

BETTER
HEALTH
FOR OUR
POPULATION

HEALTHIER YOU • HEALTHIER SG



Healthier SG aims to future-proof the healthcare ecosystem to provide accessible, affordable, and quality care for generations to come.”

TAN TEE HOW
CHAIRMAN, NHG

Better Health for Our Population

Healthier You • Healthier SG



→ Drivers

- Failed “Illness Model”
- Ageing
- Chronic Disease
- Mental Health
- Constraints



= Outcomes

- Experience
- Healthy Population
- Accessible and Affordable Care
- Happy and Engaged Staff



Better Care Principles

Care and Grow Our People:
Better People, Better Care

Activate and Involve our
Population and Patients:
Better Ownership, Better Care

Relationship-Based
Healthcare: Better Trust,
Better Care

More Goods in the Basket:
Better Value, Better Care

HEALTHIER YOU • HEALTHIER SG



► HEALTHY DIET



► HEALTHY LIFESTYLE



This is a journey that started more than ten years ago, to focus on health, rather than cure. During this journey, we have built a very robust foundation for the Singapore healthcare sector.”

ONG YE KUNG
MINISTER FOR HEALTH



► QUALITY CARE



 **National
Healthcare
Group**

CONTENTS

NHG CORPORATE YEARBOOK FINANCIAL YEAR 2021/22



NHG BOARD AND SENIOR MANAGEMENT

- 06 Messages from the Chairman and Group CEO**
- 18 Board of Directors**
- 20 Senior Management**

NATIONAL HEALTHCARE GROUP HQ

- 26 Population Health**
NHG has redesigned its healthcare delivery system to move from managing patients, to supporting residents in their health journey.
- 38 Digital Transformation**
Digital technology is driving rapid and fundamental changes in healthcare, not just in improving health outcomes but also in making our health systems more efficient, resilient, and sustainable.
- 40 Group Research**
NHG continues to leverage research and innovation, as well as strengthen existing partnerships and build new ones to drive better health outcomes.
- 44 Group Education**
Education is the cornerstone of NHG's multi-faceted strategy to cultivate a sustainable healthcare system.



48 Health Services and Outcomes Research (HSOR)

HSOR supports NHG's care transformation journey by providing best available evidence for decision-making and knowledge translation to our stakeholders.



52 Group Quality

Group Quality develops, implements, and evaluates corporate strategies to achieve quality and patient safety.

54 Group Nursing

Nurses and care support staff are the bedrock of our healthcare system and they form an integral part of the patient care team.



66 NHG Pharmacy

NHG Pharmacy remains committed to caring for patients by advocating the safe and responsible use of medication.



68 NHG Diagnostics

NHG Diagnostics has further expanded its services to the community to help build a pandemic-ready and healthier population.

71 Group Corporate Development

Group Corporate Development provides planning support for NHG and is the key liaison office with the Ministry of Health (MOH) on corporate governance and workplans.



CONTENTS

NHG CORPORATE YEARBOOK FINANCIAL YEAR 2021/22



116 OUR PEOPLE

NHG is stepping up our efforts to look after the health of our workforce, and empowering them to practise healthy habits at work and at home.

128 STATISTICS

131 ABOUT OUR INSTITUTIONS



TAN TOCK SENG HOSPITAL AND NATIONAL CENTRE FOR INFECTIOUS DISEASES

74 Tan Tock Seng Hospital

In tandem with battling COVID-19, Tan Tock Seng Hospital continues to forge ahead in transforming care for residents in the Central Region of Singapore.

80 National Centre for Infectious Diseases

Besides contributing to Singapore's COVID-19 response, the National Centre for Infectious Diseases also works at keeping the population safe from other infectious diseases.

84 YISHUN HEALTH

Yishun Health focuses on person-centred care, with collaboration forming the foundation of a thriving preventive care health ecosystem in the North.

90 WOODLANDS HEALTH

Woodlands Health's outreach initiatives empower residents to make better healthcare and lifestyle choices, and to stay well in the community.

96 INSTITUTE OF MENTAL HEALTH

The Institute of Mental Health is spearheading a collective effort to provide early intervention by incorporating mental health initiatives within physical health setups.



104 NATIONAL HEALTHCARE GROUP POLYCLINICS

The National Healthcare Group Polyclinics has been working hard to achieve a future-ready primary care ecosystem – one that is sustainable, accessible, and effective in improving population health.

110 NATIONAL SKIN CENTRE

The National Skin Centre seeks to improve and advance the skin health of the population by setting the highest standard of excellence in dermatological care, education, and research.



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 seven 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 as well as preserving health and quality of life. With some 22,000 staff, NHG aims to provide care that is patient-centric, accessible, seamless, comprehensive, appropriate and cost-effective.

As the Regional Health System (RHS) for Central-North 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.

OUR VISION

ADDING YEARS OF HEALTHY LIFE

OUR CORE VALUES

PEOPLE-CENTREDNESS

We value diversity, respect each other, and encourage joy in work.

INTEGRITY

We commit ourselves to the highest standards of ethical conduct.

COMPASSION

We care with love, humility, and empathy.

STEWARDSHIP

We are responsible for the care of our people, patients, and population.



ABOUT THE COVER

The cover depicts how NHG is aligned with *Healthier SG*, spurring our staff, partners, and the community to get active and adopt healthy habits to stay well at every stage of their life journey.

EDITORS

Wong Fong Tze, Jason Chiew

CONTRIBUTORS

Ong Chong Pheng, Kirstie Wong, Benetta Lim, Danielle Goh, Lydia Soh, Khairunnisa Binte Abdul Halek, Reuben Ho, Sri Bayu Ayu Jakariah, Kong Kum Yin, Jeremiah Koo, Joshua Kuek, Kristen Lee, Samantha Lim, Christina Low, Ellen Neo, Sabrina Ng, Yixin Ng, Jacinta Ong, Michelle Jessica Pereira, Edwin Phua, Eugene Seng, Amos Seow, Tan Qui Rong, Rachel Tan, Lynnette Wang

A Publication by NHG Group
Corporate Communications.
Co-designed by NHG and
Mediacorp Pte Ltd.

www.nhg.com.sg

[NationalHealthcareGroup](#)

[@nhgig](#)

[@wearenhg](#)

National Healthcare Group

CHAIRMAN'S MESSAGE

- THE CONCERTED EFFORTS OF OUR FRONTLINE WORKERS IN SINGAPORE'S BATTLE AGAINST THE COVID-19 PANDEMIC – WHICH STRETCHED OVER TWO YEARS – DEMONSTRATED THE METTLE AND RESILIENCE OF OUR NATION IN THE FACE OF ADVERSITY.

Although not fully out of the woods yet, we are now moving from a pandemic to an endemic state. With our population largely vaccinated, we are able to ease out of most of the social restrictions imposed during the pandemic. We are steadfastly gaining normalcy in our everyday way of life.

My sincere gratitude to our NHG Family, partners, and supporters for your encouragement and extraordinary show of solidarity, which propelled us forward in one of the most difficult periods experienced.

MANAGING BETTER HEALTH FOR OUR POPULATION

COVID-19 has also brought to the fore the importance of staying well through ownership of one's health. The COVID-19 experience gave us valuable insights on how self-care and individual empowerment can prevent the onset of illness through a holistic preventive health approach that essentially comprises Healthy Diet, Healthy Lifestyle, and Integrated and Quality Care. As our hospitals and clinics progressively reallocate manpower and operational resources from the management of COVID-19 patients back to managing the care of our population, we shall stay true to our vision of *Adding Years Of Healthy Life*.

The release of the *Healthier SG* White Paper on 21 September 2022

marked a milestone in NHG's *River of Life* care transformation journey, bringing into alignment the focus on proactive and preventive health. Under *Healthier SG*, the Ministry of Health (MOH) seeks to encourage residents to build a trusted and lifelong relationship with their family doctor to meet their health needs and to help modify habits for better health management. Additionally, MOH is collaborating with the three public healthcare clusters, NHG, National University Health System (NUHS), and SingHealth, to develop and sustain an integrated health and social ecosystem within our respective regions

BELOW Tan Tee How, Chairman, NHG, and Prof Philip Choo, Group CEO, NHG, at the NHG22 WALK.RUN.CYCLE MOVEMENT Finale Event at Gardens by the Bay.





My sincere gratitude to our NHG Family, partners, and supporters for your encouragement and extraordinary show of solidarity, which propelled us forward in one of the most difficult periods experienced.”

TAN TEE HOW

CHAIRMAN, NATIONAL HEALTHCARE GROUP

to keep our populations healthy. Social and community agencies such as the People's Association, Health Promotion Board, and Sport Singapore will partner the clusters to provide guidance on health interventions, activities, and programmes to achieve the long-term health outcomes for our nation.

There is impetus for change as our current healthcare model is not sustainable; the projected rates of healthcare costs based on our exponential increments over the years would greatly impact the affordability of today's healthcare system. As such, *Healthier SG* aims to future-proof the healthcare ecosystem to provide accessible, affordable, and quality care for generations to come.

We will fast-track our *River of Life* rollout, augmented by our Primary Care Networks (PCNs) and boost enrolment to *Healthier SG*. Today, about 57 per cent of the 1.5 million residents in the Central-North region have an existing relationship with NHG.

Through *Healthier SG*, we will engage more General Practitioners (GPs) to provide holistic care to more residents, with an emphasis on upstream preventive steps, through regular screening, lifestyle modification, and proactive disease management. We will be counting on our medical, nursing, and Allied Health staff, and healthcare coaches to promote *Living Well* beyond the hospitals by reaching beyond schools, workplaces, neighbourhoods, and the community.

Nurses form the largest professional group in the healthcare sector. They spend the most time with our patients. As we dive deeper into collective partnerships with GPs, our nurses will play bigger roles to support and strengthen interactions and relationships with both family physicians and patients. They will be empowered with technological devices and data to help drive the bulk of preventive services under *Healthier SG*.



RIGHT TTSH's Health Coaches giving a 'Healthy Cooking' demonstration.

BELOW An Occupational Therapist at Yishun Health attending to a patient.



Our Pharmacists and Allied Health Professionals will also have their roles redesigned to align with *Healthier SG*. To prepare for the shift, the NHG Group Pharmacy Council was set up in November 2021 to shape and influence better delivery, better experience, and better value for our patients. Similarly, the NHG Allied Health Council and NHG Group Allied Health are spearheading efforts to rethink, redesign, and deliver meaningful Allied Health services to support residents, patients, GPs, and community partners in their health goals and pathways.

DEVELOPING MENTAL HEALTH RESILIENCE

The Institute of Mental Health (IMH) has been a vanguard of mental health and an innovator in destigmatising mental illness through public education and prevention. IMH rolled out seven interactive training modules in August 2021, under the GP Partnership Programme, to deepen GPs' understanding of common mental health disorders and mental health issues. This Programme equipped the GPs to support patients at the primary care level. Since its rollout, more than 100 GPs have registered for the Programme.

IMH is also embarking on the second nationwide 'Mind Matters: A Study of Mental Health Literacy' to monitor

changing trends in knowledge, beliefs, and attitudes about common mental health disorders and management in the community. The one-year study began in August 2022 and involved some 4,000 Singapore residents aged between 18 and 65 years old. The findings will provide valuable data for future public health policies to cultivate mental health resilience in Singapore.

INVESTING IN DIGITALISATION AND INFRASTRUCTURE

We achieved another milestone in our digital healthcare transformation journey when Tan Tock Seng Hospital (TTSH), together with the National Neuroscience Institute (NNI), Ang Mo Kio-Thye Hua

BELOW Support teams ensuring the smooth launch of NGEMR 'Go-Live' at TTSH.

BOTTOM One of the NGEMR teams with Asst Prof Eric Wong, Group Chief Data & Strategy Officer, NHG (fourth from left), making final preparations to 'Go-Live' with NGEMR at TTSH.





TOP Official opening of Ang Mo Kio Specialist Centre on 18 March 2022 (from left to right): Prof Chin Jing Jih, Chairman Medical Board, TTSH; (then) Senior Minister of State for Health Dr Koh Poh Koon; Prime Minister Lee Hsien Loong; Tan Tee How, Chairman, NHG; and Prof Eugene Fidelis Soh, Deputy Group CEO (Integrated Care), NHG, and CEO, TTSH & Central Health.

ABOVE In August 2022, NHG and Tanoto Foundation jointly launched the Diabetes Reversal Programme at Kallang Polyclinic, with Senior Minister of State for Health Dr Janil Puthucheary as the Guest-of-Honour.

RIGHT A *Healthier SG* Resident Engagement Focus Group Discussion organised by NHG Institutions.

Kwan Hospital, and Ren Ci Community Hospital, successfully transited to the Next Generation Electronic Medical Record (NGEMR) system on 30 July 2022. The NGEMR harmonises processes across NHG and the NUHS, thereby enabling a more integrated and seamless aggregation of, and access to, patients' medical information across care teams and partnering institutions. Also strengthened is our capacity to collate patient data and analyse trends, patterns, and behaviours over time. As a result, patients will receive more timely and coordinated care, and an improved experience with overall cost and time savings in the long term.

TTSH opened the Ang Mo Kio Specialist Centre (AMKSC) in March 2022. The Centre provides a suite of specialist services closer to residents in the community such as transdisciplinary diabetes care management, optometrist-

led eye care, and audiologist-led hearing evaluation. In line with *Healthier SG*, TTSH is partnering GPs and polyclinics to co-manage residents' health and care in the community. For example, GPs can refer their patients for specialist diagnostics, therapy and procedures offered at AMKSC and receive updates on their patients' progress for continuing care.

We continue to enhance our infrastructure, with the new National Skin Centre (NSC) building slated to open in 2023. It will house state-of-the-art facilities to enhance clinical functions, training, and research. With more consultation rooms, a fully-equipped Day Treatment Centre for outpatients, and skin imaging and skin physiology laboratories, it will provide a more seamless and integrated care experience. The new building also features a Day Care Centre and a Patient Education Centre for public use.

