



A Community of Care

ANNUAL REPORT
2018/2019

Determinants of Health



Sanitation • Education • Food • Housing • Water • Employment

RIVER SYSTEM

BETTER CARE



Community Nurse Posts

Primary Care Network

Schools



Living Well

People Renewal

Organisation

Living with Illness

UNIFIED
PROVIDE GOOD QUALITY



Patient Value Compass

SOSI

BETTER PEOPLE

Energy for Performance

Toyota Production System

Financial Security

Campus Ops

Cyber Security, IT

Innovation & Tech

Green & Sustainability

Knowledge & Learning

People Centre

OF LIFE

Determinants of Outcomes



Better • Faster • Cheaper • Safer

EXCELLENCE



PERSON-CENTRIC CLINICAL CARE MODEL

Yishun Health
National Healthcare Group

CARE PHILOSOPHY
Care that is good enough for our own mothers without making special arrangements

AFFORDABLE & HASSLE-FREE HEALTHCARE WITH SCIENCE, LOVE & WISDOM

Integrity

Compassion

Stewardship

SYSTEM HEALTH

Leadership & Relationship



A COMMUNITY OF CARE

We believe that healthcare should be integrated, holistic and person-centric. This is the ethos that has shaped the way we deliver care as we continue to move away from the traditional model of illness-focused care to one that is around a patient, taking into consideration his or her needs, aspirations and personhood.

Together with our patients, their families and caregivers, collaborative teams and networks co-create team-based healthcare that goes beyond episodic treatments. This integration of care extends to helping our patients and population in the North stay healthy, manage their diseases well, and become active participants of their own well-being.

This broadens our roles as a healthcare campus. More than tending to medical crises, we also reach out to those in the community and empower them to live well.

You will read more about these efforts in this year's Annual Report. These stories showcase programmes, process improvements, and people-centred care across our medical specialties, disciplines and expertise in Admiralty Medical Centre (AdMC), Khoo Teck Puat Hospital (KTPH), and Yishun Community Hospital (YCH). This ecosystem of care also includes partnerships within the community.

Read about how doctors, nurses, allied healthcare professionals, as well as community and social services are all brought together. They are united by a common goal — to achieve the best outcomes for patients, be it in the hospital or home.

More importantly, see how our patients change from ambivalent bystanders of their own health to become advocates for healthy lifestyles; how the One Care Plan is operationalised in the management of diabetes; about trauma-care redesigned for timelier, life-saving action; and bringing comprehensive comfort and care to palliative home visits. This power of community action is also illustrated in a student-led

home care programme. These multidisciplinary teams activate numerous experts and resources to bring about synergy in the delivery of care. It is the coming together that underscores the theme of this year's report: *A Community of Care*.



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COMPLEX CARE



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EDUCATION



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WELL



79 OUR
PEOPLE



A COMMUNITY
OF CARE

VISION

Adding years of healthy life

MISSION

Provide good quality, affordable and hassle-free healthcare with science, love and wisdom

CARE PHILOSOPHY

Care that is good enough for our own mothers without making special arrangements

WE ARE NHG

The National Healthcare Group (NHG) is a leader in public healthcare in Singapore, recognised at home and abroad for the quality of its medical expertise and facilities. Care is provided through an integrated network of six primary care polyclinics, acute care and tertiary hospitals, national specialty centres and business divisions. Together they bring a rich legacy of medical expertise to our philosophy of integrated patient-centred care.

NHG's vision is 'Adding Years of Healthy Life'. This vision goes beyond merely healing the sick to the more difficult and infinitely

more rewarding task of preventing illness and preserving health and quality of life. With some 18,000 staff, NHG aims to provide care that is patient-centric, accessible, seamless, comprehensive, appropriate and cost-effective.

As the Regional Health System for Central Singapore, it is vital for NHG to partner and collaborate with stakeholders, community advisors, and voluntary welfare organisations. Together with our patients, their families and caregivers, we aim to deliver integrated healthcare services and programmes that help in Adding Years of Healthy Life to all concerned.



A MESSAGE FROM CHAIRMAN OF THE BOARD

Our goal is to help the entire population in the North to be healthy and well.

Yishun Health provides affordable and quality public healthcare in the north of Singapore through our three medical institutions, namely Khoo Teck Puat Hospital, Yishun Community Hospital and Admiralty Medical Centre. We also support our residents to take charge of their health through our community care programmes, led by the Population Health & Community Transformation (PHCT) team.

Over the past two years, we have introduced a refined model of care that is both person- and community-centred: Yishun Health's Unified Person-Centric Clinical Care Model (UCM). Under the UCM, we hope that all patients come under a One Care Plan, ensuring hassle-free access to dignified and safe care by our collaborative teams, together with community partners and government agencies. In this way, support is extended to our patients and their families beyond the medical institutions.

This model of care aims to achieve the Ministry of Health's '3 Beyonds': Beyond Healthcare to Health, Beyond Hospital to Community, and Beyond Quality to Value. It aligns with NHG's 'River of Life' Framework, which covers the five segments of care: Living Well, Living with Illness, Crisis and Complex Care, Living with Frailty, and Leaving Well.



I am heartened by the good work that has been achieved in designing and implementing the UCM.

The UCM efforts are gaining good momentum and reshaping the way we provide care at every level. Clinical teams have co-created and implemented improvements across care processes, specialties and service lines. Collaborating with our partners, we deepened our work in the community to help patients stay healthy and well with the right resources.

Redesigning our approach in delivering the best care to our residents has enabled us to understand the needs and issues of an increasingly complex healthcare landscape, made more so by an ageing population and those who are disease-burdened. To tackle these issues while also ensuring that quality healthcare remains safe, accessible, affordable and sustainable, we must stay driven to transform healthcare.

At Yishun Health, the 'River of Life' Framework depicts the broadened perspective of quality of care outside the hospital. This unites and aligns the whole healthcare team, which includes alliances comprising general practitioners (GPs), primary care networks, polyclinics, outpatient specialists, and other community and social care providers around patient goals and needs. It illustrates our vision, painting a picture of our aspiration for the Northern population. It reflects the comprehensive perspective of a person's health and takes into account the various determinants of health, including socio-economic, environmental, lifestyle, demographics and culture.

Our belief at Yishun Health is that good care must come from both top-down and ground-up approaches. Our leaders and transdisciplinary teams on the ground must keep up our spirit of continuous improvement and innovation.

I am confident that we are heading in the right direction, and I am grateful and honoured to be on this journey with everyone at Yishun Health.

Mr Robert Chew
Chairman
Yishun Health Board



A COMMUNITY
OF CARE

COMING TOGETHER TO DRIVE SEAMLESS PERSON-CENTRED CARE



community-centred, built upon a shared vision, collective strengths, trust and relationships.

The UCM framework guides us across our five segments of care and underpins the way we develop processes, use resources, and design interventions. This year, I am heartened to share updates on the progress achieved by our teams across various disciplines as they work together to deliver better care for our residents.

One initiative that has made significant improvement is the

As Yishun Health, we look after the population in the north of Singapore. Our three institutions, together with our community teams, work in an integrated manner to move us beyond the traditional illness-centric model of care. It is a more holistic and upstream approach — by focusing on health promotion, disease prevention, patient empowerment and community education. This will better manage healthcare demand and costs, making it sustainable in the long run.

In 2017, we launched the UCM. Through the UCM framework, we aspire for our residents to have a One Care Plan that emphasises a healthy and fit life, enabled by hassle-free access to dignified, safe and value-driven care by collaborative teams and networks. It also represents our goal to co-create with all staff and our communities the highest form of integrated care. This refers to care that is person- and

enhanced campus flow. Patients are cared for by a physician-led team using a single care plan, regardless of their physical location across the campus. Referrals between KTPH and YCH have been expedited, making processes more seamless and efficient. Today, it takes just about one day for the transfer to take place, making it more convenient for patients to receive right-sited care (see page 39).

In the past year, we have also improved care for our patients who arrive at the Emergency Department (ED). We reallocated resources to right-site them at the point of entry, thus eliminating unnecessary delays and time spent planning the patient's care journey. The ED team also collaborated with geriatricians to set up the Acute Geriatric Assessment Unit located within the Extended Diagnostic and Treatment Unit. Together, the multidisciplinary team works under a streamlined model to assess and manage frail elderly

patients, reducing unnecessary admissions for them. This has resulted in an average of 1,008 bed stays saved from October 2018 to January 2019 (see page 42).

We have designed distinctive medical and surgical service lines for our patients to achieve better clinical outcomes for them. Some examples are the Hip Fracture Service and the Emergency Surgery and Trauma Service, where a transdisciplinary approach is used to facilitate fast, safe and appropriate interventions for patients. At each stage of care, dedicated specialists are activated to lead and roll out structured care plans. This has brought about speedier, safer and better outcomes for patients, such as having zero surgical site infections for our hip fracture patients (see page 43).

Beyond the hospital in-patient setting, patients living with multiple chronic conditions typically need to consult multiple primary care and specialist doctors due to the fragmentation of care. In line with our person-centred care philosophy, we are assigning patients to a primary physician, who will coordinate and plan their care with specialists, nurses, allied health teams, general practitioners, and social care providers in the community. This is currently piloted in KTPH in the form of Integrated Medical Clinics.

An example is the Diabetes Centre at AdMC (see page 22). All patients come under the ownership of a primary physician, with a single care plan that follows a patient wherever he or she is. By partnering the NHGP, we strive to ensure continuity of care and raise the level of support for patients to help slow the progression of their diseases. At the same time, the close collaboration means that patients can be quickly referred back to us for specialist care if needed.

Out in the Yishun community, our PHCT team and its partners are bringing about wellness and lifelong care for residents there (see page 14). We have developed and implemented various programmes, such as the Coaching for Health Action and Management Programme (CHAMP) and Skills For Life! @ Community, to educate and empower our residents to take charge of their own health. I am pleased to share that many of our residents are now advocates for healthy lifestyles, and are inspiring their family members and neighbours to do the same.

The UCM is still in its early phase of implementation, and much work lies ahead. We become better

when we work together to achieve our goals. I encourage all staff — be they clinicians, allied health professionals, or administrators — to apply their knowledge, creativity and commitment to help us achieve the aspirations and objectives of the UCM. As a united Yishun Health team, we can achieve our vision of “Adding Years of Healthy Life” for our patients and residents.

Mrs Chew Kwee Tiang
Chief Executive Officer
Yishun Health





A COMMUNITY
OF CARE

CARING FOR OUR RESIDENTS IN THE NORTH

LEGEND



Healthcare
Institution



Community
Nurse Post



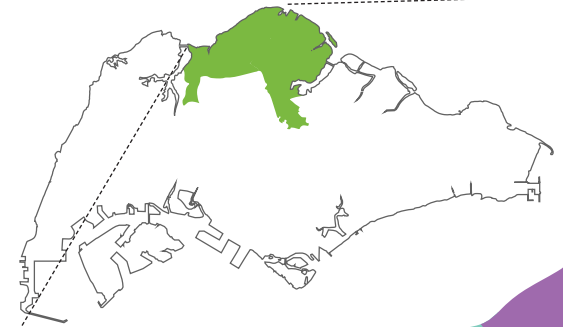
Share a Pot®



Wellness
Kampung

**Other Share a Pot® locations
not shown in the map:*

1. **Starlight RC Café Corner**
718 Tampines St 72
2. **Church of St Vincent de Paul**
301 Yio Chu Kang Rd
3. **Tembusu Senior Activity Centre**
3 Eunos Cres
4. **Agape Village**
7A Lor 8 Toa Payoh
5. **Anglican Senior Centre (Tampines)**
117 Tampines St 11
6. **Evergreen Circle Seniors Activity Centre**
827A Tampines St 81
7. **Meeting Point @ 128**
128 Lor 1 Toa Payoh
8. **Blk 139 Residents' Lounge**
139 Petir Rd
9. **Sree Narayan Care Centre @ Pei Kio CC**
21 Gloucester Rd
10. **Kebun Baru Community Club**
113 Ang Kio Ave 4
11. **Jalan Besar Bendemeer RC**
22 Boon Keng Rd
12. **THK Bedok Radiance Senior Activity Centre**
12 Bedok South Ave 2
13. **Goodlife! @ Telok Blangah**
7 Telok Blangah Cres
14. **West Spring Secondary @ Fei Yue Senior Activity Centre**
634B Senja Rd
15. **Chong Hua Tong Tou Teck Hwee**
232, 234 Tampines St 21
16. **Carelight Wellness Centre**
141 Bedok Reservoir Rd



MARSILING-YEW TEE

SEMBAWANG



Healthcare Institution

1. **Admiralty Medical Centre**
676 Woodlands Dr 71



Community Nurse Post

1. **NTUC Health Active Ageing Hub**
676 Woodlands Dr 71
2. **Sunlove Senior Activity Centre @ Golden Saffron**
764B Woodlands Circle
3. **Sembawang Zone K RC**
588C Montreal Dr
4. **Sembawang Zone J RC (Under Renovation)**
793 Woodlands Ave 6
5. **ACE The Place Community Centre**
120 Woodlands Ave 1
6. **Care Corner Senior Activity Centre**
569A Champions Way
7. **Sembawang Zone H RC**
770 Woodlands Dr 60
8. **TOUCH Senior Activity Centre**
513 Wellington Circle



Share a Pot®

6. **Care Corner Senior Activity Centre**
569A Champions Way
9. **Woodgrove Zone 1 RC**
521 Woodlands Dr 14
10. **Covenant Evangelical Free Church (Woodlands)**
90 Woodlands Dr 16
11. **Singapore Anglican Community Services Centre @ Floral Spring**
426A Yishun Ave 11
12. **Covenant Evangelical Free Church (Woodlands) & Admiralty Primary School @ Woodlands Galaxy CC**
31 Woodlands Ave 6
13. **Canberra Secondary @ Blossom Seeds SAC**
105 Canberra St
14. **Victory Family Centre**
55 Sembawang Dr

MARSILING-YEW TEE



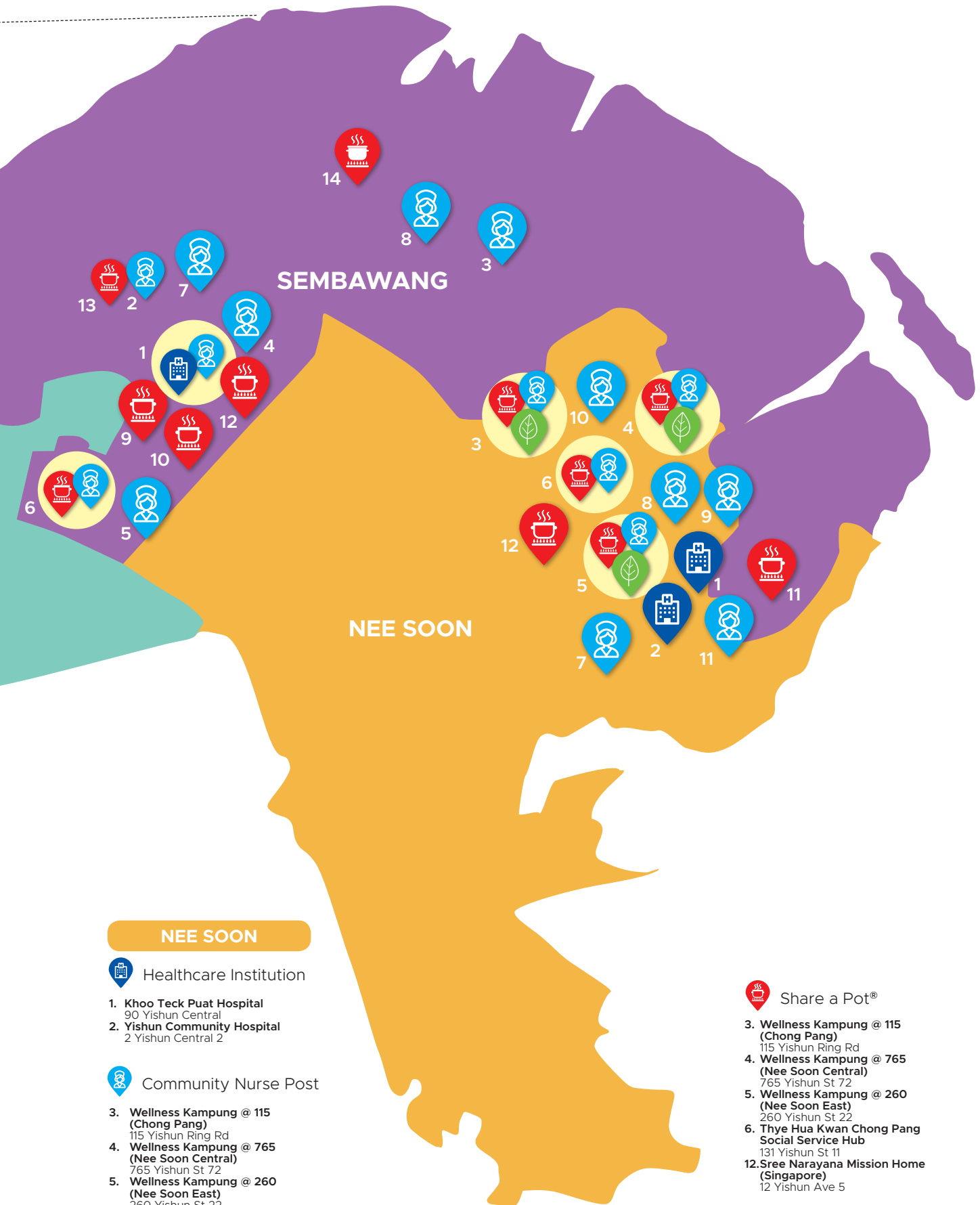
Community Nurse Post

1. **Sunlove Senior Activity Centre (Marsiling)**
3 Marsiling Rd
2. **NTUC Silver COVE Marsiling**
180B Marsiling Rd
3. **Marsiling Zone 7 RC**
206 Marsiling Dr



Share a Pot®

4. **Woodlands Secondary @ Marsiling Zone 3 RC**
123 Marsiling Rise



NEE SOON



Healthcare Institution

1. **Khoo Teck Puat Hospital**
90 Yishun Central
2. **Yishun Community Hospital**
2 Yishun Central 2



Community Nurse Post

3. **Wellness Kampung @ 115 (Chong Pang)**
115 Yishun Ring Rd
4. **Wellness Kampung @ 765 (Nee Soon Central)**
765 Yishun St 72
5. **Wellness Kampung @ 260 (Nee Soon East)**
260 Yishun St 22
6. **Thye Hua Kwan Chong Pang Social Service Hub**
131 Yishun St 11
7. **Wellness For Life @ Nee Soon South**
839 Yishun St 81
8. **Nee Soon East Community Club**
1 Yishun Ave 9
9. **Yishun Clover RC**
398 Yishun Ring Rd
10. **TOUCH Senior Activity Centre**
162 Yishun St 11
11. **TOUCH Senior Activity Centre**
436 Yishun Ave 11



Share a Pot®

3. **Wellness Kampung @ 115 (Chong Pang)**
115 Yishun Ring Rd
4. **Wellness Kampung @ 765 (Nee Soon Central)**
765 Yishun St 72
5. **Wellness Kampung @ 260 (Nee Soon East)**
260 Yishun St 22
6. **Thye Hua Kwan Chong Pang Social Service Hub**
131 Yishun St 11
12. **Sree Narayana Mission Home (Singapore)**
12 Yishun Ave 5



Wellness Kampung

3. **Wellness Kampung @ 115 (Chong Pang)**
115 Yishun Ring Rd
4. **Wellness Kampung @ 765 (Nee Soon Central)**
765 Yishun St 72
5. **Wellness Kampung @ 260 (Nee Soon East)**
260 Yishun St 22



BOARD OF DIRECTORS



Mr Robert Chew



Mr Tow Heng Tan

SENIOR MANAGEMENT



Mrs Chew Kwee Tiang

Chief Executive Officer



A/Prof Pek Wee Yang

Chairman,
Medical Board



Ms Yen Tan

Chief Operating Officer



Dr Wong Sweet Fun

Chief Transformation Officer;
Deputy Chairman, Medical
Board (Population Health);
Clinical Director,
Population Health &
Community Transformation



A/Prof Terence Tang

Chief Clinical Informatics
Officer; Deputy Chairman,
Medical Board (Clinical
Informatics, Innovation &
Patient Engagement)



A/Prof Wong Moh Sim

Deputy Chairman,
Medical Board
(Clinical Quality &
Manpower Development)



A/Prof Phoa Lee Lan

Deputy Chairman,
Medical Board
(Care Integration &
Clinical Standards)



Prof James Best



Prof Philip Choo



Mrs Chew Kwee Tiang



Ms Shirley Heng

Chief Nurse



Ms Magdalene Chai

Chief Human
Resource Officer



Mr Roger Leong

Chief Financial Officer



A/Prof Tan Kok Yang

Deputy Chairman,
Medical Board
(Service Development)



Dr Lee Kok Keng

Medical Director,
Yishun Community Hospital



Ms Cheong Choy Fong

Director,
Quality & Risk Management



Mr Donald Wai

Director,
Hospital Planning &
Infrastructure

We would like to thank Dr Pauline Tan, Chief Executive Officer, YCH (until October 2018), and Ms Low Beng Hoi, Chief Nurse, KTPH and Yishun Health (until December 2018) for their contribution.



HEADS OF DEPARTMENTS

KHOO TECK PUAT HOSPITAL

Dr Sanjay Patel	Head and Senior Consultant, <i>Acute and Emergency Care Centre</i>
A/Prof Edwin Seet	Head and Senior Consultant, <i>Anaesthesia</i> Clinical Director, <i>Office of Clinical Governance</i>
Dr Patrick Lim	Head and Consultant, <i>Cardiology</i>
Dr Wu Loo Cheng	Head and Senior Consultant, <i>Dental Surgery</i>
A/Prof S Tavintharan	Director and Senior Consultant, <i>Diabetes Centre</i>
Prof Wilfred Peh	Head and Senior Consultant, <i>Diagnostic Radiology</i>
A/Prof Phoa Lee Lan	Head and Senior Consultant, <i>General Medicine</i>
A/Prof Tan Kok Yang	Head and Senior Consultant, <i>General Surgery</i>
Dr Angeline Seah	Head and Senior Consultant, <i>Geriatric Medicine</i>
Dr Siew Chee Weng	Head and Consultant, <i>Family and Community Medicine</i>
A/Prof Wong Moh Sim	Head and Senior Consultant, <i>Laboratory Medicine</i>
A/Prof Yip Chee Chew	Head and Senior Consultant, <i>Ophthalmology and Visual Sciences</i> Education Director, <i>Education Development Office</i>
Dr Sandeep Uppal	Head and Senior Consultant, <i>Otolaryngology (ENT), Head and Neck Surgery</i>
Dr James Tan	Head and Senior Consultant, <i>Orthopaedic Surgery</i>
Dr Goh Kah Hong	Head and Senior Consultant, <i>Psychological Medicine</i>
Dr Molly Eng	Head and Senior Consultant, <i>Urology</i>
A/Prof Lim Su Chi	Head and Senior Consultant, <i>Clinical Research Unit</i>
Ms Teresa Foong	Assistant Director, <i>Allied Health Office & Pharmacy</i> Head and Senior Principal Clinical Psychologist, <i>Psychology Service</i>
Ms Supadhara Ramaiyah	Head and Senior Principal Clinical Pharmacist, <i>Pharmacy</i>
Ms Jenny Goh	Deputy Head and Principal Medical Social Worker, <i>Medical Social Service</i>
Ms Ng Lih Yen	Head and Senior Principal Physiotherapist, <i>Rehabilitation Services</i>
Ms Chow Pek Yee	Head and Principal Dietitian, <i>Nutrition and Dietetics</i>
Ms Chelsea Law	Principal Podiatrist, <i>Podiatry</i>
Mr Albert Foo	Head and Assistant Director, <i>Corporate Communications</i>
Dr Ng Yeuk Fan	Director, <i>Corporate Development</i>
Ms Fatimah Moideen Kutty	Director, <i>Operations Admin</i>

YISHUN COMMUNITY HOSPITAL

Mdm Chua Gek Choo	Director, <i>Nursing</i>
Ms Chua Ee Cheng	Head and Principal Medical Social Worker, <i>Medical Social Service</i>
Ms Chan Sue Mei	Deputy Head and Principal Dietitian, <i>Nutrition and Dietetics</i>
Ms Low Suat Fern	Deputy Head and Principal Pharmacist, <i>Pharmacy</i>
Mr Adon Chan Hock Kiong	Deputy Head and Principal Physiotherapist, <i>Rehabilitation Services</i>

POPULATION HEALTH & COMMUNITY TRANSFORMATION

Ms Low Beng Hoi	Director, <i>Nursing</i>
Mr Bastari Irwan	Director, <i>Transformation Office</i>

We would like to thank the following for their contribution:

Dr Mary Ho	Director, <i>Clinical Services</i> (until April 2019)
A/Prof David Loke	Head and Senior Consultant, <i>Otolaryngology (ENT), Head and Neck Surgery</i> (until December 2018)
Dr Doreen Tan	Head and Chief Pharmacist, <i>Pharmacy</i> (until August 2018)
Dr Colin Teo	Head and Senior Consultant, <i>Urology</i> (until June 2018)



LIVING
WELL



IT TAKES A KAMPUNG

An approach that incorporates togetherness, communal effort and camaraderie is how Yishun Health applies its mission to take healthcare beyond the hospital to the community. This broadens our efforts from caring for illness care and delivering healthcare to preventing illness and supporting health.



LEFT TO RIGHT: CHAMP staff posing in front of a standee promoting the programme; CHAMP Programme Director Dr Chan Tat Hon

A community of wellness CHAMPs

The Coaching for Health Action and Management Programme (CHAMP) is a community intervention programme that brings together health coaching and peer support to drive healthcare knowledge and sustained healthy lifestyle changes. Aligned with Yishun Health's Front of Lifelong Care, the programme focuses on four simple, powerful, health-promoting actions:

- Reducing free sugar
- Following the Healthy Eating Plate
- Substituting refined with whole grains
- Clocking at least 10,000 steps a day

This programme empowers people who are healthy or who have chronic illness to take ownership and self-manage their conditions. It also arms the community with strategies to make better decisions, motivate themselves and set health goals. Since it

began in April 2017, the programme has enrolled 3,505 people, many of whom have developed more positive habits and made measurable changes in their chronic disease risk factors.

Apart from health coaching sessions and monitoring of risk factors, CHAMP also held its first Health Carnival at KTPH on 1 March 2019. The event incorporated the four health-promoting actions into its events. For example, participants underwent health screenings so that they could measure the impact of lifestyle changes on their health parameters. They also took part in interactive and educational activities that reinforced the actions in real-time. This was followed by a healthy spread that included brown rice, *kopi o kosong*, fruits and unsweetened popcorn. The event ended with a mass stretching exercise and group coaching by CHAMP Programme Director Dr Chan Tat Hon.

AN ADVOCATE FOR POSITIVE CHANGE

Mr Tan Keng Boon joined the programme in mid-2017. The retiree with diabetes had neglected his condition for over 10 years. Though he was lucky not to experience any serious complications, his lack of lifestyle changes meant that it was not long after that he needed medication to control his blood sugar levels. However, as his disease progressed, his medication dosages kept increasing.

It was around this time that his wife heard about CHAMP and decided to join as a volunteer. To support her, Mr Tan went for one of the sessions. It was there that a sea change occurred. When he saw that all it took were simple changes to manage his diabetes better, Mr Tan started to take the first steps. “The programme was structured and there was a clear way that emphasised the lifestyle changes I could make. I decided to just do it,” he says.

Guided by the four health-promoting actions, he started taking daily walks and eating better. After three months, Mr Tan started to see an improvement and his HbA1C — an average measure of blood glucose over three months — dropped significantly, and he was able to more than halve his medication dosage. He also lost 4kg from diet changes and regular exercise, which includes 6km jogs and gym exercises.

Far from being apathetic, Mr Tan is now a literal champion of the CHAMP programme. He is part of the CHAMPion League, and has shared his journey towards a healthier life with others. His prior indifference has not only been replaced by motivation, but a sustained healthy lifestyle. Mr Tan knows he is lucky to have received the nudge he needed to improve his health before developing diabetes complications. “CHAMP helped me make changes to my unhealthy lifestyle,” he says.

“The concrete steps, guidelines and support from nurses, Health Coaches and peers made a difference in helping people to stay on track.”

Mr and Mrs Tan enjoying the benefits of a healthier lifestyle



ABOVE: Patient and volunteers prepping to cook some soup for the SaP programme



RIGHT: Exercise sessions are incorporated into the SaP programme

Building bonds over food and friendship

Share a Pot® (SaP) was launched in 2015 to leverage the Asian cultural norm of communal eating to address frailty and isolation in the community, as well as encourage vulnerable elderly to socialise, exercise and eat better.

The programme includes a meal, group exercises, and regular basic functional assessments. It is also a platform to monitor the well-being of vulnerable seniors, and is usually organised at our Wellness Kampung and 23 other organisations, such as senior activity centres and nursing homes. Today, there are about 2,004 registered participants and 214 senior volunteers.

SaP was also launched at YCH's Ward D67 in December 2016 as well. SaP@YCH is a once-a-month collaborative effort across YCH Nutrition & Dietetics, Nursing, and Rehabilitation Services, and Population Health & Community Transformation. The programme was introduced to Ward D67 as it is an orthopaedic rehabilitation ward that cares for a high number of patients with lower limb fractures. SaP@YCH includes modified exercises and activities to include more upper limb involvement. Patients are also involved in supervised food preparation. Therapy Assistants also lead social activities in place of functional assessments.

