, watching as the migrant workers streamed in excitedly to our event and seeing just how willing they were to open their hearts and share their lives and stories with us, made us feel that the past eight months of hard work had indeed not gone to waste. While we set out to share about healthcare and education with them, we were touched so much more by their devotion and dedication to their families back home.

Moving forward, our project hopes to not only continue breaking down the barriers between migrant workers and medical students, but also explore areas in which we can effect greater and more sustainable change – perhaps through infectious disease screenings or vaccination programmes.

We would like to thank our project mentor, Dr Tan Lai Yong, for his kind advice and guidance every step of the way, our sponsors and partners for their generous and enthusiastic support, and all our volunteers, committee members and friends who committed their time and effort for FOCCIP 2016.

I say – student observations

"I think it's been very meaningful and interesting seeing the migrant workers coming in with their stories and telling the medical students about it. One of the migrant workers even put his arm around a (male) volunteer and they were just talking like they were very close friends; like brothers."
– Ong Wei Xin, Phase II, FOCCIP Committee Member.

"Previously when we interacted with migrant workers, we don't really know them so this creates hesitation or inertia that stops us from talking to them, but from this experience today I realised that a lot of them are actually very nice people and they are really just like us, and some of them are really willing and open to come up to us."
– Jasmine Chua, Phase I volunteer.

"I learnt a lot about sacrifice because (coming all the way to Singapore just to work for their families) is very noble and I think we often overlook the sacrifices these people make."
– Lemuel Lok, Phase II volunteer.

A MEDICAL STUDENT REFLECTS ON HIS PALLIATIVE CARE ATTACHMENT EXPERIENCES

Story by Jonas Ho, Phase III Medicine

A couple of months ago, I applied for a Palliative Medicine attachment because I felt that I never got the chance to see the work of a palliative care doctor or nurse despite volunteering with different groups of palliative patients. 'It's about palliative care' became a common phrase I used when telling people about the projects I am in; yet my understanding of it was still so limited. The attachment really taught me many lessons that I will cherish as I continue to learn to be a useful doctor. I am grateful to Dr. Noreen Chan and the entire palliative care team at the National University Hospital for allowing my classmates and I to shadow them over the course of five days. I'm also grateful that the whole team had been so welcoming, answering our questions and taking the time to explain different things to us. I hope to be as patient and nurturing when it is my turn to help students.

THE APPROACH

"Everyone can practice palliative care, we are just the specialist team for it."

I see now that practising palliative care is about viewing each patient in a holistic manner, appreciating their beliefs, values and understanding that each one of them has a story that we only know a little of. It is not just about managing the physical pain or providing symptomatic relief, as the medical aspect of ensuring the patient's comfort is only a fraction of his care. The patient and his family's concerns, worries and preferences must all be considered thoroughly and addressed well.

For palliative care patients, the goal is also quite different. It's less about temporary pain and discomfort in exchange for a prolonged life. Rather, it is about preventing intrusive procedures, improving pain relief and making the most of the time the patient has left. No matter what I do in the future, I will remember these key insights.

ROLE OF THE PALLIATIVE CARE TEAM
(roughly in the sequence of the patient's disease progression)

Introducing themselves to the patient, explaining to the patient that the Pal Care team's role is to provide pain management and support him and his family in this time. Finding out how much the patient knows, providing information about the disease to the patient and pre-empting the patient to potential complications. Treating the patient's symptoms to improve his quality of life.

This is when the Pal Care team establishes rapport with the patient. I learnt rapport must be built sufficiently such that the patient can hold deeper conversations with the team without keeping things to himself.

Touch base with the patients' family and let them know that the team's job is to provide support to the patient and his family.

We witnessed Sister B and Dr. L speaking to a patient's family after the patient had just been referred to the Pal Care team. This meeting taught me the importance of acknowledging the family's burden and letting them know that the team (which also includes medical social workers) is there to support them. This awareness gave a certain comfort to the family members. Being there for the family during the trying times when their loved one is suffering from a terminal illness is also an incredibly meaningful and important task.

If patient's family and patient are ready, have a family conference and run through Advanced Care Planning.

I sat in on an ACP session with a patient, his family and Dr. Z. It was clear how important it is for the medical team and the patient's family to have a very clear understanding of the patient's wishes for himself. This helps everyone know how far the patient is willing to go with regard to life-sustaining treatment, the patient's preference for where he would like to die and to whom he will entrust the responsibility of decision-making on his behalf. Many patients will not be as open to holding this discussion; some may not be sure about their preferences. But I saw the importance of having this conversation, so that everyone would be informed about and respect the patient's preferences.

Family conferences are also a very delicate matter, as good intentions for the patient may become decisions that the patient may not actually want. I learnt that it's the Pal Care team's job to facilitate this entire process of deciding what's best for the patient, so that the patient can die on his own terms, instead of agreeing to what the family decides for him.