On the research front, NHG together with Nanyang Technological University (NTU) and the Agency for Science, Technology and Research (A*STAR) launched co11ab Novena (co11ab), a S\$15 million incubator to support biomedical technology (BioMedtech) start-ups, which are making the leap from research and development into commercialising their innovations. Located at NTU's Lee Kong Chian School of Medicine (LKCMedicine), the incubator aims to be a national innovation and translational hub that brings together research, clinical, and venture-creation activities. It is scheduled to be fully operational in the first quarter of 2023.





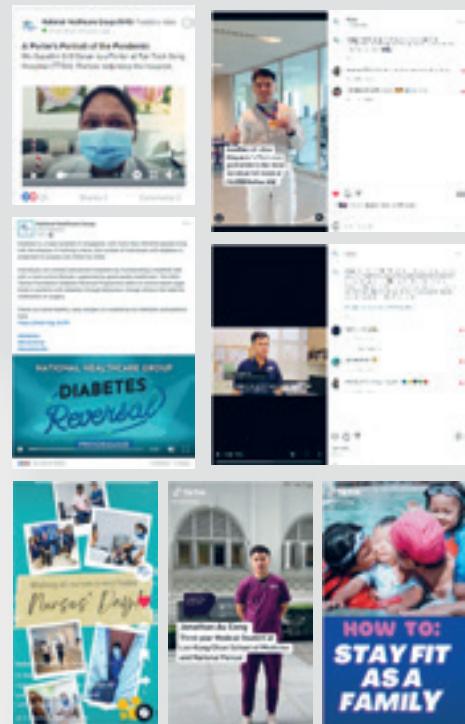
The Nurses Merit Award 2022 recognised the hard work and dedication of our nation's remarkable nursing staff.

RECOGNISING ACHIEVEMENTS IN THE NHG FAMILY

I would like to acknowledge the numerous accomplishments of the NHG Family in the past year. Over 166 Senior Management and Staff from across NHG and our Institutions were honoured at the National Day Awards 2022. My heartiest congratulations to the recipients for exemplifying the spirit of public service, and a special thanks to their leaders, coaches, and

teams for enabling them to excel.

In July 2022, 31 NHG nurses were presented with the Nurses' Merit Award for their exceptional performance, professional development, and contributions that raised the standards of the nursing profession. Ms Nirmala Bte Karmaroon, Deputy Director, Nursing, TTS, and Mr Aziz Bin Ab Hamed, Senior Nurse Clinician, IMH, received the President's Award, the highest accolade in the Singapore nursing profession. Ms Nirmala was



NHG is active across many social media platforms and is the first public healthcare cluster to have a TikTok channel, which was launched in March 2022.

integral in manpower planning during the surge in COVID-19 cases, while Senior Nurse Clinician Mr Aziz Bin Ab Hamed was recognised for his innovative ways in integrating IMH's long-stay patients under rehabilitation back to society.

As a cluster, NHG and its Institutions were conferred the Public Sector Transformation (PST) COVID-19 Awards across nine categories, for our efforts, service, innovation, and organisational excellence. Separately, NHG was awarded the OpenGov Recognition of Excellence 2021, in recognition of our innovative and disruptive use of technology in healthcare in the optimisation of health processes,



2022年11月2日 星期三

新明日报



走·跑·骑 2200人完成8万公里赛程

国家医疗保健集团 (NHG) 为庆祝成立22周年，并支持健康SG (Healthier SG)，举行NHG22—走·跑·骑活动 (NHG22—WALK·RUN·CYCLE MOVEMENT (WRCM))。以促进和社区伙伴的合作，并激励员工和公众保持活跃，促进健康。

参与的合作伙伴包括全科医生 (GP)、Razer、Grab、迪士尼和Cognizant。从8月至今，这项活动召集2200人参加50公里的虚拟挑战，累计完成了超过8万公里的赛程。

上星期天 (10月30日)，压轴节目

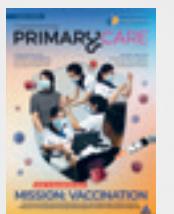
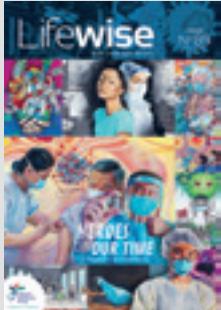


▲ 普杰立医生 (白衣者) 和朱伟任教授与参与者一起进行2公里的社区步行。(NHG提供)

以实体方式在滨海湾公园举行。主宾通讯及新闻部兼卫生部高级政务部长普杰立医生和国立健保集团首席执行总裁朱伟任教授，与参加者一起进行2公里的社区步行。

Healthier SG a decisive shift to improve people's health: Ong





NHG's winning entries for the APEX 2022 Awards.



As we enter into a new era and embark on our journey to support *Healthier SG*, let us stay focused on our vision of *Adding Years Of Healthy Life* and aspire to provide *Better Health For Our Population.*"

delivery of patient-centric services, and pushing new boundaries for advancing healthcare.

I would also like to congratulate our colleagues honoured at the National Medical Excellence Awards (NMEA) 2021 & 2020: Professor Chong Siow Ann, Senior Consultant of the Research Division and Department of Psychosis, IMH (National Outstanding Clinician Award 2021), for his exemplary contributions in mental health research and treatment; Associate Professor Sum Chee Fang, Senior Consultant, Division of Endocrinology, Khoo Teck Puat Hospital (KTPH) and Diabetes Centre, Admiralty Medical Centre (AdMC) (National Outstanding Clinician Award 2020), for his extensive contributions in diabetes and endocrinology; Associate Professor Nicholas Chew, Chairman Medical Board of Woodlands Health (National Outstanding Clinician Educator Award 2020), for his work as the former NHG Group Chief Education Officer; and the COVID-19 Research Workgroup at the National Centre for Infectious Diseases (NCID) (National Clinical Excellence Team Award 2021) for its role in the pandemic response in Singapore and globally.

NHG and our Institutions also clinched 12 awards across multiple categories at APEX 2022, an annual US-based competition which recognises excellence in publishing. Additionally, NHG's *Lifewise* magazine also won Best Magazine Infographics at the World Association of News Publishers (WAN-IFRA) Asian Media Awards 2022. Congratulations to the Group Corporate Communications and Institution Communications Teams for your creativity and engaging content to boost public education on health across print, social, and digital platforms.

STAYING FOCUSED ON ADDING YEARS OF HEALTHY LIFE

NHG has come a long way since it was formed 22 years ago. Our core values of People-Centredness, Integrity, Compassion, and Stewardship (PICS) have served and guided us well through all these years, and through the pandemic. Our collective leadership and camaraderie uplifted us as one NHG Family – and we have prevailed. As we enter into a new era and embark on our journey to

support *Healthier SG*, let us stay focused on our vision of *Adding Years Of Healthy Life* and aspire to provide *Better Health For Our Population.*



LEFT *Lifewise* Issue 91: Best Magazine Infographics at the World Association of News Publishers (WAN-IFRA) Asian Media Awards 2022.

GROUP CEO'S MESSAGE

- PANDEMICS DO END EVENTUALLY, AND THAT WILL BE THE CASE FOR COVID-19, WHICH BROUGHT SINGAPORE AND THE WORLD TO A STANDBY BEFORE VACCINATION FOR THE VIRUS WAS FOUND AND ADMINISTERED TO OLD AND YOUNG.

COVID-19 tested the public healthcare system to its maximum and collectively with the Government, agencies, partners, and citizens, we have reduced the crisis from a pandemic to an endemic state. Every one of you deserves a big "Thank You".

Although life now has a good semblance of normalcy, the virus is unlikely to be stamped out for good. In fact, we can expect the virus to mutate and circulate longer with land, air, and sea travel now open. Its new variants of concern (VOC), such as Delta and Omicron, and multiple waves of infections past, present, and future will continue to keep us busy. Singapore with its high vaccination rate has managed to be in a stable state, and most aspects of life have returned to pre-COVID-19 levels. Social restrictions have been lifted except for public transport and visits to hospitals, and flights for overseas

work and vacation have increased with a new buzz of hope.

For us in healthcare, our deep involvement on the frontline for more than two years has left scars of the COVID-19 battle. Even so, with fortitude, resilience, and encouragement from the public and the world, we stand ready and prepared for any potential emergence of old and new viruses because it is our duty to do so. We will work closely with the Ministry of Health (MOH) to take care of our patients in all situations and circumstances, and to ensure best health outcomes for the population we serve in the Central-North region of Singapore.

In other developments, MOH and Woodlands Health (WH) established the first stepped-up Community Care Facility (CCF) in September 2021 by repurposing the NTUC Health Nursing Home in Tampines. The



250-bed CCF provided timely care to patients who were stable and had mild COVID-19 symptoms, but whose underlying conditions or co-morbidities required closer monitoring. Two months later, Tan Tock Seng Hospital (TTSH) opened a 55-bed COVID-19 Treatment Facility (CTF) at Ren Ci Community Hospital (CTF@Renci) to care for elderly patients discharged from the National Centre for Infectious Diseases (NCID) but who still needed close attention. These facilities, in addition to others that opened later, helped augment the nation's hospital capacity, and ensured better overall management of patient load and specialised care for more critical cases.

I am grateful to the medical and nursing teams from these Institutions and others, including Khoo Teck Puat Hospital (KTPH), National Skin Centre (NSC), National Healthcare Group Polyclinics (NHGP), and NHG HQ,





The collective leadership, collaborative spirit, and commitment displayed in tackling COVID-19 pandemic will serve us well as we move into the endemic phase, in building better health for our population.”

PROFESSOR PHILIP CHOO

GROUP CHIEF EXECUTIVE OFFICER,
NATIONAL HEALTHCARE GROUP

who readily stepped up to help redesign care delivery, develop new workflows and clinical management strategies, and provide resources to the facilities. Added support from the Singapore Armed Forces (SAF) and various General Practitioner (GP) and community partners contributed to our ability to right-site care, without compromising quality and patient safety.

More than two years on, the COVID-19 pandemic has taught us valuable lessons that can further fortify the nation's capabilities in emergency preparedness, and enhance national resilience. It is important to share the learnings and experiences, and with this in mind, NCID established a Gallery at its premises in September 2021, which

showed the journey of our management of severe infectious disease outbreaks, including COVID-19.

Just as pandemics can be a challenging time for adults, the period of masks and darkness was a confusing period for children too as they tried to make sense of the changes around them. To help the young understand the COVID-19 virus and adapt to endemic times, Professor Leo Yee Sin, Executive Director, NCID, wrote *My Coronavirus Story*. Supported by NHG and sponsored by the Tanoto Foundation, the picture book conveys the thoughts, feelings, and experiences of a child living during the pandemic. It was launched in December 2021 and is available at most public

BELOW The unveiling of *My Coronavirus Story*.



libraries and primary schools across Singapore. The book is a reference for future generations on public health and vaccination, and emphasises social responsibility in our fight against the virus, and the message of grit, hope, and resilience to gel as a community and as a nation to combat any battle.

HEALTHIER YOU, HEALTHIER SG

The collective leadership, collaborative spirit, and commitment displayed in tackling the COVID-19 pandemic will serve us well as we move into the endemic phase, in building better health for our population. It is a future where proactive health and preventive health as a community take centre stage. People are encouraged to own their health, eat sensibly, exercise, and improve their well-being through daily living. By supporting each other, we are then able to prevent the onset of illness, and stem the progression of chronic diseases. This is the future of healthcare envisioned by MOH in its *Healthier SG* strategy.

NHG's population health framework, *River of Life*, aligns with *Healthier SG*, and is a care transformation journey we embarked on more than three years ago through an Accountable Care Organisation (ACO) – Integrated Care Organisation (ICO) structure. Our three regional ICOs – Central Health (CH), Yishun Health (YH), and Woodlands Health (WH), supported by our Group Integrated Care (GIC) Office – have to-date formed several strong networks of care with like-minded partner providers to serve the care needs of their respective zonal population, and deliver joined-up, value-based, and person-centred care.



These Communities of Care (CoCs) in familiar neighbourhoods target health and social interventions tailored to more specific demographics and needs, making holistic care within easy reach of residents.

Currently, NHG manages the health of about 1.5 million residents in Central-North Singapore with primary prevention as a focus. We have observed the demographics of our population aged 20s to 60s, and seen a significant co-relation between their risk profiles and their daily lifestyle choices. The incidence of chronic diseases has also been rising over time, even among younger people. This is a major challenge for Singapore, compounded by our rapidly ageing population.

While our Institutions provide very good care, especially acute care, it is not a long-term or sustainable solution for us. Hence, we need a paradigm shift in care to effectively deliver 'health' to those we serve, beginning with tackling

modifiable behaviours of individuals, and as a community.

Fundamental to shaping behaviours is relationship-based care and the trust it entails. This is where primary care plays a prominent role as a key driver of *Healthier SG*. We are encouraging polyclinics to be the first-line for physical wellness care, as well as mental health, and looking after the young by extending programmes into child and maternal care. GPs as key primary care partners of NHG are also crucial. They can influence, coach and guide patients to make lifestyle choices because of the trust they have built up with their patients. This means going beyond prescribing medicine to co-developing holistic health plans with patients and helping them to stay the course.

As part of transforming primary care, NHG is committed to supporting our GP partners on the *Healthier SG* enrolment programme with better access to community and cluster resources,



developing shared-care protocols and care paths for patients, and enhancing the IT system for safe and secured sharing of patient data.

Regular dialogues with GPs, community partners, and residents are important for *Healthier SG* to achieve its aims. *POPCollect* (Population Health Collective), which we launched in May 2022, and the various focus group discussions we co-organised with MOH and Agency for Integrated Care (AIC) in July and August, have proven to be useful platforms. They were opportunities for like-minded stakeholders to co-learn and co-create care, and glean pertinent feedback for building healthier and happier communities.

Another key pillar of *Healthier SG* is enabling and engaging individuals to actively participate in their own health. To do this, it is critical to understand how motivations and attitudes influence residents' health behaviours. On this front, YH is conducting a population health survey of 2,500 residents living in northern Singapore from July to December 2022. Done in collaboration with NHG, NHG Health Services and Outcomes Research (HSOR), WH, CH, and the Duke-NUS Medical School's Programme in Health Services and Systems Research, the survey aims to establish a baseline for evaluation of our healthcare model and services. Its results will help us to determine and develop effective interventions to address the health needs, health behaviour and risks, health-seeking experience and service utilisation of our communities.