To assess the impact of the programme, the team collected feedback from patients, many of whom enjoyed the soups, food preparation, as well as the exercises. Patients also indicated a greater awareness of SaP in the community, and a third were interested in joining it after discharge. YCH Therapy Assistants also felt empowered to lead sessions independently, while dietitians were able to test new soup recipes contributed by the community and glean feedback before including them in the official SaP recipe book. Currently, six of these new recipes have been tested and launched to community SaP sites.



Dietitian Karishma J Surtani teaching Skills for Life! @ Community participants how to make healthier choices when it comes to grocery shopping

Skills for Life! @ Community

Skills for Life! @ Community (SFLc) is a behavioural health intervention programme that empowers residents to live a healthier lifestyle through building their capacity, capability and confidence in adopting positive food and physical activity habits as part of their daily routine. Initially meant for Diabetes Centre patients, it has engaged anyone from the community since July 2017. The programme also aims to influence and encourage individuals to become healthy lifestyle advocates for a healthier community.

The programme is facilitated by nurses and dietitians from PHCT, sports trainers and programme executives, all of whom work together to equip participants with similar knowledge of the four health-promoting actions (see page 14).

Participants are involved in activities in an action-oriented environment. These activities range from learning how to cook a healthy dish to exploring ways to incorporate physical activity in their

HEALTHIER, THANKS TO SKILLS FOR LIFE!

Mdm Y, 60, was referred through the Community Nurse after screening showed that her fasting blood glucose was high (7.7mmol/L). The 55-year-old lady brought her husband to the session and they embarked on their health journey together. Mdm Y and her husband swapped 3-in-1 coffee for *kopi o kosong*, white rice for brown rice, and introduced 30 minutes of physical activity into their daily routine. After eight months, her fasting blood glucose dropped to 5.3mmol/L. She also initiated the programme within her neighbourhood and encouraged her friends to join.

daily routine. To encourage changes in lifestyle, participants are invited to bring along a friend or family member. Since its inception, SFLc has engaged 199 participants as of March 2019 from both Yishun Health and community sites (Wellness Kampung, Yishun Clover Resident's Committee, Nee Soon East, Canberra and Ace the Place Community Clubs, Toa Payoh Sports Complex, Al-Muttaqin Mosque and Central Sikh Temple). Importantly, an inspiring number of participants have made small yet sustained changes to their lifestyles and improved their health.

The *kampung* way forward in health

Yishun Health proactively supports and activates the community in sustaining healthy lifestyles, choices and habits. One of these key efforts is Wellness Kampung. Launched in 2016, our Wellness Kampung are located in three HDB void decks within the Yishun estate, and run by Yishun Health, St Luke's Elder Care, and Nee Soon grassroots organisations. These innovative spaces leverage existing community resources, partnerships and connections to enhance social interactions and drive health promotion efforts.

Between 75 and 90 residents drop by daily at the Wellness Kampung to exercise, cook, hang out with neighbours and friends, play games, do arts and crafts, attend health talks, and participate in festive gatherings. About 70% of Wellness Kampung programmes are planned and developed by the residents themselves, highlighting the empowering and enabling nature of the platform. By taking greater ownership of their space, residents feel a sense of belonging and are more willing to contribute to its activities.

WELLNESS KAMPUNG PROGRAMMES



30%

Exercise



27%

Social interest groups



25%

Food and nutrition



18%

Other activities

Project Silver Screen

Project Silver Screen is a functional screening exercise for Singaporeans aged 60 and above. It offers affordable screenings and subsequent follow-ups at accessible locations. The screenings are conducted in community spaces such as community centres, void decks and market spaces. This is aimed at promoting early detection of functional decline through opportunistic and scheduled screening.

For seniors with stable functionality, it enables continuity of care by providing not only regular screening opportunities, but also tips on how to maintain functional health. Seniors who require further attention are referred to the appropriate healthcare professionals for treatment and funding help.

After which, the level 2 screenings are conducted in mobile bus clinics located at Chong Pang Community Centre, Canberra Community Centre, Woodlands Galaxy Community Centre, Woodlands Community Centre and Woodlands Polyclinic. This collaborative effort sees Yishun Health leveraging existing services and partners for maximum care coverage.

Clean, green and healthy

Research proves that clean and green environments enhance wellness and recovery, support active and independent lifestyles, and play a role in preventing

the transmission of infectious diseases. At Yishun Health, we support living well not only through community and clinical programmes, but also through environmental conservation and consciousness through a wave of initiatives to support sustainable habits.

Last days of the straw

With the support of vendors, the public and staff of Yishun Health have made numerous moves to greatly reduce the use of single-use plastic straws over FY2018. It has resulted in a reduction of approximately 33,000 single-use plastic straws being disposed every month. Since January 2019, all F&B outlets have also started selling reusable metal straws as a green alternative for consumers who still need a straw. As of April 2019, more than 740 metal straws have been sold. These are some of the other initiatives that have been rolled out:

- F&B outlets put up awareness posters; kept plastic straws out of sight; provided straws only for some types of drinks
- i.Jooz orange juice vending machine cup now allows easy drinking without straw; plastic seal replaced with paper one
- Bettr Barista now sells reusable straws; rolled out 1-for-1 Bring Your Own Cup initiative; rolled out Give Your Cup Sleeve a Second Chance initiative to encourage customers to return clean cup sleeves

WHAT PROJECT SILVER SCREEN TESTS FOR



Vision and eye health

Seniors with vision and eye problems will be referred to community optometrists sited at 115 Wellness Kampung and NTUC Active Ageing Hub (Kampung Admiralty) for second-level screening and follow up specialist care where needed.



Hearing health

Seniors with hearing problems are referred to the NUHS Mobile Hearing Clinic (NUHS MHC) for a second-level full diagnostic hearing test and other follow-up tests, and will be further referred to SOC from the MHC, if necessary.



Dental health

Seniors with dental problems will be referred to NTUC Unity Dental buses for second-level follow-up and services such as scaling, polishing, extraction and filling. If dentures are required, they will be referred to NTUC Unity dental clinics.

TOTAL NUMBERS SCREENED

(data from 1 January 2018 to 1 March 2019)



Level 1 screening
(collaboration with Health Promotion Board vendors)

7,085



Level 2 hearing intervention

980



Level 2 dental intervention

575



Level 2 eye intervention

401

Reinforcing a water conservation mindset

Yishun Health commemorated World Water Day on 17 March 2019. The annual event drives both water conservation and environmental awareness through a yearly litter-picking session at Yishun Pond. To drive home the clean-and-green message, children from Little Skool House by the Lake gave a performance on water conservation tips. Guests and audience members, including Guest-of-Honour Er Dr Lee Bee Wah, Adviser to Nee Soon GRC GROs and MP for Nee Soon GRC, also recited a pledge to commit themselves to protect the environment.

Keeping community and campus clean

Yishun Health was an active participant in Keep Clean, Singapore!, the nationwide campaign organised by the Public Hygiene Council in May 2018. Staff also took part in several community-organised litter-picking events across Nee Soon GRC. In the same spirit, our Green Committee also held a Keep YH Clean! campaign across the organisation to encourage staff to keep shared areas clean for a more pleasant environment for patients and staff.



The volunteers for Keep Clean, Singapore! with the amount of litter they collected

Partnering City Developments Limited in sustainability

In FY2018, Yishun Health partnered City Developments Limited (CDL) in several environmental efforts. These included a Towards Zero Plastic event in conjunction with World Environment Day in May 2018, which was aimed at raising awareness on plastic pollution and the responsible disposal of plastic waste. Yishun Health supported CDL by donating 1,420 plastic bottles and joined in a session to set up one of their art installations at the Marina Barrage. In October 2018, two staff teams also participated in CDL's Sustainable Development Goals City Challenge in support of the United Nations Sustainable Development Goals.

Yishun Health Green Conference

In a nod to our long-held commitment to sustainability and environmental action, Yishun Health held its first Yishun Health Green Conference on 18 January 2019. It reinforced its Sustainability Movement, launched in January 2018 to align its service partners and suppliers to commit to sustainable practices. The Green Conference served as a platform to share knowledge, exchange best practices, and establish stronger partnerships to promote environmental sustainability within the healthcare sector. Guest speakers covered topics such as biophilic architecture, energy audits, and food waste reduction.

Turning food waste to fertiliser

A food digester was installed in KTPH in October 2018 to enhance our efforts to reduce and better manage food waste. The digester consists of a chamber for food waste where microbes digest the waste and convert this into compost within 24 hours. Thereafter, the compost can be reused as fertiliser in the garden, cutting down on waste and returning food scraps back to the food cycle.



Commemorating World Water Day 2019

ENGAGING THROUGH OUTREACH



On 27 January 2019, Yishun Health's General Surgery department, nurses and dietitians joined the launch of Never Alone, Singapore's first constituency-based cancer support and awareness movement, where residents who are cancer survivors are encouraged to befriend and support neighbours going through a similar journey.

Beyond Meatless Mondays, Yishun Health dietitians have begun to advocate for Wholegrain Wednesday so as to promote the goodness of unrefined grains. An initiative was launched on 13 March 2019 to introduce more wholegrain-based food at Foodfare@KTPH and patient menus. They also organised a cooking demonstration and tasting session for dishes with wholegrain ingredients by the KTPH and YCH Food Services teams.



Active ageing took on a literal meaning at our first Goldlympics, held on 23 March 2019 at Yio Chu Kang Sports Hall. Over 100 competitors aged 50 and above, from Wellness Kampung and community organisations, participated to showcase their strength, vitality and sportsmanship. The community sports event was jointly organised by Yishun Health, ActiveSG Masters Club, and Team Nila, and spearheaded by Yishun Health's PHCT.



In conjunction with World Happiness Day, Clinical Psychologists from the department of Psychological Medicine ran a week-long exhibition from 25 to 29 March 2019. Recharge My Joy aimed to raise the importance of rest and self-care. It emphasised the need to find ways to recharge, hence there were workshops for musical and dance performances, ukulele lessons, gardening tips, terrarium making, and coffee appreciation.



Over 300 people turned up for the Gastrointestinal Public Forum on 30 March 2019 to learn about gastrointestinal and colorectal cancer, as well as how to prevent them, recognise symptoms, and weigh treatment options. Organised by the General Surgery department, the event also boasted a live cooking demonstration and interactive educational booths.

IN PICTURES: CONNECTING AND EDUCATING



Occupational Therapists from Rehab Services set up an educational exhibition on 24 January 2019 to share the importance of leading a healthy and active life through meaningful day-to-day activities. These included daily physical, cognitive and social activities such as horticulture, Wii-Kinect and art & crafts.



The Yishun Health Falls Team organised an exhibition and series of educational events on 22 September 2018 in conjunction with Falls Awareness Day. For the public, there were booths highlighting and showcasing fall prevention factors, such as home safety, home exercises, eye conditions, reaction time, osteoporosis and nutrition. There was also a Falls Awareness Lecture and Workshop for staff on 24 September.



To raise awareness of the impact of diabetes on kidney health on World Kidney Day, the Yishun Health Renal Medicine team organised Kidney Health — For Everyone Everywhere on 12 March 2019. Held at the Kampung Admiralty Plaza, the exhibition was attended by more than 200 people.



On 8 November 2018, in observance of Stroke Awareness Day, the Stroke Care Team organised a staff-focused exhibition to share more technical and in-depth information about the multifaceted treatment and management of stroke with Yishun Health staff. Apart from challenging quizzes, there were also games. In one such game, staff tried to dissolve a 'blood clot' in the brain with a bolus injection.



To commemorate World Radiography Day and celebrate the 123rd anniversary of the discovery of X-rays, Yishun Health's radiographers set up a week-long exhibition. #123 Shades of Gray included a historical timeline of diagnostic technologies and interesting trivia on X-rays.



LIVING WITH
ILLNESS



EMPOWERED TOWARDS SELF-CARE

Living well with illness takes consistency and support — and helping people to do just that is what we believe in. This means going beyond providing episodic treatment and broadening the idea of healthcare from a ‘doctor knows best’ mindset to enabling people to self-care. Across our campus, we roll out holistic care approaches to support patients living with chronic illness, from community-based interventions and integrated clinical services to comprehensive psycho-socio-economic support to patient education, empowerment and capacity building.



The team from AdMC's Diabetes Centre aims to provide a One Care Plan for each patient to manage his or her diabetes, and is led by A/Prof S Tavintharan (third from right)

Working as one to manage diabetes better

The best approach to diabetes management is a holistic, transdisciplinary one that brings together multiple facets of care. At AdMC's Diabetes Centre, a team of doctors of various specialties, nurses and allied healthcare professionals has been developing relationship-based, integrated shared care plans with NHGP and GPs in our networks. This ensures that patients are well managed at the clinical level. More importantly, the team works with patients to equip them with the knowledge and skills to sustain good diabetes care in their daily lives. This approach helps to ensure that patients can live well with illness, slow down the progression of the disease, and reduce the risk of complications.

The Diabetes Centre sees about 5,000 patients a year, and attends to a spectrum of diabetes severity and complexity, from an early onset and stable disease to diabetes with multi-organ involvement and/or frailty. About 800 new referrals (a majority consisting of complex cases and complications) are made to the Centre annually; about half of these are from KTPH wards or Specialist Outpatient Clinics (SOCs), and about 16% come from Woodlands and Yishun Polyclinics.

Beyond caring for their patients at AdMC, the Diabetes Centre has also started to expand the scope of diabetes prevention and management to the wider community. In the north of Singapore, about 90% of patients with diabetes are typically seen in the primary care setting, such as polyclinics, where good care infrastructure and protocols are in place to manage patients well.

This partnership with the polyclinics further enhances care for this cohort of patients, keeps them stable, and retains the bulk of diabetes management in the community. This is done through

the One Care Plan. The goal of the One Care Plan is to:

- Work more closely with primary care providers such as polyclinics to reduce the progression of diabetes so that patients can continue to be cared for in the community
- Develop a structured framework of criteria and threshold so that patients can be appropriately referred for specialist care when necessary
- Provide a single care plan — under the ownership of a primary physician — that 'follows' a patient wherever he or she goes, whether at the wards, AdMC or polyclinics

Under the One Care Plan, the partnership of care between Polyclinics and the Diabetes Centre is strengthened. The Plan ensures seamless and consistent care as a patient's medical history, prescriptions and treatments are easily accessed and visible to all medical providers, regardless of the patients' physical location.

To complement this intensification of care at the primary level, the Diabetes Centre serves as a virtual extension of NHGP's Teamlet Care Model. This close collaboration and partnership with NHGP is achieved by means of easy access to teleconsultations and case discussions once every two months, even before patients reach the threshold for referral to the Centre. This means the AdMC Diabetes Care team acts as an additional safety net at the community level. It keeps care at the primary care level, backed up by the availability of prompt and timely access to specialist input.

WHO'S IN THE TEAMLET

Those with chronic illness can receive integrated and sustained management under NHGP's Teamlet Care Model. They have a regular healthcare team of two Family Physicians, a registered nurse Care Manager, and a Care Coordinator to coordinate care with Pharmacists, Allied Health professionals, hospital specialists, and community partners for a customised care plan that sees to their medical, emotional and social needs.



Patients at AdMC's Diabetes Centre will find educational posters and self-monitoring booths, such as the blood pressure station



LIVING WITH ILLNESS

To strengthen diabetes management at the primary care level, the Diabetes Centre is also building shared care partnerships with GPs and family physicians. With its philosophy that “every patient should have their own primary care physician”, the Diabetes Centre helps identify suitable family physicians who will be able to care for these patients with its partners. Depending on the clinical complexity, these patients could be discharged or co-managed with the family physician.



Supporting these endeavours is a range of capability-building programmes that bolster diabetes management skills across the primary care spectrum. These efforts elevate the overall quality of care to bring the spectrum of healthcare providers together as one in the battle against diabetes.

DIABESITY REVISITED — A PRIMARY CARE FOCUS

The AdMC Diabetes Centre organised the Diabetes and Metabolic Symposium 2019 at Sheraton Towers Singapore on 25 January 2019. Named Diabesity Revisited — A Primary Care Focus, the event was targeted at healthcare professionals and attended by approximately 300 GPs, nurses and allied health professionals. The transdisciplinary team, comprising Yishun Health doctors, dietitians and psychologists, shared on Diabesity (in reference to the relatedness of diabetes and obesity), its complications, as well as risk stratification and management options. Participants then attended breakout sessions in the specific areas of nutrition, psychology, therapeutics and surgery for more in-depth learning.

Getting SMART about community health

Driving self-management and right-siting as well as maximising community support and resources is the way forward to build health resilience and patient empowerment.

To this end, the Self-Managed Autonomous Regional Team (SMART) was started in 2017. SMART is a

geography-based initiative that covers the Yishun, Woodlands and Sembawang zones, and comprises community nurses and healthcare assistants who proactively conduct home visits for residents referred by community partners. In FY2018, SMART conducted home visits for 280 residents. They also saw almost 2,000 residents across 20 Community Nurse Posts (CNP) for chronic disease monitoring, health action coaching, and geriatric assessments.

They engage residents:

- In chronic disease management and health action coaching at CNPs
- By connecting them with resources in the community
- Through building self-care capability and capacity of residents, their families and community

The approach is known as the 2S+2C Model of community nursing (refer to infographic on page 25).

This approach means nurses are able to develop a deeper understanding of each patient’s specific medical, social and even familial and financial circumstances. They have the autonomy to manage their work, customise care plans, and make joint decisions with clients in their care. For example, SMART nurses may jointly decide with their clients to cut down on less essential medication. They may also link them up with social support services. This de-medicalisation of care makes care more ground-up and community-based, and encourages patients to be more active participants in their own health.

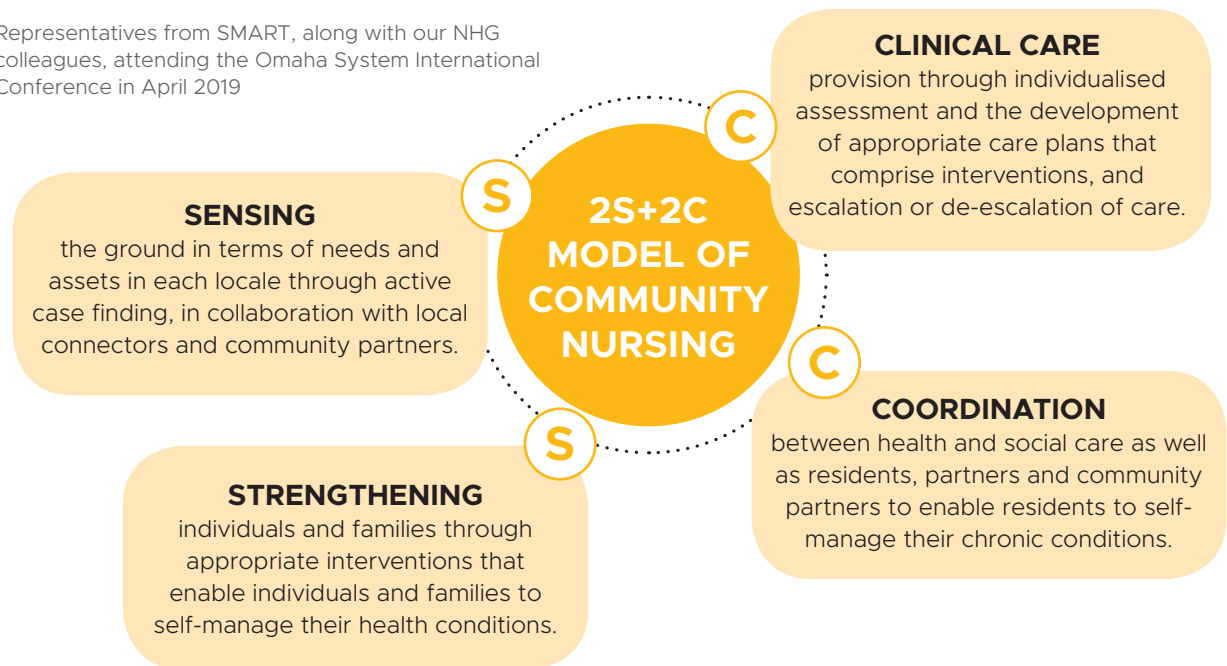
In FY2018, SMART adopted the Omaha System, a licence-free and research-based standardised nursing terminology and documentation that comprises:



Representatives from SMART, along with our NHG colleagues, attending the Omaha System International Conference in April 2019



Our SMART nurses presented a poster on 'Experiences of Community Nurses in Adopting the Omaha System among Diabetic Residents in Northern Singapore'



- An assessment component that organises assessment for individuals, families and communities in a consistent and standardised manner
- A care plan and services component that organises multidisciplinary practitioners' care plans and the services they deliver
- An evaluation component that evaluates the change in the care recipient's condition over time

The author of the Omaha System reference guide and chair of the Omaha System Board of Directors, Ms Karen Martin, was invited to Singapore in August 2018 for a week of training and discussions with Yishun Health and NHG Community Nursing teams. This training was made possible by the Alexandra Health Fund Visiting Expert Fund. After the training, SMART worked on incorporating the electronic documentation of the Omaha System in the existing Ageing-in-Place System. This enhancement was completed and went 'live' in April 2019, making documentation much easier for our Community Nurses.

CASE STUDY

Community Nurses first met Mdm Aw and her husband when they made a joint home visit with staff from TOUCH Community Services Seniors Activity Centre (SAC). During the visit, it was discovered that Mdm Aw, 69, had difficulties managing 16 types of medications. She also had multiple medical appointments at different institutions. Her mood was low, and she had strained relationships with her husband and children. Over about six months of follow-up, SMART simplified her medications, consolidated her medical appointments, and provided emotional support to her and her husband. Mdm Aw's mood improved and she began to self-manage her conditions. She and her husband now volunteer regularly at the SAC, and actively participate in various community activities, including the recent Goldlympics, Yishun Health's senior sports day (see page 19).



To commemorate World Diabetes Day, calligrapher Mr Jimmy Koh (third from right) presented a Chinese couplet that translates to: "A healthy body makes you feel strong, so do not wait and worry about your health in old age."

A SMART collaboration with AdMC's Diabetes Centre

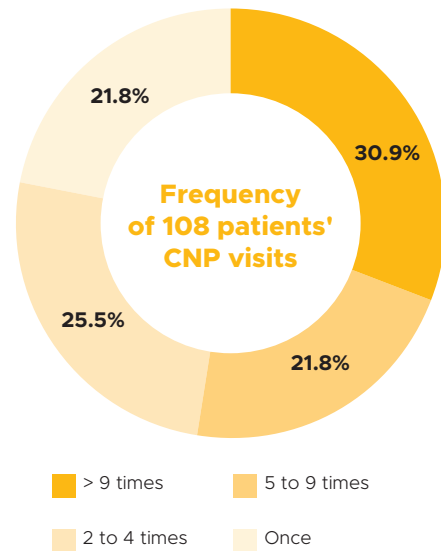
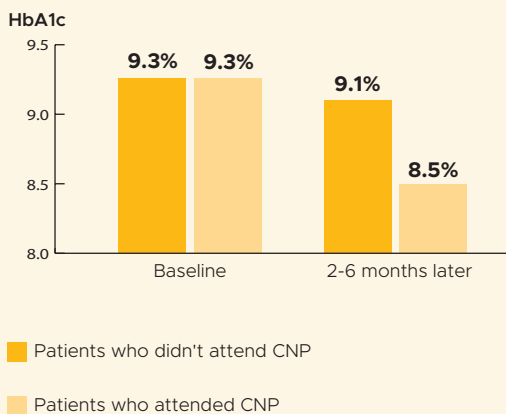
Since early 2017, AdMC's Diabetes Centre has worked with PHCT, consisting of CNP and SMART, to enhance diabetes care.

Patients, particularly those requiring assistance with the monitoring of blood sugar and blood pressure, were referred to either CNP or SMART. There were thus more people to ensure that patients receive the support they need when they

are at home. Through care protocols, real time telecommunication, monthly case discussions, and diabetes care training, the community team is able to escalate care where needed and obtain advice on difficult-to-manage diabetes.

The seamless care has helped to establish sustained management of chronic diseases beyond the hospital and clinics, allowing community nurses to initiate timely adjustments to lifestyle and medication.

IMPROVEMENT OF BLOOD SUGAR LEVELS (HbA1C)



For example, between February 2017 and January 2018, 108 patients, with a mean age of 62.8, were referred to CNP under this care integration. It was found that collaboration between the CNP team and AdMC diabetes team led to improved glycaemic and blood pressure control.

In FY2018, this collaborative effort was extended to patients with high blood sugar from the polyclinics. This entailed regular lunchtime Continuing Medical Education and case discussions between AdMC’s Diabetes Centre and medical teams from Woodlands and Yishun polyclinics.

A family effort

To underscore the importance of support, Yishun Health commemorated World Diabetes Day with an event themed ‘The Family & Diabetes’. Held at the Kampung Admiralty Plaza on 3 November 2018, it was a day dedicated to showcasing the multidisciplinary nature of diabetes management through five interactive multisensory booths. Each booth was a way to show and remind participants of the far-reaching consequences of diabetes, such as diabetes-related eye complications.

Excellence in sight

The management of eye disease is more than about treatment. It is moving upstream to spot problems at their early stages. As our population ages, incidences of eye conditions will rise. At Yishun Health, we have taken a concerted approach to holistically address eye care across the spectrum, from improving prevention to updating surgical protocols.

Community & Home Eye Screening Service

Regular mass eye screenings do not reach out to all in the community, particularly the elderly and frail. To fill the gap, Community & Home Eye Screening Service (CHESS) was launched in February 2017. It brings together the expertise of our Ophthalmology & Visual Sciences (OVS) department and the PHCT teams in the early

detection and treatment of eye conditions in elderly residents.

By improving access to eye care through screenings and consultations, it aims to identify and treat eye diseases early. CHESS targets residents aged 50 and older, and persons with diabetes of any age who do not have follow-up appointments with an eye doctor and have not seen one in more than a year. CHESS contributes to our overall strategy to provide lifelong care and leverage community healthcare teams in Yishun.

Since its launch, CHESS has grown to provide more comprehensive levels of eye care and treatment, and has expanded its scope from the provision of First-level Community Eye Screening (FiLCES) and Second-level Eye Consultation (SeLEC). Since October 2018, SeLEC has evolved to become the Second Level Eye Care Team (SeLECT). This enhances the eye care treatment to a team-based one.

SeLECT is a transdisciplinary collaboration that involves various departments coming together for a new care model. This model seeks to:

- Increase accessibility of community eye care using trained nurses and optometrists, leverage existing resources — such as KTPH and AdMC Optometrists, Ageing in Place Community Care Team (AIP-CCT) and NTUC Health Active Ageing Hub — and optimising these for greater cost effectiveness
- Train and accredit AIP-CCT and PHCT nurses to perform FiLCES with a flipped classroom model. This comprises blended learning (e-learning and face-to-face sessions) and hands-on training sessions on Visual Acuity Testing. Nurses must achieve a score of at least 80% for accreditation
- Train and accredit community optometrists to perform SeLEC under an ophthalmologist’s supervision via telemedicine

From February 2017 to March 2019, 9,984 residents underwent FiLCES. Out of these, only 5.7% of them required a specialist referral while the rest remained in the community for the management of their eye conditions.