In a terminal discharge, ensuring all worries and questions are addressed fully.

I had the chance to see a couple of terminal discharges during my attachment. I saw how Dr. L, Sister P and Dr. Y spoke at length with a man who wanted his wife to be brought home from the hospital. It struck me how much patience and guidance was required as the team took the time to address all his questions, as he still did not feel well prepared to care for his wife at home. I can only imagine that in addition to the emotional burden of caregiving for his wife, he also had to deal with many logistical matters. Thus, having the team explain the different precautions he could take and how he could prepare for his wife was definitely comforting for him.

Preserving the patient's dignity and relieving the patient of pain or discomfort.

I also followed the team when they had to conduct a terminal extubation for a patient in the ICU. Even though they warned the patient's family that it could be quite a traumatic experience witnessing one's loved one being extubated, I saw how gentle and careful the team was during the entire process. As they removed the various tubes from the patient's body, they were still talking to the patient and worked swiftly to reduce any discomfort. The patient grimaced a little during the extubation and I saw how Dr. Z stopped everything to ensure that another bolus of analgesics was given so that the patient suffered as little pain and discomfort as possible. I was glad to be able to witness this event, as it taught me what it means to help a patient pass on with dignity.

THE IMPORTANCE OF NON-VERBAL ACTIONS

An understanding expression; a gentle touch on the shoulder; giving time to the patient, allowing a family member to be emotional; offering tissue paper or a drink. I saw how these tiny gestures went a long way in showing the patients that the team cares for them. It helped them feel that they are understood to some extent and made me realise that such actions should never be underestimated.

I also witnessed how the Pal Care team cares for patients by going out of their way to get things that the patient likes. Such as when Nurse Y and Dr. S went to buy isotonic drinks and ice cream for their patient, and how Sister B planned a birthday party for one of her patients. I was touched to have seen these kind actions and it just speaks volumes about the kind of care that the team provided for the patients under their care. It was clear to me that caring for their patients is much more than just a job, instead, walking alongside each patient on his or her final journey is the genuine mission of the Pal Care team.

BEHIND THE LENS

Phase I Medicine student Ching Ann Hui made local news recently when she won the CDL Singapore Young Photographer Award (CDL SYPA). She explains her love for the art form.

The faces of togetherness and happiness juxtapose with the sobriety and solitude of the subject. There is the proliferation of photos of 'the good life' on social media that is unrealistic and warp our sense of normalcy, ironically intensifying negativity.

What I am fundamentally interested in are people and emotions and I do this through what I call a blend between documentary and street photography.

In my free time, I like to wander around parts of Singapore and talk to people I find particularly interesting. My camera is my window into the lives of others that are completely different from mine.

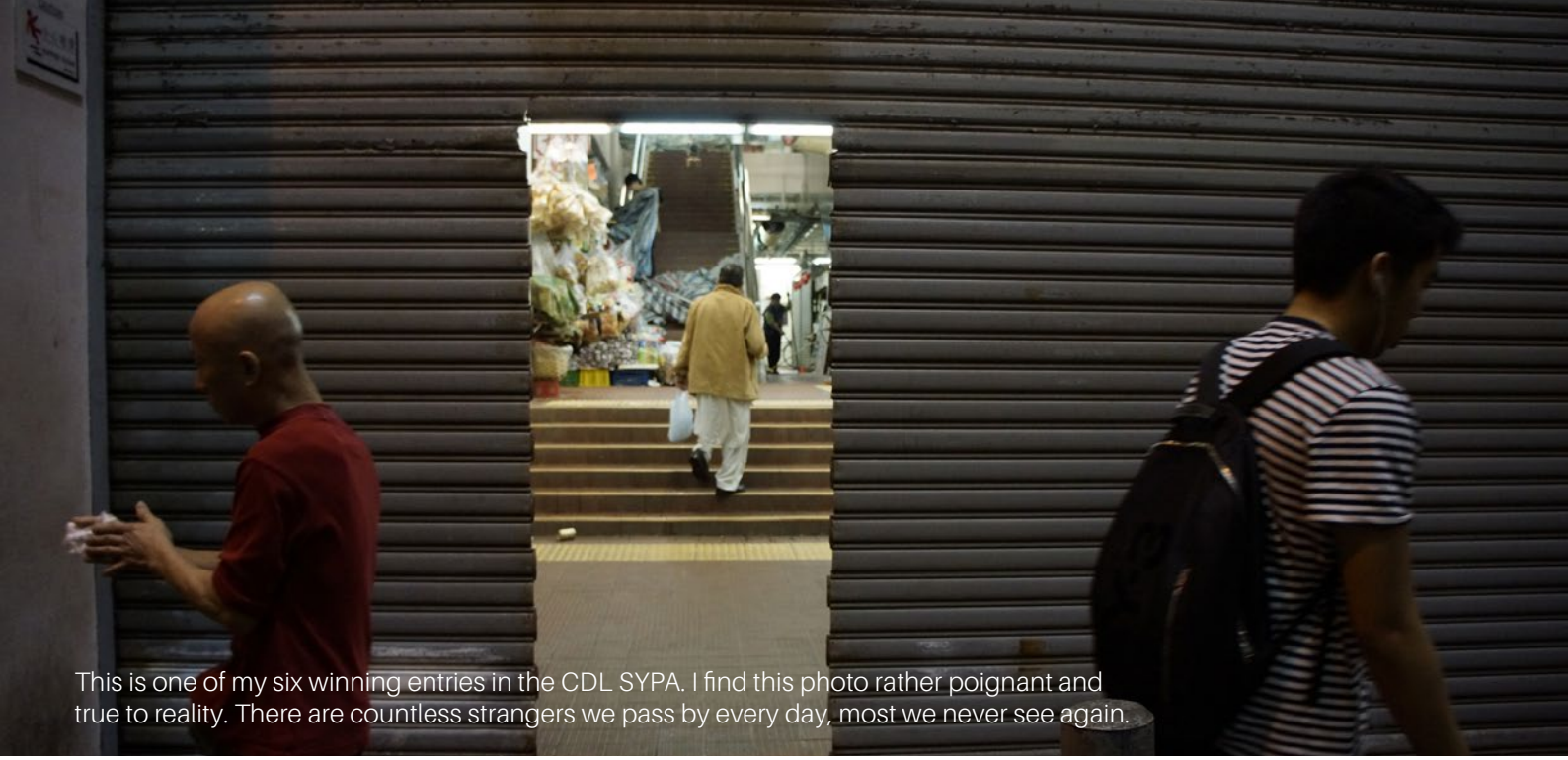
What draws me to particular subjects is their frankness. Subjects who are candid and open about who they are. Ironically, sometimes what draws me to photograph certain subjects are their invisibility, people who are in our midst but are either ignored or overlooked.