To support our data gathering, our Group Accountable Care (GAC) Office is building a Population Health



Launch of the NHG-Tanoto Foundation Diabetes Reversal Programme.

Registry (PHR) that would have both resident-data and patient-data, in order to create a longitudinal record of the health, social, and lifestyle factors of all residents who live in the Central-North region, including patients of NHG Institutions. Dashboards are also in the pipeline to allow for the monitoring of resident population health outcomes at different levels.

Several of our integrated health-social programmes – including TTSH's Project Carer Matters, YH's Wellness Kampung, NHGP's Enhanced Maternal Baby ToddleR And Child SurvEillance^{PLUS} (EMBRACE^{PLUS}), and Institute of Mental Health (IMH)'s Recovery-Oriented Transitional Care Model (ROTCM) – arose from insights we gathered on what matters to our patients and caregivers and their needs.

More recently, NHG with a S\$2.6 million funding support from the Tanoto Foundation launched a Diabetes Reversal Programme. The Programme, unveiled on 5 August, seeks to control blood sugar levels in diabetes patients through behavioural change without the need for medication or surgery.

A clinical trial would be conducted for an intensive weight management regime in reversing early diabetes in obese patients, as such real-world research can directly impact health outcomes.

DIGITAL TRANSFORMATION

In parallel with research studies and data gathering, giving access to a common set of accurate, up-to-date, and complete information across the populace, GPs, public healthcare clusters, MOH, and other providers would facilitate good and coordinated care.

On 30 July 2022, TTSH became the first hospital in our Cluster together with National Neuroscience Institute (NNI), Ang Mo Kio-Thye Hua Kwan Hospital, and Ren Ci Community Hospital to go-live with the Next Generation Electronic Medical Record (NGEMR) System. As more NHG Institutions go-live with NGEMR, it is my hope that our community of carers would enjoy more seamless access to clinical information so as to better coordinate care, enhance patient experience, and drive greater health for our population.



NHG's *PopCollect* is a platform for knowledge exchange with GP partners and the community.



As we harness digital technology further, we must step up cybersecurity and make cyber safety a standard good practice to sustain public trust. In July 2021, we launched the NHG Cyber Safety Ambassador Programme, and to-date our Group Information Security Office (GISO) has enlisted more than 300 Ambassadors across NHG Institutions to help raise cybersecurity awareness and instil individual cyber hygiene. Our efforts towards securing IT solutions, data protection, and raising staff readiness to predict, respond, and mitigate potential cyber-threats will help secure the technology that our healthcare systems are built on.

INCREASING HEALTHCARE CAPACITY

In spite of disruptions from the COVID-19 pandemic, NHG was able to achieve several milestones in raising healthcare capacity to meet patients' current needs.

WH marked its topping out milestone on 12 February 2022, and will progressively open from December 2023, first with specialist outpatient clinics. The remaining services, including emergency department and inpatient wards, will open from May 2024.

On 7 May 2022, NHGP officially opened Kallang Polyclinic. In line with *Healthier SG*, the polyclinic offers a range of healthcare services to help residents take charge of their health and well-being. These include RELATE (RELationship-based HeAlth & Social InTEgration) programme, where the polyclinic works closely with community partners to develop shared care plans to support elderly patients with complex medical and social needs, and the pilot



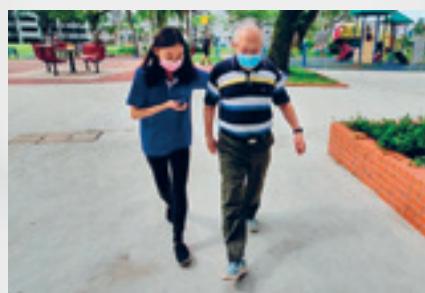
An artist's impression of WH's specialist outpatient clinics.

use of a fully-automated SMARTVacc (Safety Manpower Productivity Accountability Real Time Analytics Vaccine) System, which monitors and dispenses vaccines inventory in real time. It is also the first NHG Polyclinic to introduce a Patient Advisory Council (PAC), which comprises residents from the neighbourhood who are also patients, to co-create care solutions.

As part of its efforts to enhance inpatient care and improve operational efficiency, IMH completed Phase One of its refurbishment and improvement project in November 2021. Under this first phase, a new Short Stay Unit (SSU) was created and five acute wards, including a child and adolescent ward, were refurbished. These will significantly boost IMH's recovery-focused model of care, which advocates holistic and patient-centred treatment and management. Refurbishment of another five inpatient wards is on-going and expected to be ready in 2023.

ENHANCING MENTAL HEALTH SUPPORT

As we embark on *Healthier SG*, it is important that we ensure the well-being and health of our staff, especially in post-COVID-19 times. Research has shown that the person who is mentally healthier tends to have better outcomes.



Cluster and Institution-wide initiatives to monitor and promote overall health and staff well-being will continue, as would the protocols that assure staff they can safely seek redress from abuse they may face from patients and caregivers, and get the support they need.

STRENGTHENING LEADERSHIP FOR THE FUTURE

As we shift to a higher gear to provide better health for our population through the GAC-GIC structure, we have also renewed leadership across NHG. I would like to thank Dr Elaine Tan who stepped down from her role as Chief Integrated Care (Clinical), GIC. Under her leadership, she facilitated new wellness, illness, and community care models, and developed integrated care programmes that created positive impact on the community. Ms Ong Jing Fang has been re-designated Chief, GIC, and she stands in good stead to oversee and synergise GIC functions in support of *Healthier SG*.

I would like to congratulate Dr Karen Ng on being appointed Deputy Chief Executive Officer, NHGP. With her experience in helming NHGP's clinical services, Dr Ng is well poised to drive an integrated system that is person-centred and relationship-focused, to support the exciting growth in our primary care transformation journey.

I would like to express my appreciation to Associate Professor Thomas Lew, who stepped down from his position as Group Chief Data & Strategy Officer in October 2022. A/Prof Lew was instrumental in driving NHG's digital transformation journey, and bringing the NGEMR to fruition. Through his leadership, we have established a sound integrated IT foundation that would revolutionise delivery of care and improve health outcomes via implementation of sustainable and connected capabilities, and optimisation of data. Assistant Professor Eric Wong succeeds him and will spearhead NHG's strategic

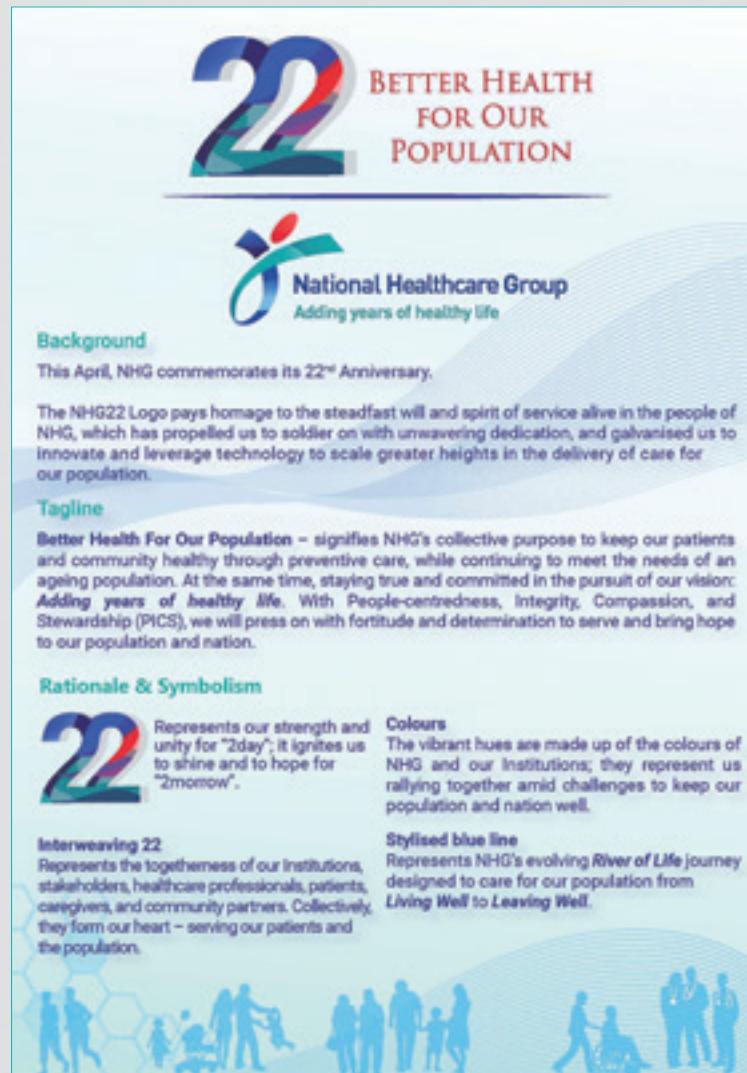
capabilities across the IT Office, Health Informatics Office, Group Data and Data Protection Offices, and Information Security Office. Associate Professor Terence Tang was designated Group Chief Clinical Informatics Officer in November 2022 to augment leadership for the Group Health Informatics Office and develop strategic plans to drive care transformation projects.

The past year also saw the appointment of Deputy Group Chiefs to provide the necessary support to steer our organisation to new heights. Dr Tang Kong Choong was appointed Deputy Chief Executive Officer, TTS & Central Health, to help manage Hospital Services and Corporate Services, and oversee the Nursing, Allied Health, and Pharmacy Divisions. Separately, my gratitude goes to Professor Benjamin Seet who relinquished his appointment as Assistant Chief Executive Officer, Corporate Services, TTS & Central Health, in April 2022 to focus on his existing role as Deputy Group CEO (Education & Research), NHG.

To advance quality improvement and development, Dr Tung Yew Cheong was appointed Deputy Group Chief Quality Officer (GCQO) in July 2022, to work alongside fellow Deputy GCQO, Dr Wong Moh Sim. Both are assisting Associate Professor Tai Hwei Yee, GCQO to provide stewardship in the Group Quality Office. Ms Khoo Swee Lan was appointed Deputy Group Chief Human Resource Officer in October 2021 to help drive workforce transformation to address the challenges of our healthcare system and *Healthier SG*.

CELEBRATING NHG22

To commemorate NHG's 22nd Anniversary this year, Group Corporate Communications (GCC) designed an attractive NHG22 Logo comprising the vibrant colours of NHG and our Institutions. They represent us rallying together to keep our patients well through our *River of Life* framework, designed to



The image shows the NHG22 logo, which features a stylized '22' in blue and red. To the right of the logo, the text 'BETTER HEALTH FOR OUR POPULATION' is written in red. Below the logo is the National Healthcare Group (NHG) logo, which consists of a stylized 'i' shape in red, green, and blue, with the text 'National Healthcare Group' and 'Adding years of healthy life' underneath. The background of the slide is light blue with a subtle grid pattern.

Background
This April, NHG commemorates its 22nd Anniversary.

The NHG22 Logo pays homage to the steadfast will and spirit of service alive in the people of NHG, which has propelled us to soldier on with unwavering dedication, and galvanised us to innovate and leverage technology to scale greater heights in the delivery of care for our population.

Tagline
Better Health For Our Population – signifies NHG's collective purpose to keep our patients and community healthy through preventive care, while continuing to meet the needs of an ageing population. At the same time, staying true and committed in the pursuit of our vision: *Adding years of healthy life*. With People-centredness, Integrity, Compassion, and Stewardship (PICS), we will press on with fortitude and determination to serve and bring hope to our population and nation.

Rationale & Symbolism

22	Represents our strength and unity for "2day"; it ignites us to shine and to hope for "2morrow".	Colours The vibrant hues are made up of the colours of NHG and our Institutions; they represent us rallying together amid challenges to keep our population and nation well.
Interweaving 22	Represents the togetherness of our institutions, stakeholders, healthcare professionals, patients, caregivers, and community partners. Collectively, they form our heart – serving our patients and the population.	Stylised blue line Represents NHG's evolving <i>River of Life</i> journey designed to care for our population from <i>Living Well</i> to <i>Leaving Well</i> .

A horizontal row of blue silhouettes of people in various active poses (walking, running, pushing a stroller) is positioned at the bottom of the slide, representing the 'River of Life' movement.

care for our population from *Living Well* to *Leaving Well*. I am confident that together with our partners, we are moving beyond providing illness care to wellness care, and to partner our CoCs to lead healthier lives.

As part of our NHG22 celebrations, GCC with support from NHG HQ and Institutions organised a NHG22 Walk-Run-Cycle Movement from August to October 2022, to

promote bonding and healthy living. The Movement – which spurred NHG staff, family, friends, and community partners to clock in over 85,000 km through their walks/runs/cycles over the three-month virtual challenge – culminated in a physical finale event on 30 October. This big NHG Family bonding and community event attracted some 600 participants who hopefully will continue to exercise regularly. This Movement is reflective of NHG's vision of *Adding Years Of Healthy Life*.

Let us continue to remain focused and undaunted, especially in the face of the evolving health landscape. Guided by, and grounded on our core values, we will forge ahead as ONE NHG to serve our nation and achieve better health for our population.