Date	First-level Community Eye Screening (FiLCES)			Second-level Eye Care Team (SeLECT)			
	Total residents screened	Referred to SOC via GP/ polyclinics	Referred to optician for spectacles	Referred to SeLECT	Total patients seen	Referred to SOC via GP/ polyclinics	Direct subsidised referral to SOC
February 2017 – March 2019	9,984	304	1,927	2,807	600	207	60
One or more eye condition(s) detected (304 + 1,927 + 2,807 = 5,038)							

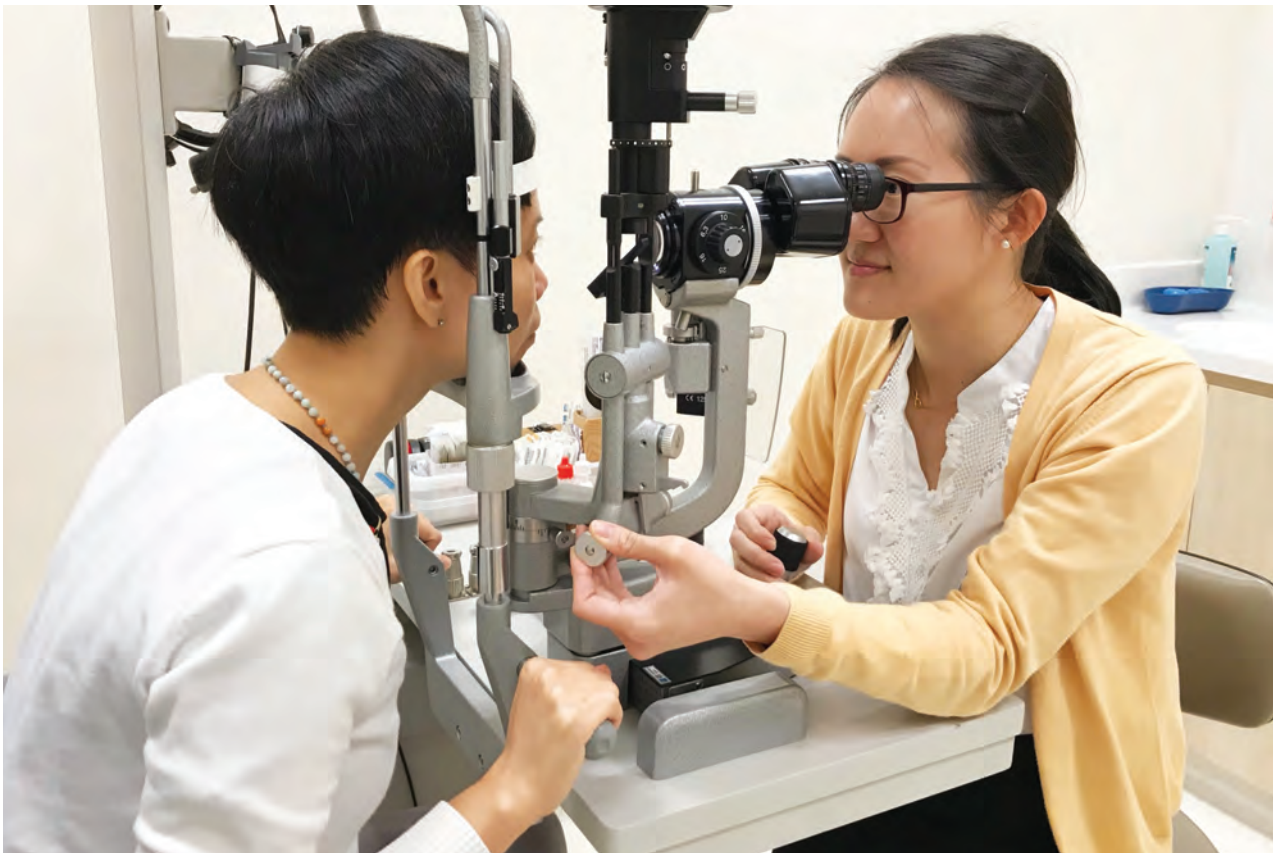


Supplementary Primary Eyecare Clinic

Complementing its eye care efforts, the OVS department also started Supplementary Primary Eyecare Clinic (SPEC) in 2017 for eye clinic patients with stable eye conditions that only require observation and minimal intervention. The collaborative, capacity-building effort utilises and trains optometrists as physician extenders under a joint accreditation programme with Tan Tock Seng Hospital to manage stable eye conditions. This frees up appointment slots for new or urgent cases, and allows the ophthalmologists more time to manage complicated eye diseases. At the same time, it ensures that stable patients receive seamless integrated care.

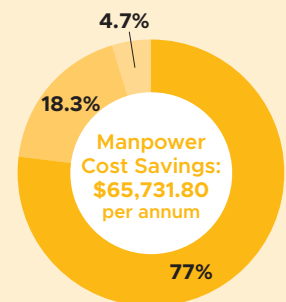
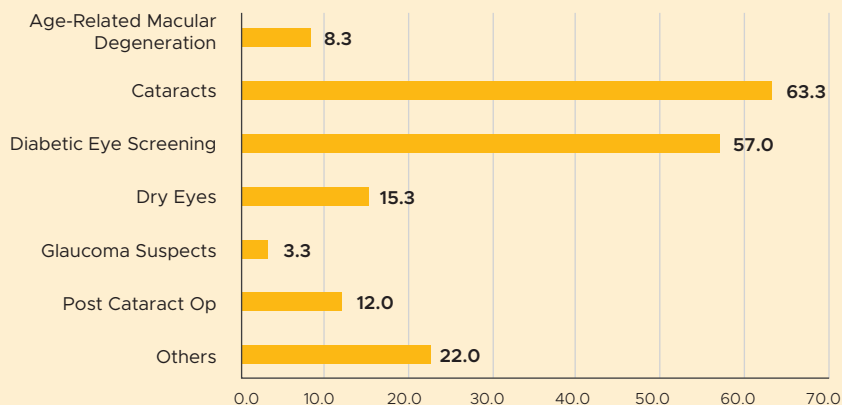
Since it began, SPEC has trained five optometrists, all of whom met high accreditation standards, scoring higher than the passing mark of 90%. They saw 300 patients between July 2017 and March 2019, freeing up the same number of new cases in the general eye clinic. This has resulted in a shorter lead time for the Eye Clinic, from 42.17 to 28.17 days.

Another advantage of SPEC is that trained optometrists have also been deployed to CHES, maximising their impact.



SUPPLEMENTARY PRIMARY EYECARE CLINIC (SPEC)

Proportion of Eye Conditions Seen in SPEC (%)



- SPEC-managed
- Referred to specialist clinic
- Discharged

Less for more:

The Lean Cataract Surgery Care Path

The OVS department sees about 2,700 cataract cases a year. To enhance the patient care experience, a transdisciplinary unit — comprising OVS, Anaesthesia department, Day Surgery Centre,

and Nursing — has collaboratively transformed the cataract surgery process. The team studied the workflow of the care path for Cataract Surgery Under Regional Anaesthesia (CSURA) and implemented four changes:

1 Using a kimono wrap instead of full operating theatre (OT) attire

The full OT attire (disposable gown) takes time to put on and adds to the patient’s consumables bill. The kimono wrap is sufficient to meet infection-control needs for those who go for uncomplicated CSURA.

	Before: disposable gown	After: kimono
Time Spent	10–20min (before and after)	4min (before and after)
Total time Savings per Patient	16min	

	Complicated CSURA	Uncomplicated CSURA
Disposable gown (OT attire)	\$7.20	Not Applicable
Laundry cost for kimono	Not Applicable	\$0.60
Total	\$7.20	\$0.60
Total Cost Savings per Patient	\$6.60	

2 No need for fasting before surgery

Traditionally, CSURA requires a six- to eight-hour fast before surgery where sedation is required. If patients forget to do so, surgery may be cancelled or delayed. However, as a majority of CSURA patients do not require sedation, patients are not required to fast anymore if they fulfil the inclusion criteria.

3 Doing away with non-critical pre-operative investigations

Traditionally, electrocardiograms and blood tests were done as part of the pre-operative process. Based on evidence, these tests were proven to be unnecessary for a selected group of patients and have been done away with — for greater cost savings for them.

Uncomplicated CSURA	Before	After
Blood Investigation (Renal panel with glucose)	\$40.40	\$0
Electrocardiogram (ECG)	\$14.00	\$0
Total	\$54.40	\$0
Total Cost Savings per Patient	\$54.40	

4 A faster, more cost-effective eye drop

The multi-step Eye Drop Instillation regime was pared down. Using a new Combo-R eye drop, the

process has been streamlined, cutting down on the number of times that eye drops need to be given. This saves effort, time and money.

Before		
Eye Drop	Time (min)	Frequency
Amethocaine 0.5%	5	1 drop
Tropicamide 1%	15	3 drops (5min interval)
Phenylephrine 2.5%	5	1 drop
Ketorolac 0.5%	15	3 drops (5min interval)
Total	40	8 drops

After		
Eye Drop	Time (min)	Frequency
Amethocaine 0.5%	5	1 drop
New mixture of dilating drops (Tropicamide 1% + Phenylephrine 2.5%)	15	3 drops (5min interval)
Total	20	4 drops

	Before	After (Combo-R)
Pre-dilation eye drops per case	40min	20min
Total Time Saved per case		20min
Projected Time Savings per year	60,000min / 1,000 hours of time savings per year	



Raising the level of sub-acute care

Sub-acute care gives patients the space, time and support to recover, recuperate and rehabilitate after acute care needs have been settled. YCH runs a comprehensive range of programmes to get people back on their feet. This means not just tending to physical health and functional wellness, but patient's emotional and psychological well-being too.

Faster stroke recovery through walking

YCH's Let's Walk programme is an initiative started in March 2018 by the Rehabilitation Services team. It aims to increase the walking duration and distance of stroke patients while they are recuperating in hospital.

Stroke patients do not walk enough during hospitalisation at YCH, one reason being the lack of confidence and supervision. However, walking is the most important outcome after a stroke because it is the most common objective for all patients undergoing rehabilitation. Patients who are able to walk have a lower likelihood of being placed in nursing homes upon discharge. Walking also has protective effects against common secondary complications after a stroke.

Apart from getting patients active and more confident about walking in a safe environment under supervision, Let's Walk achieves therapeutic benefits. It enables patients to apply what they have learned from therapists, such as gait practice, and helps them improve walking speed and endurance.

Let's Walk is an individualised, structured walking programme led by a Therapist Assistant. Each eligible patient is encouraged to walk along the D97 and D98 ward corridor for 30 minutes. To be eligible, patients must:

- Have active ambulatory goals
- Require minimal assistance, with or without a walking aid
- Be able to follow simple instructions
- Be medically stable

To date, the Let's Walk team has seen considerable improvement in total time as well as total distance spent walking. Over 12 months, 30 Let's Walk patients were studied. They were classified into two groups:

Functional walkers: Able to walk with minimal assistance and can be managed by nursing staff

Chair-bound walkers: Limited walking ability, and only during supervised therapy sessions

The functional group achieved an increase of 20% in time spent walking (47 minutes) and about 1.5 times increase in total distance walked, covering 640m, compared to patients who would have qualified but did not participate in the programme. The chair-



Let's Walk is an individualised, structured walking programme for stroke patients led by a Therapist Assistant

bound group achieved a 50% increase in total time spent walking (15 minutes) and covered a total distance of 120m.

Therapy Assistant-Led Group Therapy

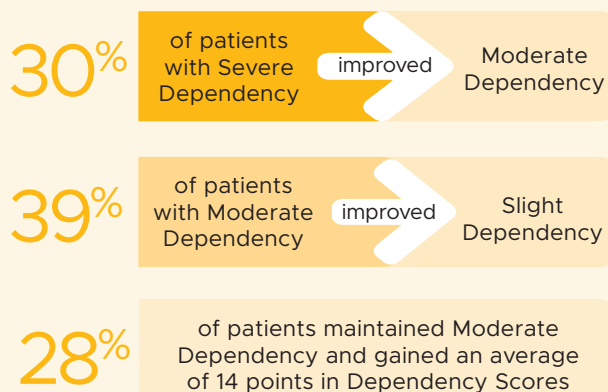
Changing demographics and an ageing population have led to increased patient admissions. However, this rise has not necessarily been matched with a proportional increase in therapist manpower. To better meet rehabilitation needs, the Rehabilitation Services team has found creative solutions and adopted a one-to-many approach in the form of Therapy Assistant-Led Group Therapy (TAG).

TAG was implemented in January 2017 in two rehabilitation wards in YCH. It aims to increase efficacy in patient care by maximising a patient's rehabilitation potential and maintenance of their current functions while maintaining effectiveness of a therapist's time with patients.

Physiotherapists determine suitably fit patients for the programme and set the level of difficulty of the exercises according to the patient's rehabilitation objectives (maintenance, strengthening, balance and/or engagement). The patient is then referred to a group, where the TAs are empowered to conduct a fixed set of general strengthening and balance exercises. Each TA supervises three patients over the 90-minute programme.

Since its implementation, 183 patients have taken part in TAG, with a total of 767 attendances. Feedback a month after implementation showed that TAG had helped YCH physiotherapists provide a higher level of care for patients with higher complex needs, effectively saving up to three times the manpower required to otherwise deliver the treatment in a 1-1 model. Patients also reported a positive experience. Since March 2017, TAG has been implemented in another two wards in YCH.

Therapy Assistant-led Group Therapy Between July 2017 and July 2018 (total of 74 patients):



Scheduled Group Activity Engagement in the geriatric acute care ward

Geriatric patients are at a higher risk of functional decline related to acute illness and prolonged bed rest during hospitalisation. The resultant functional decline often persists post-discharge, and is associated with further deterioration in cognition, mood and activities of daily living. This increases the likelihood of hospital readmission. In order to lower the risk of functional decline in elderly patients during acute hospitalisation, a more coordinated and multidisciplinary approach to care is needed to increase their participation in rehabilitative activities.

Scheduled Group Activity Engagement in the geriatric acute care ward (SGActiveE) was started to provide more activities for these patients while at KTPH. SGActiveE is part of the Cognition 6th Vital Sign Initiative in KTPH (see page 55), which was formed in July 2018 to formulate care standards and a care protocol for frail older patients with cognitive impairment (dementia/delirium) in the hospital. It also aims to improve meaningful engagement and well-being of elderly patients through scheduled group activities in the ward.

The multidisciplinary team came together to establish patient suitability criteria and develop a structured activity plan with facilitation. These activities include creative art, jigsaw puzzles, crossword puzzles, as well as games for gross motor function. Patients were

also engaged in reminiscence work and the simple pleasure of social interaction. The initiative also engaged Sunshine Buddy Volunteers, who work closely with the occupational therapists and staff nurses in the ward, to facilitate group activity engagement for patients at KTPH.

This has led to more patients who sat out of bed and participated in activities (from 10.6% to 23.05%). There was also more constructive engagement and a decrease in passive engagement, non-engagement and self-engagement during group activity periods. As for emotional effects, patients' general alertness and pleasure rose, while anxiety/fear and sadness decreased. Staff, too, reported greater levels of satisfaction, professional recognition, collaboration and teamwork with colleagues.

Garden by the bed

Yishun Health's garden setting is well known. However, the gardens are not accessible to patients with medical instability and poor activity tolerance. Thus, the mobile horticulture initiative was started by the hospital's occupational therapists to make horticulture accessible to all patients. Mobile horticulture kits are brought to the bedside for therapy and activity engagement by the therapists, staff nurses and volunteers.

The use of the kits improves patients' engagement, mood and motivation to be out of bed — in fact, 97% of patients are motivated to move up from baseline positions, meeting therapy goals to maximise physical functions and activity tolerance. The scheme has been implemented in geriatric Wards D87, D78, B56, B65 and B66. The Mobile Horticulture Project was awarded the Rapid Prototyping Grant in 2017.



Garden by the bed: mobile horticulture kits are used as a form of therapy



Social, mental and emotional support

When the crisis phase of an acute illness is over and the patient is stable enough to return home, it is only the start of another journey. Yishun Health's holistic approach to care ensures that other aspects of health are addressed. These include factors such as socio-economic wellness, mental resilience, psychological support and more.

Adding value to social care

At YCH, the Medical Social Services (MSS) team, comprising Medical Social Workers (MSWs) and Social Work Assistants (SWAs), proactively supports patients with potential social risks to avoid escalation and remedial work. Since YCH opened its doors in 2016, demand for social services and intervention has been increasing.

To meet this increasing demand, the MSS team re-evaluated job roles within their department. It was found that MSWs spent an average of 3.5 hours per patient on discharge care planning, leaving less



RESULTS OF REDESIGNING ROLES IN MSS TEAMS:



1.3

Hours per day saved:

More time for advocacy, mediation, counselling, violence work, community networking



\$5,206.96

Annual time-cost saved per teamlet



Positive feedback in wards



Greater empowerment among SWAs



Increased scope for coaching among MSWs

time for counselling, mediation work, and liaison with multiple agencies for socially complex cases. The job scope of SWAs, on the other hand, were largely administrative. During this re-evaluation process, the team found that the SWA role could be restructured for better efficiency.

This led to the creation of a MSS Teamlet for each ward, comprising a MSW and a SWA. Known as the Social Work Assistant Redesigned Team, it has been implemented in all subsidised wards in YCH, and cases are triaged based on social complexity. MSWs manage the socially complex cases, providing psychosocial support, discharge planning, and short-term counselling. For straightforward cases, SWAs do preventive work by providing care coordination to ensure that patients and caregivers receive sufficient support in the community upon discharge. This creation of a new social care model in the community hospital setting allows the team to strengthen the aim of early detection of social issues and provide timely intervention. To support this model, the team developed SWA in-service training to standardise SWA work practices, and formulated standard work instructions to guide practices.

In celebration of MSWs

On 4 March 2019, MSWs from Yishun Health launched a week-long exhibition in conjunction with Social Work Day 2019. The exhibition highlighted the roles and work of the MSWs, and was a platform to share real patient experiences. One of the highlights was a touching series of stories on how their work has impacted lives and helped patients through challenging moments.

Psychiatry support for patients of HCA Hospice Care

KTPH’s Psychological Medicine (Psy Med) embarked on a collaboration with HCA Hospice Care in July 2018 to deliver mental health support for patients in HCA’s Home Hospice Care (HHC) programme.

The HHC programme is a service staffed by a multidisciplinary healthcare team. HHC provides round-the-clock medical, psychosocial and caregiver support to clients island-wide. This service allows for patients with life-limiting illnesses to be cared for in the comfort of their homes, in the presence of their loved ones.

Many of these patients may have mental health needs, either preceding their life-limiting illnesses or related to such illnesses. They do not engage with healthcare through conventional inpatient or outpatient settings, limiting their access to mental health services.

Through this collaboration, a KTPH psychiatrist joins the HHC multidisciplinary team once a month to review and manage patients identified by the HHC team to have mental health needs. These home-based reviews offer a higher quality of care as the understanding of patients’ clinical issues is enriched by directly observing the interactions between the patients and factors in their living and care environment.

The KTPH psychiatrist rotates through HCA centres in successive months, providing coverage for HHC clients in different areas of the country, such as in Woodlands and Bedok. In addition, the Psy Med department has also extended ad hoc support to HCA for patients requiring urgent reviews.

This collaboration also better equips the HHC team in managing common mental health issues encountered in the course of its work through knowledge sharing during home reviews and monthly multidisciplinary meetings.

To date, 20 HHC clients have benefited directly from home-based assessments. Many others have benefited indirectly through refinement of care plans after multidisciplinary case discussions with the KTPH psychiatrist.





CAN-DO: Capacity Assessments at the Nursing home, Done On-site

Psychiatrists are often asked to perform assessments of mental capacity for patients with mental illness and/or cognitive impairment. For instance, does someone with dementia have the testamentary capacity to understand and make decisions about his/her will?

Nursing homes (NH) conventionally send their residents requiring mental capacity assessments to the hospital SOCs for this service. When these NH residents require assessments of mental capacity, the current workflow involves many steps.

To streamline the process and reduce confusion for NH residents, the KTPH Psychological Medicine team has initiated a more patient-centred workflow, with the psychiatrists doing the assessments on-site.

CAN-DO: A NEW SOCIAL CARE MODEL

Previous model	New model	
<ul style="list-style-type: none"> An appointment has to be made with the SOC. Cost is incurred for the booking of ambulance. A nursing aide is also deployed to accompany the resident for the appointment. The resident, who may be cognitively impaired, may be prone to disorientation and confusion from being in an unfamiliar environment. This affects the accuracy of the assessment. The nursing aide accompanying the NH resident may also be unfamiliar with the resident’s condition, baseline and social background. 	<p>KTPH psychiatrists visit nursing homes to conduct assessments on-site</p>	<p>Better</p> <p>Quality and ease of assessment </p> <hr/> <p>Faster</p> <p>Turnaround time for an appointment reduced from 45 days to < 1 month </p> <hr/> <p>Cheaper</p> <p>Cost reduced from \$324 to \$166 </p> <hr/> <p>Safer</p> <p>Same-day reporting is more accurate </p>



Raising competencies among our communities

We play an enabling role in raising the level of health knowledge and skills so that patients, families, caregivers, the general public, and our healthcare colleagues can step up to the plate and build a healthy and enabled community.

Alleviating the pressure of pressure injuries

Yishun Health's Pressure Injury Workgroup was formed in May 2016 in response to a small but growing problem of pressure injuries. Since then, it has grown to an organisation-wide movement that makes pressure-injury prevention and management a standard component of overall care plans.

Over the years, the Workgroup — which comprises doctors, nurses, physiotherapists, occupational therapists, podiatrists, dietitians, and respiratory therapists — has not only raised awareness of the problem, but also trained healthcare staff in prevention and management, and equipped caregivers with the same skills.

Following on the heels of this was STOP Pressure Injury, an in-depth event for staff and community partners. The full-day event, held on 29 November 2018, went beyond Yishun Health to also include our partners in the community care sector. Four plenary sessions and three skills workshops were held to bolster the proficiency of healthcare workers in the area of pressure injuries prevention and management.

Mr Emilio Galea, International Medical Director of URGO Medical, gave the keynote address. He was joined by other experts, who expanded on the topic

and shared useful ideas on good pressure-wound care. Participants also attended practical sessions to try pressure injury devices, learn wound-dressing methods, and use a pressure-mapping system to ensure proper seating position to lower the risk of pressure wounds.

Making foot care a priority

Foot health is a critical aspect of diabetes care, elder health, fall prevention as well as general comfort and health. To raise awareness of these issues and integrate foot care as part of overall care plans, Yishun Health's Podiatry team has rolled out a wide number of initiatives.

A visual guide to better running

Working with the Sports Medicine Centre, the Podiatry service has introduced video gait analysis and a running re-training programme. Video gait analysis is an intervention that is used to study and identify ways to improve one's running technique.



Dr Mansha Khemlani, Head of the Pressure Injury Workgroup (second from left), with some of its members



Part of the STOP Pressure Injury event was held at AdMC, where members of the public could try out equipment that helps with pressure injuries



The Podiatry team, with Ms Chelsea Law, Manager and Principal Podiatrist (sixth from right)

Runners are videotaped while running on a treadmill and the footage is analysed for faulty movements or inefficiencies. The podiatrist then recommends strategies to tweak and retrain techniques to manage injuries. This intervention is typically employed when the patient's condition persists despite first-level podiatry treatment.

KTPH is one of the few hospitals in Singapore to provide such Podiatry services, and the first hospital to provide running retraining. To date, since its inception in late 2016, the service has managed more than 160 runners, helping them to return to the sport they love.

Working in and with the community

The Podiatry Clinic at AdMC's Diabetes Centre has become an important platform for working with the community to deliver relationship-based healthcare and lifelong care. Apart from providing regular outpatient podiatry services such as diabetes foot screenings at AdMC, services have been extended to the Primary Care Network. The Podiatry team also regularly takes part in community outreach events.

Extending podiatry services to the Emergency Department

In bid to improve patient access to podiatry care and reduce unnecessary admissions for podiatry-related conditions, Podiatry services have been deployed to the Emergency Department (ED). This helps to move care upstream, prior to admission. By offering podiatry interventions on-site at the ED, patients avoid unnecessary admissions, receiving quicker access to care, and leading to greater satisfaction for patients.

During the pilot phase from October 2017 to October 2018, a total of 36 patients were referred to the podiatry service in the ED, resulting in total savings of \$21,450. This initiative also came in first



place in the Better category of Yishun Health's Kaizen Festival this year.

Hand-in-hand for good foot care

Since 2016, the Podiatry team has worked with community partners and nursing homes to raise the level of podiatry care and skills. Since holding their first nail care competency workshops for nursing home staff at the Singapore Christian Home three years ago, the team has conducted many more trainings.

To date, 30 nursing home staff have been trained in providing basic nail and foot care. This effort has reduced healthcare costs as external podiatrists are no longer needed to provide nail care services at these nursing homes every quarter. Future plans include increasing training frequency to twice a year, providing refresher courses for previous trainees, and extending training to more nursing home partners, community nurses, healthcare assistants and caregivers.



Joint consultations for more coordinated care

Diabetic foot complications can be complex and require coordinated care from multiple disciplines. This often results in numerous outpatient appointments. This is inconvenient and adds to a patient's financial costs.

For a more cost-effective and integrated approach, the Podiatry service has collaborated with various disciplines to run a joint consultation clinic with a medical or surgical specialist, and a podiatrist. The single session allows better communication between the patient and healthcare professionals for a more concise care plan. Over a 12-month period, this model benefited 87 patients, saving them \$1,410 on average.

Of sports, active living, and moving pain-free

The KTPH Sports Medicine Centre is a multidisciplinary centre that supports people to remain active throughout all stages of life. It offers various services within and beyond the hospital to serve the active, exercising and sporting community.

In FY2018, the team grew in terms of new services, outreach and patient numbers. For instance, it expanded its acupuncture service beyond KTPH to AdMC. Going forward, the centre plans to include general sports medicine care so that active seniors in the North can receive care at Kampung Admiralty.

Another service that saw growth is the ultrasound-guided injection, which benefited more patients over the past year. Apart from ultrasound-guided injections for corticosteroids and other drugs, the team added spine injections, including facet joint and



nerve root blocks, to the suite of ultrasound-guided procedures. This service was recently enhanced with the acquisition of a high-end ultrasound machine.

At the same time, the Sports Medicine Centre has remained committed to its partnership with Sport Singapore in caring for national athletes, with our sports physicians holding key leadership positions in the Commonwealth and Asian Games in 2018. The centre was also given the privilege of providing medical care to world class athletes during the Women's Tennis Association Finals in October 2018, and SMBC Singapore Open in January 2019. This is in addition to their continued work in the local sporting scene (combat sports through WAKO Kickboxing Singapore, and strength sports through Powerlifting Singapore and Singapore Weightlifting Federation).



The Sports Medicine Centre conducted the second run of the Orthopaedic and Sports Medicine Masterclass series in FY2018. The series aims to equip family physicians with basic knowledge and skills for their daily practice. Together with the Alexandra Academy of Clinical and Emergency Sonography, the centre has also directed the musculoskeletal series of ultrasound courses, which are recommended for local sports physician specialist training.

The centre also continued to be active in the teaching of orthopaedics to medical students at the undergraduate and postgraduate levels (Graduate Diploma in Sports Medicine) at the Lee Kong Chian School of Medicine, NTU. The centre was also designated as an elective site for the NHG rehabilitation medicine residency programme. As for public education, it organised two forums this year, themed around combat sports and traditional Chinese medicine respectively.

FROM LEFT: From Sports Medicine, Dr Shauna Sim, Registrar, and Dr Dinesh Sirisena, Consultant, at the SMBC Singapore Open in January 2019



CRISIS AND
COMPLEX CARE



INTEGRATED CARE IN ACTION

When it comes to critical and crisis care, Yishun Health believes in a right-sited, integrated approach. This means providing efficient, value-adding and appropriate care for acute and complex medical problems. In addition, care must extend along the spectrum to support patients on their journey to recovery. To achieve a person-centred patient experience, we have implemented a wide range of improvements, new services, and innovative models to tackle crisis and complex care.

CHOP: A timely improvement to treat trauma

KTPH's Acute and Emergency Department, also known as the Emergency Department (ED), attends to an average of 1,200 trauma patients a year. A third of them are severe or critical injuries and classified as Tier 1 category traumas. In Singapore, this puts KTPH's A&E in the second-highest spot for Tier 1 traumas in FY2018.


A majority of these injuries are due to blunt trauma from road traffic accidents or falls from height. As these injuries often involve more than a single organ or system, and have the potential to deteriorate rapidly, there is a critical need for speedy multidisciplinary trauma care. This brings together a wide range of medical specialties — from Emergency Medicine and General Surgery to Orthopaedic Surgery, Anaesthesia and Interventional Radiology — to stabilise patients for surgery.

Adding to this challenge of early definitive care, there is a need to factor in:

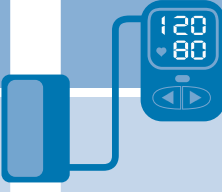
- Logistical coordination with the various specialists
- The mobilisation of appropriate resources
- Time-sensitive and high-stress circumstances
- The need for a dedicated 'after hours' trauma team (over 60% of cases occur after office hours)

To address these issues and better facilitate the recognition, escalation and mobilisation of resources for severely injured patients, and ensure timely access to surgery, General Surgery and ED

CHOP PROTOCOL CRITERIA




CHOP is activated for severely injured trauma patients who present with at least two of these criteria:





Blood pressure:
>90mmHg

Heart rate:
>120 beats per minute

Presence of penetrating injuries to head, neck, torso or limbs



Scans showing fluid in the stomach or chest

developed the Critical Haemorrhage to Operation Room Patient (CHOP) Protocol. It targets critically injured trauma patients or those who have potential severe bleeding. It identifies at-risk patients early, activates trauma surgeons in a timelier manner, and initiates early resuscitative measures such as blood transfusions to address and arrest severe bleeding as quickly as possible.

The CHOP Protocol, adapted from international trauma intervention models, quickly identifies critical patients and kicks off second-tier activation. It automatically begins a chain of calls to a General Surgery Consultant, Anaesthesiologist/Intensivist, and an Interventional Radiology Consultant, all of whom must be ready within five minutes. If necessary, a backup General Surgery Trauma Consultant is also contacted. Operating theatre staff are also activated to stand by, and blood packs are immediately sent to the resuscitation area.

The CHOP Protocol was first implemented in March 2018 in KTPH. To familiarise the team with the protocol, the team undergoes regular inter-professional CHOP trauma team simulation training, called In-situ Simulation for Trauma Education. There, simulations are done in the ED to enhance teamwork, communication, decision-making, leadership and task performance.

Another programme is SAFE-KIT, a one-day event that comprises a lecture and trauma simulation exercise.

A year in, CHOP has promoted the initiation of definitive care within 90 minutes of CHOP activation, with an average time of 73 minutes. It has also been useful in starting early blood transfusions. Today, it has helped to achieve an overall mortality rate (for Tier 1 and 2 cases) of 1.8%, which is one of the lowest among the acute hospitals in Singapore. The trauma team was also recognised with a gold award for this achievement at the NHG Team Recognition Awards 2019.

Importantly, this new workflow blends seamlessly with the pre-existing trauma activation guidelines and protocols to boost efficiency, and has become an essential and indispensable part of the pathway to get critically injured patients the best possible care.