This sounds very trite, but there is a world inside everyone one of us that outsiders don't explore. This is what informs my interactions – listen, don't assume, we don't know what they've weathered. Everyone has a reason for behaving the way they do!

The power of powerful photography is that it lets you feel how it is like to be someone else, someone else whom you otherwise would never have a chance to encounter, and that is possibly important in an increasingly polarised world.

Photography is analogous to poetry - the necessary brevity forces one to distil all into one moment. More crucially, this brevity gives the audience the chance to reflect - they have to think of the significance of the photograph and that is different for every person and it depends on where they are from, what they've been through. So unlike other art forms, it isn't heavy or overwhelming. It doesn't force a particular interpretation, but lets you experience someone else's life through your own lens.

My sister introduced me to photography when I was nine. Much more than learning about aperture and shutter speed, the latent sibling rivalry made me work harder to prove that I could take better photographs than her!



This is one of my six winning entries in the CDL SYPA. I find this photo rather poignant and true to reality. There are countless strangers we pass by every day, most we never see again.

Along the way, I discovered photographers who inspire me and influence my work: Alex Webb for his use of colour and Richard Kepler because of his comedic portrayal of daily life. I was lucky enough to attend a workshop by the Magnum photographer, Patrick Zachmann in Hong Kong this June. Under his tutelage, I completed a photography project on Islam in Hong Kong. His workshop opened up completely new ways of photographing I never knew existed - for instance, now I focus a lot more on light, colour and what he calls "atmosphere" and the "itinerary of the eye".

However, the first photographer I was exposed to is still my biggest influence: Henri Cartier Bresson and his concept of the decisive moment where many elements just click together to create meaning through juxtaposition. I think this is why I continue shooting, to find moments which are in plain sight and that reveal a lot, yet many don't see.

I took this photo because I like the colours, light and the man's kind facial expression. The baby in the pram to the left of the photo was a nice counterbalance.

It was evening and a group of workers had just finished work and were waiting for transport. I was first drawn to their jollity and how relaxed they were with one another. However, the worker second from the right saw me photographing and started to get up! I also liked the way the dragons framed the photo.

A woman and her child sharing a happy moment while a foreign worker passes by. It is extremely easy to forget that our privilege or success comes from the backbreaking (sometimes literally) work of others.

AT YOUR SERVICE - A DECADE OF NEIGHBOURLY HEALTH SCREENING

10th Anniversary of the Neighbourhood Health Service

Story by Dr Ian Wee Liang En, Dr Andre Cheah, Dr Chiong Yee Keow and Associate Professor Gerald Koh

Medical undergraduates at the NUS Yong Loo Lin School of Medicine regularly give back to the community and one way is through the Neighbourhood Health Service (NHS). Now in its 10th year, the NHS has been providing residents of 1-2 room rental flat blocks in Singapore with free health screening and follow-up.