BOARD OF DIRECTORS

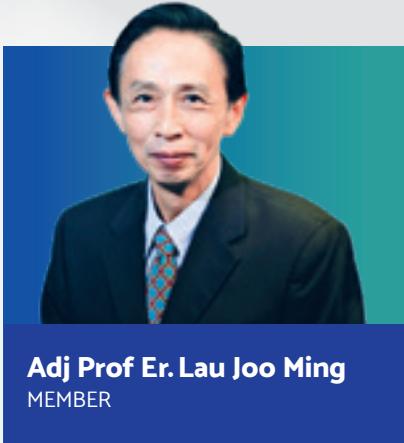




Professor Joseph Sung
MEMBER



Ms Lock Yin Mei
MEMBER



Adj Prof Er. Lau Joo Ming
MEMBER



Dr Tan Khai Tong
MEMBER



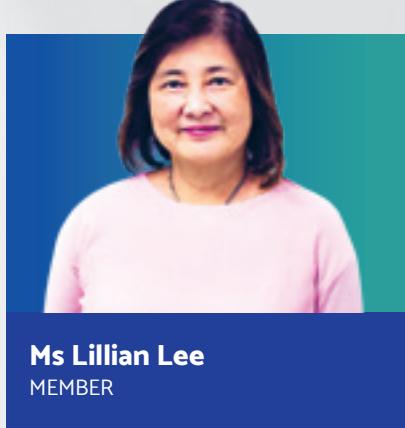
Mr Tow Heng Tan
MEMBER



Mdm Zuraidah Abdullah
MEMBER

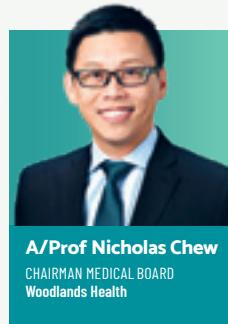
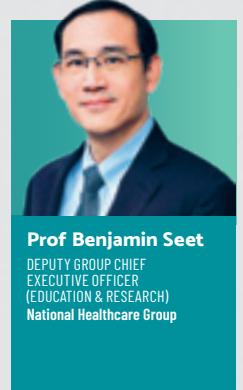


Mr Patrick Tay
MEMBER



Ms Lillian Lee
MEMBER

SENIOR MANAGEMENT





A/Prof Chong Phui-Nah
CHIEF EXECUTIVE OFFICER
National Healthcare Group
Polyclinics & Primary Care



A/Prof Daniel Fung
CHIEF EXECUTIVE OFFICER
Institute of Mental Health



Prof Tan Suat Hoon
DIRECTOR
National Skin Centre



Prof Lim Tock Han
GROUP CHAIRMAN MEDICAL BOARD
National Healthcare Group



Prof Chin Jing Jih
CHAIRMAN MEDICAL BOARD
Tan Tock Seng Hospital &
Central Health



Ms Wong Fong Tze
GROUP CHIEF CORPORATE
COMMUNICATIONS OFFICER
National Healthcare Group



A/Prof Tai Hwei Yee
GROUP CHIEF QUALITY OFFICER
National Healthcare Group



A/Prof Yong Keng Kwang
GROUP CHIEF NURSE
National Healthcare Group



Prof Leo Yee Sin
EXECUTIVE DIRECTOR
National Centre For
Infectious Diseases



A/Prof Michelle Jong
GROUP CHIEF EDUCATION OFFICER
National Healthcare Group



Dr Tang Kong Choong
DEPUTY CHIEF
EXECUTIVE OFFICER
Tan Tock Seng Hospital &
Central Health



Dr Karen Ng
DEPUTY CHIEF
EXECUTIVE OFFICER
National Healthcare Group
Polyclinics



Dr Jamie Mervyn Lim
CHIEF OPERATING OFFICER
Tan Tock Seng Hospital &
Central Health



Dr Mok Ying Jang
CHIEF OPERATING OFFICER
National Healthcare Group
Polyclinics



Ms Yen Tan
CHIEF OPERATING OFFICER
Khoo Teck Puat Hospital &
Yishun Health



Ms Khoo Swee Lan
DEPUTY GROUP CHIEF
HUMAN RESOURCE OFFICER
National Healthcare Group



Dr Heng Bee Hoon
SENIOR DIRECTOR, HEALTH
SERVICES & OUTCOMES
RESEARCH (HSOR)
National Healthcare Group

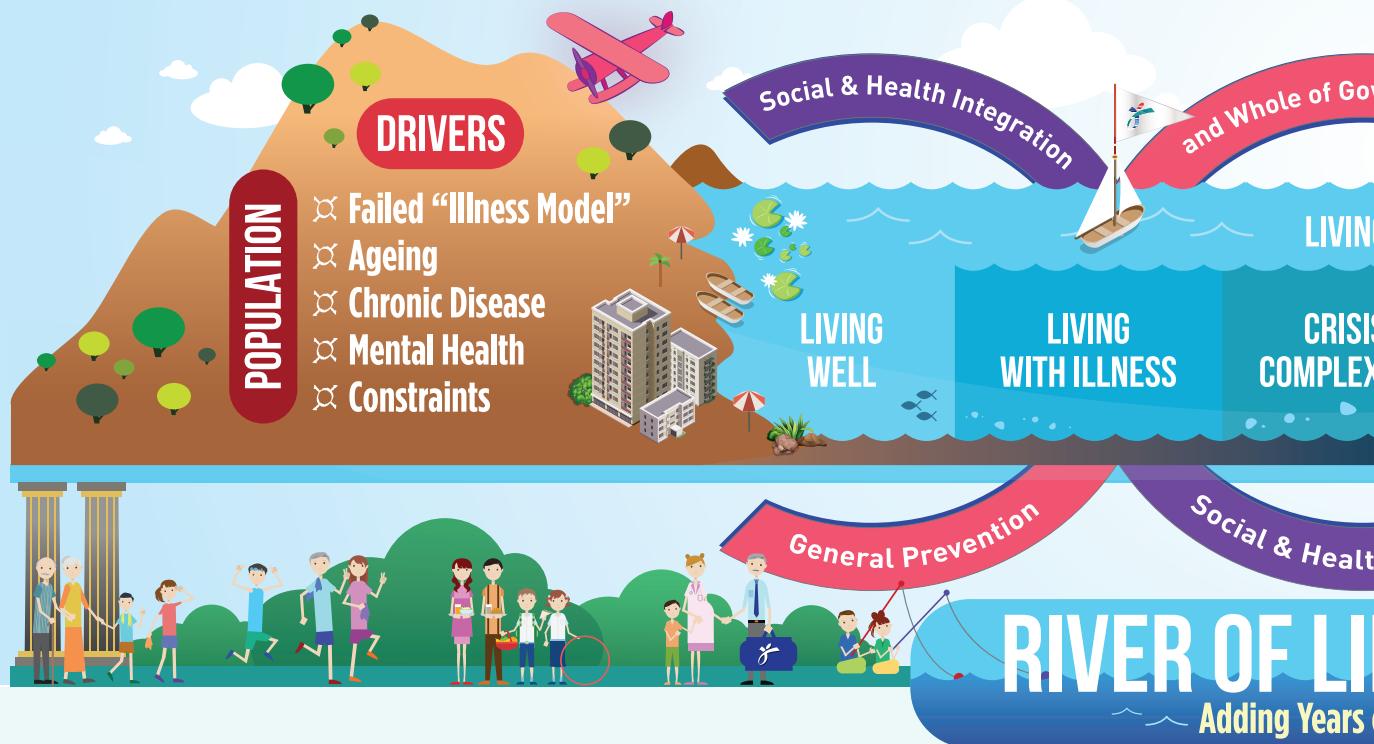


Ms Ong Jing Fang
CHIEF, GROUP INTEGRATED CARE
National Healthcare Group



Dr Tung Yew Cheong
DEPUTY GROUP CHIEF
QUALITY OFFICER
National Healthcare Group

Our appreciation to former Group Chief Data & Strategy Officer, A/Prof Thomas Lew; Chief Operating Officer, Institute of Mental Health, Mr Lim Hock Leng; and Chief, Integrated Care (Clinical), Dr Elaine Tan, for completing their tenure.



✓ Guiding Principles

1. Public Health: River of Life; Building Resilience in Self-Care and Managing Crisis
2. Determinants of Health: Some have Higher Risks
3. Current ills of Healthcare: Cottage, Episodic, Reactive, Limited, and Variable

✓ Better Care

1. Care and Grow our People:
2. Activate and Involve our People: Better Ownership, Better Care
3. Relationship-Based Health
4. More Goods in the Basket:

HEALTHIER YOU



National Healthcare Group
Adding years of healthy life



Core Principles

Better People, Better Care

Population and Patients:
Care

Care: Better Trust, Better Care

Better Value, Better Care

✓ Key Enablers

1. Organisation Development Transformation
2. Finance & HR Transformation
3. Information & System Transformation
4. Execution & Actualisation Excellence
5. Vision, Values & Collective Leadership
6. Mindset Transformation

• **HEALTHIER SG**



“We have realised that our current method of illness care is not foolproof in maintaining a healthy population. Longitudinal studies have shown that we should switch tracks to make our population healthier in every stage of each person’s life.”

PROFESSOR PHILIP CHOO
GROUP CEO, NHG





• NHG HQ



Population Health

- To better support the nation's *Healthier SG* initiative, NHG's concerted efforts in managing population health aim to improve health outcomes as well as promote population well-being through more integrated, preventive, and community care – which will in turn delay the onset and deterioration of Singapore residents' health conditions.



REORGANISING OURSELVES FOR A HEALTHIER SG

INTRODUCING NHG'S ACO-ICO MODEL

To better address the needs of an ageing population, manage rising chronic disease burden, and bridge the gap between the health and social needs of Singapore residents, NHG has redesigned its healthcare delivery system to move from managing patients, to supporting residents in their health journey.

To drive a sustainable healthcare ecosystem, NHG re-organised itself to align with an Accountable Care Organisation (ACO)-Integrated Care Organisation (ICO) model in 2021. As an ACO, NHG is responsible for the health outcomes, care, and costs of 1.5 million Singapore residents living in the Central-North region. To enable locality-based planning and care provision, our zones – Central Health (CH), Yishun Health (YH), and Woodlands Health (WH) – are designated as ICOs. The ICOs are supported by NHG Polyclinics, the Institute of Mental Health (IMH), and the National Skin Centre (NSC). Each ICO serves the care needs of its zonal population through a strong network of like-minded partner providers to deliver joined-up, value-based, and person-centred care (see Figure 1).

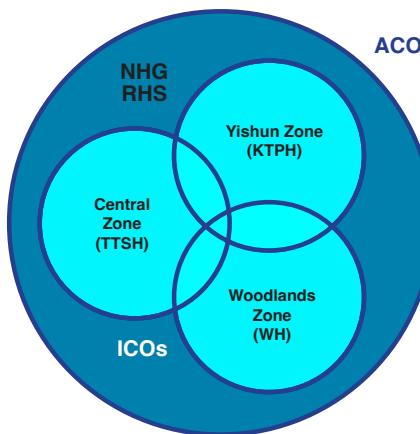


Figure 1: NHG's ACO-ICO Model

NHG's ACO-ICO model **Aligns**, **Aggregates** and **Anchors** all actors in the system, namely the payer, provider, and patient/resident. This 'triple A' strategy incentivises the behaviours of all actors towards health, reduces fragmentation, and provides stackable value across the system, driving towards our Population Health Aims (see Figure 2).

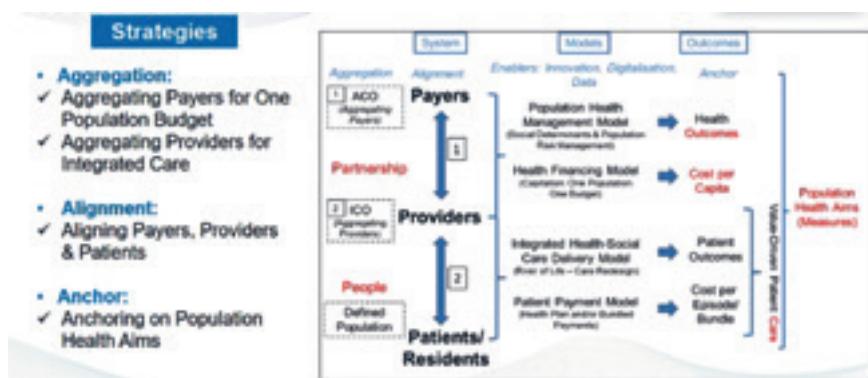


Figure 2: 'Triple A' Strategy for Population Health Aims



DRIVING CARE TRANSFORMATION FOR POPULATION HEALTH

In tandem with the Ministry of Health (MOH)'s *Healthier SG* initiative, NHG has kick-started its efforts in (i) Building Relationship-Based Care and (ii) Strengthening Place-Based and Integrated Care.

Building Relationship-Based Care
NHG is gradually shifting from episodic transactional provider-patient exchanges to a **longitudinal care relationship between the resident and his/her primary care provider** via enrolment to a dedicated primary care provider such as a Family Physician or General Practitioner (GP). This empowers the resident to own his or her health. The primary care provider would then co-create a care plan with the resident that would strongly feature preventive health elements. This close relationship with a primary care provider is expected to enable each

resident to better understand his or her health profile with periodic reviews, set personalised care goals, and navigate the co-created care plan.

Strengthening Place-Based and Integrated Care

The resident and the GP are supported through a **Place-Based Care** approach that comprises partnerships with health and social care partners, within a geographical-based Community of Care (CoC). The CoC supports the health and social care needs of the local residents. It ensures that care is localised to the needs of residents at a neighbourhood level, and that there is an availability of programmes offered by local health and social care partners. As of July 2022, NHG, with support from the three ICOs, has set up 41 CoCs. Expansions are on-going to build a CoC in every neighbourhood for our residents (see Figure 3).



Figure 3: A Community of Care in every neighbourhood

Integrated Care adopts a life-journey approach that involves the design of programmes and pathways that joins up and simplifies care for residents across their preventive, pre-disease, and end-of-life needs. The keystone of integrated care will be GPs, being the first and constant point-of-contact in the residents' health journey. CoCs within each region support GPs to help each resident access programmes and services in the community, near their homes to help them attain their health goals. Underpinning the integrated care plans is the NHG strategic clinical priorities driven by the population level burden of disease projections, namely, for Metabolic Disease, Musculoskeletal, Chronic Respiratory and Mental Health conditions, and Cancers. For the effective management of these conditions, NHG established a framework that is supported by a multidisciplinary care team provided by an ICO that serves the local care needs of residents. This would enable NHG to drive integrated population health across the Central-North region, align interests, financing, and workflows between care providers, and anchor care in the community.



KEY ENABLERS TO DRIVE CARE TRANSFORMATION

Capitation Financing

Singapore's *Healthier SG* initiative has paved the way for the three public healthcare clusters to move away from a workload-based funding model towards capitation (per-resident) funding. Singaporeans and Permanent Residents will be assigned to a healthcare cluster based on their geographical residence. Each cluster will be responsible for its assigned residents' health experience, outcomes, and costs. As an ACO,

NHG will optimise the capitation funding for residents in the Central-North region, through more holistic end-to-end care executed jointly with its Institutions, care provider partners, and other government agencies. The Group Accountable Care (GAC) Office within NHG will allocate the resources to its providers to incentivise population health efforts, behaviours and outcomes, and for joined-up care to be put in place for residents.