Seamless care across Yishun Health

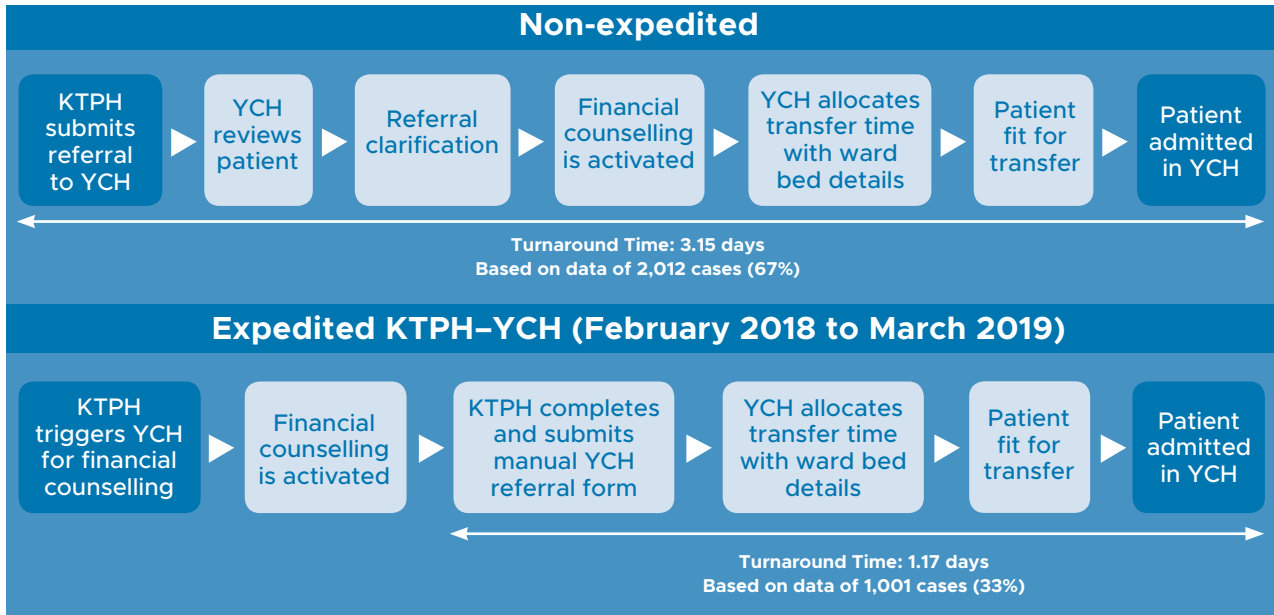
Our Campus Flow initiative is aimed at streamlining processes so that patients can move smoothly, efficiently and in a hassle-free manner anywhere across Yishun Health, as well as into or from the community. This is aligned with our mission to integrate care under a unified person-centric care plan and ensure patients are right-sited across the system, whether it is in the acute, intermediate or community setting.

Currently, about 245 patients with stable conditions are transferred to various community hospitals from KTPH each month. Typically, these patients no longer require treatment for acute conditions, but need on-going rehabilitation and treatment to recover and regain function. About nine in 10 are admitted to YCH, with the transfer taking an average of three to five days. To make this process more seamless, the team reviewed the current process to identify inefficiencies and implemented the following changes:

- Patients are activated early for financial counselling before the submission of the referral form
- The referral form is simplified from three to one page, with less to fill in as information is automatically retrieved from the shared clinical system
- The vetting time is shortened
- A Joint Clinical Governance Model is established between KTPH and YCH to streamline processes, including the transfer of patients back to the acute hospital when needed



KTPH-YCH PATIENT TRANSFERS



This new expedited process takes an average of 1.17 days (as of March 2019), and was fully rolled out in May 2019 together with an enhanced electronic referral system.

For their efforts, the team was awarded the bronze award at the NHG Team Recognition Awards 2019. More significantly, the new seamless flow between KTPH and YCH means patients can receive appropriate care in an environment more suited to their needs.

Enhancing emergency care

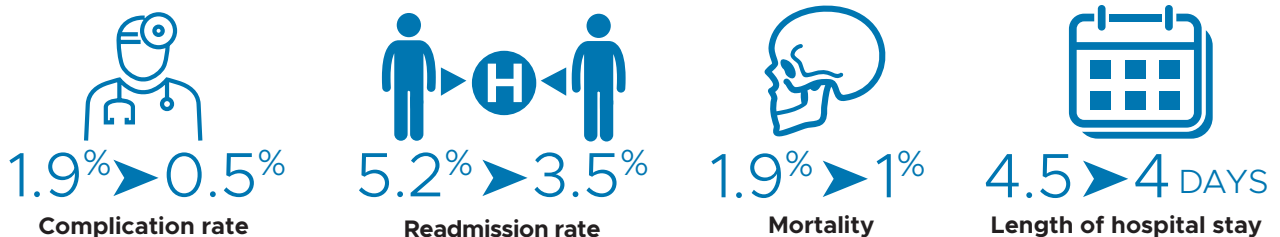
Emergency care is one of the most challenging aspects of crisis and complex care. Involving time-critical and life-threatening conditions, medical teams

must be on their toes to make lightning-fast decisions and perform in high-pressure situations. One way Yishun Health facilitates faster, safer and appropriate interventions is through the Emergency Surgery and Trauma (ESAT) Service.

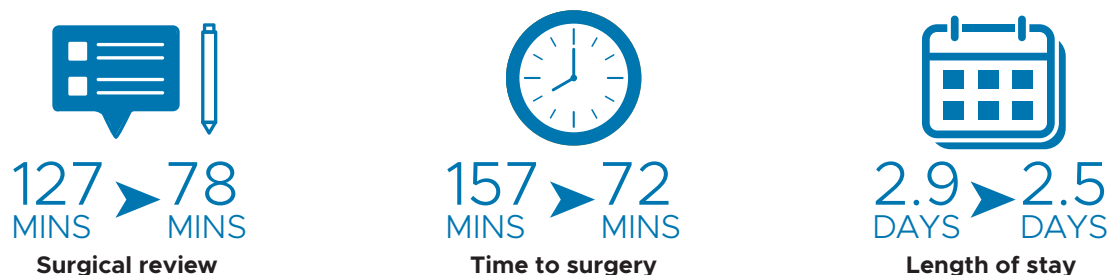
ESAT addresses the issue of balancing the elective load and emergency cases by moving away from the traditional model of emergency care. There is a dedicated, consultant-led emergency team so that doctors who were initially on-call can focus either on an elective caseload, or emergency and trauma cases. This enables ready access to surgical review and treatment for emergency patients that is undertaken with direct senior supervision.

ESAT RESULTS

In 2018, ESAT's results were published in two peer-reviewed journals. It showcased significant improvements in overall patient outcomes:



Acute appendicitis is one of the most common conditions managed by ESAT. An audit performed in 2018 showed similar decreases in:



This improvement in outcomes is commensurate with decreases in patient costs.



General Surgery's ESAT team is led by Dr Jerry Goo (second from left)

Better care for patients with acute abdominal conditions

The Emergency Laparotomy (ELAP) team provides crisis and complex care for patients with acute abdominal conditions. Patient outcomes in this group are characterised by high morbidity and mortality, especially among the elderly.

To this, an ELAP clinical microsystem was formed to provide value-driven care with integrated workflows across all the operative stages. Under this framework, transdisciplinary clinical teams consisting of surgeons, emergency physicians, anaesthetists and geriatricians work together to identify patients and provide comprehensive care plans and reviews for them.

From 2017 to 2018, this framework has reflected improvement in the following areas:

- Post-operative assessment by geriatricians for patients above 65 years old increased from 15% to 66.7%
- 51.5% of our high-risk patients receive intensive monitoring post-operatively compared to 40.3% before the pathway was implemented
- The anaesthetist consultants' presence in the team rose from 30.2% to 57.6%. This results in optimal management of patients intra-operatively

A more efficient model for emergency diagnostics

Adding to this more efficient approach towards emergency surgery is the ED's Extended Diagnostics and Treatment Unit (EDTU). The 20-bed unit observes patients for up to 24 hours and conducts intensified therapy and extended diagnostic testing — without ward admission. Patients may be discharged home with follow-up advice or admitted to the wards for further treatment. In FY2018, daily admission rates for EDTU hovered between 17 and 20 patients, with an average admission rate of 22% to 23%. For additional

comfort and convenience (and reduced usage of beds), EDTU patients who are ready to be discharged but who are waiting for family members can also use the discharge lounge.

Raising the level of EDTU care for suspected heart attacks

To widen the scope of care, Computed Tomography Coronary Angiography (CTCA) was introduced to EDTU in 2018. Using a standardised scoring system, patients are risk-stratified so that those at higher risk can receive CTCA reports in a timelier manner. Patients can obtain a definitive diagnosis in two instead of 42 days, and make fewer specialist clinic visits. Also, in comparison with patients who were warded for CTCA, the average length of stay was reduced from 3.4 days (inpatient) to 0.66 days (EDTU). These contribute to a quicker and more hassle-free experience.

Earlier investigations under CTCA have also helped to reduce reattendances and readmissions for the patients, improving the confidence of safe discharge.

Right-siting care for safe geriatric emergencies

In 2018, KTPH's ED improved its model to deliver better care for geriatric patients. The ED and Geriatric-Emergency Medicine (GEM) department now jointly operate a four-bed Acute Geriatric Assessment Unit (AGAU). AGAU provides full multidisciplinary assessment and management within the EDTU for elderly patients who would otherwise be admitted to acute wards. Dedicated geriatricians review these patients with the support of a multidisciplinary team, reducing admissions and reattendances at the hospital.

THE CHEST PAIN CLINIC

To improve care for chest pain and shorten the lead time for cardiology appointments, a Chest Pain Clinic was set up. The integrated effort, involving the Cardiology department, Cardiovascular Centre (CVC), Cardiology SOC, and ED, risk-stratifies patients with chest pain on a standardised scoring system so they can receive care based on their individual risk profile.



Previously, low-risk patients were admitted for at least two days for assessment. Today, the twice-a-week, consultant-led Chest Pain Clinic manages this workload. It allows the ED to discharge low-risk patients safely with prompt follow-ups. To support this initiative, the SOC reserves slots for non-invasive stress tests for these patients, allowing a rapid turn-around. This service sees 20 to 30 patients per month, and has reduced patient wait time from the ED to cardiology appointment by 14 days.



The Hip Fracture Service consists of a transdisciplinary team led by Dr Jagadish Ullal Mallya (second row, third from right)

Between October 2018 and January 2019, AGAU managed 175 geriatric patients (an average of three per day). Of these, 120 were discharged with follow-ups for either Early Review Clinic (ERC), the Geriatric Clinic, AIP-CCT or community hospital. This resulted in an average of 1,008 bed stays saved, without compromising patient care.

GEM nurses continue to sustain quality geriatric care at the ED while reducing admissions and bed days. In 2018, a total of 928 patients were comprehensively screened by GEM nurses, and 261 were admitted. Other patients, through the screening, were referred to other geriatric services better suited for their care.

The Hip Fracture Service: Breaking new ground

Started in 2015, Yishun Health's Hip Fracture Service (HFS) takes a transdisciplinary approach to address the spectrum of acute treatment, long-term management and preventive care. The team of orthopaedic surgeons, geriatricians, anaesthetists, ED doctors, cardiologists, nurses, rehabilitation therapists, dietitians, case managers and operations personnel across both KTPH and YCH works together to streamline and improve processes. Since its inception, it has served over 1,200 patients.

In FY2018, HFS evolved into a service line, with clinicians taking the lead in various areas of patient care. Dividing HFS into subgroups has enabled the respective leads and teams to focus more on problems faced in their areas, further improving their patients' care across their many stages of need.

Acute/Emergency stage

The team expedites the admission of identified hip fracture patients to the Hip Fracture Unit. The percentage of admissions within four hours increased from 48% in 2017 to 58% in 2018. As of February 2019, the figure stood at 67%.

Pre-operative stage

The team assesses patients' suitability for operation and optimises any medical conditions pre-operatively for timely surgery. The percentage of surgeries performed within 48 hours increased from 48.8% in 2017 to 49.2% in 2018, and 52.2% to date (as of February 2019).

Peri-operative stage

The peri-operative team works to avoid unnecessary U-turns from the operating theatre, and reduce immediate post-operative complications.

Post-operative stage

The transdisciplinary team manages patients to minimise complications, manage pain, and enable faster recovery.

Discharge and sub-acute stage

The streamlined processes across institutions ensure a smooth transfer of patients to intermediate care to enable longer rehabilitation and recovery. Percentage of patients transferred to YCH increased from 85.7% in 2017 to 94.4% in 2018.

Home and outpatient stage

Patients continue to be supported on their journey to recovery after discharge through transitional care, home care and other community health services, such as day rehabilitation centre appointments. Their medical problems, fall risks and osteoporosis management will be reviewed at the falls and balance clinic. These ensure there is necessary care and follow-ups for patients.

HFS' KAIZEN INITIATIVES

HFS has rolled out numerous kaizen projects since 2016 and, importantly, sustained them as part of the HFS model of care.

Prevention of Surgical Site Infections

From 2015 to 2018, HFS consistently reduced Surgical Site Infection (SSI) incidences and achieved zero SSI in 2018. SSIs were prevented through the elimination of the need for excessive wound dressing manipulation. This was done by indicating the date and time of the wound dressing, and tracking progress using photographs. This allows doctors and nurses to keep track without the need to undress the wound repeatedly. Wound documentation and photographs are also attached with patients' notes when they transfer to YCH, providing better communication, reducing wound touching and thereby saving time and cost. This project came in first place under the Well-Sustained category at the Kaizen Festival 2019.

Prevention of Venous Thromboembolism

Thromboprophylaxis is efficacious, safe and effective in reducing Venous Thromboembolism (VTE) in hip fracture patients. This project introduced a standardised protocol for VTE prophylaxis (VTEP). It assesses patients' suitability of VTEP and starts those who are on chemoprophylaxis upon admission for five weeks unless contraindicated. Patients are also closely monitored for complications and incidence of VTE. Since 2015, the VTE incidence rates have decreased from 2.6% to 0.4% in 2018.

Education for better heart failure management

Many times, cases of heart failure tend to have a poor prognosis, but this can be improved with good management and patient education. In a bid to improve outcomes for patients, the Cardiology department and the nursing teams from Ward B65 and Ward B66 came together to develop a Clinical Practice Improvement Programme (CPIP) Project in June 2018.

The team reinforced the importance of heart failure education to doctors and nurses, and created a workflow for referral of patients. Within six months, eligible heart failure patients who received heart failure education increased more than four times. Patients also showed a higher level of understanding on how to manage their heart conditions, with their knowledge score doubling after the intervention. They also gave the service a very high satisfaction score. Significantly, none of the patients who received heart failure education were readmitted after 30 days. Each admission saved translates to a saving of \$2,050.

In a further refinement to the heart failure pathway, the team also standardised preventive measures, such as flu vaccination (vaccination take-up rate improved from 0% in 2017 to 59% in 2018).

Overall, the CPIP Project also led to greater compliance of the heart failure pathway, from 77% in FY2017 to 91% in FY2018. While the 30-day readmission rate increased slightly from 4.8% in FY2017 to 6.4% in FY2018, the Cardiology team saw its service extend to a larger population of patients (number of patients on the pathway increased by 50% from 2017 to 2018).

More appropriate care for low-risk NSTEMI patients

Patients who have had a type of heart attack known as Non-ST-elevation Myocardial Infarction (NSTEMI) require a procedure to clear the blocked vessels in the heart. This procedure is known as a Percutaneous Coronary Intervention (PCI). This non-surgical procedure uses a thin flexible tube called a catheter to place a small stent to open up blood vessels in the heart that have been narrowed by plaque.

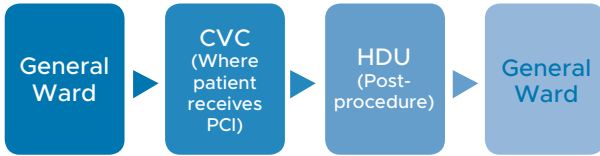


The HFS nursing team with their poster at Kaizen Festival 2019

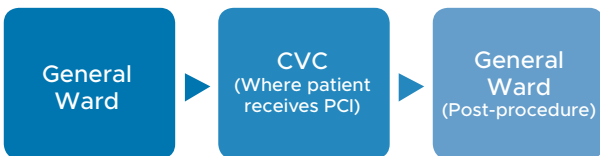


CRISIS AND COMPLEX CARE

Patients who underwent PCI were previously warded in the high dependency unit (HDU) for post-procedural care and rhythm monitoring. However, this would mean a three-way bed movement for patients. Should there be high bed occupancies in HDU, PCI treatments will be delayed.



To better right-site care and improve access to definitive treatment, the Cardiology department and Cardiovascular Centre (CVC) worked together with nursing teams from Ward B65 and Ward B66 to train and up-skill nurses from these wards. This means that these low-risk post-PCI patients can receive the necessary care in the general wards instead of in the HDU, saving both time and cost for the patients, while still ensuring appropriate care for them.



PATIENTS WHOSE ACCESS TO PCI WAS DELAYED DUE TO LACK OF HDU BEDS

2016

34

2017

66

End of January–July 2018

50

December 2018–May 2019
(After implementation)

1

From crisis care to sustained community management

Beyond hospital-based clinical improvements, the Cardiology department worked closely with NHGP (Woodlands and Yishun Polyclinics) and a growing network of GPs. This has improved the right-siting of patients, who experienced improved clinical outcomes, appropriateness of clinical care, and affordability.

Yishun Polyclinic developed referral guidelines for common cardiac conditions, such as chest pain, heart failure and atrial fibrillation, and provided a formal

hotline for Cardiology Champions (designated GPs based in Yishun and Woodlands Polyclinics) to directly contact Yishun Health's Cardiologists for a timely opinion and consult. Yishun Polyclinic doctors are also now able to directly access department services without needing to go through a cardiologist.

The Cardiology department also worked with PHCT to engage a network of about 50 GPs in the North to collaborate on right-siting in the future. To this end, the department hosted a successful GP forum last year on a variety of cardiac topics to both promote collegial interaction as well as to meet the educational needs of our GP colleagues.

Trimming costs for lipid monitoring

Regular blood tests are an important way to track and monitor the status and progress of patients. For those with ischaemic heart disease, lipid tests are done to obtain information on cholesterol, or lipid, levels. The full lipid panel measures total cholesterol, including triglycerides, high-density lipoprotein (HDL), and low-density lipoprotein (LDL) — and must be done in a fasted state. For patients with heart disease, a non-fasting liquid panel that tests for LDL is ordered instead, and is sufficient for their lipid-modifying therapy compliance monitored by clinicians. This shift has led to:

- Eliminating the incidence of hypoglycaemia caused by fasting
- A \$10 cost saving for patients. From April to August 2018, 9,910 tests were ordered, leading to total savings of \$99,100
- Fewer visits for afternoon SOC appointments



Towards better heart health:

Educating the community

Beyond patient education and support in wards and SOCs, education about heart health is an important aspect of Yishun Health's Cardiology department. On 6 April 2019, it held a Cardiology Public Symposium at KTPH. More than 300 members of the public attended the symposium to hear from doctors from various specialties. They spoke on myriad cardiac conditions, such as heart attack and chest pain, heart failure, heart blockage, and high blood pressure.

To make the weekend more interactive, these talks were complemented by an exhibition of educational booths and activities that covered the spectrum of care, including other departments such as Nutrition & Dietetics, Pharmacy, and Rehabilitation Services.

Safer and seamless surgical intensive care

FY2018 was a busy year for the Surgical Intensive Care Unit (SICU) team as they raised levels of seamless

and integrated surgical care for the critically ill. The unit managed a total of 1,095 patients over the year, providing lifesaving and intensive multi-organ support for road traffic accident victims, stroke patients, and those who needed urgent abdominal, head and neck operations. The team also provided planned post-operative surgical intensive care for high-risk patients undergoing major surgical procedures. Led by intensivists — specially trained intensive care specialists — the team of intensive care nurses, surgeons, infectious disease specialists, pharmacists, dietitians, physiotherapists and respiratory therapists coordinate multidisciplinary care.

SICU features 20 critical care single rooms that can be easily adapted between ICU and HD levels of care. This maximises care options based on the patient's individual clinical needs. The unit is also equipped to provide advanced haemodynamic monitoring and support, and continuous renal replacement therapy. In addition, the team has introduced and adapted best clinical practices, some of which include:

- Prevention and early identification care bundles for sepsis, Ventilator-Acquired Pneumonia, Catheter-Associated Urinary Tract Infections, nosocomial infections, as well as sedation and delirium
- Effective treatment of community-acquired infections

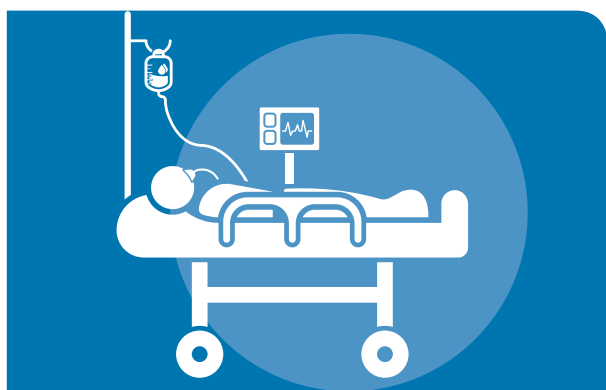
The SICU team also works closely with the National Organ Transplant Unit (NOTU), and has been at the forefront of facilitating organ donation. This involves the identification of patients who are brain dead, engaging with the families of deceased patients, and supporting them during the process of organ donation. Between 2017 and 2018, the unit facilitated 10 solid organ donations.

Multidisciplinary management of pheochromocytoma for safer outcomes

KTPH's Endocrine Surgical Service spearheaded the multidisciplinary management of a complex and rare condition known as pheochromocytoma, which is a life-threatening tumour of the adrenal gland.

The management of pheochromocytomas requires careful planning of logistics, thorough pre-operative optimisation and careful pre-operative preparation and optimisation of drugs by endocrinologists, evaluation of medical and cardiac risk factors by surgeons and anaesthetists, and a meticulous and careful surgery with close post-operative monitoring.

Addressing these complex challenges and improving patient outcomes is the Endocrine Surgical Service's Multidisciplinary Management of Pheochromocytoma Clinical Model. It



RESEARCH & EDUCATION

The SICU team is accredited by the Joint Committee on Specialist Training (JCST) to deliver training in neuro-intensive care and surgical intensive care modules for the Intensive Care Medicine residency programme. It is also accredited by the Singapore Medical Council to provide an international fellowship programme in Intensive Care Medicine. Over the last two years, SICU has trained some 37 Year 4 medical students from Lee Kong Chian Medical School in Critical Care. Apart from this, SICU supports and promotes clinical research, audit and quality improvement activities. The unit has participated in multicentre clinical trials and the results of the research activities have been shared in various national and international meetings.



identifies and brings together the specialists and resources in a structured and concerted manner. Besides assembling a holistic team of endocrinologists, anaesthetists, ICU intensivists and surgeons for this major operation, it also ensures that a surgical ICU bed is available post-surgery. The care plan also ensures that all operative procedures and checks are organised for greater efficiency.

The holy grail of management success remains the intra-operative surgical steps, titration of medication, and close monitoring of haemodynamic fluctuations in blood pressure by anaesthesia. This not only requires very close communication between surgeons and anaesthetists, but also a very good understanding of the surgical anatomy to prevent mishaps and errors — mistakes during these operations can be costly and lead to significantly adverse outcomes and morbidity.

Thus far, 34 successful laparoscopic adrenalectomies from 2013 to 2018 have been performed, with six patients having phaeochromocytoma. In three of these phaeochromocytoma cases, the tumours were longer than 6cm and yet successfully removed using minimally invasive surgery. All the phaeochromocytoma patients had a high dependency stay of less than two days, suffered no adverse outcome, and all were cured.

Shortening stays for HPB surgeries

The Hepato-Pancreato-Biliary (HPB) Surgical Service served over 2,200 outpatients in FY2018. Of this number, some 300 patients had liver cancer. The Service also reviewed more than 500 complex cases in the HPB conference and saw 875 inpatient referrals.

To raise the level of safety and boost patient outcomes, the HPB Surgical Service started an informal enhanced recovery after-surgery pathway in April 2018. It was formally adopted with multidisciplinary consensus in November 2018. This pathway improves major HPB surgery by instituting pre-operative evaluation and counselling for major resections.

From April 2018 to April 2019, the service performed 51 major HPB operations with excellent clinical outcomes (0% mortality and no major complications) and patient satisfaction. The procedures included 18 pancreatic resections, 13 liver resections, and 20 complex biliary operations. The median LOS was seven days for pancreatic resections and eight days for liver resections. This compares favourably with the same period previously (12 and 16.5 days respectively).

Stop CAUTI: Improving quality and safety of care

In mid-2016, the Clinical Quality Improvement Team assembled a multidisciplinary team of administrators, physicians, nurses and therapists to reduce the incidence of Catheter-Associated Urinary Tract Infections (CAUTI).

CAUTI are the most commonly reported hospital-acquired infection. An indwelling catheter (IDC) is a tube inserted through the urethra into the bladder, and is frequently used for patients who have severe retention of urine.

The team started a series of education and reinforcement initiatives to drive behaviour changes and help healthcare professionals to adopt the new practices effectively and sustainably. The team focused on improving healthcare professionals' knowledge and the creation of the CAUTI Bundle, which is a systematic process that guides the need for insertion, daily maintenance, and daily review of the necessity of an IDC. Each initiative was implemented using the continuous Plan-Do-Study-Act methodology, with the help of infection control nurses to measure the process compliances and CAUTI rates.

The Stop CAUTI initiatives have increased awareness among all healthcare teams and empowered champions from various departments to work

THE CAUTI	BUNDLE
1 Insert IDC only when indicated	6 Empty urine bag when two-thirds full or when necessary
2 Insert IDC aseptically; always perform hand hygiene before and after insertion of IDC	7 Ensure proper anchoring of IDC
3 Maintain sterile and closed system	8 Perform perineal and meatal care daily and when necessary
4 Keep urine bag below the level of the bladder but not touching the floor	9 Review the necessity of the IDC daily
5 Ensure IDC tubing is not obstructed	10 Encourage oral hydration and mobility if possible



Dr Molly Eng (third from right), Head and Senior Consultant, Urology, and her team, together with Mrs Chew Kwee Tiang, at the official opening of the Urology Clinic

together to ensure that interventions and strategies were effectively communicated.

As a result, KTPH's Medical ICU was CAUTI-free for 17 months, between December 2016 and April 2018; at YCH, CAUTI rates dropped by more than 50%. The team also won an Excellence Award in Client Experience Improvement at the AIC Quality and Productivity Festival 2018.

At your service for all your urology needs

Yishun Health officially opened its new Urology Clinic on 29 November 2018. It is designed as a one-stop diagnostic and therapeutic centre, centralising many aspects of urology care. It offers clinical consultation, uroflowmetry, ultrasonogram, cystoscopy, shockwave therapy, prostate biopsy, and counselling sessions by our nursing and paramedical staff.

The clinic is one of many milestones for KTPH's Urology Department in FY2018, as it expanded to provide more holistic and hassle-free care for patients. It also works closely with the neighbouring Geriatric Clinic and Diagnostic Radiology department so that patients can enjoy a seamless clinical journey.

Significantly, services have been developed to address areas of need. For example, the Urology department has intensified certain urological sub-specialties that involve older patients. These include the newly set up Bone Health Clinic, which aims to prevent and treat osteoporosis in prostate cancer patients as they are at high risk of skeletal adverse

events due to their need for hormonal therapy for cancer control.

Junior consultants are also designated for fellowships in minimally invasive cancer surgery, andrology, reconstructive urology and continence care to proactively meet a projected rapid increase in demand for these sub-specialties in our patient population. As it stands, the number of laparoscopic upper tract surgery — including partial nephrectomy, pyeloplasty, nephroureterectomy, renal cyst and stone operations — increased over six times in FY2018.

In addition, the Urology Clinic serves as a hub for staff training and development, and hosts lectures and hands-on activities for both internal and external healthcare providers. In FY2018, its consultants served as faculty in nationwide programmes such as the Prostate Awareness Month, at regional meetings like UroFair and Asian Robotic Surgery Summit, and at international conferences like the World Congress of Endourology. The department provided expertise for workshops with participants of various skill levels, such as the European Basic Laparoscopic Urological Skills Programme for surgical trainees, and the Singapore General Hospital Laparoscopic Partial Nephrectomy Workshop for ASEAN Urologists. Apart from these, the department also organised three urology nursing courses in the past year and provided theoretical and hands-on learning on basic urological procedures for 52 internal and 25 external nurses.



Dr Lim Eng Kuang (sixth from right), Head of Renal Medicine, together with representatives of the team that helped to open the Renal Centre

Supporting inpatient dialysis within our campus

To better support and provide dialysis treatment during inpatient stays, the new Renal Centre was officially opened on 21 January 2019 with an expanded haemodialysis (HD) and peritoneal dialysis (PD) service.

The new inpatient renal dialysis centre is able to accommodate more patients, and has two isolation rooms, nine HD stations, and seven PD stations. The increase in PD stations will facilitate an upcoming service to enable same-day admission for interim PD and PD training. The expanded facilities will also enable the centre to carry out 26 HD treatments daily, a 30% increase. Going forward, the Renal Centre aims to set up an At-Risk Haemodialysis Unit to support patients who require HD services after office hours. This will reduce the dependency on ICUs and free up ICU beds for more acute cases.