The NHS was started in Taman Jurong in 2007 by a group of NUS Medicine students who had experience with grassroots work and were interested in bringing health screening to the underprivileged. Taman Jurong was chosen as the first site for this project because of its strong grassroots support, large pool of needy rental-flat residents and proximity to NUS. Over the years, the numbers of residents served annually by the NHS has steadily grown from about 200 at one site in the first year to an average of ~500-600 residents per year at multiple sites today. Over successive years, the NHS has also reached out to other rental flat communities around Singapore, such as Macpherson, Bukit Merah, Marine Terrace and Eunos Crescent. While the scope and the services offered by the NHS have evolved, some elements have been maintained and handed down through successive generations of NHS student organisers.

The founding ethos of the NHS has been its focus on lower-income, rental flat residents. Since its beginning, NHS's work has been concentrated on rental flat communities. Over the years, the NHS expanded into other geographical locations even as it kept its focus on rental flat dwellers. Why so? The main indicator of socioeconomic status in Singapore is home ownership – the majority (≥85%) of Singaporeans live in owner-occupied public housing. Through government subsidies, home ownership is high.

Public rental flats on the other hand provide heavily subsidised accommodation for the needy segment of the population. Over the years, studies by the NHS have shown that preventive healthcare services, like cancer and cardiovascular screening is less

NHS student participants with a resident

accessible to people living in rental-flat neighbourhoods, while management of chronic diseases like hypertension is also sub-optimal. Hence, the NHS targets rental flat populations in order to bridge these gaps and help the most vulnerable.

Working with rental-flat communities entails challenges. For example, as turnover is high in these neighbourhoods, some residents may not be located for follow-up. Language barriers between volunteers and residents also pose communication problems and trust-building with the grassroots is essential in order to encourage residents to open up to volunteers. However, the NHS continues to work in these communities despite these challenges because the needs are ever-present and very real.

Another characteristic of the NHS is its home-based approach. While most health screening events are held as mass events in large public spaces, the NHS reaches out to screen residents where they live, in the privacy of their own homes. Since the beginning, the NHS has held fast to this door-to-door approach. While labour intensive, going door-to-door provides greater convenience for the residents, especially the disabled who have mobility issues. In addition, bringing the conversation about screening and health into the home helps volunteers to see and identify the barriers that prevent residents in these neighbourhoods from attending screening and seeking healthcare. Holding conversations in patients' living rooms also helps to engage family members and encourages interaction between volunteers and residents. Studies done on the NHS show that this novel home-based approach is also better in fostering empathy in these future health professionals, and helps our students to better understand the dilemmas faced by the low-income when dealing with health issues.

Additionally, the NHS has always been student-run from its inception. While faculty members from the NUS Medicine and the Saw Swee Hock School of Public Health provide supervision and guidance, a student committee sits at the heart of the NHS, overseeing logistics, fundraising, publicity and succession planning, all the key functions that keep the engine of the NHS running. Key decisions – whether to expand into a new community or whether to offer new services – are decided on by the students, who retain ownership over the program. This student-run emphasis provides health professionals in-training with an opportunity to learn while at the same time, faculty support and supervision ensure that patient safety is ensured. From being run by medical students only at the outset, the NHS has broadened to include NUS Nursing and Social Work students in its programme. This reflects the increasingly inter-professional nature of the NHS and by extension, the practice and delivery of healthcare, and also serves as a good, practical setting for students to learn how to work in multi-disciplinary teams to deliver patient care.

While all these elements have remained constant, the NHS has evolved over the years. One of the changes is the renaming of the NHS to reflect its broadened focus. Initially, NHS was known as the "Neighbourhood Health Screening". This subsequently morphed into the "Neighbourhood Health Service" to reflect the shift in focus from only health screening to providing a more comprehensive service. At the beginning, the NHS offered blood pressure screening and BMI (body-mass-index) assessment. Over the years, this has expanded to include diabetes, cholesterol and vision screening, as well as various checks for common cancers (colorectal, breast and cervical cancers). Throughout the course of screening, it was noted that adherence to chronic disease

Student volunteers man an NHS station

management was also an issue in the low-income community. Thus, to improve patient care, the NHS started a follow-up service with Patient Care Conferences helmed by residents from the NUH Department of Family Medicine. The objective was not to replace the existing primary care system but to encourage these needy residents to be linked back into the system and followed up with a polyclinic doctor or general practitioner. At the same time, because many needy residents were not participating in regular screening or were not compliant with treatment because of financial and social issues, Social Work students started an initiative to link these residents to various schemes available to address these matters. Thus, the NHS has broadened over the years, moving from an initial focus on screening to what has become a holistic approach to health in the community.