Data Transformation

The GAC Office is building a Population Health Registry (PHR) that will include

INTEGRATED CARE PROGRAMMES FRAMEWORK





The launch of Population Health Collective by Health Minister Ong Ye Kung.

resident-data, in addition to patient-data, to create a longitudinal record of the health, social, and lifestyle factors of all residents who live within the Central-North region, including patients of NHG Institutions. When fully operational, NHG will be able to segment the population based on risk factors, identify high-risk individuals for intervention, perform geospatial

analyses to identify geographical areas where residents have specific healthcare needs, and assess the impact and effectiveness of implemented interventions. The past year has seen the PHR team focused on creating a longitudinal database using NHG institutional data to cater for a cross-institution analysis for each ICO to analyse the profile of each of their assigned resident population. Moving forward, data from non-NHG sources, including our GP and community partners, will be included. Dashboards are in the pipeline to allow for the monitoring of resident population health outcomes at different levels.

BUILDING PARTNERSHIPS WITH OUR PRIMARY CARE AND COMMUNITY PROVIDERS

LAUNCH OF POPULATION HEALTH COLLECTIVE

In May 2022, Minister for Health Mr Ong Ye Kung launched NHG's Population Health Collective (POPCollect) at the inaugural annual Population Health Connect (POPConnect) seminar. Hosted by NHG, POPCollect – comprising a



network of more than 80 community partners, 544 GPs, agencies, and NHG Institutions – is a movement to improve the health and well-being of the population in Central-North Singapore through building a Community of Care (CoC) in every neighbourhood. POPCollect will form the basis for an annual workplan seminar to co-learn from one another and co-create meaningful collaborations for place-based care and relationship-based care.



BETTER HEALTH FOR OUR

• • •

Healthier SG marks a milestone in the nation's journey towards preventive health and building a sustainable healthcare ecosystem. NHG is aligned to this strategy, and is implementing this model of health for residents under its care.

In March 2022, Minister for Health Mr Ong Ye Kung set out a bold new vision for healthcare in Singapore. The strategy, known as *Healthier SG*, is rooted in the philosophy of “prevention is better than cure”. It aims to keep Singaporeans healthy for as long as possible through preventive care and early interventions, while providing necessary care to those who need it. “We need to maintain health, rather than treat sickness,” summed up Minister Ong.

As NHG Group CEO Professor Philip Choo said, “We were built for illness care. We don’t go out to look for people who are not sick to change their lives. But we have realised that this current method is not fool-proof in maintaining a healthy population. Longitudinal studies have shown that we should switch tracks.”

There is therefore an urgent need to devise a new strategy to safeguard health. Prof Choo said that in cases of chronic diseases like hypertension and diabetes, only half are actually diagnosed. And of those, only a third are treated adequately. “There’s a need for us to change and improve care by building a relationship of trust that allows us to influence and guide,” he emphasised.

The polyclinics in Singapore are already going beyond prescribing medicine to being advocates of exercise and lifestyle changes. “We need to build a system for General Practitioners (GPs) to be able to do the same thing,” Prof Choo explained. There is also a pressing fiscal need to do this. “Today, we are still able to make healthcare affordable,” he added. “But based on the trend trajectory, it will be quite unsustainable in the future.

To mitigate this, the Government is advocating the *Healthier SG* strategy.”

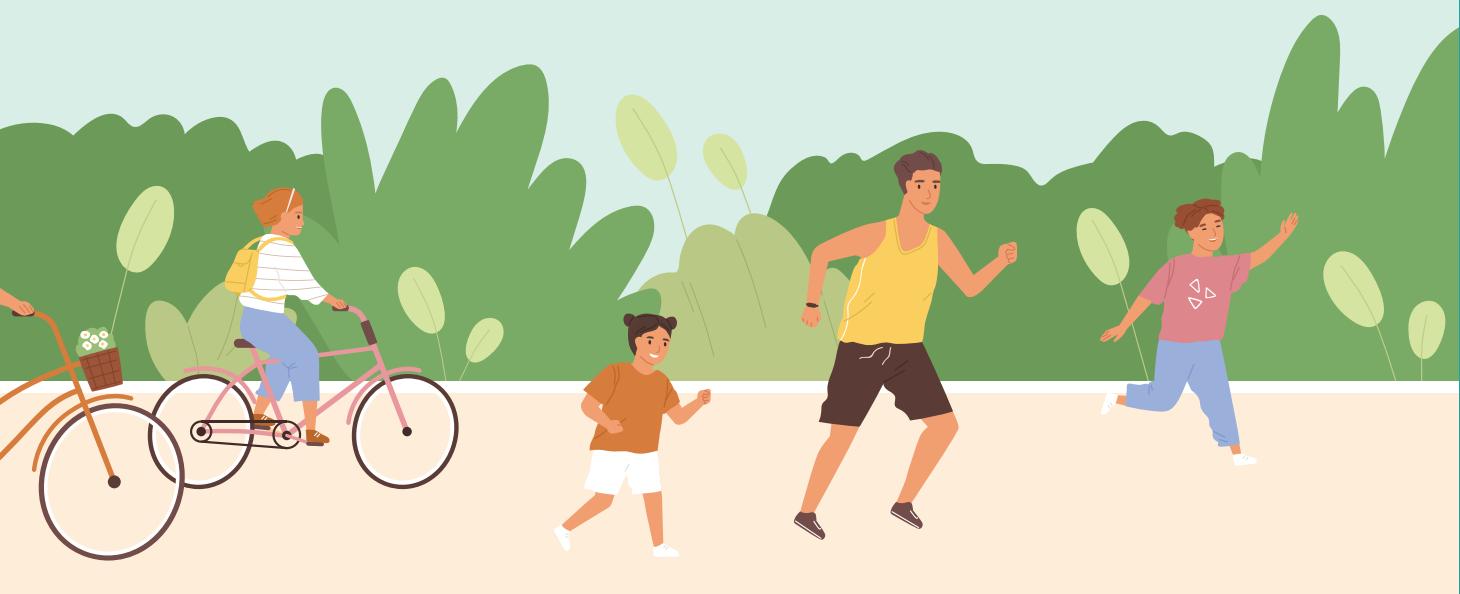
Here is what that means for residents and the healthcare system at large:

PARTNERS IN PREVENTION

A key tenet of *Healthier SG* is preventive care. This notion is not new, but the experience of battling COVID-19 has offered valuable insights into how efforts to prevent the onset of illness can be optimised – through Singapore’s well-established primary care network, which comprises 1,800 GP clinics and 23 polyclinics, of which 544 GPs are located in the Central-North region of Singapore.

This network will be roped in to support the push for preventive care and living well. GPs and family doctors will be the primary point of contact for healthcare needs. As Minister Ong puts it, “Prevention is best centred on family doctors and less on surgeons and specialists in hospitals. Family doctors must become the most important anchor of our healthcare system.”

Currently, only three in five Singaporeans have a regular family doctor, despite the benefits of doing so. Therefore, encouraging the population to have a regular family doctor is an important goal of *Healthier SG*. “This is because the doctor and his care



POPULATION: Let's Get Moving...

team can detect early signs of problems, timely and accurately," said Minister Ong. Indeed, NHG data supports this theory, shared Prof Choo. "NHG manages the health of about 1.5 million Singapore residents in the Central-North region of Singapore. When we build that relationship with patients, we get better health compliance. We have seen improvements, such as a reduction in referrals from polyclinics to hospitals. Studies have shown that 30 to 40 per cent of patients can 'reverse' and subsequently maintain their medical condition, and prevent disease progression."

In line with this, the Government will roll out a national primary care

enrolment programme from 2023. NHG will coordinate this initiative for its catchment areas. Each resident will be invited to enrol with a family physician of his/her choice – who would support them for life – as their first line of care.

Residents' relationship with their GPs will change as well: they will no longer visit them only in times of ill-health. Instead, residents are encouraged to have regular scheduled check-ins – at least once a year – for the GPs to assess their overall health, carry out necessary health screenings, and suggest lifestyle changes to improve health. These regular interactions will form the basis of each resident's unique

CHAMPIONING PREVENTION

Over the years, NHG has encouraged preventive care through the following initiatives. Said Prof Choo, "We strongly believe in going into captive audiences: school health, workplace health, health in the community. We try to get them to remain healthy and not to adopt risky habits."

- **Living Well in Our Communities** promotes and builds a culture of health in the Central-North region of the country. Key programmes include Wellness Kampung, Share a Pot, and Walking Foodpedia.
- **Living Well @ School** is a three-year pilot partnership with selected schools. It aims to develop a school health working model that can be scaled to all educational institutions.
- **Living Well @ Work** empowers employers to manage the health and well-being of their staff.

"Today, we are still able to make healthcare affordable. But based on the trend trajectory, it will be quite unsustainable in the future. To mitigate this, the Government is advocating the *Healthier SG* strategy."

PROFESSOR PHILIP CHOO
GROUP CEO, NHG



NHG Institutions engage Singaporeans through various community activities.

care plan. This plan will reflect each resident's clinical, social, and behavioural needs – as well as their values and choices – and promote seamless care transition and care coordination. GPs will also act as trusted health advisors, helping residents navigate the healthcare system to find further care they need, be it in the community or in an acute hospital.

SUPPORTING THE SHIFT

These additional responsibilities will undoubtedly increase the workload of GPs. Most have welcomed *Healthier SG* as an important step in Singapore's healthcare journey, but some expressed concern about its implementation. The head of a GP group is reported to have said, "Our doctors are naturally concerned about time commitments and ability to provide specialised care while having to manage a high patient load."

On this front, NHG is shoring up its support to GPs to ensure they are well-placed and ready to carry out their new duties. Support will take several forms, including:



• Connecting Stakeholders

NHG has amassed an extensive network of more than 80 community health and social partners who are essential to providing specialised care for residents. As a connector of stakeholders, it will forge relationships

between GPs and these community partners to ensure that GPs, too, can tap on NHG's expertise and experience on the ground.

NHG will also promote closer relationships between GPs, polyclinics, and acute care hospitals.

FIVE FOR THE FUTURE

The *Healthier SG* strategy has a quintet of core components:

1. MOBILISATION OF THE NETWORK OF FAMILY PHYSICIANS.

The Government will reorganise care delivery and integrate primary care providers, especially GPs, into the public healthcare ecosystem.

support the needs of residents who stay within their region, by partnering agencies such as the Health Promotion Board (HPB), Agency for Integrated Care (AIC), People's Association (PA), Sport Singapore (SportSG), National Parks Board (NParks), and community partners to provide programmes and services to help residents keep healthy and well in the community.



2. CARE PLANS.

Singaporeans will be encouraged to visit the same GP clinic regularly for all their care needs and discuss their health goals. This could include completing key preventive care actions, addressing risk factors early, and exploring together how to achieve health goals and delay the onset of diseases.

support the needs of residents who stay within their region, by partnering agencies such as the Health Promotion Board (HPB), Agency for Integrated Care (AIC), People's Association (PA), Sport Singapore (SportSG), National Parks Board (NParks), and community partners to provide programmes and services to help residents keep healthy and well in the community.

3. COMMUNITY PARTNERSHIP TO SUPPORT BETTER HEALTH.

NHG and the other two healthcare clusters will build an integrated health and social ecosystem to better

4. NATIONAL *HEALTHIER SG* ENROLMENT PROGRAMME.

Each resident will be invited to enrol with a family physician of their choice as their first line of care. This doctor will then support them across their life for different health needs and care episodes, to ensure continuity of care.

5. SUPPORT STRUCTURES AND POLICIES.

These include further investments in manpower and training, reviews of financing schemes to focus on delivering key health outcomes, and the building up of critical support pillars in technology and data. These will be done in tandem with the rollout of *Healthier SG*.





This would enable GPs to work with polyclinics and hospitals in the management of patients with more complex needs. Upon discharge, hospitals will refer patients to the GP they are enrolled with, to ensure continuity of care.

• **Resources for the Community**

The scope of work for Allied Health Professionals in primary and community care will be

expanded to improve care delivery and support to patients and doctors in the community. Different networks of Communities of Care (CoCs) will cater to the various health needs of residents within the areas in which they reside in. As of June 2022, there are 41 CoCs within the Central-North region of Singapore; this number will progressively increase to NHG's ideal state of 97 CoCs.

• **Navigating the Healthcare System**

GPs will become the wayfarers of the fast-changing healthcare system, directing residents to the appropriate care they need. Through regular updates and sharing sessions, NHG will keep GPs apprised of the healthcare system's policies, and how best to guide residents. To make this navigation more intuitive, NHG has also streamlined its healthcare Institutions based on its *River of Life* segments of care – *Living Well*, *Living with Illness*, *Crisis and Complex Care*, *Living with Frailty*, and *Leaving Well*. These segments also take into consideration the risk factors and conditions that impact residents' well-being, including metabolic diseases like diabetes, mental health conditions, chronic diseases, and various cancers.

• **Tapping on Technology**

Information Technology (IT) will be critical to *Healthier SG*, as it offers an avenue for seamless care across the healthcare system. In this vein, NHG will work with the Ministry of Health (MOH) to better support GPs with integrated IT systems that can make secure and seamless records-sharing a reality.

ENGAGING FOR SUCCESS

Healthier SG has already shown to be a popular strategy among Singaporeans: an informal poll of 20 residents conducted by *The Straits Times* found that most are in favour of it. But details of the programmes will need to be communicated regularly when they have been fleshed out. NHG will lead the charge in the Central-North region of Singapore, with plans afoot for roadshows and in-person engagements. It has also canvassed the views of residents and shared these with MOH, so that *Healthier SG* can be actualised with their needs in mind.