KTPH Renal Medicine has also embarked on initiatives to advocate for PD as a preferred mode of treatment instead of HD. This is in line with MOH's initiatives to encourage higher uptake of PD, a home-based therapy that provides equivalent quality of renal replacement therapy as HD. More importantly, it empowers patients to take care of their own treatment. In KTPH, the number of active PD patients was 105 in FY2018.

Plastic, Reconstructive and Aesthetic Surgery Service in Yishun Health

Yishun Health launched its Plastic, Reconstructive and Aesthetic Surgery Service in October 2017. This in-house Plastic Surgery specialist service epitomises

the concept of transdisciplinary, team-based care with multiple specialties within Yishun Health.

For FY2018, the service recorded a surgical workload of more than 300 cases, of which 80 were major surgical cases. These 80 major cases included 18 free flap cases, which involve a microsurgical free-tissue transfer. The service team performed these in close collaboration with various other departments in Yishun Health. Some of the clinical services offered include:

- Lower Extremity Reconstructive Services with Orthopaedic Surgery team
- Head and Neck Reconstructive Services after tumour ablation with ENT team
- Breast Reconstructive and Oncoplastic services with Breast Surgery team
- Plastic Surgery outpatient clinics and Day Surgery services at AdMC





LIVING WITH
FRAILTY



WHERE I BELONG

Research shows that medical needs constitute only small portion of a patient's health determinants — health is largely determined by non-medical factors, including those that exist in the social, behavioural and environmental realms. To support patients with multiple, poorly managed conditions or life-limiting illnesses, Yishun Health has gone beyond its campus to provide multifaceted, multidisciplinary care that keeps patients well in their homes and community.



Bridging generational and healthcare gaps

The award-winning Tri-Generational HomeCare @ North West project (TriGen) is a student-led initiative that brings together North West Community Development Council (NWCDC), Yishun Health's community nursing teams, and students to care for seniors in the community.

Started in 2014 by medical students Ms Angeline Tey and Mr Kennedy Ng, TriGen aims to extend social and health advocacy support to seniors, as the duo observed that patients from close-knit families did better in their recovery. In a bid to extend this to those who do not have the same support system, they started TriGen to rope in student peers as care advocates and establish relationship-based care.

Bridging generational and healthcare gaps, students from the National University of Singapore (NUS) and various secondary schools are trained by AIP-CCT and NWCDC in basic healthcare, caregiving and befriending skills. NUS students from the Medicine, Nursing, Pharmacy, and Social Work faculties organise and run the rest of the programme, assigning teams and schedules. Their role as student team leaders involves training and managing teams of secondary school students within the North West District. Working in tandem with AIP-CCT's nurses, doctors and allied healthcare providers, TriGen volunteers help to raise the frequency of home care visits to keep a closer eye on patients.

As of April 2019, it has served about 225 elderly residents in the North and engaged some 1,010 university and secondary students. Apart from NUS students, the programme now includes students from Nanyang Technological University's (NTU) Medicine faculty and Singapore Institute of Technology's (SIT) Occupational Therapy and Physiotherapy faculties. This better meets the

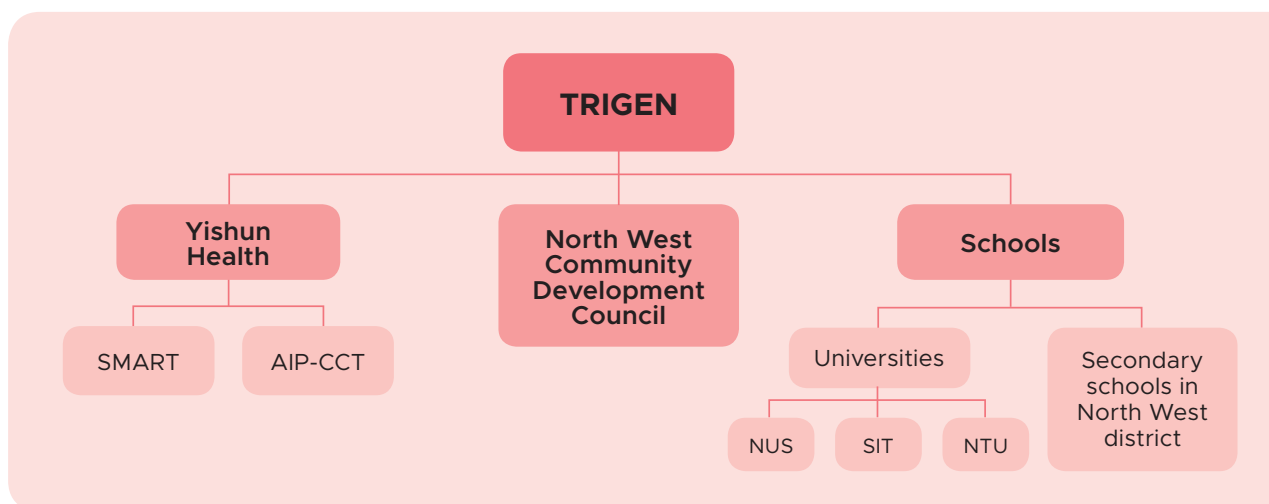


Students learning about food and nutrition at TriGen's training session

increasing needs of patients requiring medical care and rehabilitation support.

The programme has also been enhanced. In July 2018, PHCT's SMART joined TriGen to widen the reach of the programme. Compared to patients cared for under AIP-CCT care, SMART patients have different needs. Where AIP-CCT serves patients who have been discharged from the hospital, those under SMART are residents staying in the North who may not have been hospitalised but have poorly managed chronic illnesses and require a little more support to improve their self-care. Under TriGen, students are involved in health coaching and befriending. By building rapport, residents are encouraged to take better care of themselves.

To equip TriGen volunteers to better care for a broader spectrum of needs, more training has been rolled out. In 30 March 2019, students underwent a training on food and nutrition conducted by a community dietitian. This session taught team leaders how to provide appropriate and realistic dietary recommendations.





LIVING WITH FRAILTY

Not only has TriGen built a wider network of care, it has also promoted service learning and inter-generational learning and bonding. It underscores the value of ageing in place, active ageing, and community-based care to future generations of healthcare workers. Importantly, it puts seniors in need in touch with connections that matter — from access to healthcare services and support for chronic illness to the simple but invaluable power of healing that comes from knowing that someone cares.

Hospital to home: Transitional support for better recovery

Transitional care has become an important part of the move towards person-centred care. It ensures that care extends beyond hospitals and active treatment to support patients in their journey towards recovering their physical and functional health, as well as their emotional and social well-being.

Yishun Health's AIP-CCT is a hospital-to-home initiative that has been running since 2011. It is a post-discharge, nurse-led and team-based home-visit service that integrates the expertise of doctors, nurses, therapists, pharmacists, medical social workers, and healthcare assistants. Under this model, community nurses visit patients at home to assess them and develop individualised and holistic care plans. The team also works closely with community

partners, such as voluntary welfare organisations, government bodies and grassroots organisations, to address a full range of needs. Working together, they help patients and caregivers manage well at home and in the community, with the goal of helping patients maintain their health and independence, prevent complications, and minimise unnecessary readmissions.

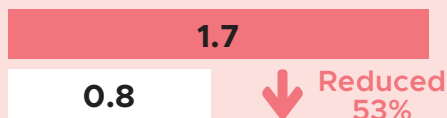
To cater to frail elderly patients who need further support at home, AIP-CCT works closely with the Geriatric Medicine department (GRM) to manage transitional care after these patients have been discharged from hospital. For referrals received from GRM, AIP-CCT team conducts home visits with a focus on geriatric issues, such as medication compliance and fall prevention. Each care plan is customised for the individual needs of patients, and is based on assessments done by community nurses. From 1 April 2018 to 28 February 2019, 587 GRM patients were referred to AIP-CCT. A total of 1,138 nurse home visits, 188 doctor home visits, and 329 therapist visits were conducted for these patients.

To study the impact of the care integration between GRM and AIP-CCT, 228 patients were sampled pre- and post-six months of enrolment. The programme reduced visits to the ED, hospital admissions, and the length of stay.

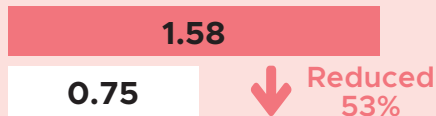
CARE INTEGRATION BETWEEN GRM AND AIP-CCT



Emergency Department attendance



Hospital admission



Length of stay (days)



6 months before AIP-CCT

6 months after AIP-CCT

YISHUN HEALTH'S AIP-CCT HOSPITAL-TO-HOME INITIATIVE (ESTIMATED NUMBERS)



5,000

Phone calls
from nurses



4,000

Nurse
visits



2,000

Allied
Health visits



1,500

Healthcare
Assistant visits



1,500

Therapist
visits



500

Doctor
visits



300

Medical Social
Worker visits



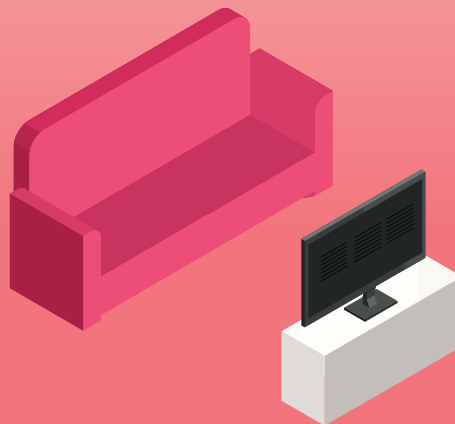
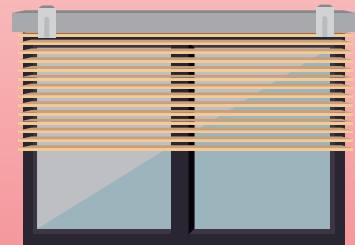
150

Pharmacy
visits



100

Counsellor
visits





Upskilling the nursing home sector

The GeriCare@North programme has been operating since 2010. It increases access of nursing homes to specialised geriatric care in an efficient and cost-effective manner via teleconsultations, as well as conducting direct training and supervision. This, in turn, raises the level of end-of-life and geriatric care the nursing homes can provide.

Today, the programme has evolved into a full-fledged programme providing geriatric and palliative care and training to eight nursing homes in the northern region of Singapore and 1,600 nursing home residents.

In the past year, GeriCare@North has enhanced palliative care service with GeriPall Team, where Yishun Health work with partners to provide training and preceptorships, and guide nursing homes in the care of terminally ill residents. This brings together a training team of nurses, doctors and allied healthcare staff, as well as partners from the Agency for Integrated Care, Eagle Care and Project Care (the latter two are long-term care (LTC) programmes run by Changi General Hospital and Tan Tock Seng Hospital respectively). GeriCare@North has also started an LTC Inpatient Programme in Ward D78 to look after patients admitted from nursing homes and homes for the destitute.

In addition to these new moves, other long-running programmes have continued to make their mark. For instance, the GeriCare@North's Palliative Care Course for LTC Nurses has been translated into an

intensive course for use in Thailand, in collaboration with the Geriatric Education and Research Institute, Chulalongkorn University, and the Ministry of Public Health of Thailand. For the past two years, the GeriCare@North team also delivered lectures on telemedicine to Nanyang Polytechnic students in the Advanced Diploma in Gerontology course. In the past year, the programme was presented at a plenary lecture at the Malaysian Geriatric Congress, and two papers were published in the *British Medical Journal* in 2017 and *JAMDA 19* in 2018. The programme also received the National Health IT Excellence Award in 2017.

Onwards and upwards together in geriatric care

In FY2018, Yishun Health continued efforts to offer learning opportunities for our nursing home partners. In January 2019, it hosted GeriCare@North, a MOH-funded programme aimed at upgrading the nursing skills of healthcare workers in nursing homes to minimise hospital admissions and emergency transfers from nursing homes to hospitals. Together with other nursing leaders, the programme is led by Dr James Low and Dr Laurence Tan, GeriCare's Programme Director and Deputy Programme Director respectively. The nurses were provided preceptorship through a Telegeriatics Nurse Training Course and the Advanced Palliative Care Course for Long-Term Care. Eight of our nursing home partners took part in the intensive programme. On 29 January 2019, Yishun Health was proud to confer GeriCare certificates to 56 nurses.

Improving care for patients with cognitive and physical frailty in the hospital

A significant proportion of older patients in hospitals are frail both physically and cognitively. Every day, there are approximately 150 patients in KTPH who have cognitive frailty with dementia and/or delirium. They make up 40% of those aged 78 years or older. These older patients fit poorly into the hospital environment, are prone to hospitalisation-associated disability, and leave the hospital with marked functional decline and in poorer physical, cognitive, psychological and functional states than at admission.

Recognising the need to enhance care standards for this vulnerable group of patients in the hospital, the Cognition 6th Vital Sign initiative was formulated. Cognition 6th Vital Sign refrains from being a siloed quality-improvement effort, but addresses the work culture that underpins care to shift priorities from being task-focused to being more person-based. It consists of 10 care standards and a care protocol for frail older patients with cognitive impairment of dementia and/or delirium.

Yishun Health's GRM developed a care assessment tool based on these standards to allow ground staff to perform self-evaluations and identify existing gaps to improve care. These standards are encapsulated in the acronym **KNOW our VIPS NEEDS BEST** (see diagram).

KNOW:

Knowing patients as persons, and learning about their biographies, likes and dislikes, values and love language.

VIPS:

Each patient is *valued* and cared for as a unique

individual. Care must adopt the *perspective* of the patient, and *social* psychology allows us to tailor care to the need of the patient.

NEEDS:

Operationalises person-centred care in more concrete terms. It includes making the hospital experience close to what is *normal* in the daily routine of the patient, *enabling* and *empowering* patient with greater agency and *dignity* despite being hospitalised, and attending to older patients at a *slower* pace.

BEST:

Sets out the *key* medical and nursing *needs* of patients that warrant close attention to prevent and manage confusion.

These enhanced care standards buttress existing medical and nursing care, as well as improve the soft skills of ground staff through person-centred care. This emphasises the needs of the patient over tasks. While lack of time is often cited as a reason for not being able to commit to person-centred care, in actuality, the person-centred approach is able to lower the incidence of challenging behaviours, build better rapport, and increase cooperation, which ultimately saves time on reactive interventions. Importantly, person-centred care has been shown to improve staff satisfaction and reduce turnover. With its focus on people and relationships, it helps to enkindle the desire to care beyond merely completing tasks, and rekindle the joy of working as a healthcare professional.

This initiative makes KTPH a first mover in setting new standards for hospital care of older people in Singapore, and a leader in age-friendly hospital care.

KNOW OUR VIPS NEEDS BEST



Value



Individualise



Perspective of patient



Social psychology
(relationships)



Normalise



Enable, Engage



Emancipate, Empower



Dignify



Simplify
(slow down)



Bladder, Bowel, Brain



Energy (nutrition),
Electrolytes (water),
Environment



Sight, Sound, Smile, Sip, Stand, Sway, Sleep, Skin, Strain



Tubes, Tablets, Teeth



Medication DIY

Self-care and management is an important aspect of fostering good long-term management of chronic diseases. To empower patients to play a central and active role in managing their own medication, YCH Pharmacy team initiated the Self-Administration of Medication (SAM) Programme in 2016. Since then, 244 patients have been recruited.

SAM Programme improves compliance with medication regimes to enhance safety, improve self-management of illness, and decrease the rate of re-hospitalisation related to medication-related problems. Patients acquire an increased knowledge and understanding of their own medication to maintain their independence and autonomy.

Of the 244 YCH patients participating in SAM Programme, 192 completed it upon discharge, 84 progressed to unsupervised SAM, and the remaining 108 continued with supervised SAM upon discharge.

To improve SAM Programme, YCH developed new qualitative measures to ensure patients benefit from a high level of safety and independence upon discharge. In March 2019, SAM's screening process was digitised and included as part of the admission checklist to increase referral rates. The referral was programmed to point towards suitable patients who are able to fulfil all inclusion criteria. This digitisation effort has enabled the team to obtain a clear idea of patients suitable for SAM Programme, and to be notified of any medication changes made by the doctors, thus improving the safety of the patients.

SAM PROGRAMME CONSISTS OF TWO STAGES

When a patient is admitted, nurses, pharmacists and doctors determine his or her suitability to be enrolled into the programme and consent is taken.

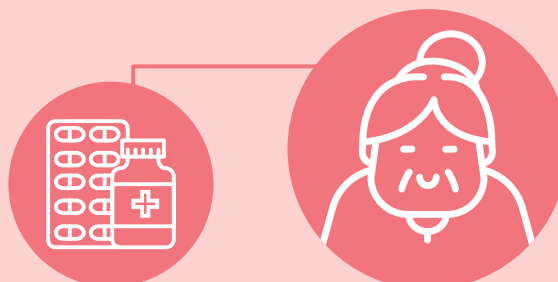
Stage 1: Supervised SAM

Patients are initially monitored by nurses; over time, as their competency increases, nurse involvement decreases and patients transition to the next stage.



Stage 2: Unsupervised SAM

Patients are capable and can independently take their medications without supervision. Not all patients will progress to this stage.





LEAVING
WELL



COMFORT AND CARE AT LIFE'S END

End-of-life care requires a comprehensive approach that recognises the personhood and preferences of patients to offer support that goes beyond medical care. Through social support, home care, or access to funds or equipment, the goal of palliative care is to enable patients to enjoy the best quality of life and achieve their last wishes.



Broadening the IMPACT of palliative care services

Palliative care is an approach that provides patients and their families with comprehensive support to relieve their physical, psychosocial and spiritual distress. This requires a full-systems integrated approach that may be offered not just at the end-of-life, but also concurrently with curative care in both inpatient and outpatient settings. Fronted by teams from Lifelong Care, Relationship-Based Shared Care Partnerships, and Crisis & Complex Care, the skills and knowledge of specially trained teams work together to deliver person-centred care across various disciplines. This typically includes palliative medicine physicians, nurses, medical social workers, dietitians, physiotherapists, occupational therapists, psychologists and any other member who may be required, depending on the patient's needs.

One palliative programme managed by Yishun Health's palliative medicine physicians and AIP-CCT is Programme IMPACT (Programme of Integrated

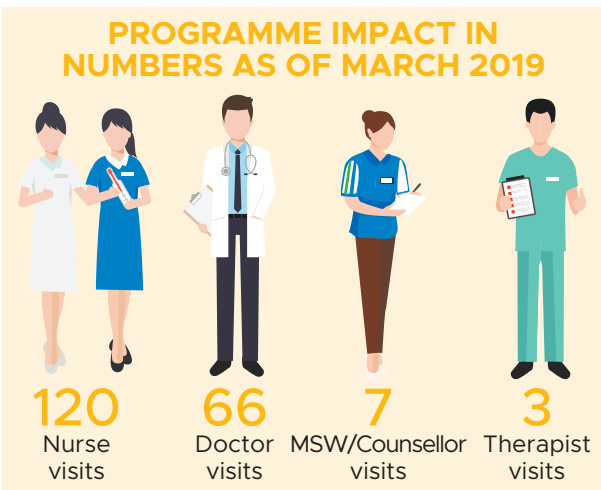


Under Programme IMPACT, caregivers also learn basic but important things such as packing the correct medicine into the pill box for their loved ones

Management & Palliative Care for the Terminally Ill non-cancer patients).

It is aimed at filling the gap for patients with end-stage organ failure of the heart, kidney or lung, and particularly focuses on the close collaborations with cardiac, renal, respiratory and other medical organ specialists. The home care team, comprising palliative medicine physicians, palliative-trained nurses, medical social workers and counsellors, provide regular home visits and phone consultations.

The goal is to improve the quality of life for patients through providing symptom relief as well as psychological, social and spiritual support to them and their families. Since its inception in September 2018, 15 patients have enrolled into the service, and over 200 home visits have been carried out by the team.



Adding life to inpatient assessments

Assessing palliative patients in the ward is typically a matter of routine. Doctors, nurses and allied healthcare professionals stop by each bed as part of ward rounds, usually at different times. The team then gathers at the end of each week to share their updates.

At YCH's palliative ward, the team wanted to do something more person-centric that would improve the transdisciplinary communication between the care team. This led to the Holistic Patient Evaluation through Communal Activities and Rehabilitative Engagement (HOPE and CARE) initiative, which started in October 2017.

HOPE and CARE provides multidisciplinary assessment of terminally ill patients in an active manner. Once a fortnight, the care team, palliative patients and their families gather for a session of rehabilitation exercises, table games, and food. This breaks down the 'wall' between healthcare workers and patients, allowing the team to see for themselves how patients are doing in real time. Apart from their physical functions, patients are also assessed for motor skills, and cognition and pain levels. This helps

the team to conduct co-consultations on the spot. As for patients, the informal and fun sessions improve their mood and engagement with their caregivers, care team, and each other. Bonding over games and snacks also raises their appetite and activity levels.

The design of this intervention promotes an intentional and collaborative effort among those in the team, thereby strengthening their collaboration and fostering synergy. The new workflow created from the implementation of this project is now a permanent feature at Ward D108. Representatives of other wards have sought the team's advice on implementing the initiative in their own wards.

Over the years, HOPE and CARE has continued to introduce new games, formats and activities to keep sessions interesting and relevant to changing needs. To enhance the collaborative spirit of the care teams, each session is led by different members, which consists of doctors, nurses, physiotherapists, occupational therapists, speech therapists, pharmacists, dietitians and medical social workers. In 2018, HOPE and CARE was the recipient of both the NHG Quality Improvement Award and the NHG Excellence in Action award.



IMPACT OF HOPE & CARE

- More patient-centric and cost-effective care
- Productivity rate improved by more than 95%; an average total of 400 minutes were saved each session
- More efficient care as the team is able to perform more clinical interventions in the same amount of time
- Patients, families and the team have requested for more such gatherings, sharing how this small initiative has created many happy memories
- Increased trust and understanding among team members
- Manpower savings, higher satisfaction, and better patient care
- Presentations to external agencies, such as St Luke's Hospital and the National University Health System Interprofessional Education Committee
- Presented at SHINE Conference and International Society for Quality in Healthcare Conference 2018





Palliative and supportive care services: A year in review

Hospital-based care

The GRM's palliative team offers a 24-hour hospital-based palliative care consulting service. Thus far, it has served 598 patients, rendering support to hospital teams in the management of difficult symptoms, complex psychosocial issues, and terminal discharges. In April 2018, the palliative care team expanded its services by opening five dedicated acute palliative care beds in the campus, and cared for 92 patients with complex physical and psychosocial issues.

To further palliative care support, a 16-bed sub-acute palliative unit in YCH was relocated from Ward D68 to Ward D108 on 1 November 2018. This has benefited some 276 patients with interim care and provided them with slow-stream rehabilitation, symptom control, caregiver training, and a comfortable stay while they waited for inpatient hospice placement.

In FY2018, two more palliative specialist outpatient clinics were opened, recording 425 patient visits.

Community-based care

In the community, the Palliative Service-CCT brought specialist-level palliative care into homes, fulfilling wishes and maximising time and quality of life for patients who were diagnosed with advanced cancer, advanced organ failure, and advanced stages of clinical frailty.

Building on this, the team partnered the Singapore Cancer Society's home hospice team to provide visiting consultancy services. They also collaborated with nursing homes under GeriCare@North and, in 2018, the services expanded to provide end-of-life care for patients who have expressed a wish to pass away in nursing homes.

Training and education

To increase the level of expertise on palliative care, several courses for healthcare workers as well as the public were conducted in FY2018.

One of these was a two-day end-of-life course for Yishun Health staff. The awareness-building session, which raises the understanding of palliative care and end-of-life issues, used to run four sessions a year. In 2018, the number of sessions rose to six, and saw the participation of 124 Yishun Health staff.

Advance Care Planning: A conversation that matters

Advance Care Planning (ACP) is an ongoing conversation between a patient, family members, and healthcare professionals. It seeks to verbalise, clarify and document a patient's future healthcare plans, as well as medical or personal preferences and decisions. This plan guides the medical team and the family in providing care that is in accordance to his/her wishes, values, beliefs and preferences. In doing so, ACP reduces the need for family members to make decisions during a crisis, and safeguards a patient's best interests.

In the past year, Yishun Health's ACP Office has been advocating the importance of ACPs at an institution level, working with healthcare institutions



ABOVE: As a Senior Advance Care Planning Facilitator, Mr Lawrence Huang (right) guides individuals on their end-of-life wishes

BELOW: Community Physician participants of the General Advance Care Planning Facilitator Course





Participants of the Both Sides, Now toolkit training session

and community partners to de-medicalise this conversation. This builds a broader culture for the community as a whole to reflect on what is important to them and what meaningful care is at the end of life.

Within Yishun Health, the ACP programme covers the initiating, referring, facilitating, and activating of ACPs at the end of life. ACP conversations are now taking place across Yishun Health, beyond the ward and outpatient settings, and in nursing homes, polyclinics, GP clinics, Wellness Kampung, and even in homes.

In partnership with Both Sides, Now

Training and supporting ACP advocates and facilitators in the community has allowed more Singaporeans to access information about end-of-life care in their neighbourhoods. One of Yishun Health's valued partners in the community is Both Sides, Now (BSN).

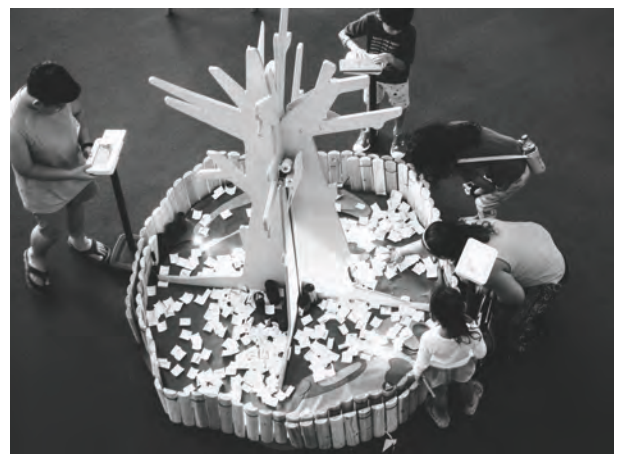
BSN has been working in the heartlands of Yishun and Chong Pang to evoke end-of-life conversations over the last two years through art, workshops and other creative approaches.

Following the success of their arts-based interventions last year, BSN has developed a toolkit for other healthcare workers. Across two-day sessions in January 2019, BSN trained 35 doctors, nurses, medical social workers and administrators from Yishun Health, Woodlands Health Campus, polyclinics and social service organisations such as TOUCH Community Services and Beyond Social Services to use this toolkit to facilitate end-of-life conversations with patients, caregivers and at-risk youths.

Live Well, Leave Well

Inspired by BSN, Yishun Health, together with Woodlands Health Campus, set out to deliver a series of talks, workshops and exhibitions to spark end-of-life conversations in public library spaces. Coordinated by Singapore Hospice Council, 20 institutions contributed 33 programmes as part of the Live Well, Leave Well campaign to mark World Hospice and Palliative Care Day on 12 October 2018.

Doctors, nurses, counsellors and volunteers from both institutions delivered a menu of creative programmes. This included film screenings, intimate discussions on how grief and spiritual pain are expressed, and art workshops. There was even a Human Library, where attendees met and listened to four individuals who have journeyed through illness, death and dying. Our collaboration culminated in the centrepiece of the campaign at Ang Mo Kio Library, the Decision Tree, where the public was asked to make end-of-life decisions on the spot. This was done to show the many difference values or preferences of people, emphasising that, in such scenarios, there are no right or wrong choices.





Mini Medical School: Conversations about the end of life



The Mini Medical School (MMS) marked its fifth year in 2018. The free education programme aspires to raise the health literacy of seniors in the community. This initiative also underscores the commitment towards

lifelong learning and dedicated self-empowerment, equipping people with the knowledge and skills to age well. Since its inception in 2013, 14 runs have been conducted for hundreds of residents in the North, who have attended the sessions that touched on epidemics, emergency preparedness, and metabolic syndromes.

In January 2018, MMS took a leap of faith to run Good Life, Good Will, Good End — sessions about end-of-life issues. Despite the challenging topic, once considered taboo, 293 people attended the series over the Lunar New Year season. Over three Saturdays, participants confronted challenging and necessary issues surrounding the last leg of life. Eight distinguished speakers from the hospital and community held engaging and thought-provoking lectures that spanned ACP, grief and bereavement, as well as palliative care issues.

Participants openly shared their experiences and emotions, reflecting that people were more than ready to discuss issues surrounding death, dying and, consequently, living well. As part of the sessions, participants were tasked to write or create art in the form of a condolence letter, letter to their deceased loved one, or their own eulogy. With recurring themes of love, gratitude, pain, mortality and legacy, more than 80 submissions were received, and have been compiled into a commemorative publication, *Letters to the Stars*.

Upcycling to make caregiving easier

Officially started in 2016, the Recycling Medical Equipment for End-of-life Patients is an initiative that supports patients who wish to spend their last days in the comfort of their own homes. The programme, which ran



informally for many years, matches donated medical equipment to those in need of it.

Under this initiative, Yishun Health's ABLE Studio, our retail pharmacy, coordinates with palliative care nurses to receive medical equipment donated by families whose loved ones have passed on. The nursing team then identifies patients who are unable to afford to buy or rent these items for their own end-of-life needs, then coordinates the transport and delivery of medical equipment to their homes. Donated items include adjustable hospital beds, oxygen concentrators, suction pumps, air mattresses, and commodes.