Another change was a renewed focus on measuring outcomes. The NHS has always been focused on delivering quality care and a good learning experience for its students, and measuring outcomes was a key component of tracking its ability to deliver on those goals. Over the years, the NHS has done comprehensive research on the health issues faced by residents staying in rental apartments, identifying gaps in services that could be filled. For example, in 2012 the NHS had a component centred on mental well-being, after a study found a high prevalence of depressive symptoms and cognitive impairment in the rental flat population. Medical students who had previously rotated through their psychiatry posting fanned out into the community to identify at-risk individuals, and made referrals for these persons to psychology/counselling services offered by NHS partner organisations. Being able to track and measure outcomes also helps the NHS to understand the needs of its clients and improve its services (e.g. by designing materials and programmes that appeal to the lower-income segment of the population).

Additionally, over the years, the NHS has embraced technology to improve care delivery. When the NHS first began, students went door-to-door with clipboards, pens and paper. In 2014, the NHS transitioned to a digital platform where students went door-to-door armed with iPads to key in data into a secure app-based system and play educational videos during patient counselling. This improves efficiency and speeds up the interview process, allowing students to spend more time interacting with the residents in a meaningful way. Each year, the student organising committee also reviews its procedures and sees how the workflow can be improved to enhance the patient experience. From relying on generic materials for its health promotion efforts in the early days, the NHS has also progressed to creating its own educational materials, including pamphlets and videos. These attempt to address some of the common misperceptions about health that have been identified among residents in these low-income communities.

Hence, while preserving its ethos of community service, the NHS has also moved with the times. Key to its success, though, is the support of many individuals – from the numerous medical, nursing and social work student volunteers who participate in the programme each year, to the student committees that pass the torch on to their successors, as well as the faculty supervisors who give of their time generously in providing supervision to the students. Without the support of the grassroots organisations, partners and sponsors, the NHS would also be unable to function. And lastly, of course, we owe a debt of gratitude to the residents and patients that the NHS is dedicated to. They open their doors and their hearts to us each year – the NHS would not be possible without them.

THE FUTURE OF SINGAPORE HEALTHCARE

Associate Professor Benjamin Ong, Director of Medical Services, Ministry of Health, delivered the NUS Medicine Keynote Address to students and staff of the NUS Yong Loo Lin School of Medicine, Duke-NUS Medical School and Lee Kong Chian School of Medicine on September 9.

This is an exciting and challenging time to be part of the Singapore healthcare system. I am encouraged to see so many of you here with the desire to serve our nation in healthcare into the future.

The Changing Healthcare Landscape in Singapore – Setting the Context

You are about to enter the Singapore healthcare system as a healthcare professional at a crucial time. Many of you will look back at this time as an inflexion point as the landscape of our healthcare system is changing rapidly, and upon graduation you will be at the forefront of these changes. Our healthcare sector has been lauded as probably amongst the best globally. One such measure is our life expectancy which stands at 82.8 years on average now, making it among the highest in the world. We expect this to increase further. But we have another leading statistic – the percentage of our population aged 65 and above is expected to double to 20% by 2030. That means one in every five of you in this auditorium.

This is not a new phenomenon. Developed countries all over the world are ageing. What makes the situation here slightly more acute is our low fertility rate. According to the World Bank, Singapore's Total Fertility Rate in 2014 is 1.25, making it 196 out of the 200 countries ranked. Here we are near the bottom of the table!

But I want us to realise what an increased lifespan implies. It means that more Singaporeans will be living longer with chronic conditions. For example, the number of persons aged 65 and above with dementia is projected to more than double from about 20,000 today, to more than 50,000 in 2020. The ageing population will increase the healthcare needs of the nation significantly, and we have to be prepared well in advance to meet these needs.

What all these numbers are trying to impress upon us is that there will be increasing burden on the working population to support the elderly.

Healthcare 2020 – Addressing Capacity and Affordability

Our existing healthcare system was built to serve the population needs of the past. Our acute hospitals have, for a long time, been rightly the centrepiece of care delivery, and served the more acute, episodic healthcare needs of a younger population well. This model also guided our manpower planning and our health professional training. However, the system is increasingly strained in the current context as this configuration is hard put to deal with an increasing proportion of patients not amenable to a single curative intervention.

One of the main thrusts of the Healthcare 2020 Masterplan is to increase overall healthcare capacity. But, while we are still building more acute hospitals, we also broadened our capacity to increase community hospitals, nursing homes and other healthcare facilities to meet the changing demands. Just to list a few examples, Ng Teng Fong General Hospital, Jurong Community Hospital and Yishun

Community Hospital were opened last year. By 2020, there will be an additional 6,600 places in community care, home care, and palliative care sectors. Marine Parade Polyclinic has just been expanded and further plans for the primary care sector are in the pipeline to 2020 as part of our initiatives to strengthen community care.

On manpower, the residency programme was started in 2010 in part to introduce training structure, reliability and efficiency in specialist training. There are now more doctors entering specialty and Family Medicine training. The number of medical students in our three medical schools has also increased over the years. Nonetheless, the training of healthcare professionals takes years and more so for specialists, who may require more than a decade to train. This makes it inherently challenging to calibrate the training pipeline and constantly maintain an appropriate number of healthcare workers in the system. Occasionally, we have needed healthcare professionals from overseas to augment our teams.