POPULATION HEALTH CONNECT 2022: BUILDING NHG'S MODEL OF HEALTH TOGETHER

On 4 May 2022, Minister for Health Mr Ong Ye Kung launched NHG's Population Health Collective (POPCollect) at the inaugural annual Population Health Connect (POPConnect) seminar. Hosted by NHG, POPCollect is a movement to improve the health and well-being of the population in Central-North Singapore through building a Community of Care (CoC) in every neighbourhood. The event saw about 300

senior leaders from NHG's health and social community partners, General Practitioners (GPs), agencies, and NHG Institutions, who joined in virtually and onsite, to discuss and co-learn about "Building Trusted Relationships with GPs and Residents" and "Building Care around Residents". The highlight of POPConnect was a conversation with Minister Ong on "*Healthier SG – Why It Matters and What It Really Means*".

BRIDGING DATA AND PRACTICE FOR **PREVENTIVE AND POPULATION MEDICINE**

By Professor Eugene Fidelis Soh
Deputy Group CEO (Integrated Care), NHG
& CEO, Tan Tock Seng Hospital & Central Health



We move forward every day to advance our Population Health agenda as we brace for the launch of the national *Healthier SG* movement. To support population health in the vision of Central Health 2030, there is a need for clinical preventive and population medicine capabilities in Tan Tock Seng Hospital (TTSH) & Central Health.

Preventive and population medicine is a specialty that focuses on the health of individuals, communities, and defined populations. The goal of preventive medicine is to protect, promote, and maintain health and well-being and to prevent disease, disability, and death. Population medicine provides the scientific basis for the specific activities of the healthcare system that – by themselves or in collaboration with partners – improve population health using the best available resources.

Our newly-incepted Department of Preventive and Population Medicine (DPPM) seeks to achieve health for our patients and residents in the Central zone through the use of data. It is through data that all clinicians can contribute to the cause. Data can be a powerful tool to advance the health of the population. With data, we can uncover unseen problems, relationships, trends, causes, and even solutions.



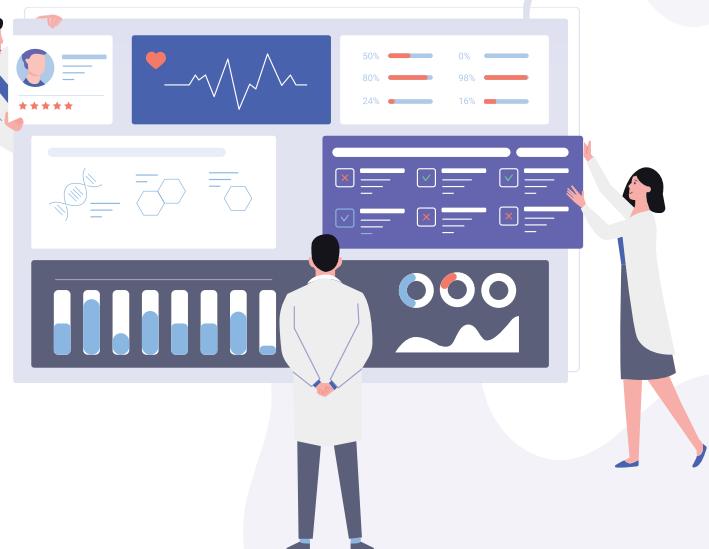
AN EXPANDED PURPOSE

An evolution of previous Department of Clinical Epidemiology (DCE), DPPM will go beyond its epidemiology and surveillance role by developing capabilities in preventive and population medicine to support TTSH & Central Health's mission. The new department will continue to be led by Associate Professor Angela Chow, who is ably flanked by Adjunct Assistant Professor Lim Wei-yen and Dr Wong Chia Siong, who augment Angela's expertise in infectious diseases with their focus on chronic diseases and population medicine.

DCE's established epidemiological, bio-statistical, data management, and data analytics capabilities – with its strong team of epidemiologists, biostatisticians, data analysts, and surveillance coordinators – can support DPPM's preventive and

population medicine, and programme and outcome evaluation work. DPPM seeks to expand these core capabilities to the areas of health protection and prevention, economic analysis, and programme and outcome evaluation, to support population health developments and healthcare transformation efforts.

With these capabilities, DPPM can establish programmes and outcome evaluation frameworks. The department will also develop and implement systematic evaluation processes for the multiple Strategic Innovation Programmes (SIP), clinical value initiatives, and new clinical services for population health, with influence from preventive medicine.





Data is DPPM's key to support population health management strategies. To do so, the department is developing a robust data architecture that will link data from primary, secondary, and community care to be made available for direct care and care redesign. To best serve our population, we will also need to include wider data sources beyond clinical, like social care, to better understand and improve social, behavioural, organisational, and systemic determinants that affect patterns of disease and health distribution. With data from all these sources, the department will develop and maintain a population health registry for Central Health.

Apart from measuring and tracking the health status and determinants of health of our Central zone residents, the department will implement population health management tools as well as health prevention and promotion programmes. The department will also develop interventions – especially for preventive care through the resident's care continuum – from Cradle to Grave, and from Wellness to Illness to End-of-Life.

On top of data management, DPPM will provide consolidated data analytics leadership in clinical epidemiology and preventive and clinical care. With its

data analytics capabilities, the department can better analyse data, support decision-making, forecast on emerging disease and resource threats, and influence the engineering of clinical and operational processes design. Through close collaborations with clinical departments and community partners, analytics will also enhance scientific evidence by bridging the gap between theory and practice using evidence-based approaches for programme development and improved clinical decision-making. The team can also explore and develop novel data analytic methodologies to better support clinical decisions.



A HOME FOR PUBLIC HEALTH

DPPM aspires to provide and build a “home” at TTSH for clinicians from all disciplines with an interest in preventive and population medicine. “Home” will provide training in public health and epidemiology, as well as training for medical, public health, and biomedical science undergraduates, medical and other health professional graduates, interns, and others. Leveraging on

DCE’s active role in public health and preventive medicine education in Lee Kong Chian School of Medicine, Yong Loo Lin School of Medicine, Saw Swee Hock School of Public Health, and the National Preventive Medicine Residency Programme, DPPM hopes to provide a wider range of preventive medicine work scope to attract talent in preventive medicine and public health.

Expertise in public health and preventive medicine will become more important with the nation- and cluster-wide push towards population health. Preventive medicine physicians and public health-trained Allied Health Professionals like epidemiologists and biostatisticians will play important roles in the design of intervention programmes. As a “home”, DPPM also hopes to foster Communities of Practice for co-learning and peer support for these experts.

A “home” also means a place where data can be consolidated and analysed. A diversified database – beyond infectious and chronic disease – will exponentially benefit the population we serve. DPPM aspires to bridge between traditionally hospital-based services and Central Health’s population health agenda through data. Data from all departments and community partners, both clinical and social, can help predict the future needs of the population.

GROWING OUR EXPERTISE FOR SINGAPORE’S HEALTH

There is a pressing need to grow expertise in preventive and population medicine to support the mission of Central Health 2030. This is an opportune time, with the push by the Ministry of Health (MOH) and NHG to develop population health.

Leveraging on data can impact programmes for our patients and population at TTSH and the Central zone. With data, we can predict the next outbreak, prevent outbreaks from turning into epidemics, determine funding priorities, transform entire neighbourhoods for residents, and even tailor treatment plans to combat an illness in individual patients. As the pool of data grows and improves, so will the health of our population.



Digital Transformation

- Digital technology is driving rapid and fundamental changes in healthcare, not just in improving health outcomes but also in making our health systems more efficient, resilient, and sustainable.

TRANSFORMING CARE WITH THE NEXT GENERATION ELECTRONIC MEDICAL RECORD (NGEMR) SYSTEM

A key initiative in the National Healthcare Group (NHG)'s digital transformation journey is the Next Generation Electronic Medical Record (NGEMR) System. It is an advanced, integrated medical record system put in place by the Ministry of Health (MOH) for the Singapore population. NGEMR harmonises sub-systems and functions across participating institutions, enabling patient care details to be captured cohesively and efficiently. The system gives care teams quick and secured access to up-to-date medical information such as clinic appointments, health plans, and self-care resource materials.

NGEMR 'GO-LIVE' IN NHG

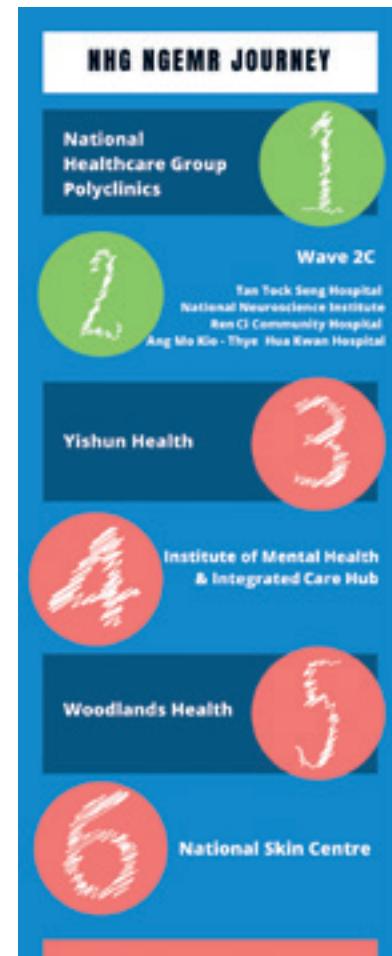
Since 2021, NGEMR has gone 'live' progressively across NHG Institutions, beginning with the National Healthcare Group Polyclinics (NHGP). On 30 July 2022, Tan Tock Seng Hospital (TTSH) became the first public hospital under NHG to 'go-live' with NGEMR, together with its partners – National Neuroscience Institute (NNI), Ang Mo Kio-Thye Hua Kwan Hospital, and Ren Ci Community Hospital. The roll-out has brought about more seamless access to information by this community of carers, as well as better coordinated care and an enhanced patient experience.

NGEMR Go-Live, Go-Right!

NEXT STEPS FOR NGEMR

In the coming years, other NHG Institutions will be 'going-live' with NGEMR to bolster the centralised system with more comprehensive clinical data to drive better health for our population. Preparations are underway to on-board other Institutions to NGEMR, including the building and testing of system readiness and security, the development of Business Continuity Plans (BCP), as well as the engagement and training of staff users.

Benefits to the healthcare community are multi-fold. Integrated patient data is available at a click. Workflows are paperless, reducing our carbon footprint. There is ease in updating each patient's health plan, and timely dispensing of interventions and treatments, in addition to cost and time savings. All these encourage Singaporeans to be more connected, be better engaged, and to take ownership of their health and well-being.



Upcoming NHG Institutions going live on NGEMR.



The TTSH management team visiting Ren Ci Community Hospital following its go-live.





Welcoming NGEMR (from left): Asst Prof Eric Wong, Group Chief Data & Strategy Officer, NHG; Dr Tang Kong Choong, Deputy CEO, TTSH & Central Health (CH); Prof Eugene Fidelis Soh, Deputy Group CEO (Integrated Care), NHG, and CEO, TTSH & CH; A/Prof Kenneth Mak, Director of Medical Services, Ministry of Health, Prof Chin Jing Jih, Chairman Medical Board, TTSH & CH; and Dr Jamie Mervyn Lim, Chief Operating Officer, TTSH & CH.

MORE ABOUT NGEMR 'GO-LIVE' FOR TTSH AND PARTNERS

It has been an exciting transformation journey towards Better Care as ONE for TTSH and its partners with NGEMR.

From porters, and patient care associates, to Allied Health Professionals, nurses and doctors, more than 10,000 healthcare staff from the four healthcare institutions diligently learned, upskilled and practised to familiarise themselves with the new system.



From building a harmonised system that meets the needs of our stakeholders to priming ourselves for the transition into NGEMR – all these would not have been possible without the project team's steadfast effort. **We have achieved a good pace in this NGEMR journey and we now strive to facilitate other Institutions in the pipeline to transition smoothly into the NGEMR system too."**

ASSOCIATE PROFESSOR TERENCE TANG
GROUP CHIEF CLINICAL INFORMATICS OFFICER, NHG

NGEMR is more than just an IT upgrade, it is a foundation to transform care for patients. Besides providing access to patients' medical information, NGEMR strengthens the hospitals' ability to collate data and analyse trends, patterns and behaviours. This will help to design and drive sustainable models of care that will more effectively improve health, care and services for patients, their caregivers, and the community.

THE TEAM BEHIND NGEMR

As a cross-cluster initiative, NGEMR brought together various job families across the National University Health System (NUHS), NHG, and Integrated Health Information Systems (IHIS) to closely collaborate and unify workflows and functional modules, guided by the Functional Group (FG) Leads, and Chief Medical Informatics Officers/Chief Clinical Informatics Officers (CMIOs/CCIOs) of the Institutions.

"The roll-out of NGEMR involves continuing strategic leadership from the NHG Board, dedication and sacrifice from Management and staff, and critical support from our valued partners. NGEMR has paved the way for greater possibilities of digital and future-ready engagement of our patients in their healthcare journey, aligned to the NHG *River of Life* framework, which is geared towards the *Healthier SG landscape*," said Assistant Professor Eric Wong, Group Chief Data & Strategy Officer, NHG.

Group Research

- At NHG, we put the patient first, and focus on real-world research that directly leads to better health outcomes and quality of life. As such, NHG Group Research works towards three global outcomes: to raise research intensity; to build international peaks of excellence; and to provide real-world evidence to transform population health.

STRENGTHENING PARTNERSHIPS AND GROWING TALENTS IN RESEARCH

RENEWAL OF PARTNERSHIPS TO RAISE RESEARCH INTENSITY

To deliver quality care to patients and populations in the Central-North Region, NHG continues to leverage research and innovation, as well as strengthen existing partnerships and build new ones to drive better health outcomes. Between October 2021 and April 2022, NHG renewed its commitment and support towards:

- Palliative Care Centre for Excellence in Research and Education (PalC)**

Jointly set up by NHG, Nanyang Technological University, Singapore (NTU Singapore)'s Lee Kong Chian School of Medicine (LKCMedicine), and Dover Park Hospice, PalC focuses on two key aspects: providing palliative care education to upskill healthcare professionals in the care of individuals living with life-limiting diseases, and providing support for palliative care research through the annual award of intramural grants. Research at PalC has improved understanding of integrated models of care, management of end-of-life symptoms, non-cancer palliative care, and support for healthcare professionals in palliative care. In October 2021, NHG renewed the partnership for another three years until FY2023.