This initiative makes it possible for palliative patients to be cared for in the comfort of their home, and easier for loved ones to perform caregiving duties. Over the last two years, this endeavour, run through the generosity of donors — who sometimes even foot the transport bill — and delivery providers who offer an affordable transport fee, has since benefited some 100 patients and families in need.





RESEARCH AND
EDUCATION

UNCOVERING MYSTERIES, SHARING DISCOVERIES

Yishun Health's mission to provide quality, affordable and integrated team-based healthcare is supported by our research and education efforts. In FY2018, Yishun Health focused on identifying and tackling important healthcare challenges, such as diabetes and end-of-life issues. These efforts are part of our ethos to seek continuous improvement and enable us to deliver more value to our patients.



The Alexandra Health Fund (AHF) drives a large proportion of Yishun Health's research work. In FY2018, it supported 17 key programmes directed at improving the quality of life of our patients.

AHF was incorporated as a Company Limited by Guarantee and a registered charity under the Charities Act in September 2014. It has since benefited over 300 patients annually with financial assistance. It helps patients to live independently in the community through support services such as transportation and home care, medical

equipment, consumables, and medical treatment across Yishun Health.

Such initiatives consistent with AHF objectives are aligned to Yishun Health's key focus to build 'health resilience'. This means keeping the population well through health promotion, illness prevention, as well as empowered self-care and crisis management. AHF supports Yishun Health's UCM, and funds programmes that encourage the community to manage their own health independently.

FY2018 DONATIONS INCLUDE:



\$16.6 million

Yishun Health community projects (KTPH surplus)



\$9.5 million

Yishun Health's Evolving Healthcare Model Programme (KTPH surplus)



\$6 million

Yishun Health's Human Resource Development (KTPH surplus)



\$3 million

Research (KTPH surplus)



\$28,741

General donations

These programmes may target complex patients transitioning from or entering acute to community care settings, patients with chronic diseases who can be better managed by primary care physicians and supported by our community nursing teams, and residents living in the community to support each other.

In FY2018, AHF:

- Supported a joint Research and PHCT project on augmented glucose monitoring that helps to improve diabetes care for the population
- Supported strategic training of Yishun Health staff in areas of talent and leadership development, and emerging learning needs for care transformation
- Designated funds for the Mavis Khoo Nursing Leaders Scholarship, which is supported for the next 10 years
- Supported clinically relevant research projects that can contribute directly to improving patient care, enhance clinical research capabilities, and demonstrate potential in translating basic discoveries into the prevention, diagnosis, treatment and cure of diseases
- Contributed to the Get Well Fund for patients to get home faster

As of March 2019, AHF has \$170 million in its coffers, an increase from \$139 million (as at March 2018).

A year in review:

Education Development Office

Yishun Health's Education Development Office (EDO) was set up in 2013 to oversee and coordinate the delivery of pre-employment clinical training. EDO develops Healthcare Professional Training Programmes for students from the medical, nursing, pharmacy and allied health professions. EDO marked several milestones in FY2018.

Leadership changes

Prof C Rajasoorya passed the baton of leadership to A/Prof Yip Chee Chew, who became Education Director in 2018.

The Academic Year 2018 (AY2018) also saw a transition of leadership for the Postgraduate Year 1 (PGY1) programme in KTPH. After five years of dedicated service, A/Prof Lawrence Tan stepped down as Programme Director, and Dr Nimeshi Sanjila Peiris took over the helm in January 2019.

Restructuring the EDO

EDO also underwent a timely re-organisation. With the integration of Yishun Health into the NHG cluster, it restructured to align itself with the NHG Education Office framework. EDO is now comprised of three units: the Graduate Medical Education (GME) unit, Pre-Professional Education (PPE) unit, and Education Development (ED) unit.

- The GME unit, formerly known as the Residency Program Office, oversees the postgraduate medical training in Yishun Health, which includes Residency and PGY1 training programmes, Basic and Advanced Specialist Training, and National Pharmacy Residency programmes.
- The PPE unit provides administrative and logistical support to the pre-employment clinical training for medical, nursing and allied health students.
- The ED unit is involved in post-registration education activities, education research, and innovations.

A better way to track teaching hours

As part of EDO's drive to improve work processes and productivity through technology and innovation, it collaborated with the Human Resource Development department on an in-house system to track teaching hours.

The result, the Electronic Timing Input and Monitoring for Education (E-TIME), is a hassle-free way to capture the start and end of contact times with medical educators. This improves the way educators monitor and regulate schedules to ensure the fulfilment of teaching hour requirements. The E-TIME project will begin its pilot trial in the OVS department in the last quarter of 2019.



The inaugural NHG Postgraduate Year 1 (PGY1) retreat

The inaugural NHG PGY1 retreat took place on 23 June 2018. Administrative and education leaders, key faculty, and PGY1 graduates from KTPH and Tan Tock Seng Hospital gathered to discuss the programme and strategise on strengthening it. Through collaborative leadership and learning, stakeholders worked towards sharing expertise and resources to deliver a more robust PGY1 training within the NHG cluster.

Trainees' Engagement Day

In FY2018, the GME Unit organised the annual Trainees' Engagement Day, a social event that integrates educational elements to welcome and orientate trainees into the culture and systems of



Trainees are given an orientation into the culture and systems of Yishun Health

Yishun Health. The session was attended by more than 300 faculty members, administrative staff, medical residents, and medical students.

Expanding our education reach

The year also recorded a notable rise in the number of LKC Medicine Year 4 scholarly projects supervised by KTPH Medical Teaching faculty. KTPH started with two scholarly projects in AY2017 and, since then, the number of projects has increased to nine in AY2018, with the majority of them involving service improvement initiatives and biomedical research. Through this, EDO hopes to inspire LKC Medicine students to pursue a career in academic medicine. KTPH also received its first batch of Occupational Therapy and Physiotherapy students from the Singapore Institute of Technology degree programmes for clinical placement in 2018.

Learning from the experts

EDO leverages its network to tap on the expertise of external speakers from all over the world. In FY2018, it organised two NHG College faculty development workshops at Yishun Health. One of these was a Workplace-Based Assessment Using Mini-CEX workshop on 13 November 2018 by Dr John Norcini, a world-renowned expert in the field of assessment. On 25 February 2019, Dr Tanvi Gautam held the popular Storytelling as a Pedagogical Tool workshop.

Celebrating clinical teachers

The annual NUS Medicine Dean's Appreciation for Clinical Teachers for the NHG cluster was held at KTPH in November 2018. This award ceremony

recognises and celebrates the teaching excellence of medical educators who have taught NUS Medicine undergraduates. Awardees from KTPH include:

NUS Medicine Dean's Award for Teaching Excellence

- **A/Prof Yip Chee Chew**

Head and Senior Consultant, OVS

- **Dr Surej John**

Senior Consultant, Psychological Medicine

- **Dr Anoop Thomas**

Senior Staff Physician, OVS

NUS Medicine Special Recognition Award

- **A/Prof Philip Yap**

Senior Consultant, Geriatric Medicine

- **Dr Jagadish Ullal Mallya**

Senior Consultant, Geriatric Medicine

NUS Medicine Dean's Award for Teaching Excellence and NUS Medicine Special Recognition Award

- **Dr Marc Ong Wei Jie**

Associate Consultant, General Surgery

Besides these individual awards, KTPH's Department of Anaesthesia was awarded the NUS Medicine Clinical Training Excellence Award. Our educators were also recognised for their excellence in education administration leadership.

Researching the best ways to teach

Research in the health professional medical education is an important and strategic aspect of the work at EDO. Such research helps to ensure that educational tools and approaches are founded on sound pedagogy, theoretical underpinnings, and best practices. In FY2018, two Yishun Health clinicians won awards for their work in medical education research at the 2018 Singapore Health & Biomedical Congress.

Best Poster Category

Gold Medal

- **Dr Cheong Chin Yee**

Associate Consultant, Geriatric Medicine

Health Professions Education Research

Investigator Award Category

Silver Medal

- **A/Prof Yip Chee Chew**

Head and Senior Consultant, OVS



A/Prof Yip Chee Chew receiving his award



Representing KTPH's Department of Anaesthesia was Dr Lim Kim Seong

Driving better care through research

Our research efforts set the foundations for a better understanding of diseases, their roots, mechanisms and complications so that we can develop more effective methods for prevention and management. For the full list of papers submitted for publication, turn to page 94.

Tracing the genetic roots of young onset diabetes

Dr Ang Su Fen

Diabetes is on the rise in Singapore, spurring a nationwide effort to drive its prevention, early detection and management. In 2010, diabetes affected about 11.3% of those aged 18 to 69, and the disease is expected to affect 1 million Singaporeans by 2050.

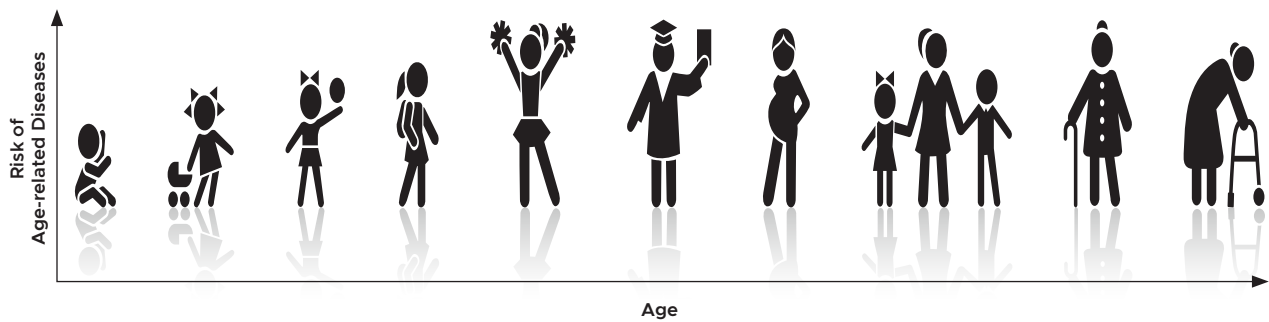
Worryingly, a cross-sectional study of a prospective cohort under the Joint Asia Diabetes Evaluation program (JADE) highlighted that one in five adult patients had early-onset (below 40 years old) Type 2 diabetes. Of the nine countries that participated in this study, Singapore had the highest proportion (about 30%) of participants with early-onset Type 2 diabetes. They were seen to:

- Be less likely to achieve good glycaemic control despite being more intensively treated with insulin
- Be at a higher risk of diabetes-associated complications

To better identify the determinants of early-onset Type 2 diabetes to aid its prevention, detection, treatment and prognosis, a study was started to determine the genetic root of the condition. The study found the PAX4 R192H genotype to be significantly associated as a risk factor for early-onset Type 2 diabetes in our East Asian population, marking a milestone in our journey to uncover the genetic basis of diabetes.

Conclusion Together with clinical and biomarker data, this genetic information will help identify the different types of early-onset diabetes. This can be used to more accurately stratify disease types and

RISK OF AGEING



to more precisely predict, treat and manage early-onset Type 2 diabetes.

Early-onset of Type 2 diabetes and rapid loss of kidney function

Dr Liu Jianjun

The early onset of Type 2 diabetes is of growing concern, especially as there is accumulating data that suggest it is linked to the early development of vascular complications. A research study was initiated to look into the risk of chronic kidney disease progression, also known as rapid kidney function decline, in this group of patients. The study, supported by the Clinician Scientist Award from National Medical Research Council, followed 1,189 patients with Type 2 diabetes for a median of 3.9 years.

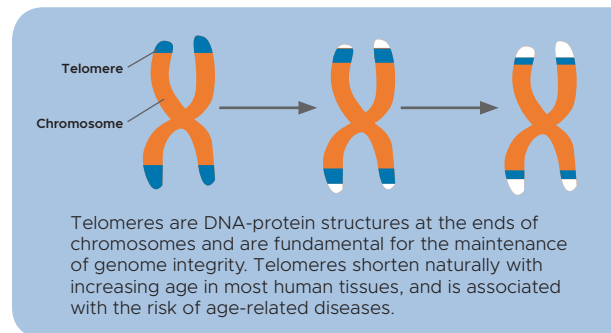
In this cohort of patients, 157 (13%) had developed Type 2 diabetes between the ages of 18 and 30 (early onset). Compared to their remaining 1,032 later-onset counterparts, those with early-onset Type 2 diabetes were more obese and had poorer glycaemic control at baseline. After accounting for multiple traditional risk factors, those with early-onset diabetes have a 2.63-fold higher risk of progressive chronic kidney disease. Moreover, the excess risk of progressive chronic kidney disease associated with early-onset diabetes mainly occurred in those with a diabetes duration shorter than 10 years. This suggests that delaying the onset of diabetes and intensive treatment during the early phase of their diabetes journey will be desirable.

Conclusion This study highlighted the importance of intensive kidney function surveillance in patients with early-onset Type 2 diabetes. It also suggests the importance of prevention of Type 2 diabetes in younger people to avoid the high burden of diabetic complications in their most productive period of life.

Exploring the relationship between obesity, ethnicity and telomere length

Dr Resham Lal Gurung

Telomeres are DNA-protein structures at the ends of chromosomes. They play a fundamental role in maintaining genome integrity. Telomeres shorten



with increasing age. When telomeres become critically short, cells undergo senescence and eventually die. Clinical studies have established telomere length as a biomarker for ageing, with short telomeres being a risk factor for age-related diseases, including cardiovascular disease, renal failure, neurological diseases, and all-cause mortality.

While emerging evidence suggests an inverse relationship between obesity and telomere length, the relationship between the changes in obesity and telomere length in multi-ethnic Asian populations with Type 2 diabetes is not well understood.

A study of 1,431 people of this population was initiated to examine the association of baseline and changes in obesity indices with telomere length dynamics. It was found that telomere length varied among ethnic groups in an Asian population with Type 2 diabetes, and was independent of metabolic conditions, smoking status, and levels of inflammation markers. Compared with ethnic Chinese, leukocyte telomere length (LTL) was longer in ethnic Malays and similar in Indians.

Cross-sectionally, body mass index (BMI)-adjusted (residual) visceral fat area (VFA), and waist-to-hip ratio were significantly associated with LTL in the Chinese but not in the Malay and Indian subset. These changes in BMI and VFA were inversely correlated with changes in LTL. Furthermore, in the Chinese, 1-SD incremental changes in BMI and VFA were significantly associated with larger telomere attrition, independent of age, sex, diabetes condition, baseline LTL, obesity, and inflammation markers.

Conclusion Three-year changes in BMI and VFA were associated with telomere dynamics in Chinese but not in Malays and Indians with Type 2 diabetes. Increased central obesity (visceral fat) was associated with larger telomere attrition than general obesity. This could mean that reducing obesity may reduce the risk of diabetes complications associated with shorter LTL in the Chinese population.

Fat-gain associated with progressive renal decline in diabetics

Dr Angela Moh

In parallel with the growing prevalence of Type 2 diabetes, diabetic kidney disease has become the leading cause of end-stage renal disease, and cardiovascular morbidity and mortality worldwide. This imposes a profound socioeconomic and healthcare burden on patients and healthcare systems.

According to a large-scale study conducted by the NHGP from 2006 to 2009, diabetic kidney disease was seen in 52.5% of patients with Type 2 diabetes, and the rate was highest in those of Malay ethnicity.

While weight gain is linked to the risk of Type 2 diabetes, research on the impact of weight gain on diabetic kidney disease is lacking. It is accepted that excess weight exerts a detrimental effect on glycaemic control. Long-term exposure to hyperglycaemia may lead to 'metabolic memory', or a legacy effect that predisposes individuals to an increased risk of vascular diseases that resist amelioration by tight glycaemic control. This points to a critical need for sustaining good glycaemic control in the long term — a fact made more urgent given that, in Singapore, one in three people with diabetes is poorly controlled (HbA1c of $\geq 8\%$).

Based on data from a cohort of 1,014 patients with Type 2 diabetes, it was found that an average weight gain of merely 2.5kg over three years was sufficient to be associated with a 60% increased risk of rapid decline in kidney function.

This association was significant only in the Malay ethnic group, but not in Chinese, Indian and other ethnicities. Similarly, a weight gain of 2.5kg increased the risk of high albuminuria by 60%. In a recent sub-cohort analysis of subjects with adequately controlled diabetes at baseline, it was found that a subsequent loss of glycaemic control mediated 40% of the relationship between increased adiposity and diabetic kidney disease progression.

Conclusion Taken together, the findings suggest that modest increase in adiposity adversely affects renal health, partly explained by poor control of diabetes. Therefore, a carefully designed treatment regime to effectively manage weight and glycaemic

control is important for preventing diabetic kidney disease development and progression.

Using cytokines and genetic markers to better determine septic prognosis

Dr Shahla Siddiqui, Dr Resham Lal Gurung, Dr Sylvia, A/Prof Edwin Seet Chuen Ping, A/Prof Lim Su Chi

The outcomes of sepsis and septic shock patients are heterogenous, with a variable response despite standardised care. The aim of this study was to explore the racial differences in septic shock outcomes, and their association with genetic polymorphisms and cytokine levels in an Asian population.

This was an observational cohort study in the KTPH ICU of 198 patients (73 Chinese, 73 Malay and 52 Indian and others) admitted there between August 2016 and June 2017, with a diagnosis of severe sepsis. Plasma interleukin-6 (IL-6), interleukin-10 (IL-10) and tumour necrosis factor- α (TNF α) were measured. The gene panel studied included 16 genes. The rs7038903 common variant in SVEP1 gene showed significant association with sepsis severity independent of other variants. Moreover, the association between rs7038903 and increased hazard for death remained significant after further adjusting for cytokines level.

Interestingly, significant differences were seen in plasma IL-6 in individuals with or without rs7038903 C allele in patients with severe sepsis in the Malay ethnic group. Our study shows a promising polymorphism in SVEP1 gene (rs7038903), which is associated with sepsis shock and 28 days mortality, independent of age, gender, method of diagnosis, and SOFA score.

Conclusion Collectively, while the findings so far have shown the additional value of measuring cytokines and genetic markers in sepsis outcomes in the local population, further large-scale studies are needed in a heterogeneous septic population with a rigorous analysis to know the significance of these findings.

To err is human:

The nurse who commits the error needs help too

Mok Wen Qi, Chin Guey Fong, Yap Suk Foon
Second-victim phenomenon is broadly described as the suffering of providers, such as nurses, in the face of a clinical error. Second victims experience myriad symptoms and consequences, including poor psychological, physical and professional outcomes. This study aimed to explore nurses' second-victim experience and quality of support resources.

An exploratory descriptive study using a self-administered questionnaire survey was conducted

from 1 January to 12 February 2018 in KTPH. The second-victim experience and quality of support resources was measured using the Second Victim Experience and Support Tool (SVEST), with well-established reliability and internal consistency. SVEST is a 29-item tool measuring second-victim experience across seven dimensions.

A total of 1,163 inpatient nurses were included in the final analysis. A majority of the participants reported 'neutral' to 'not significant' second-victim responses. It was found that local nurses who are younger and less experienced were more likely to experience greater second-victim response. As a majority of local nurses graduate with a diploma around the age of 20 and make nursing their first job, this insufficient job experience may explain their limited problem-solving skills and coping mechanisms. The percentage of respondents who experienced second victim-related turnover intentions and absenteeism was 31.8% and 9.3%. Among the support options, having a respected peer to discuss the adverse clinical event was rated as the most desirable.

Conclusion Awareness of the second-victim phenomenon and strong institutional support is essential in alleviating the suffering of nurses and assisting with their reconciliation in the aftermath of an unanticipated error. The findings reinforced the need for institutions to actively address the suffering of second victims and develop a robust second-victim support programme to assist them with their recovery and reconciliation.

Learning and developing together

Our training and development programmes enable us to rise together, not only as an organisation, but in tandem with our partners, to ultimately enhance healthcare delivery for all.

Training Enhancement and Accreditation for Community and Home Eye Screening

A/Prof Yip Chee Chew

A vast majority of preventable blindness such as cataracts continues to remain undetected in the community until they become symptomatic. The Community and Home Eye Screening Service (CHESS) is a novel project by Yishun Health to increase the early detection of common eye conditions in northern Singapore for specialist referral and management.

Community nurses and opticians are activated as Primary Eye Care Professionals (PECPs) to play an important role in increasing the reach and regularity of community eye screenings. This is an improvement over ad-hoc eye screenings by hospitals or community groups. A robust Training and Accreditation System (TAS) is crucial so that

physician-extenders can act as competent and safe PECP.

Traditionally, Face-to-Face Training and Assessment (F2FTA) is the gold standard TAS, but it is labour intensive, time consuming, and expensive. Instead, CHESS leverages Yishun Health's hospital e-learning platform, the Learning Management System, to deliver the e-learning component.

An electronic TAS, called the Training Enhancement and Accreditation for Community and Home Eye Screening (TEACHES), was developed to augment F2FTA in this workforce transformation. TEACHES negates the expenses incurred to develop a TAS software or smartphone application.

TEACHES uses a flipped-classroom pedagogy to enhance the teaching of clinical knowledge and eye examination skills in PECP. It involves a synergistic combination of cognition-based training videos, mental rehearsal, and repetitive scenario-based assessments to optimise learning without incurring more faculty contact time. This innovative and effective teaching model was recognised with accolades at major conferences, such as the 16th Asia Pacific Medical Education Congress, 2019 (Merit Award, Oral Presentation) and the Health & Biomedical Congress 2018 (Health Professional Education Research Investigator Award, Silver Medal).

Since its commencement in 2018, TEACHES has trained 38 nurses and 162 opticians to provide CHESS, while reducing F2FTA sessions and duration. With TEACHES, PECPs can flexibly learn at their own pace while maintaining TAS compliance through reminders and enforcement.

Over a one-year period, 1,789 residents in northern Singapore were screened by TEACHES-trained nurses. One or more asymptomatic eye and eyelid conditions were detected in 41.5% of screened residents. Of these, 69.5% could be managed in the community without specialist referral. TEACHES-trained opticians also performed around 400 opportunistic eye screenings at their optical shops.

Building nursing competencies for end-of-life issues

With an ageing population, skill sets for palliative care are becoming more relevant. However, the core curriculum for end-of-life care in nurse training courses is limited, and only 45% of nurses indicated familiarity with inpatient palliative care. To build up nursing competencies in end-of-life care, an End-of-Life Care workshop was started.

The two-day multi-modal workshop aimed to reduce nurses' death anxiety and improve their

skills, knowledge and attitude towards palliative care. The first workshop was held for 45 nurses. Based on a 20-item knowledge-based questionnaire and a Death Attitude Profile-Revised scale, it was found that the workshop significantly improved participants' knowledge and reduced their anxiety dealing with issues surrounding death. Most nurses also reported a positive change in their knowledge, attitudes and practice even after the workshop.

Process improvements

With regular reviews, deployment of automation and IT, as well as rigorous academic analyses, Yishun Health works relentlessly to improve processes, raise safety, improve seamlessness, and streamline care.

Automation to reduce errors in medication dispensing

A new Inpatient Pharmacy Automation System (IPAS) in KTPH has been rolled out to lower the risk of errors in the dispensing and administration of medications. Leveraging NHG's existing Closed Loop Medication Management (CLMM), KTPH implemented IPAS in February 2018. IPAS is a part of CLMM, which closes the medication management loop using a barcode system that checks the unit dose dispensed against the SCM electronic medication administration record.

KTPH's IPAS comprises:

- Automated Dispensing Cabinets (ADC):
These computerised drug storage cabinets hold medication stocks and are accessed by nurses
- Unit Dose Tablet Repackaging Machine:
A centralised packaging system used by the pharmacy to supply medications to wards; the machine repackages medications into barcoded unit dose sachets

- SCM for Barcode Medication Administration:
An enhancement to the existing SCM system to read barcoded unit doses; this electronically matches administered drugs to ordered drugs for safety
- System for Automated Medication Management:
A barcode-assisted system to facilitate picking supplies from the pharmacy

IPAS raises patient safety by verifying medications accurately throughout the entire medication process. The automated process will also help the pharmacists to focus more on value-added patient-facing roles, such as medication dispensing and counselling. At the ward level, the controlled drugs can be securely stored in the ADC, thus doing away with the need to count controlled medications at every shift change or for a dedicated nurse to hold an access key. Overall, IPAS has improved operational efficiency, revamped the nursing and pharmacy workflow, and raised the quality of patient care.

Fasting patients before cataract surgery – challenging the status quo through evidence-based reviews

A/Prof Edwin Seet Chuen Ping

Two anaesthetists from KTPH's Department of Anaesthesia, together with key opinion leaders from the United Kingdom and United States of America, debated the utility of fasting in routine cataract surgery. This ubiquitous practice of preoperative starvation has near-religious adherence in many institutions around the world, although it is not supported by high-level evidence from clinical research.

The authors, consisting of anaesthetists and ophthalmologists, conducted a review of the



published scientific literature and argued for the case of challenging the status quo. This paper was recently published as 'The Open Mind' in the influential American journal, *Anaesthesia & Analgesia*. The article attracted debate and discussion in the scientific community.

Prolonged fasting may affect patients' physical and psychological well-being, resulting in dehydration, low blood glucose levels, and other side effects. Anxiety may also be worsened by thirst and hunger, inducing unwanted stress responses.

Consensus within the anaesthesiology and ophthalmology communities is lacking, giving rise to variable practices around the world. Based on this literature review, the authors opined that advantages of fasting avoidance in routine cataract surgery under regional anaesthesia outweigh the low risk of pulmonary aspiration from lack of fasting. They suggested a more liberal approach with respect to preoperative fasting — patients should be allowed to consume a light meal or liquids (for example, an electrolyte drink) before surgery. Such practices should ameliorate thirst and hunger, and improve patient well-being and experience.

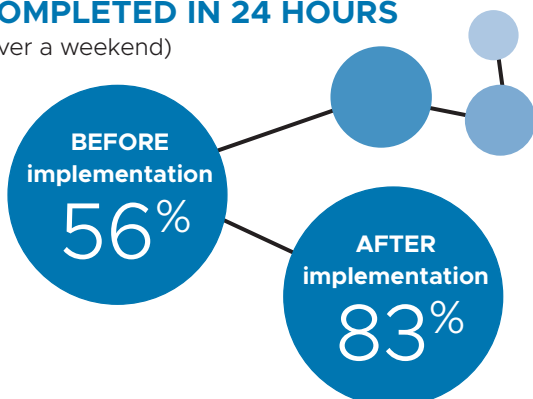
Since 2014, KTPH has done away with unnecessary pre-procedure fasting for routine cataract patients.

Enhanced vigilance over MRSA

MRSA is a hospital-acquired infection that is difficult to treat and can impact the ability of patients to be admitted to community hospitals. To improve surveillance over MRSA, the Department of Laboratory Medicine has worked to provide 24-7 MRSA testing. Leveraging new molecular technology and redefining the job scopes of the Junior Medical Technologists to include rotations to the Microbiology and Molecular laboratory sections, they have decreased the turnaround time of detecting MRSA. This ensures that affected patients are isolated as soon as possible to reduce the spread of MRSA in the wards.

RATE OF MRSA TESTS COMPLETED IN 24 HOURS

(over a weekend)



Extending awareness and education

Beyond internal efforts to improve care, our departments also extended education to the greater public about important issues.

Celebrating Pharmacy Week

During Pharmacy Week, held in October 2018, Yishun Health pharmacists organised an exhibition: Know Your Medicines — Curb the Highs, Fight the Bugs. Via booths that housed informational exhibits and educational activities, they engaged the public on topics such as managing diabetes, hyperlipidaemia and hypertension. Useful tips on using medication lists were also shared, and participants could play a game highlighting the dangers of antibiotic resistance. PHCT nurses offered free health screenings.

Raising awareness of antibiotic resistance

Antibiotic resistance is a growing problem, and can lead to adverse drug events that predispose a person to other types of infections and make them harder to treat. To raise the public's awareness of the issue, an informational booth was set up during Antibiotic Awareness Week in November 2018. Doctors and pharmacists shared the risks of inappropriate or unnecessary use of antibiotics, and the importance of finishing courses of medicine.

To support antibiotic safety throughout Yishun Health, an Antimicrobial Stewardship Programme (ASP) is in place. Under the ASP, pharmacists work closely with Infectious Disease specialists to ensure that only patients who truly require antibiotics receive the correct type, and for an appropriate duration. They also work with the patient's primary care doctor to discontinue or change antibiotics that are at high risk of becoming resistant. In addition, ASP pharmacists review and update in-house antibiotic guidelines and protocols to be consistent with international guidelines and hospital-specific data.





AWARDS AND
RECOGNITION

THE PURSUIT OF EXCELLENCE

The rewards of delivering good medical care often lie in the little things — a smile, a word of thanks, or the joy of seeing someone get back on their feet. And in today's challenging healthcare environment, there is even greater satisfaction in knowing that we can take a step back to provide empowering infrastructure so that patients can care for themselves, supported by the resources of family and community.



Mdm Ye Fong Lai (third from left), Ms Serene Lim (fifth from left) and Mr Rosli bin Hadi (extreme right), together with Yishun Health staff, at the Healthcare Humanity Awards 2018

Even as we strengthen our internal operations to provide quality, value-added, integrated person-centred care, we are also building our ecosystem of care for greater synergies. In ways big and small, Yishun Health has, over the past year, continued in our pursuit of excellence. This is driven by our conviction that building better healthcare means building the right environment, creating enabling platforms, and nurturing healthcare professionals who embody heart, skills and wisdom.

Healthcare Humanity Awards

Born from the legacy of the heroism shown by healthcare workers during the outbreak of Severe Acute Respiratory Syndrome in 2003, the Healthcare Humanity Award (HHA) recognises and honours healthcare professionals, caregivers and volunteers who provide care in our community.