The Ministry has been taking steps to further improve the quality of healthcare delivery. To ensure that we do not sacrifice quality for quantity, the Ministry is reviewing the training of our healthcare professionals, taking into consideration the current practice and learning environment. For local specialist training specifically, residency has provided a framework to anchor our training even though there are areas that need improvement. The first batch of residents has just completed training. We will continue to monitor and improve the system. For healthcare professionals from abroad, the professional boards and councils have put in place supervisory frameworks to ensure that they can practice safely and competently here.

The Ministry has also been implementing the recommendations of the Nursing Taskforce since 2012 to strengthen the development of the nursing profession in the areas of Career progression, Autonomy, Recognition and Education. Some of these initiatives include providing bridging courses for our Enrolled Nurses to become Registered Nurses and the nurturing of more Advanced Practice Nurses.

The third focus of Healthcare 2020 is affordability. Apart from the Community Health Assist Scheme (CHAS) and the Pioneer Generation Package, MOH launched the MediShield Life in November last year. MediShield Life provides better protection and higher payouts, so that patients pay less Medisave/cash for large hospital bills; it covers all Singapore Citizens and Permanent Residents, including the very old and those who have pre-existing conditions; and it is protection for life.

Beyond Healthcare 2020 – Ensuring Effective Sustainability

However, to truly prepare ourselves for the change in the healthcare needs, we have to put the patients back at the centre of healthcare delivery and better appreciate how they journey through their stages of health and illness, and across different care settings. Optimising these care journeys requires us to develop a system perspective and not, myopically, a single care setting focus. We will have to go upstream to focus on resource utilisation, disease prevention, and home and community care. All these have to be done in a sustainable way, bearing in mind the constraints on resources we will increasingly face in the future. These are encapsulated in the Beyond Healthcare 2020 plan as "from hospital to community", "from quality to value" and "from healthcare to health".

From Hospital to Community

The transition from a traditional hospital-centric model to a broader community-based one will require building stronger links between tertiary institutions and the primary, intermediate, long-term and home care sectors, to better deliver care to Singaporeans. Much has been said about the Regional Health Systems (RHS). Each RHS will have oversight of the acute hospital, community hospitals, nursing homes, polyclinics and home care providers under its purview, ensuring that patient flow is seamless and care is coordinated. This can be done in many ways, one of which is integrated care pathways. Private primary care providers like the GPs should also come under this framework for the benefit of their patients.

Primary care is the foundation of any healthcare system. We are strengthening its place in our healthcare system as the first and continuous line of care. Our goal is to realise the vision of "One Singaporean, One Family Doctor". Our Family Physicians and general practitioners, and not the specialists, should be the first point of contact for most Singaporeans, both the ill and well.

Healthcare Manpower

As we reshape our health delivery system, we will have to re-look the whole care process ecosystem and reduce duplicative and unproductive clinic visits and tasks as well as tests. However, there is also a need to modify the way we train our healthcare workforce. First, we need to re-balance the tide of sub-specialisation and bring back generalist skills to reduce care fragmentation. Too many times, we hear of patients with multiple specialist appointments in different places, a long shopping list of medications that seems to grow with every appointment, and no one doctor to take overall responsibility. A diabetic patient with stable cardiac and neurological complications does not need to be separately seen by the endocrinologist, cardiologist and neurologist. Siloed, episodic models of care will become increasingly unsustainable as life expectancy becomes longer and more Singaporeans live with multiple chronic conditions. This is where generalist disciplines such as Internal Medicine, Family Medicine and Geriatric Medicine come in. Doctors in these areas are overall in-charge and coordinate the care for patients with multiple co-morbidities. Unfortunately, these are not as popular among doctors as we would like them to be.

To further strengthen primary care, MOH has introduced training subsidies to encourage our primary care colleagues to undergo postgraduate training in Family Medicine for continued upskilling. As the prevalence of chronic diseases and complexity of cases increase, with more people having multiple co-morbidities, the MBBS alone may become insufficient for independent professional practice. These efforts will take time but I hope with this, the public can slowly appreciate the professional value-add that Family Physicians can bring to their care.

This generalist approach applies not only to doctors but also the nurses and pharmacists. As we train more Advance Practice Nurses (APNs) who can specialise in areas such as critical care and

psychiatry, all nurses should still be able to provide good basic nursing care. Similarly for the pharmacists, though the numbers are much smaller than the APNs, specialist pharmacists should still be able to, if I may quote from the Department of Pharmacy's website, "tackle challenging human health problems" and maintain "clinical acumen and scientific mastery that translate to applications in clinical practice, pharmaceutical research and service".