- Rehabilitation Research Institute of Singapore (RRIS)**

RRIS is a translational centre for ageing/rehabilitation research and innovation jointly established by NHG, NTU Singapore, and the Agency for Science, Technology and Research (A*STAR). It brings together research, engineering, and clinical expertise across the three institutions. Leveraging sensors and robotic technologies, RRIS has developed prototypes to assist rehabilitation therapists' work and capture falls, such as a balance-assistive robot that has been piloted at Tan Tock Seng Hospital (TTSH) and other day rehabilitation centres. In April 2022, NHG renewed the RRIS partnership for another two years until FY2023.



- Brain Bank Singapore (BBS)**

The BBS is a national initiative between NTU Singapore's LKCMedicine, the National Neuroscience Institute (NNI), NHG, and National University of Singapore (NUS)'s Yong Loo Lin School of Medicine. As a brain donation programme and tissue repository, BBS enables future biomedical research to delve into the patho-etiology of neurodegenerative disorders like dementia and neuropsychiatric conditions like schizophrenia. Since its launch, BBS has recruited more than 200 pledged donors and collected four brain and cerebrospinal fluid donations, allowing research in neurological/ neurodegenerative and neuropsychiatric disorders to be performed using human tissues. In June 2022, NHG renewed the partnership for another three years until FY2024.

NHG-LKCMEDICINE JOINT APPOINTMENTS

In September 2021, a Memorandum of Understanding (MoU) was inked between NHG and LKCMedicine for no-cost reciprocal appointments. Through the framework, NHG and LKCMedicine would mutually appoint up to 6.0 full-time equivalent (FTE) staff for each discipline of common interest to the other institution. This timely move sets the stage for the joint establishment of an Academic Health System (AHS) in the future, facilitating cross-disciplinary learning and co-development of joint research programmes and translational platforms to raise NHG's research intensity and competitiveness.



Dr Colin Quek, Deputy Director (Informatics) and Principal Research Fellow of RRIS, giving a presentation to Tan Tee How, Chairman, NHG; Prof Philip Choo, Group CEO, NHG; and Dr Tang Kong Choong, Deputy CEO, TTSR.

In October 2021, a new Clinician Scientist Preparatory Programme Plus (CSPP+) was launched to better facilitate CSs in their preparation and transition towards research PhDs, through the provision of seed funding and protected time to enable the generation of preliminary research data.

Concurrently, support to Clinician Innovators (CIs) was also expanded. CIs offer unique insights into addressing clinical needs and improving care delivery, through innovative yet practical ideas that effectively bring together multidisciplinary partners to overcome challenges. In April 2022, an innovation talent development roadmap was launched to provide integrated support for training, mentorship, and funding.

GROWING TALENTS IN RESEARCH AND INNOVATION

Developing staff in research and innovation remains a key strategic thrust of NHG. Since 2012, NHG Group Research has been offering three flagship programmes that provide customised support for basic research training, formal PhDs, and post-doctoral pursuits, making up a comprehensive research talent development roadmap to nurture clinicians into Clinician Scientists (CSs).

NHG Innovation Talent Development Roadmap



NHG Group Research's Innovation Talent Development Roadmap provides customised support to develop clinicians in clinical innovation.

SINGAPORE BIODESIGN INNOVATION FELLOWSHIP

In August 2022, NHG selected a new candidate for the Singapore Biodesign (SB) Innovation Fellowship: Dr Violet Hoon, Consultant, Department of Cardiology, TTSR. She follows the footsteps of Dr Chen Kok Pun, Consultant, Department of Gastroenterology & Hepatology, TTSR, who graduated from the SB Innovation Fellowship in 2020 and is the first Biodesign Fellow in NHG.

DRIVING INNOVATION AND RESEARCH ENTERPRISE SINGAPORE PACT FUNDING

In 2021, Enterprise Singapore awarded NHG's Centre for Medical Technologies and Innovations (CMTi) a new multi-million-dollar funding for five years from CY2021, the third to-date in recognition of the good outcomes achieved by CMTi in CY2020. The renewed funding will strengthen CMTi's capabilities to support NHG clinicians in the following areas:

- Translating ideas into products
- Grooming and nurturing clinician innovators
- Introducing new technologies

As NHG's primary engine that drives innovation and translates ideas into implementable products and solutions, CMTi has facilitated more than 300 projects, and engaged close to 300 clinicians to-date. Together with clinicians, CMTi has attracted industry funding worth more than S\$39 million, spun off 13 companies, filed over 140 patents, licensed more than 70 intellectual property to partners, and commercialised at least 24 products.

INNOVATIONS IN COVID-19 RESPONSE

To meet the immediate needs of managing COVID-19, NHG CMTi launched a one-off COVID-19 MedTech Innovation Grant Call in April 2020 to support clinicians in their medtech development projects. This timely grant provided the much-needed funding for COVID-19-related projects in the areas of infection prevention and control, telemonitoring and rehabilitation, falls prevention and diagnostics, with close to S\$0.5 million in funding awarded.

Since FY2021, the following three projects have been piloted and/or implemented in two NHG Institutions to help create a safe and clean environment for patients and healthcare workers:

• Sunburst UV Disinfection Robot

TTSH's Departments of Environmental Services and Infection Prevention and Control collaborated with PBA Systems Pte Ltd to co-develop and validate an enhanced version of the Sunburst UV Disinfection Robot, an autonomous ultraviolet-C (UVC) disinfection robot that disinfects high-touch surfaces in hospital environments.

• COVID-19 Swab Protection Shield

The risks of COVID-19 infection increase when high viral loads are exhaled or when healthcare staff spend long periods in close proximity or in poorly-ventilated spaces where particles can remain suspended in the air for an extended period. Dr Angeline Seah, Senior Consultant, Geriatric Medicine, KTPH; and Ms Foo Meow Ling, Senior Nurse Clinician, KTPH, partnered Clifford Dispensary and The Biofactory Pte Ltd to co-develop the COVID-19 Swab Protection Shield for patients during aerosol-generating procedures to prevent the spread of COVID-19 droplets/



The Sunburst UV Disinfection Robot

aerosol. With Singapore transitioning towards endemic COVID-19 and the demand for swabs reduced, the team adapted its application to focus on aerosol-generating procedures such as nebulisation.

• Automated Hospital Cubicle Curtains

Given the frequent need to handle privacy curtains before and after contact with patients and their surroundings, privacy curtains can pose as a serious risk of transmission of infectious diseases if hand hygiene is inadvertently overlooked. Led by Dr Yong Enming, Consultant at TTSH's Department of General Surgery, a team from TTSH developed and tested an automated curtain device with motorised curtain hooks and sensor control to reduce potential 'touch-based' contamination.

The COVID-19 pandemic has also led to collaborative innovation outcomes in the following areas:

Rise of telehealth to enable access to remote assessment, monitoring, and care for our patients

In collaboration with Taggle Pte Ltd, NHG clinicians from multidisciplinary backgrounds have been working to co-develop Digital Health Applications (DHAs) that allow for remote assessment, monitoring, and treatment to help improve and optimise patient and healthcare outcomes:

- **Heart-track:** A full-fledged virtual mobile application-based multidisciplinary programme built for cardiac rehabilitation that allows patients to exercise independently within their targeted heart rate zone with continuous heart rate monitoring, and empowers them to live a heart-healthy lifestyle with modifications based on their individual risk factors.



- MoveVID:** An interactive virtual mobile application and telerehabilitation platform that enables patients to have access to a self-directed pulmonary rehabilitation programme, including an educational exercise programme to empower patients to exercise at home for better quality of life.

- Surgical Enhanced Recovery Assistant (SERA):** A perioperative patient journey management application based on Enhanced Recovery After Surgery (ERAS[®]) principles. The application guides the patients in preparing for surgery, and monitors compliance to their tasks and recovery post-surgery.



TTSH Nursing and CoNEX Healthcare Pte Ltd collaborated and co-developed the Bedside Alarm Recognition (BAR).



- Speech Therapy Digital Suite:** This comprises two applications. The first is a fit-for-purpose digital application designed for speech and voice treatment, which incorporates audio-video conferencing capabilities and allows real-time collection of voice and speech parameters without the need for additional equipment. The other is a comprehensive speech and language rehabilitation platform, which enables speech therapists to provide real-time, simultaneous feedback with an array of local resources in various languages for communication rehabilitation.

The Heart-track, MoveVID, and SERA applications have been identified as initial programmes to be implemented on the NHG HealthApps Platform (HAP), which will pave the way for more DHAs to be developed to meet our population's health needs.

Facilitating accurate and timely healthcare intervention

- Associate Professor Tan Ern Yu, Head of Service, Senior Consultant, Breast and Endocrine Surgery, TTSH, and her team are collaborating with Onkolyze to develop artificial intelligence (AI) applications to improve the accuracy of breast ultrasound assessments. The team has developed algorithms aimed at identifying lesions of concern and which require biopsy for histological confirmation.
- TTSH Nursing and CoNEX Healthcare Pte Ltd collaborated and co-developed the Bedside Alarm Recognition (BAR), which has been designed to sense audio signals produced by medical equipment and relay them to an external alarm for timely intervention by healthcare professionals.

GRANTS TO SUPPORT INNOVATION

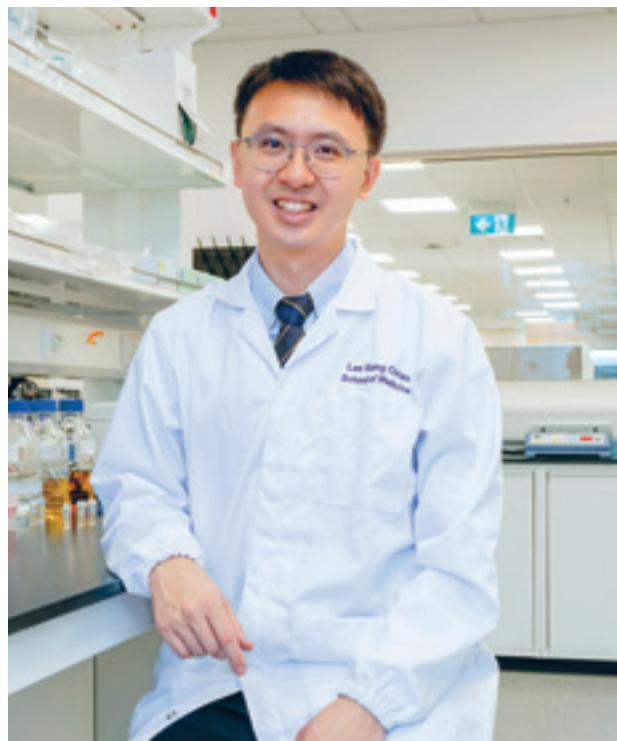
CMTi has established two grants that run annually – the NHG CMTi MedTech Grant in February 2021 and the NHG CMTi–NHIC Joint MedTech Grant in May 2019. Both grants support clinicians in developing technologies to translate their ideas into meaningful products and solutions to address unmet needs in healthcare.

Group Education

- Education is the cornerstone of NHG's multifaceted strategy to cultivate a sustainable healthcare system. Designed as a holistic enabler, Group Education is committed to inspiring and motivating learners to care for the population, and to meet present and future healthcare needs.

LKCMedicine to award its own degree from 2029

Students enrolling in Nanyang Technological University (NTU)'s Lee Kong Chian School of Medicine (LKCMedicine) in 2024 will graduate with a medical degree awarded solely by NTU, unlike their seniors, whose degree certificates bear the names of NTU and Imperial College London. This marks the completion of LKCMedicine's partnership with Imperial College six years from now, in 2028 as planned. Students who enrol this year or in 2023 and complete their five-year Bachelor of Medicine and Bachelor of Surgery programme by 2028 will still receive the joint degree from both institutions. Set up in 2010, LKCMedicine was designed to meet Singapore's growing healthcare needs. It welcomed its first batch of students in 2013 who graduated in 2018. To-date, four cohorts of medical doctors have graduated from LKCMedicine and are now contributing to Singapore's healthcare sector. The fifth cohort enrolled in May this year.



LKCMedicine welcomed its ninth cohort at its White Coat Ceremony in September 2021.

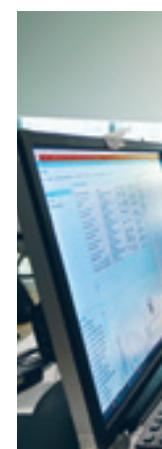


LKCMedicine celebrates largest cohort of medical students in White Coat Ceremony

In September 2021, LKCMedicine welcomed its ninth and largest cohort to-date at its White Coat Ceremony, with some 168 newly-matriculated students. The Ceremony was held in person at NTU's Nanyang Auditorium with safe distancing measures in place, while family and friends witnessed the occasion through a livestream. The event was graced by Guest-of-Honour Associate Professor Kenneth Mak, Director of Medical Services, Ministry of Health (MOH), who delivered the keynote address where he acknowledged how medical schools had adapted to the evolving situation, while ensuring that learning and training remained robust and of high standards.

LKCMedicine appoints new Assistant Dean, Academic Medicine

Associate Professor Sunny Wong was appointed Assistant Dean, Academic Medicine, LKCMedicine, with effect from 1 May 2022. A/Prof Wong, who joined LKCMedicine in August 2021 as Associate Professor of Nutrition, Digestion and Metabolism, now assists the School's Vice Dean (Research) to develop strategies and drive academic medicine initiatives with its primary clinical training partner, NHG. He also assists with the establishment of an Academy for Clinician Scientists and Innovation (ACSI) with NHG.





UPSKILLING TO MEET FUTURE CARE NEEDS TRAINING MEDICAL AND NURSING STUDENTS TO BE NGEMR-READY

Healthcare students at NHG have been receiving progressive training on the use of the Next Generation Electronic Medical Record (NGEMR) system. As of 30 July 2022, some 1,157 final-year medical and nursing students from the National University of Singapore Yong Loo Lin School of Medicine (NUSMedicine) had received collaborative training from NHG Cluster Pre-professional Education (PPE), Tan Tock Seng Hospital Pre-Professional Education Office (TTSH PPEO), and the National University Health System (NUHS).

Since June 2022, cluster PPE and TTSH PPEO have expanded training to include final-year medical students from LKCMedicine, NUSMedicine, and nursing students.