On 26 April 2018, three members of the Yishun Health family were honoured at the 2018 HHA ceremony. They were Nurse Clinician Ms Serene Lim Chiew Peng, former YCH patient and current befriender volunteer Mr Rosli bin Hadi, and caregiver Mdm Ye Lai Fong.



Yishun Health recognised at May Day Awards 2018

Mrs Chew Kwee Tiang received the Medal of Commendation during the NTUC May Day Awards Ceremony, held on 5 May 2018. Mrs Chew was one of 141 recipients who were acknowledged for strengthening labour management relations, upgrading the workforce, and being a partner to the Labour Movement. Mrs Chew was nominated by the Healthcare Services Employees' Union for her strong advocacy of bipartism, cordial labour-management relations, and collaboration on fair and progressive employment practices.

Yishun Health also received the inaugural Innovative Breakthrough Award at the same ceremony as one of the 15 partners of the Kampung Admiralty Silver Community. Dr Wong Sweet Fun, Chief Transformation Officer, represented Yishun Health to accept this award, which recognises breakthrough initiatives that have made an impact on the lives of workers.

The annual NTUC May Day Awards are held in conjunction with Labour Day, and recognises individual leaders and organisations for their contributions to workers in Singapore.



Making our mark in healthcare transformation

The Public Sector Transformation Awards are given to individuals and teams from the Public Service who showcase excellence in service delivery, innovation and best practices. Two of Yishun Health's person-centric initiatives were recognised at the 2018 ceremony, held on 4 July 2018, for their innovative approaches to improving healthcare delivery and access.

A/Prof Philip Yap, Senior Consultant, Geriatric Medicine, KTPH, received the Distinguished ExCEL Innovation Champion award for his pioneering work in raising the understanding of and elevating the level of care for dementia patients in Singapore. A/Prof Yap established both the Care for Mentally Infirm Elders (CAMIE) and Comprehensive Assessment & Rehabilitation of the Mentally Infirm Elder (CARMIE) initiatives. CAMIE is a restraint-free acute medical ward in KTPH for patients with dementia. CARMIE is its sister ward in YCH.

The team from Community and Home Eye Screening Service (CHESS), steered by A/Prof Yip Chee Chew, Head and Senior Consultant, Ophthalmology & Visual Sciences, KTPH, picked up the ExCEL Innovative Project award. CHESS has revolutionised community eye care by training nurses and optometrists to be physician extenders. This scalable model has reduced specialist referrals to hospitals, increased healthcare accessibility for the elderly and home-

bound, and lowered the cost of screening and managing eye conditions.

Our big win at the Asian Elderly Care Awards 2019

Yishun Health was tops in five categories of the first Asian Elderly Care Awards, which recognises healthcare providers for excellence and best practices in areas of physical, emotional, economic, social and spiritual well-being of the elderly.

Excellence in Brand Building and Marketing, Gold Award

Share a Pot®: Coming together for soup and society

Share a Pot® addresses frailty and social isolation in the senior community through the weekly soup programme, which includes group exercises, a bowl of healthy soup, and opportunistic health screening where necessary. They work together to deliver nourishment to seniors' bones, brawn, brains and bonds.

Most Creative Community Partnerships, Gold Award

Together We Build: Bridging communities across the ages

Intergenerational programmes such as Tri-Generational HomeCare@Northwest build compassionate communities through engaging and educating university and secondary school students. Students are paired with seniors to offer befriending,



(From left) A/Prof Philip Yap and A/Prof Yip Chee Chew were recognised at the Public Sector Transformation Award Ceremony



health and psychosocial support. The experiential learning and mentorship build empathy among students, who are also empowered to design creative and suitable activities to meet the needs of seniors.

Best in Healthy and Active Ageing Services, Gold Award

Building Healthy Self-managed Communities in the North: Yishun Health's ecosystem of community programmes

Yishun Health supports a healthy self-managed community by leveraging group activities, community resources, and the individual and collective strengths of people. Services such as Wellness Kampung, Community Nurse Posts, Share a Pot® and CHOPE also decentralise healthcare to a low-cost, high-access network of community nodes.

Excellence in Day/Home Care or Stay-in Services, Gold Award

Community Nursing in the north of Singapore: Beyond hospital to home

Community nurses visit seniors in their homes after their discharge from the hospital to assess their transition. Taking clinical, psycho-social and environmental needs into account, nurses build

rapport with patients and caregivers to develop individualised care plans. They also collaborate closely with community partners where needed. By leveraging community support and building up self-management capabilities of seniors, the programme keeps them well in the community.

Outstanding Innovations in Health Education, Excellence Award

Mini Medical School @ KTPH: Driving medical literacy

Yishun Health's Mini Medical School is a ground-up initiative that makes medical education accessible to the community. The series of informative and easy-to-understand lectures is aimed at raising health literacy and self-efficacy so that people can be active participants in managing their own health.

Strengthening safety and security

On 28 September 2018, KTPH received the Safety and Security Watch Group Award in the individual category for the fifth consecutive year. Jointly organised by the Singapore Police Force and Singapore Civil Defence Force, the award recognises members for their exceptional efforts in taking ownership and practising a proactive approach towards premises safety and security.



AWARDS AND RECOGNITION



Dr Donald Wai (right), Director, Hospital Planning & Infrastructure, received the ASEAN Energy Award from Dato' Paduka Lim Jock Hoi, Bruneian Government Official and Secretary General of ASEAN



Passive design is used to lower noise pollution as well as reduce solar heat gain

- The Geriatric Education & Research Institute (GERI) tower buffers YCH wards from street traffic noise along Yishun Central
- YCH wards at Tower D are placed at the north end, facing directions away from the rising and setting sun

Energy-saving cooling and heating

- Air-conditioned wards have dual mode switches to allow natural ventilation from open windows
- Air handling units pre-cool fresh air and reduce cooling needs
- Solar thermal hot water systems generate hot water for daily use, cutting down on the need for electricity

Smart lighting systems

- LED lights and T5 lightings with electronic ballast are used to increase efficiency in lighting systems
- An intelligent lighting control system deploys motion and photocell sensors to enhance the building management system and maximise lighting efficiencies

A lean and green Yishun Health campus

Sustainability in Yishun Health has long formed one of our core beliefs to drive a conducive environment for health, healing and wellness. Being green and sustainable is also our way of walking the talk, as a healthy environment is the foundation for a healthy life. For our environmental stewardship and green initiatives, Yishun Health is proud to have been honoured with several awards in FY2018.

The Singapore Environment Council presented the Singapore Environmental Achievement Award (Public Sector) 2018 to KTPH on 30 August 2018, making it the first restructured hospital to be recognised in this area. The award is a nod to our achievements in successful energy management, water conservation, and our 4Rs (Refuse, Reduce, Reuse and Recycle).

At the 36th ASEAN Ministers on Energy Meeting on 29 October 2019, YCH received the ASEAN Energy Award (AEA) in the Tropical Buildings category as first runner-up. YCH was recognised for the innovative technologies used to reduce energy consumption and increase the use of renewable energy. Beyond a more comfortable environment for patients, visitors and staff, these efforts have offset more than 40% of YCH's energy use. The AEA is the region's highest recognition of efforts in energy efficiency, renewable energy, and energy management.



OUR
PEOPLE

WE ARE YISHUN HEALTH

Our growth as an organisation goes beyond building new physical infrastructure; it extends to developing our networks, partnerships and culture. Just as we have come together operationally as a healthcare campus to offer seamless and integrated care, we have also united ourselves with a shared vision. This is nurtured through talent development and professional inter-learning as well as organisational traditions, celebrations and culture-building.



Two key ways in which we come together and refine our direction are our Vision Alignment sessions and Town Halls, where Yishun Health leadership share their insights and map out our organisational direction, reinforce key messages, and communicate strategies that support the national, NHG and Yishun Health mission, vision and goals.

In FY2018, Senior Management delivered a total of six Vision Alignments, and Yishun Health CEO Mrs Chew Kwee Tiang helmed four Town Halls. At the November 2018 Town Hall, NHG Group CEO Prof Philip Choo shared the NHG Care Models and key

developments within the NHG family. In that same session, Mrs Chew spoke of NHG's Core Values, while Mr Samuel Wong, NHG Cluster ISO, talked about cyber security.

Partnerships that strengthen our purpose

Yishun Health has gone beyond the confines of our walls to work with partners, patients and the community at large, leveraging their strengths and finding synergies so we can become greater than the sum of our parts. This is how we become more than a hospital, and develop into a collective community of care.



The MOU was signed and witnessed by (from left) Mr Chiang Hock Woon and Mr Lim Teck Yin, Deputy CEO and CEO, SportsSG; Mrs Chew Kwee Tiang; and A/Prof Yip Chee Chew, Medical Director, AdMC

An agreement for better access to dental care

KTPH and the National Dental Centre of Singapore (NDCS) signed a Memorandum of Understanding (MOU) on 22 June 2018. The partnership, which took effect on 1 July 2018, establishes a commitment to ensure timely care for dental patients, and sees the streamlining of dental services and resources across both institutions. This collaboration will provide better quality of care and outcomes for patients by improving access to periodontal, denture, crown and bridge, and root canal treatments.

Improving eldercare knowledge and skills for the region

To enhance international bilateral collaboration and exchange between KTPH, Geriatric Education & Research Institute (GERI), the Ministry of Public Health and Chulalongkorn University in Thailand, a Collaborative Agreement was signed. This was part of International Dialogue on the Provision of Long-Term Care (LTC) for the Elderly between Singapore and Thailand. Guests from nursing homes, hospices and community hospitals in Singapore attended

the event to learn from international partners and encourage deliberate and engaging conversations between key stakeholders on improving the provision of palliative and end-of-life care in the LTC sector.

Taking Active Health to the community

Yishun Health and Sport Singapore (SportSG) signed a MOU on 11 March 2019 at AdMC to launch a new collaboration to bring healthy living to the residents in the North. On 25 May 2019, the Active Health Lab at Admiralty Medical Centre (Active Health @ AdMC) was officially launched. Housed within a community medical facility, Active Health @ AdMC aims to help residents in the North take greater ownership of their fitness. It leverages AdMC's role as a one-stop medical centre and a source of community health outreach activities to strengthen various initiatives that educate and empower the community.

Under this unique effort, patients will be referred to Active Health experts for fitness and health assessments and a personalised wellness plan. These two-way medical referrals will integrate the overall medical and physical needs of each person and involve medical referrals from Active Health to doctors, as well as from AdMC physiotherapists to Active Health. For patients, this means they will gain the skills and knowledge to transition from medical care to self-care.

Developing talent, nurturing culture, and fostering excellence

To aid us in our vision of transforming healthcare in the North, we invest intensively in building our talent and grooming people to have the right aptitude and attitude to serve patients and their families. As such, we actively engage staff in learning programmes to inculcate a culture of lifelong learning.

Building a future-ready workforce

Yishun Health awarded more than 100 staff in-service sponsorships and scholarships to staff



The MOU was signed by (seated, from left) Prof Pang Weng Sun, Executive Director, GERI; Mrs Chew Kwee Tiang; Dr Pannet Pangputhipong, MD, Deputy General Director, Ministry of Public Health (MOPH), Thailand; and A/Prof Siriphan Sasat, Head, STAR on Long-Term Care for Older Persons, Chulalongkorn University



in FY2018. These educational initiatives enable our staff to upgrade their competencies and prepare for the future through local and overseas formal education programmes, which range from certificate to PhD levels. More than 20 clinicians and administrators were also sponsored to participate in the Healthcare Manpower Development Programme. In addition, four overseas visiting experts were invited to share with our departments on work that benefits our patients and residents.

Developing the Yishun Health pipeline

Yishun Health started the inaugural NHG Healthcare Management Associates Programme (HMAP) and recruited five Management Associates (MA) in 2018. The HMAP is aimed at grooming fresh graduates with outstanding leadership qualities for a fulfilling and challenging career at Yishun Health. The two-year programme will expose the MA to various functions within the healthcare setting through three different postings, focusing on campus, lifelong and shared services portfolios, as well as care transformation projects.

Developing our Patient Service Associates and Therapy Assistants

Yishun Health embarked on a collaboration with the Institute of Education (ITE) on a Work Learn Technical Diploma (WLTD) as part of our long-term plan to upgrade the skill sets of our Patient Service Associates (PSA) and Therapy Assistants, and prepare them for the future. The WLTD is a practical course with a comprehensive range of modules in ITE, and forms a large component of the on-the-job training in Yishun Health.

Our own PSA supervisors and therapists who had risen through the ranks were identified to be the trainers. They will go through a train-the-trainer course conducted by ITE and supported by internal managers and directors. Not only will the trainees benefit from the rich experiences of the trainers, our trainers, who are also staff, will also be better at the job as they share and embrace Yishun Health's learning spirit of 'all share, all teach, all learn'.

Patient Service Associates job redesign

Our PSA play an important role in facilitating care flow for patients, and addressing all patient-facing administrative issues. In their daily work, they handle a broad range of tasks, from handling service inquiries and assigning beds for admission to financial care activities and creating statistical daily reports. In FY2018, we completed two PSA transformation projects.

Inpatient ward redesign

To improve efficiency in the inpatient wards, the work processes for PSA were updated.

This includes:

- Digitising the process for blue-letter referrals
- Printing patient labels to streamline workflow and reduce errors
- Collating upcoming internal and external outpatient appointments
- Re-engineering the process time and doing small-batch booking of non-urgent NHGP slots

Hassle-free financial counselling

Typically, a team of eight Financial Counselling Officers (FCO) conduct financial counselling and deposit monitoring, while a separate team of seven Business Office Associates (BOA) work on MediSave and insurance claims, tagging and scanning documents into SAP. In FY2018, these functions were redesigned and combined to come under the responsibility of eight Financial Care Officers. BOA were redeployed to other tasks under the Business Office.

These two projects achieved productivity gains and saved \$1,561,126 and 31,059 hours. These gains were achieved without increasing staff numbers even though there was a 11 to 12% growth in workload (admissions and discharges) from 2016 to 2018.

Workplace Health Forum:

Living Well at work, home and life

The sixth instalment of the Workplace Health Forum was hosted by Yishun Health on 2 March 2018. It was an occasion for partners to network and share best practices in workplace health promotion. This year, the forum was broadened as a NHG cluster event.

Professionals across the NHG family touched on living well in workplaces and keeping healthy at work, such as through weight management, getting vaccinations, and having a healthy mental well-being.

Engaging our community for health

Yishun Health's first Quality Convention of 2018 was called Engaging Community, Engaging Health: The Way We Connect. It was held on 24 April 2018



Ms Kuik Shiao-Yin (second from right) also joined our Q&A panel at our first Quality Convention in 2018

and featured guest speaker Ms Kuik Shiao-Yin, Director and Co-founder of The Thought Collective, and a former Nominated Member of Parliament. She talked about the challenge of connection and dived into the fundamentals of building trust. She shared that rational metrics, such as competency and reliability, are not good enough for building trust; instead, people tend to develop deep trust from a “gut level”, when they sense and connect with who we are and why we care about anything.



Our invited panellists included (from left) Dr Caroline Lim (author of *Building Enabled Communities in Singapore*), Dr Jean-Louis Lamboray, Dr Christina Tiong (CEO, Home Nursing Foundation), Mr Cormac Russell, and Prof Phillip Choo (GCEO, NHG)

Celebrating our community strengths

Yishun Health held its annual Regional Health System Forum on 21 February 2019. It was an opportunity to recap the highlights of the past year, such as our outreach efforts and impact, enhanced community nursing programme (SMART), and the appointment of new PHCT nursing leadership (Ms Low Beng Hoi, Director of Nursing, and Ng Huoy Ling, Nurse Manager).

Two guest speakers were invited to share their perspectives on building enabled communities. Mr Cormac Russell, European Director, Asset-Based Community Development (ABCD) Institute, shared that, beyond being a medical issue, health is more of a social issue related to community resources. Dr Jean-Louis Lamboray, Co-Founder, The Constellation, talked about the importance of “doing nothing”, as it is sometimes critical in order to mobilise and strengthen the community.

Building a learning organisation through facilitation

More than 120 Yishun Health staff turned up for the Expert Insights Facilitation session at the KTPH Auditorium on 13 April 2018 for an eye-opening dialogue with veteran facilitators, Dr Douglas O’Loughlin and Mr Ng Choon Seng, as they shared their wealth of experience in facilitating groups of various sizes and dynamics.

During the session’s opening speech, Mrs Chew Kwee Tiang thanked staff who have partnered senior management to teach, guide and coach their peers. She also shared her aspirations of building Yishun Health as a lifelong-learning organisation, and allowing our facilitators to form communities of practice.



Dr Douglas O’Loughlin (fourth from left) and Mr Ng Choon Seng (sixth from left), together with staff who attended the Expert Insights Facilitation session



Kaizen: our way of life

Yishun Health celebrated its spirit of continuous improvement at our fourth Kaizen Festival, held on 17 April 2019. This annual event recognises the good work done by staff across our institutions, and reinforces our commitment to doing better each day. Kaizen, or continuous improvement, has been part of our organisation's DNA since the days of Alexandra Hospital. In FY2018, 96 projects were shortlisted from 176 submissions, and 28 won an award. The festival was also a time to reflect on and rally together in our conviction and passion for delivering safe, quality care that is guided by our frameworks and philosophies.

Finance for supervisors

Apart from providing quality and value-based care to patients, healthcare staff have to manage the rising costs of healthcare spending and operations. To enable our supervisors to make sound decisions for their departments and divisions, we developed a one-and-a-half-day Finance For Supervisors programme to teach skills in understanding and interpreting financial information. Training included discussions and exercises on both qualitative and quantitative analysis of financial statements



using internal examples. This was done in collaboration with the Finance department to ensure the relevance of the training objectives and materials of the programme.

Coaching for supervisors

A Coaching For Supervisors course was also introduced in FY2018 with the aim of equipping staff with leadership skills and instilling a coaching culture. Participants were taken through the differences in coaching and other leadership roles, coaching fundamentals, team coaching, coaching for multi-generations, and the nuanced differences between coaching and a coaching mindset. An online micro learning mobile platform, Gnowbe, was also introduced as a way to record their coaching practices and learn from others.

A fun, fit and healthy Yishun Health

As an organisation, it is our goal to keep the population in the North healthy and well. To do this, we walk (as well as run, Zumba and yoga!) the talk to exercise regularly, eat healthily and maintain emotional wellness so as to keep ourselves in the peak of health, thus influencing members of our community to achieve their peak health as well.

Fitness Challenge

More than 3,600 staff participated in last year's Fitness Challenge. There was a 75% increase in participants who scored the Excellent award (20 out of 20 points).

To enhance the Fitness Challenge and go beyond promoting general wellness, two exercise programmes were introduced that targeted specific fitness. The WorkLife circuit training was created to teach participants the benefits of sustaining exercise regimes through group training. It also introduced new modalities of exercise, such as core and resistance training.

The Fitness Challenge also included new technique workshops to improve form for exercises such as push-ups, sit-ups, sit-and-reach, and the 1.6km walk/2.4km run. One in four participants who attended these sessions improved their Fitness Challenge scores.

The Yishun Health League

In FY2018, our Interdepartmental Games comprised five different competitions: badminton, basketball, bowling, futsal and captain's ball. The combination of teamwork and healthy competition improves our social cohesion and camaraderie. More than 500 athletes competed in the games, backed by hundreds of supporters. The Emergency Department and Diagnostic Radiology (DDR) department tied for the Championship title after

a series of exciting competitions. DDR also won the Highest Participation award, the third time it has done so.

Mental well-being

Yishun Health’s Human Resource’s Worklife team collaborated with Psychological Medicine and Medical Social Services to set up the PsychoSocial Executive Committee to guide and promote psychological support for staff within Yishun Health. Heart Space was one of the key initiatives that was launched in 2018.

Heart Space focuses on providing bite-sized learning opportunities to empower staff to enhance their own mental well-being. While Heart Space is parked in one of Yishun Health’s five pillars of health known as *Be Happy*, the PsychoSocial Executive Committee members have stepped forward to support Heart Space activities, such as mindfulness practices and talks on Burnout and Happiness.

To help staff organise their personal lives while being at work and create peace of mind, other programmes such as terrarium-making and talks on financial literacy were also organised.



One of the many activities under the Heart Space initiative

Making active living a routine

To make exercising more accessible, staff fitness classes are held within Yishun Health. Last year, more than 350 classes were held.

Families get active

Our first combined Family Day and Active Day was held on 3 November 2018 for over 1,600 Yishun Health staff and their family members, volunteers and partners at D’Marquee at Downtown East.

Our first overseas day trip saw 26 Yishun Health staff and family members visit Batam to explore markets and take part in a cooking class on 2 June 2018.



MAKING EXERCISING MORE ACCESSIBLE

11

FITNESS CLASSES

held during lunch hour and in the evenings:
Cardio Kickboxing, KpopX Fitness, and varying levels and types of Muay Thai, Yoga, Pilates and Zumba



8

SEASONS

5 TO 10

CLASSES PER SEASON



1,400

PARTICIPANTS



OUR PEOPLE

Making safety and security our priority

Strengthening our culture of safety, we have embarked on a new phase of building a culture of safety in our organisation.

Speak Up For Safety

Our Speak Up For Safety (SUFS) movement entered its next phase in FY2018. Marking this was a session held on 15 August 2018, where Dr Lynne McKinlay, Senior Medical Educator from the Cognitive Institute, and Dr Wong Moh Sim, Deputy CMB (Clinical Quality & Manpower Development), and Chairman of the Patient Safety Collaboration Workgroup, spoke about Promoting Professional Accountability (PPA).

To inculcate a blame-free and supportive culture that promotes trust and teamwork, Yishun Health launched its PPA Online Reporting Tool on 1 September 2018.

While SUFS has so far focused on implementing the Safety CODE, the next step forward is developing people. To overcome challenges in face-to-face interaction, the PPA Online tool allows staff to report excellent or unprofessional behaviours. A triage team decides if the situation requires a Peer Messenger to initiate an objective conversation. Peer Messengers are trained to share the feedback with empathy without judgment and encourage reflection – a method that has proven more effective than telling people what to do. Dr Wong emphasised this builds a speaking-up culture, where informal feedback channels are used to communicate behaviours that are perceived as unprofessional and to also highlight good acts.

We also launched the PPA programme as a follow-up to the SUFS programme. PPA is an evidence-based programme that seeks to address sub-optimal health outcomes following behaviours that undermine a culture of safety and reliability. It is an accountability framework that uses a respectful and collegiate approach to managing disruptive or unprofessional behaviours.

Briefings and training sessions in the form of seminars, executive briefings, intervention skills workshops for leaders, peer messengers skills training, and staff seminars were conducted for all staff over four days in August 2018.

Staff cultural events

Being a diversity-embracing organisation, Yishun Health takes the effort to celebrate various festive and cultural occasions, such as Chinese New Year, Hari Raya and Deepavali. These events allow participants from different ethnicities to learn more about each other's culture.



May Day Cultural Exchange

One such event was our May Day Cultural Exchange evening. A collaboration between Yishun Health and Healthcare Services Employees' Union (HSEU), the celebration saw numerous booths that highlighted the cultures of China, Malaysia, Myanmar and the Philippines. Staff ambassadors took the opportunity to share about their respective cuisines and cultures. As a memento, specially crafted 'passports' were given out. These pamphlets included multiple-choice questions and interesting facts about each country. Event participants could earn a chop on their passports from each booth to enter a lucky draw for prizes.

Keeping up the gold standard in hand hygiene

To commemorate Global Hand Hygiene Day, Yishun Health's Infection Control team held an award ceremony on 18 May 2018 to recognise teams that have reflected outstanding hand hygiene compliance in their wards and departments. Dr Chris Willis, Chairman of the Infection Control Committee, and Senior Consultant, General Medicine, noted that hand hygiene compliance has improved over the years, and challenged healthcare workers to continue maintaining hand hygiene standards.

A partnership to build emergency preparedness

On 26 September 2018, KTPH collaborated with the National Fire and Civil Emergency Preparedness Council and Singapore Civil Defence Force (SCDF) to conduct our annual Mass Fire Evacuation Drill. This year's drill was the first time we participated as a hospital in a month-long national campaign to promote fire safety and emergency preparedness in public premises. The occasion highlighted the importance of fire safety awareness in healthcare institutions. The exercise involved more than 1,000 people from Yishun Health staff, Company Emergency Response Team (CERT) members, and SCDF volunteers. The drill also tested the reaction of emergency responders, and the evacuation procedures for patients, staff and visitors.

As part of the night fire drill on 19 October 2018, smoke was noticed in a ward pantry at about 9pm. Food that had been left unattended to heat up in a microwave had ignited, causing a fire. Putting in action the fire safety procedure known as R.A.C.E, the alarm was sounded and a fire extinguisher was used to try to put out the fire. This led to CERT



members and the Site Incident Controller (SIC) expediting a report to the Fault Reporting Centre, whose personnel arrived in Personal Protective Equipment in response. The fire, nevertheless, grew and smoke rapidly engulfed the ward. The fire warden declared a horizontal evacuation to adjacent wards and a second alarm was activated. While waiting for the SCDF, the CERT team took steps to mitigate the blaze.

This night-time scenario was to enhance the operational fire readiness and capability of KTPH staff and the CERT team. About 60 staff were involved in the drill, and the lessons learned from the exercise were used to validate and fine-tune the respective Standard Operation Procedures, Safe Work Instructions and emergency contingency plans.



Business Continuity Plan Tabletop Exercise

On 23 January 2019, Yishun Health held its Business Continuity Plan (BCP) Tabletop Exercise. Some 120 staff across 19 departments came together to go through their plans for times of crisis and disaster.

This exercise ensures that Yishun Health has a workable plan that complies with statutory and regulatory requirements for emergency response and crisis management to recover and resume our critical business function of caring for our patients. It was also useful to identify weaknesses and areas for improvement, and to propose recommendations. It was facilitated by an external partner from BCP Asia.



OUR PEOPLE

Engaging our community in service

As an organisation, Yishun Health not only gives back, but provides platforms for community engagement and service. In doing so, we are able to more sustainably make an impact on lives and collaborate to grow social cohesion.

In solidarity with inclusivity

Yishun Health was part of the 10,000 people who turned up for the Purple Parade on 27 October 2018. Staff were there to pledge their support for inclusivity, which seeks equal access to education, employment, transport and social networks for people with special needs. Within Yishun Health itself, there are efforts to build an inclusive workforce through a partnership with SG Enable, an agency dedicated to enabling persons with disabilities. Every year, we provide a batch of students from SG Enable with on-the-job training, equipping them with useful skills for the future.

Sunshine Buddies

The Sunshine Buddy programme, supported by C3A, started in October 2017, and has since brought many energetic and passionate volunteers together. Dressed in bright orange vests with a colourful button name badge, these Sunshine Buddies befriend patients and caregivers, distribute meals, and assist with way-finding and simple language translation. They also make the waiting experience more pleasant and positive by providing blankets, serving warm drinks, and watching out for patient needs. For patients and caregivers, these friendly faces have become a listening ear, informal support system, and even a channel for feedback.

In the wards, Sunshine Buddy 'sitters' start 'sunshine' rounds at 7am. 'Sitters' keep a watchful



All dressed up in shades of purple for the parade!

eye on high-fall risk patients, alert nurses if a patient needs assistance, and help patients get water or accompany them to the bathroom. They also serve breakfast, comb the hair of patients, and help cut their nails.

In FY2018, the programme grew to some 110 volunteers serving 10 wards and 14 clinics daily. They have clocked more than 7,000 hours and befriended some 9,500 patients and caregivers. Training has also been provided to ensure that they are equipped for their role. Training ranged from befriending and wheelchair handling to learning about Personal Data Protection and the different resources available to our patients. On 23 March 2019, 57 Sunshine Buddies attended the first Sunshine Buddy retreat, during which they had a lively discussion of their experiences, and shared ideas to grow the Sunshine Buddy family.



Volunteers in orange vests — these Sunshine Buddies bring cheer to patients in the wards and clinics



The Mobile Library team encourages reading among the elderly to address memory loss

Reading for better health

A segment of patients at YCH face the risk of memory loss due to their sedentary lifestyle and demographic profile. To counter this, a Mobile Library was set up. The weekly programme aims to encourage reading among elderly patients as a way to address memory loss brought about by physical inactivity, lack of mental stimulation, and social isolation. The library also encourages interaction between patients and YCH's senior volunteers, and fosters social connection between the two.

A ground-up dance group

Dancercise was formed in November 2017, independently organised by a group of volunteers, called the Fun Fit Club, from Woodlands. A resident, Ms Mona, proposed organising this dance activity for patients while visiting her relative at YCH. The all-female group, mainly made up of housewives aged 40 and above, come together regularly to perfect their Zumba-inspired dances. The music and



A Dancercise class in session for wheelchair-reliant patients

moves have brought cheer to the wards, and even encouraged patients to move along with them.

Thank you, volunteers!

A get-together tea session was held on 9 July 2018 to thank more than 100 Yishun Health volunteers for bringing joy, companionship and acts of service to patients. They were appreciated for their contributions in areas such as gardening, stroke support, befriending, advanced care planning, and music therapy, all of which have played an important role in the creation and sustaining of a caring and healing environment.