Here, I should make a special mention about our medical social workers (MSWs). You are an integral and important part of the healthcare team and I say this from personal experience. Singapore may be affluent but changing family structures possibly mean more elderly living alone and with their co-morbidities. This is where our MSWs will become more important. You bridge patient care across sectors and it is not just from the acute hospitals to step down care but also within the community. As we mourn the passing of Mr S. R. Nathan, take pride in the achievements he has accomplished, academically and professionally, in the area of medical social work and build on it, exemplify it.

Demand for healthcare will continue to grow with an ageing population and the supply of local manpower will shrink due to falling birth cohort sizes. As such, innovation and productivity must increase to take on the challenge ahead. Productivity and efficiency efforts by healthcare workers are for a noble purpose, as they enable us to serve patients and residents better. Each of us can lead in this effort, by reviewing workflow and eliminating waste, deploying equipment and technology that extend manpower, expanding our skills with training to meet changing care needs and empowering patients, caregivers, volunteers to support the care delivery. At the systems level, we are reviewing policies and regulations and are prepared to change if they no longer serve their intended purpose. We are also designing for efficiency and automation upfront when planning new healthcare facilities. There have been many good ideas that have been implemented and we must continue to strive to create ways to do more with less manpower.

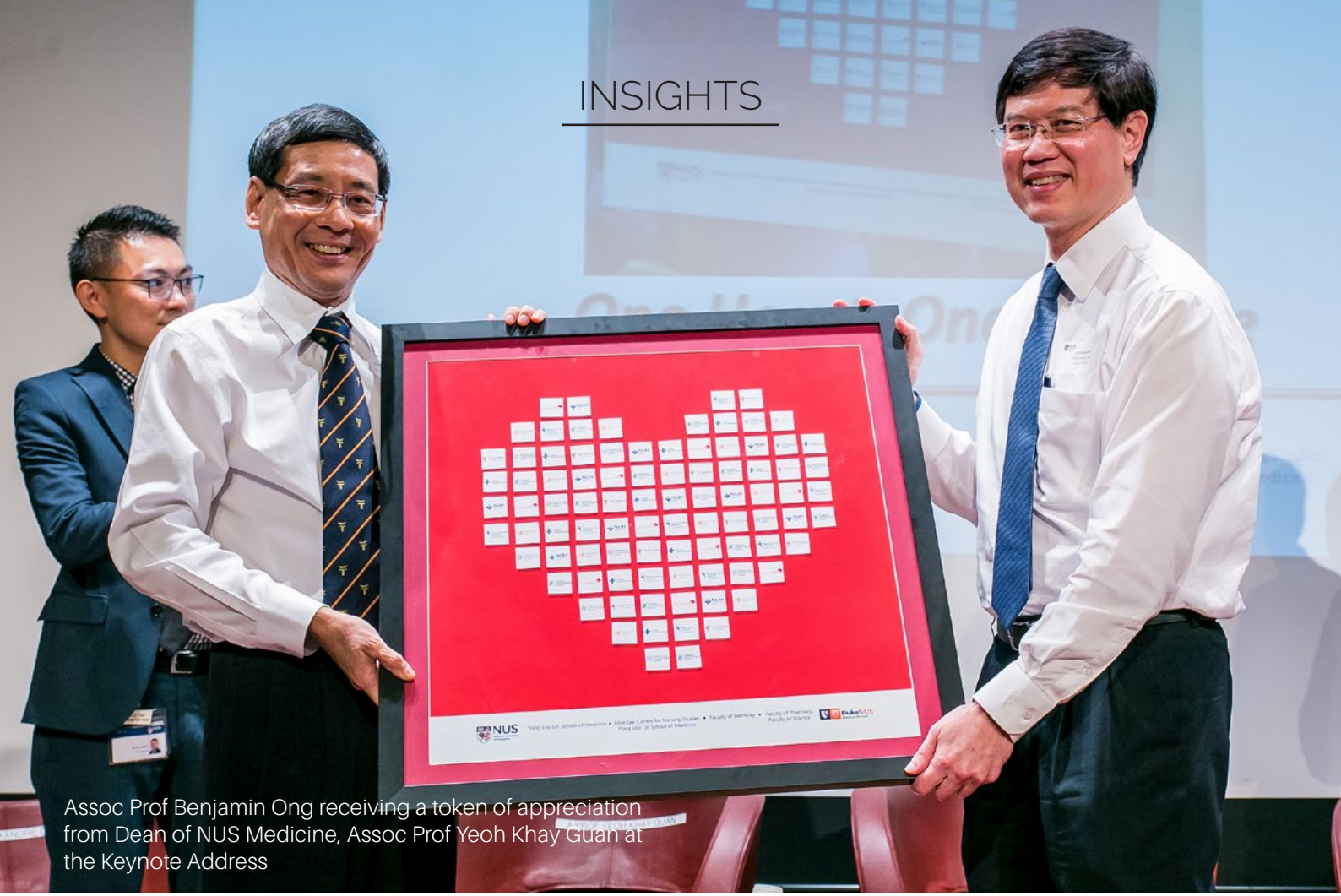
From Quality to Value

I mentioned ensuring sustainability in the face of re-modelling our healthcare delivery. With so many new drugs and medical devices coming out of the market, what is the most appropriate for our patients and that is sustainable for the healthcare system? The Ministry has recently set up the Agency for Care Effectiveness to (1) guide the proper use of such treatments and technology, and (2) encourage providers to manage costs while providing quality care.

From Healthcare to Health

While I have been expounding on what we are doing to provide care for the ill, we need to remove the causes of ill-health early and reduce the progression of long-term chronic diseases. This is a challenging task for it not only involves our colleagues in the Health Promotion Board, everybody from outside the healthcare sector must be engaged. A mindset change, to move away from the current lifestyle, must be embraced.

The World Health Organization recently announced that the global number of adults living with diabetes is over 400 million in 2014. Of these 400 million, 400,000 are in Singapore. The Minister for Health has therefore recently declared War on Diabetes. You are certainly aware of the many risk factors and complications related to this one single condition. Tackling diabetes will have collateral



Assoc Prof Benjamin Ong receiving a token of appreciation from Dean of NUS Medicine, Assoc Prof Yeoh Khay Guan at the Keynote Address

benefits on the prevention and management of other chronic conditions such as diseases of the heart, nerves, and kidneys. However, rather than a campaign against one specific disease, may I urge you to see this as an anchor upon which the entire healthcare sector – health promotion, primary care, acute care and rehabilitation need to come together to reduce the rate of increase in diabetes, and support and empower patients with diabetes to manage their condition well. This is going to require the sustained efforts of everyone here.

Expect the Unexpected – Infectious Diseases

Singapore is a global travel hub, with about 60 million travellers passing through Changi Airport last year. Some of these travellers may bring with them communicable diseases. SARS was brought into Singapore through air travel. Zika may also have come in from the region in the same manner. We are preparing for the importation of MERS. Thailand, Malaysia and the Philippines have already experienced imported MERS cases. A single imported case can result in a huge outbreak and national crisis as we saw in South Korea last year. We also have to contend with endemic diseases such as tuberculosis, HIV and dengue. The principle is simple: prevent or stop outbreaks through early detection and disruption of the chain of transmission. Even as we strengthen our national surveillance systems, the Zika outbreak has illustrated to us the importance of vigilant healthcare workers – to pick up the unusual. Early detection of SARS, chikungunya and Zika was all effected through such vigilance. If we are able to detect an outbreak early, we would have a better chance of minimising its impact.

Your Role

I have highlighted the main areas which we have identified as high priority for Ministry development, such as primary care, intermediate and long-term care and public health. I also covered infectious diseases and the response that needs epidemiologists, infectious diseases physicians and public health experts. I encourage you to consider careers in these sectors in future. Not only will you be moving Singapore healthcare forward, you will also find yourselves genuinely fulfilled as you touch the lives of everyday Singaporeans.

We will need skilled healthcare professions to lead the charge in the community. Patient care will be more complex and challenging. It is therefore even more important that you see yourselves as part of one public healthcare system. The relationships that you build in school now will allow you to have a shared goal and camaraderie. More importantly, the relationship you build with your patients will enrich your professional lives ahead.

Conclusion

All systems must evolve and adapt to changes. Changes present opportunities for us to grab. I very much hope you will all embrace this time of change and lend your talent to the healthcare system to ensure Better Health, Better Care and a Better Life for all Singaporeans.

NOVEMBER – JANUARY

Date	Event & Venue
Nov 3-6	**NUH Eye International Congress 2016 (XII ISOT & III APOT Meetings)** Auditorium, NUHS Tower Block
Nov 7	**NUS - PRIME (Priority Research in Medical Education)** Centre for Translational Medicine (CeTM), MD6, NUS
Nov 10-12	**Asia Pacific Psycho-Oncology Network (APPON 5) Meeting** Auditorium, NUHS Tower Block
Nov 15-17	**Asia Pacific Meeting on Simulation in Healthcare (APMSH)** University Cultural Centre, NUS & Centre for Healthcare Simulation, Level 3, Centre for Translational Medicine (CeTM), MD6, NUS
Nov 18-20	**Association of Standardised Patient Educators (ASPE) Asia Pacific Conference** Centre for Healthcare Simulation, Level 3, Centre for Translational Medicine (CeTM), MD6, NUS
Nov 26	**Wong Hock Boon Society Symposium & Mentor Appreciation Lunch 2016** Peter & Mary Fu Lecture Theatre (LT35), Level 1, Centre for Translational Medicine (CeTM), MD6, NUS
Jan 11-15	**14th Asia Pacific Medical Education Conference (APMEC)** University Cultural Centre, NUS

Details are subject to change.

Yong Loo Lin
School of Medicine