Running in support of cancer survivors

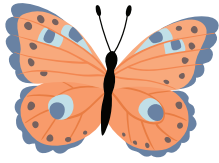
On 2 March 2019, over 30 Yishun Health staff joined 7,000 participants in Relay For Life, a 15-hour relay run. It was organised by the Singapore Cancer Society to raise funds for its programmes and services. The relay also signified solidarity with patients, families, survivors and caregivers in their cancer journey.



Yishun Health staff who took part in Relay For Life

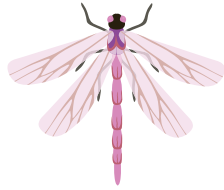


FAUNA AND FLORA



Butterflies

97
SPECIES



Dragonflies &
Damselflies

29
SPECIES



Birds

81
SPECIES



Fishes

100
SPECIES



Fruit Trees

50
SPECIES



Medicinal Plants

102
SPECIES



Flowering
Plants

52
SPECIES



Vegetables

51
SPECIES

UTILITIES



Electricity

41,246,935 KWH

(increased by 1.8%
from 40,531,293kWh)



Potable Water
Consumption

116,801 M³

(decreased by 31.6%
from 170,782m³)



NEWater
Consumption

234,060 M³

(increased by 14.2%
from 204,992m³)



Gas

617,079 KWH

(increased by 1.1%
from 610,626kWh)



General Waste

2,326 TONS

(increased by 8.7%
from 2,139 tons)



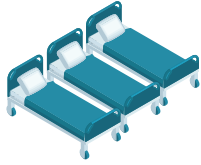
Recyclable Waste

172 TONS

(decreased by 25.9%
from 232 tons)



KHOO TECK PUAT HOSPITAL



Beds in Service

659

(Decreased by 9% from 727)



Bed Occupancy

92%

(Decreased by 3% from 95%)



Total Inpatient Days

220,300

(Decreased by 5% from 232,623)



Average Length of Stay

5.3 DAYS

(Increased by 8% from 4.9 days)



Outpatient Attendances

375,705

(Decreased by 1% from 379,135)



A&E Attendances

133,980

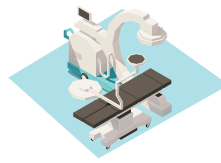
(Decreased by 4% from 139,349)



Inpatient Admissions

41,722

(Decreased by 10% from 46,119)



Total Surgeries

51,234

(Decreased by 1% from 51,871)



Day Surgeries

33,810

(Decreased by 2% from 34,668)



Inpatient Surgeries

17,424

(Increased by 1% from 17,203)

YISHUN COMMUNITY HOSPITAL



Beds in Service

258

(Increased by 0.4% from 257)



Bed Occupancy

79%

(Increased by 4% from 75%)



Total Inpatient Days

74,232

(Increased by 6% from 70,197)



Average Length of Stay

25.9 DAYS

(Increased by 5% from 24.6)



Inpatient Admissions

2,834

(Decreased by 2% from 2,885)

ADMIRALTY MEDICAL CENTRE*



Outpatient Attendances

26,254

(Increased by 90% from 13,814)



Day Surgeries

2,089

(Increased by 191% from 717)

* AdMC officially opened in July 2017; as such, FY2017 figures only cover 9 months



AWARDS

APRIL 2018 HEALTHCARE HUMANITY AWARDS

Open Category

- Serene Lim Chiew Peng
Advanced Practice Nurse/Nurse
Clinician, Case Management, KTPH

Volunteer Category

- Rosli Bin Hadi

Caregiver Category

- Ye Lai Fong

MAY 2018 NHG RECOGNITION AWARDS Outstanding Citizenship Award

- Dr Eugene Yang Weiren
Senior Consultant, General Surgery,
KTPH

Young Achiever

- Dr Benjamin Lam Chih Chiang
Consultant, Family and
Community Medicine, KTPH
- Eileen Cheah Lilian
Senior Nurse Manager,
Nursing Administration, KTPH
- Dr Ester Yeoh Chai Kheng
Consultant, General Medicine
(Diabetes), KTPH
- Chelsea Law Chiew Chie
Principal Podiatrist, Podiatry, KTPH

Team Recognition Award (Gold)

- Hip Fracture Service
Yishun Health

Team Recognition Award (Silver)

- Acute Medical Unit
KTPH

Team Recognition Award (Bronze)

- Telehealth Supported
Community Care Team
PHCT
- Emergency Surgery and Trauma
KTPH
- ICU Critical Care Outreach Warriors
KTPH

NTUC MAY DAY AWARDS

Medal of Commendation

- Chew Kwee Tiang
Chief Executive Officer, Yishun Health

Innovative Breakthrough Award

- Yishun Health

JULY 2018 PUBLIC SECTOR TRANSFORMATION AWARDS

Distinguished EXCEL

Innovation Champion

- A/Prof Philip Yap Lin Kiat
Senior Consultant,
Geriatric Medicine, KTPH

EXCEL Innovation Project

- Community and Home Eye
Screening Service (CHESS)
KTPH

COMMUNITY IN BLOOM AWARDS

Edible Gardens (Special Mention)

- KTPH
- Organisations Category (Gold)
- YCH

COMMUNITY EDIBLE GARDENS COMPETITION

Heaviest Pumpkin (1st Place)

- KTPH

Heaviest Wintermelon (2nd Place)

- KTPH

Heaviest Wintermelon (3rd Place)

- YCH

AUGUST 2018 NATIONAL DAY AWARDS The Public Administration Medal (Silver)

- Chew Kwee Tiang
Chief Executive Officer,
Yishun Health

The Public Administration Medal (Bronze)

- Deric Liang Shih Tyh
Board Member, Alexandra Health
Fund, Yishun Health;
Chief Financial Officer and Chief
Operating Officer, MOHH

The Commendation Medal

- Chelsea Law Chiew Chie
Principal Podiatrist, Podiatry, KTPH
- Toh Hai Moy
Senior Nurse Clinician,
Nursing Administration, KTPH
- Low Suat Fern
Principal Pharmacist, Pharmacy, YCH
- Noribah Bt Abdul Rahman
Senior Nurse Manager, Acute and
Emergency Care Centre, KTPH

The Efficiency Medal

- Jainon Bte Jayus
Nurse Manager, ICU 1 (Medical), KTPH
- Chan Sue Mei
Principal Dietitian,
Nutrition and Dietetics, YCH
- Ho Kwee Chong
Manager, Finance & Accounting,
KTPH

The Long Service Medal

- Ho Siew Liene
Senior Staff Nurse, Ward A82, KTPH
- Magammal D/O Abimannan
Staff Nurse, Infection Control, KTPH
- Sastrina Bin Ismail
Senior Assistant Nurse,
Ward A61, KTPH
- Tan Soh Choo
Principal Assistant Nurse,
ICU 2 (Surgical), KTPH
- A/Prof Yip Chee Chew
Head & Senior Consultant,
Ophthalmology & Visual Sciences,
KTPH
- A/Prof Koh Kwong Fah
Senior Consultant, Anaesthesia,
KTPH
- A/Prof James Alvin
Low Yiew Hock
Senior Consultant,
Geriatric Medicine, KTPH
- A/Prof Pek Wee Yang
Chairman, Medical Board,
Yishun Health
- Prof Pang Weng Sun
Dy GCEO (Population Health), NHG;
Executive Director, GERI;
Senior Consultant,
Geriatric Medicine, KTPH

NATIONAL MEDICAL EXCELLENCE AWARD National Outstanding Clinical Quality Champion Award

- A/Prof Wong Moh Sim
Dy Group Chief Quality Officer, NHG;
Dy CMB (Clinical Quality and

Manpower Development),
Yishun Health;
Head, Laboratory Medicine, KTPH

NURSES' MERIT AWARDS

- Pamela Foong Pei Mei
Assistant Nurse Clinician,
ICU 1 (Medical), KTPH
- Cherie Koh Sin Teng
Nurse Manager, Ward B86, KTPH
- Lai Foon Wan
Nurse Manager,
Day Surgery Centre, KTPH
- Ng Siok Qi
Nurse Manager, Ward B95, KTPH
- Xu Shuhui
Assistant Nurse Clinician,
Ward A61, KTPH
- Ng Huoy Ling
Nurse Manager, PHCT
- Lee Yen Ein
Assistant Nurse Clinician,
Ward D108, YCH

PRESIDENT'S AWARD FOR NURSES

- Shirley Heng
Deputy Director of Nursing,
Nursing Administration,
Yishun Health

SINGAPORE ENVIRONMENTAL ACHIEVEMENT AWARD (PUBLIC SECTOR)

- Green Committee
KTPH

NHG EDUCATION TEACHING AWARDS

NHG Education Leaders Award

- Chew Pei Kiang
Senior Nurse Educator,
Nursing Administration, KTPH

NHG Inter-professional Teaching Award

- Mercado Jhovel Lizondra
Senior Staff Nurse, Ward A61, KTPH

NHG Outstanding Nurse Teachers Award

- Seow Geok Huay
Assistant Nurse Clinician,
Nursing Administration, KTPH

NHG Teaching Award for Allied Health Educators

- Jasmine Lee Chan Bing
Senior Radiographer,
Diagnostic Radiology, KTPH

- Wong Shiyun
Senior Physiotherapist,
Rehab Services, KTPH

NHG Teaching Award for Junior Doctors

- Dr Jasmyn Angon De Leon
Resident Physician,
Geriatric Medicine, KTPH

NHG Teaching Award for Nursing Preceptors

- Bergonia Maria
Melissa Asuncion
Staff Nurse,
Acute and Emergency Care Centre,
KTPH
- Bugayong Rachel Villalon
Senior Staff Nurse, Ward B85, KTPH
- Ernie Yanty Binte Borhanudin
Senior Staff Nurse,
Ward B105, KTPH
- Faith Tan Yen Hoong
Senior Staff Nurse, Ward D78, KTPH
- Hou Luyin
Senior Staff Nurse, Ward B86, KTPH

- **Toh Shang Ming**
Senior Staff Nurse,
Ward B75, KTPH
- **Sia Hwee Wan**
Assistant Nurse Clinician,
Major Operating Theatre, KTPH
- **Siti Amirah Binte Sahari**
Senior Staff Nurse,
Ward A51, KTPH
- **Loh Mun Yee**
Staff Nurse, Ward D57, YCH
- **Wva Chai Yin**
Staff Nurse, Ward D98, YCH

NHG Teaching Award for Pharmacy Preceptors

- **Samuel Ho Shan Wei**
Pharmacist, Pharmacy, KTPH

NHG Teaching Award for Pharmacy Senior Preceptors

- **Grace Chang Shu-Wen**
Senior Clinical Pharmacist,
Pharmacy, KTPH

NHG Teaching Award for Senior Doctors

- **Dr Anton Cheng Kui Sing**
Senior Consultant,
General Surgery, KTPH
- **Dr Benjamin Julian Chang Chong Ming**
Senior Consultant,
Ophthalmology & Visual Sciences,
KTPH
- **Dr Jagadish Ullal Mallya**
Senior Consultant,
Geriatric Medicine, KTPH
- **Dr Michael Fung Chung Hua**
Consultant,
Acute and Emergency Care Centre,
KTPH
- **Dr Rajaratnam Vaikunthan**
Senior Consultant,
Orthopaedic Surgery, KTPH

SEPTEMBER 2018 EXCELLENCE IN ACTION AWARDS

Team Category

- **CHESS**
KTPH
- **Wellness Kampung**
PHCT
- **HOPE & CARE**
(Holistic Patient Evaluation through Communal Activities and Rehabilitative Engagement)
YCH

NHG QUALITY DAY AWARDS Quality Improvement Category

- **Forging Optimal Mobility for the Critically Ill — Is it Possible and Safe?**
KTPH
- **STOP Catheter-Associated Urinary Tract Infection (CAUTI) in a Sub-acute Ward at a Community Hospital**
YCH

Excellence in Action Category

- **CHESS**
KTPH
- **Wellness Kampung**
PHCT
- **HOPE & CARE**
YCH

Individual Category

- **Yeo Boon Kiak**
Senior Podiatrist, Podiatry, KTPH

Exemplary Caregiver Category

- **Mr Daniel Ho**

SAFETY AND SECURITY WATCH GROUP AWARD

Individual Award

- **Security**
KTPH

COMMUNITY CARE EXCELLENCE AWARDS Individual Award (Gold)

- **Pauline Tan Swee Kim**
Senior Nurse Manager,
Ward D107, YCH

Individual Award (Silver)

- **Dr Siew Chee Weng**
Head & Consultant, Family and Community Medicine, KTPH
- **Andrew Swee Zhi Ming**
Medical Social Worker,
Medical Social Services, AIP-CCT,
PHCT
- **Jovina Cheng Khim**
Medical Social Worker,
Medical Social Services, YCH
- **Adon Chan Hock Kiong**
Principal Physiotherapist,
Rehab Services, YCH
- **Ho Geok Lay**
Nurse Manager, Ward D97, YCH
- **Rodchell Tan San Miguel**
Senior Staff Nurse, Ward D67, YCH
- **Marfa Sheryl Anne Omang**
Staff Nurse, Ward D67, YCH
- **Mabilangan Pauline Carla Villanueva**
Staff Nurse, Ward D67, YCH
- **Sarranya Devi Surreagandai**
Staff Nurse, Ward D67, YCH
- **Choo Ming Jiao**
Staff Nurse, Ward D67, YCH
- **Gauri Segar**
Senior Staff Nurse, Ward D67, YCH
- **Yap En Tong**
Staff Nurse, Ward D57, YCH
- **Yap Kah Kei**
Senior Staff Nurse, Ward D67, YCH
- **Ng San San**
Staff Nurse, Ward D57, YCH
- **Eugene Choo**
Staff Nurse, Ward D57, YCH
- **Siow Jia Yee**
Senior Staff Nurse, Ward D57, YCH
- **Bhanupriyah Annamalai**
Staff Nurse, Ward D57, YCH
- **Lopez Macron Fajardo**
Staff Nurse, Ward D57, YCH
- **Kok Chien Teng**
Staff Nurse, Ward D57, YCH
- **Neethu Jose**
Assistant Nurse, Ward D107, YCH
- **Resplendor Sheryl Dimapasoc**
Staff Nurse, Ward D107, YCH
- **Pee Phea Ling**
Staff Nurse, Ward D107, YCH
- **Gillego John Joseph Idos**
Staff Nurse, Ward D107, YCH
- **Dr Colin Ngeow**
Consultant, Medical Services, YCH
- **Tay Xuan Wen**
Assistant Nurse Clinician,
Ward D48, YCH

Clinical Quality Improvement Award (Winner)

- **STOP CAUTI in a Sub-Acute Ward at a Community Hospital**
YCH

Clinical Quality Improvement Award (Merit)

- **HOPE & CARE**
YCH
- **Streamlining of Hip Fracture Flow from KTPH to YCH**
Yishun Health
- **KISS (Keep Identifier Simple and Safe) Before the Next Move — Right or Left**
YCH
- **Improving AH to CH Admission Efficiency: Using an E-Referral System**
YCH
- **Nursing e-Doc: Individualised Nursing Care Plan to Enhance Patient's Care**
YCH

Productivity & Innovation Award (Winner)

- **Label Innovation to Improve Food Traceability and Food Safety in a Community Hospital**
YCH

Productivity & Innovation Award (Merit)

- **Patient Information Board**
YCH

OCTOBER 2018

ASEAN ENERGY AWARD

Tropical Buildings (First Runner-Up)

- **YCH**

CHARITY GOLD AWARD

- **Yishun Health**

FEBRUARY 2019

ASIAN ELDERLY CARE AWARDS

Excellence in Brand Building and Marketing (Gold)

- **Share a Pot®**
PHCT

Most Creative Community Partnerships (Gold)

- **Together, We Build**
PHCT &
Woodlands Health Campus (WHC)

Best in Healthy and Active Ageing Services (Gold)

- **Healthy Self-Managed Communities in Northern Singapore**
PHCT & WHC

Excellence in Day-Care / Home Care or Stay-in Services (Gold)

- **Community Nursing in the North of Singapore**
PHCT

Outstanding Innovations in Health Education (Excellence)

- **Mini Medical School**
PHCT

SHARE & COOK COOKING COMPETITION

Second Place

- **Terry Wan & Jason Khor**
Sous Chef & Chef De Partie,
Food Services, KTPH



DEPARTMENT	AUTHORS	TITLE OF PAPER	JOURNAL	VOLUME	PAGE NO.
Acute & Emergency	Desmond Mao Renhao	Extracorporeal Life Support: The Final 'Antidote' for Massive Propranolol Overdose	Hong Kong Journal of Emergency Medicine	-	1-6
Acute & Emergency	Desmond Mao Renhao	Confirmation of Endotracheal Tube Placement with Ultrasound – Direct Visualisation with Anterior Neck Compression and Continued Surveillance	Anaesthesia Critical Care & Pain Medicine	-	1-2
Acute & Emergency	Desmond Mao Renhao	Improvements in Bystander CPR Rates and Survival for Out-Of-Hospital Cardiac Arrest with a Comprehensive Dispatcher-Assisted CPR Program in Singapore	Resuscitation	130(1)	-
Acute & Emergency	Goh Hsin Kai, Francis Lee Chun Yue	Most Impactful Predictors for Hyperoxaemia in Exacerbation of Chronic Obstructive Pulmonary Disease Managed by Emergency Medical Services and Emergency Department	The Clinical Respiratory Journal	13(4)	256-266
Acute & Emergency	Francis Lee Chun Yue	A Common Misunderstanding in Lung Ultrasound: The Comet Tail Artifact	Medical Ultrasonography	20(3)	379-384
Acute & Emergency	Desmond Mao Renhao	Ethnic and Neighbourhood Socioeconomic Differences in Incidence and Survival from Out-of-Hospital Cardiac Arrest in Singapore	Prehospital Emergency Care	22	1-12
Anaesthesia	Shahla Siddiqui	Survey on Perceived Impact of Religion, Culture, and Social Network Information on Surrogate Decision Making in a South Asian Developed Country	Indian Journal of Critical Care Medicine	22(9)	656-659
Anaesthesia	Joselo Delute Macachor, Chandra Mohan Kumar, Edwin Seet Chuen Ping	Peripheral Nerve Blocks in a Regional Anaesthesia Block Area: An Economic Model	Regional Anesthesia and Pain Medicine	43(4)	448-449
Anaesthesia	Shahla Siddiqui, Wang Jiexun	Compliance with Brain Trauma Foundation Guidelines in TBI Patients	Journal of Clinical Cases and Reports	1(2)	63-66
Anaesthesia	Shahla Siddiqui	In the Patient's Best Interest: Appraising Social Network Site Information for Surrogate Decision Making	Journal of Medical Ethics	44(12)	851-856
Anaesthesia	Edwin Seet Chuen Ping	Laryngeal Mask Airway Protector™ for Intubation and Extubation in Thyroid Surgeries: A Case Report	Indian Journal of Anaesthesia	62(7)	545-548
Anaesthesia	Shahla Siddiqui	Extubation Success can be Better Predicted by Diaphragmatic Excursion Using Ultrasound Compared to Rapid Shallow Breathing Index	Indian Journal of Anaesthesia	62(10)	814-815
Anaesthesia	Shahla Siddiqui	Clinical Profile and Outcomes of Elderly Patients in an Asian Intensive Care Unit: A Retrospective Observational Study	International Journal of Critical Care and Emergency Medicine	4(2)	1-2
Anaesthesia	Shahla Siddiqui	Delays in Brain Death Certification in an Opt-Out Deceased Organ Donation System: Causes, Ethical Problems, and Avoidance	Asian Bioethics Review	10(3)	189-198
Anaesthesia	Shahla Siddiqui	Myasthenia Gravis as a Cause of Failed Extubation Diagnosed by Diaphragmatic Ultrasound	Journal of College of Physicians and Surgeons Pakistan	-	-
Anaesthesia	Edwin Seet Chuen Ping	Intraoperative Management of Adults with Obstructive Sleep Apnoea	-	-	1-6

DEPARTMENT	AUTHORS	TITLE OF PAPER	JOURNAL	VOLUME	PAGE NO.
Anaesthesia	Chandra Mohan Kumar, Edwin Seet Chuen Ping, Lai Foon Wan	Outcomes of Nurse vs. Anaesthesiologist Monitoring During Cataract Surgery Under Topical Anaesthesia	Journal Francais d'Ophtalmologie	41(10)	e491–e492
Anaesthesia	Shahla Siddiqui, Lynn Yeo Soo Hoon, Wang Jiexun	An Audit of Patients with Intracranial Haemorrhage Admitted to the Surgical Intensive Care Unit of a Tertiary Hospital in Singapore	Asian Journal of Neurosurgery	–	–
Anaesthesia	Edwin Seet Chuen Ping, Chandra Mohan Kumar	Starving Patients Before Cataract Surgery Under Regional Anaesthesia: Needed or Not?	Anesthesia and Analgesia	127(6)	1448–1451
Anaesthesia	Shahla Siddiqui	Member Spotlight: Community Outreach in Cambodia	Critical Connections: Society of Critical Care Medicine Newsletter Publication	–	–
Anaesthesia	Sudeep Saxena	Use of Rotem in Correction of Unexpected Oozing in a Child with a Preexisting Normal Coagulation Profile Undergoing Splenectomy	Pediatric Blood & Cancer	65(11)	27270
Anaesthesia	Sudeep Saxena, Suresh Babu Loganathan	Does the Use of Regional Anaesthesia for Below-Knee Amputation Reduce the Need for Perioperative Blood Transfusions?	Regional Anesthesia and Pain Medicine	43(6)	646–647
Anaesthesia	Chandra Mohan Kumar	Preventing Adverse Events in Cataract Surgery: Sub-Tenon's Block	Anesthesia & Analgesia	127(4)	e68–e69
Anaesthesia	Chandra Mohan Kumar, Edwin Seet Chuen Ping	Cancelled Operations: Comment on Br J Anaesth 2018	British Journal Anaesthesia	122(2)	e15–e16
Anaesthesia	Lynn Yeo Soo Hoon, Jerry Goo Tiong Thye, Tan Kok Yang	Geriatric Emergency Laparotomy Patients an a General Hospital an Singapore	ANZ Journal of Surgery	89(1-2)	e47
Anaesthesia	Edwin Seet Chuen Ping, Chandra Mohan Kumar	Anaesthesia in Patients with Multiple-System Atrophy: A Narrative Review and Practice Guidance	Anesthesia Analgesia Practice	12(5)	176–179
Clinical Research Unit	Lim Su Chi, Sum Chee Fang	Low-Dose Levothyroxine Reduces Intrahepatic Lipid Content in Patients with Type 2 Diabetes Mellitus and NAFLD	Journal of Clinical Endocrinology and Metabolism	103(7)	2698–2706
Clinical Research Unit	Ang Su Fen, Clara Tan Si Hua, Lim Su Chi	A Genome-Wide Association Study of Diabetic Kidney Disease in Subjects with Type 2 Diabetes	Diabetes	67(7)	1414–1427
Clinical Research Unit	Moh Mei Chung, Sum Chee Fang, Subramaniam Tavintharan, Keven Ang Kue-Loong, Lim Su Chi	Gain in Adiposity Over 3 Years is Associated with Progressive Renal Decline in Multi-Ethnic Southeast Asians with Type 2 Diabetes	Journal of Diabetes	11(4)	316–325
Clinical Research Unit	Resham Lal Gurung, M Yiayunaa, Liu Jianjun, Sylvia, Clara Chan Si Min, Moh Mei Chung, Keven Ang Kue-Loong, Sum Chee Fang, Subramaniam Tavintharan, Lim Su Chi	Ethnic Disparities in Relationships of Obesity Indices with Telomere Length in Asians with Type 2 Diabetes	Journal of Diabetes	11(5)	386–393
Clinical Research Unit	Lim Su Chi, Sum Chee Fang, Jamaliah Binte Rahim, Keven Ang Kue-Loong, Liu Jianjun, Ang Su Fen, Subramaniam Tavintharan, Clara Tan Si Hua	Pax4 R192h is Associated with Younger Onset of Type 2 Diabetes in East Asians in Singapore	Journal of Diabetes and Its Complications	33	53–58



DEPARTMENT	AUTHORS	TITLE OF PAPER	JOURNAL	VOLUME	PAGE NO.
Clinical Research Unit	Liu Jianjun, Sylvia, Resham Lal Gurung, Clara Chan Si Min, Keven Ang Kue-Loong, Subramaniam Tavintharan, Sum Chee Fang, Lim Su Chi	The Relationship Between Fasting Plasma Glucagon Level and Renal Function: A Cross-Sectional Study in Individuals with Type 2 Diabetes	Journal of the Endocrine Society	3(1)	273–283
Clinical Research Unit	Lim Su Chi	Association of Diabetic Retinopathy and Diabetic Kidney Disease on All-Cause and Cardiovascular Mortality in a Multi-Ethnic Asian Population	JAMA Network Open 2019	2(3)	–
Clinical Research Unit	Ang Su Fen, Clara Tan Si Hua, Lim Su Chi	Precision Medicine for a Man Presented with Diabetes at 2 Months Old	European Journal of Human Genetics	27	989–993
Clinical Research Unit	Liu JianJun, Sylvia, Lim Su Chi	Sex Modulates the Association of Fibroblast Growth Factor 21 with End-Stage Renal Disease in Asian People with Type 2 Diabetes: A 6.3-Year Prospective Cohort Study	Diabetic Medicine	35(7)	880–886
Clinical Research Unit	Serena Low Kiat Mun, Zhang Xiao, Wang Jiexun, Allen Liu Yan Lun, Keven Ang Kue-Loong, Subramaniam Tavintharan, Sum Chee Fang, Lim Su Chi	Long-Term Prospective Observation Suggests that Glomerular Hyperfiltration is Associated with Rapid Decline in Renal Filtration Function: A Multiethnic Study	Diabetes and Vascular Disease Research	15(5)	417–423
Clinical Research Unit	Sharon Pek Li Ting, Anton Cheng Kui Sing, Michelle Lin Xueqin, Wong Moh Sim, Eric Chan Zit Liang, Moh Mei Chung, Sum Chee Fang, Lim Su Chi, Subramaniam Tavintharan	Association of Circulating Proinflammatory Marker, Leucine-Rich- α 2-Glycoprotein (LRG1), Following Metabolic/Bariatric Surgery	Diabetes Metabolism Research and Reviews	34(7)	e3029
Clinical Research Unit	Zhang Xiao, Kumari Neelam, Serena Low Kiat Mun, Keven Ang Kue-Loong, Darren Yeo Su Jian, Allen Liu Yan Lun, Subramaniam Tavintharan, Sum Chee Fang, Lim Su Chi	The Association of Serum Creatinine and Estimated Glomerular Filtration Rate Variability with Diabetic Retinopathy In Asians with Type 2 Diabetes: A Nested Case-Control Study	Diabetes and Vascular Disease Research	15(6)	548–558
Clinical Research Unit	Moh Mei Chung, Kumari Neelam, Zhang Xiao, Sum Chee Fang, Subramaniam Tavintharan, Keven Ang Kue-Loong, Lim Su Chi	Excess Visceral Adiposity is Associated with Diabetic Retinopathy in a Multi Ethnic Asian Cohort with Longstanding Type 2 Diabetes	Endocrine Research	43(3)	186–194
Clinical Research Unit	Serena Low Kiat Mun, Zhang Xiao, Wang Jiexun, Allen Liu Yan Lun, Ang Su Fen, Subramaniam Tavintharan, Sum Chee Fang, Lim Su Chi	The Impact of Haemoglobin A1c Trajectories on Chronic Kidney Disease Progression in Type 2 Diabetes	Nephrology (Carlton)	–	–
Clinical Research Unit	Liu Jianjun, Sylvia, Lim Su Chi, Resham Lal Gurung	Urine Tricarboxylic Acid Cycle Metabolites Predict Progressive Chronic Kidney Disease in Type 2 Diabetes	The Journal of Clinical Endocrinology and Metabolism	103(12)	4357–4364

DEPARTMENT	AUTHORS	TITLE OF PAPER	JOURNAL	VOLUME	PAGE NO.
Clinical Research Unit	Subramaniam Tavintharan	Overview of the Current Status of Familial Hypercholesterolaemia Care in Over 60 Countries: The EAS Familial Hypercholesterolaemia Studies Collaboration (FHSC)	Atherosclerosis	277	234–255
Clinical Research Unit / General Medicine	Liu Jianjun, Sylvia, Lim Su Chi, Resham Lal Gurung, Clara Chan Si Min, Keven Ang Kue-Loong, Subramaniam Tavintharan, Sum Chee Fang	Relationship Between Fasting Glucagon Level and Renal Function: A Cross-Sectional Study in Individuals with Type 2 Diabetes	Journal of the Endocrine Society	3(1)	273–283
Clinical Research Unit / Geriatric Medicine	Serena Low Kiat Mun, Adriel Rao Kailing, Terence Tang Eng Yeow	Factors Associated with Hospital Readmission and Emergency Visits Among Older Adults – 5-Year Experience in a Busy Acute Hospital	Journal of Clinical Gerontology & Geriatrics	9(4)	126–136
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Diagnostic Radiology	Shimpi Trishna Ramesh, Sumer Shikhare Nrupendra, Raymond Chung Jin Hung, Wilfred Peh Chin Guan	Imaging of Gastrointestinal and Abdominal Emergencies in Binge Drinking	Canadian Association of Radiologists Journal	70(1)	52–61
Diagnostic Radiology	Sivasubramanian Srinivasan	Commentary: Non-Cardiac Uses of Chest Ultrasonography Other Than Pleural Effusion	Indian Journal of Radiology and Imaging	29(1)	98
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