NGEMR was implemented across all National Healthcare Group Polyclinics (NHGP) in May 2021 and at TTSH in July 2022.

NGEMR trainers from the TTSH PPEO guiding final-year nursing students through the NGEMR system.



Fourth-year medical students Mr Lim (second from left) and Mr Kwang (third from left) received the Best Peer Teacher Award from their tutors, Dr Clement Chia (extreme left) and Dr Ruth Chua (extreme right).

NHG EDUCATION AND NHG COLLEGE COLLABORATE WITH LKCMEDICINE TO OFFER STACKABLE POSTGRADUATE PROGRAMMES

In collaboration with LKCMedicine, stackable postgraduate healthcare specialisation programmes will be available to NHG healthcare professionals interested in pursuing postgraduate certificates leading to a diploma or a master's degree. The first stackable postgraduate programme, leading to a Master of Palliative Care, is slated to launch in July 2024. The programme will be co-developed with the NHG Palliative Care Centre for Excellence in Research and Education (PaC).

LOTTE (LEARNING ORIENTED TEACHING IN TRANSDISCIPLINARY EDUCATION) LAUNCHED AT KTPH TO FOCUS ON TRANSDISCIPLINARY MEDICAL EDUCATION

Dr Clement Chia, Consultant, Department of General Surgery, Khoo Teck Puat Hospital (KTPH), initiated a Learning Oriented Teaching in Transdisciplinary Education (LOTTE) elective posting. The objective was to allow medical students to maximise their learning opportunities in two medical subspecialties, so as to better appreciate the benefits of working in a transdisciplinary collaborative environment. Launched in April 2021, the four-week programme saw students dividing their time equally between both of their subspecialties, attending to their rounds in the wards, clinics, and operating theatres, as well as conducting home visits.

ADDRESSING MENTAL WELLNESS TO BOOST RESILIENCE AT WORKPLACE

NHG RESIDENCY EXPANDS 'SOAR'

NHG Residency expanded its common curriculum domain 'SOAR' to include three domain areas of managing Self, managing Others, And building Resilience. The Self-Care 101 module was introduced in April 2021 to create awareness on the need for self-care and the effects of burnout, as well as equip residents with self-care and coping strategies. The module also guides residents to recognise emotional red flags so as to know when and where to seek help. Pilot courses on workplace mental wellness, mindfulness practice, and self-compassion training for the healthcare community were introduced in collaboration with NHG College, Brahm Centre, and the Mindful Compassion Project.

NHG RESIDENCY COUNSELLING REFERRAL GUIDE

To address the different levels of emotional and behavioural changes in residents, the NHG Residency Wellness Committee launched a counselling referral guide in August 2021. The guide uses traffic light colour codes to help faculty and staff identify residents in need of help – green (low need), yellow (moderate need), and red (critical need), for appropriate assistance/interventions to be implemented. Critical information of the guide has been incorporated in the NHG Residency crisis response policy.

The Workplace Mental Health (Basic) workshop completed a total of five runs in FY2021.



NHG Residency's publicity poster on its expanded Common Curriculum 'SOAR'.

DEVELOPING MENTAL RESILIENCE

NHG College continued to work closely with core faculty teams from TTSHealth and Woodlands Health (WH) to develop and conduct Workplace Mental Health (Basic) and SAFETALK Suicide Prevention Workshops. They are designed to train staff in identifying common mental health issues at the workplace, as well as administering mental health first aid. Five runs were conducted for some 90 peer supporters and HR practitioners across NHG.



474 leaders across NHG attended the virtual edition of Collective Leadership Conversations in FY2021.

ELEVATING CAPABILITIES TO BOOST PROFESSIONALISM ENABLING PRACTICE OF COLLECTIVE LEADERSHIP

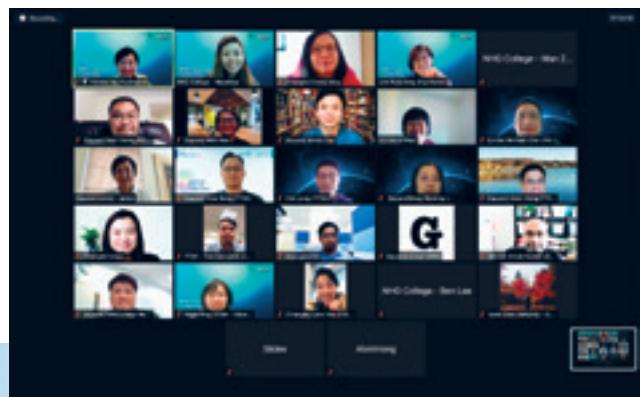
Five virtual programme runs of the NHG Collective Leadership Conversations were delivered in the past year to enable the practice of collective leadership. Additionally, NHG College conducted 13 runs of leadership development programmes for 474 leaders, designed to deepen the leadership capabilities of NHG's leaders.

Participants of the NHG Education Overseas Expert Programme (EOEP) having a group discussion.



FACULTY DEVELOPMENT AND ENHANCING THE ADOPTION OF DIGITAL LEARNING

NHG College delivered 49 runs of faculty development programmes for some 1,909 educators from NHG Education. Two new workshops were launched in FY2021 – 'Learning Facilitation' and 'Basic Psychometrics for Health Professions Education' – aimed at equipping NHG clinical educators with facilitation and assessment concepts. Additionally, educators learnt how to develop Entrustable Professional Activities (EPAs) through a series of virtual workshops and online lectures based on the four component instructional design model at the NHG Education Overseas Expert Programme (EOEP) with Professor Jeroen van Merriënboer.



Health Services and Outcomes Research

- Aligned to the Ministry of Health (MOH)'s *Healthier SG* strategy, NHG is actualising its *River of Life* (ROL) through the Accountable Care Organisation – Integrated Care Organisation (ACO-ICO) framework, to improve the health and well-being of the population we serve. Health Services and Outcomes Research (HSOR) supports this care transformation journey by providing best available evidence for decision-making and knowledge translation to our stakeholders, and by building capacity and advancing knowledge in health services research.

1. DEVELOPING A DASHBOARD TO STUDY THE NHG POPULATION

HSOR collaborated with Group Integrated Care (GIC) to develop a planning dashboard that provides stakeholders with a platform to explore aggregated demographic and healthcare data on patients residing in the NHG catchment area. Viewed through a system comprising maps, charts, and tables, users are able to examine data on demographics, chronic disease prevalence, ROL segments of care, and healthcare utilisation, as well as overall and per capita healthcare cost of known patients. Additionally, the dashboard includes information on the Community Health Assist Scheme General Practitioner (CHAS GP) clinics within the Central-North region, and clinic-level data. The data is presented via four geographic segmentations: i) Integrated Care Office (ICO), ii) Urban Redevelopment Authority (URA) planning area, iii) URA subzone, and iv) postal code (Figure 1). Available are summarised data sets of specific locations. This comprehensive overview of the NHG patient population will help stakeholders gain a deeper understanding of our patients, to better inform and facilitate resource and policy planning.

Figure 1. Pop-up summaries of health information using the ICO planning dashboard

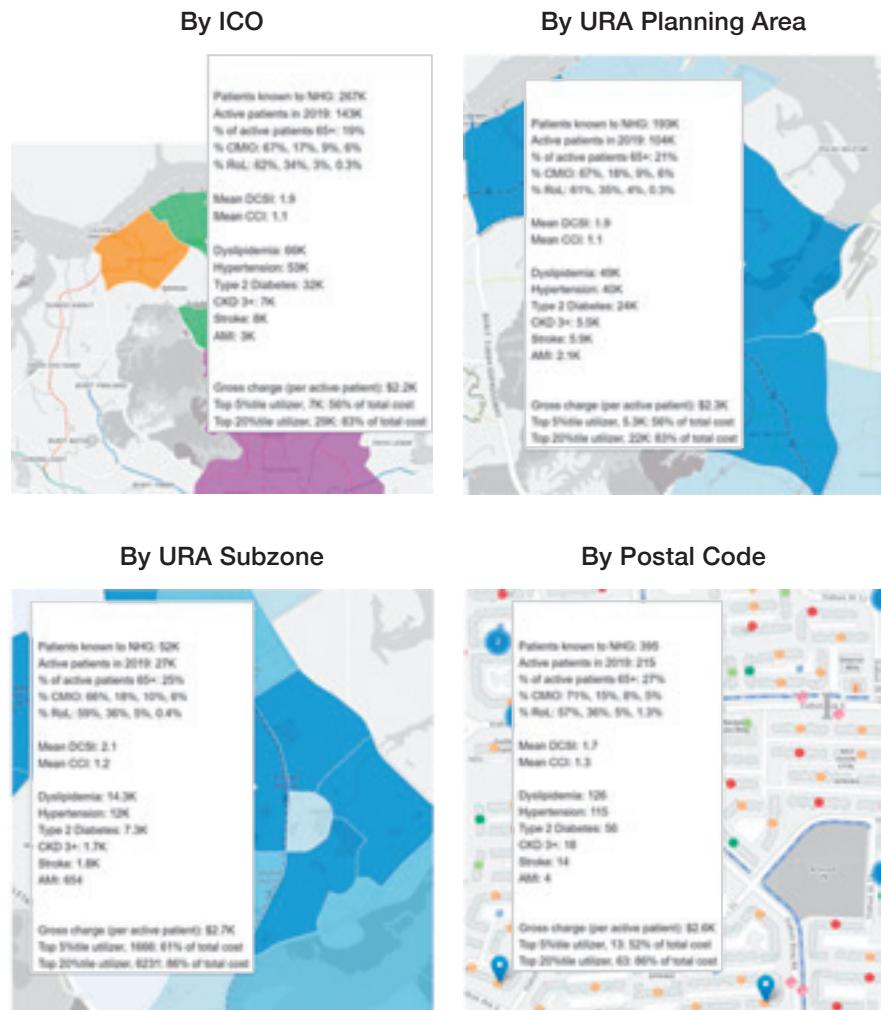
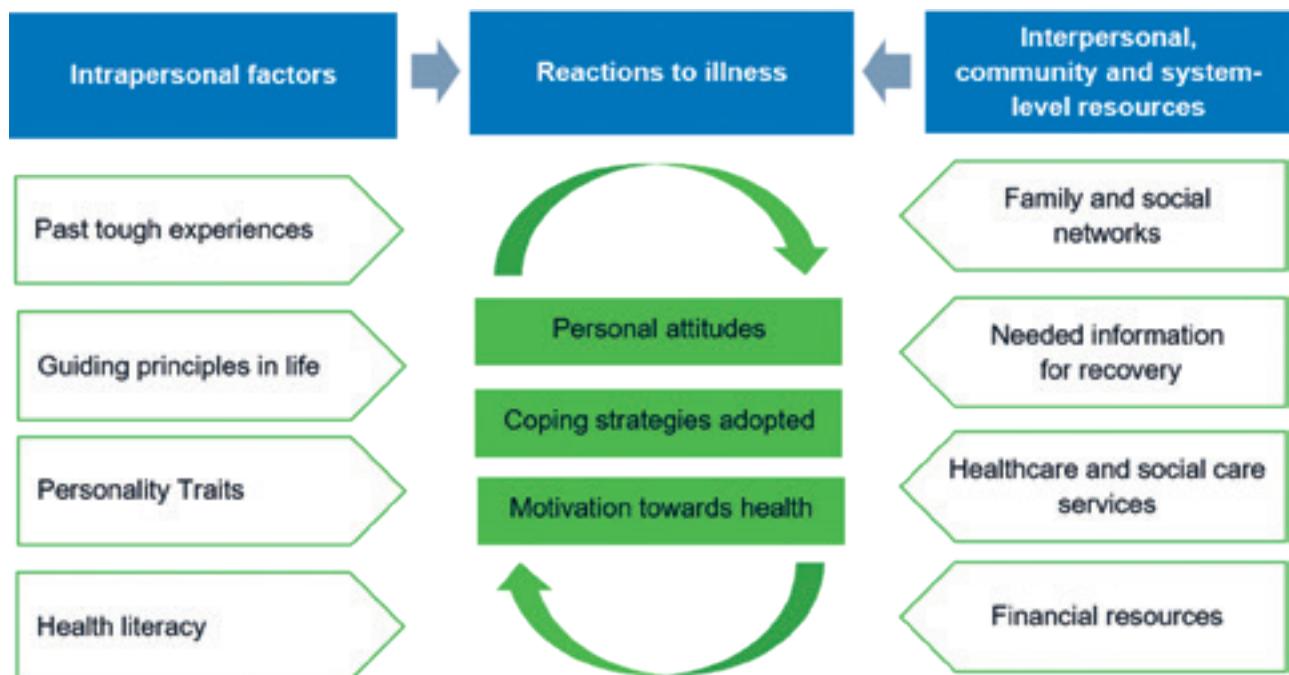


Figure 2. Factors influencing health resilience and their processes and interactions



2. IDENTIFYING FACTORS ASSOCIATED WITH RESILIENCE IN THE COMMUNITY

Some 65 residents living within the Central-North region of Singapore were interviewed in a qualitative study, to understand their perspectives on how they prepared for, dealt with, and overcame challenges and the impact of health adversities. These residents had experiences of being unwell, or taking care of someone who had been unwell in the past 5 years, and were from varying age groups. Semi-structured interviews were conducted with the participants, of which 14 were caregivers. Health resilience was found to be dynamic and comprised systemically impacted multi-layer interactions across interlinked, intrapersonal, reaction-related, interpersonal, community, and system-level factors (Figure 2).

Intrapersonal factors, such as previous tough life experiences, guiding principles in life, personality traits, and health literacy, were interlinked closely with perceived availability, accessibility or support accorded by community and system-level resources. These intra-, inter- and extra-personal factors influenced one's reactions to illness, such as personal attitudes, coping mechanisms adopted, and motivation towards health, which ultimately influenced the individual's ability to manage external and internal demands of their health challenges. Identifying the factors that influence health resilience and understanding their processes and interactions can help inform public health services on how to better support individuals to minimise or overcome the ill effects of health and life adversities.

3. EVALUATION OF A CHRONIC CARE PLAN AT ANG MO KIO POLYCLINIC

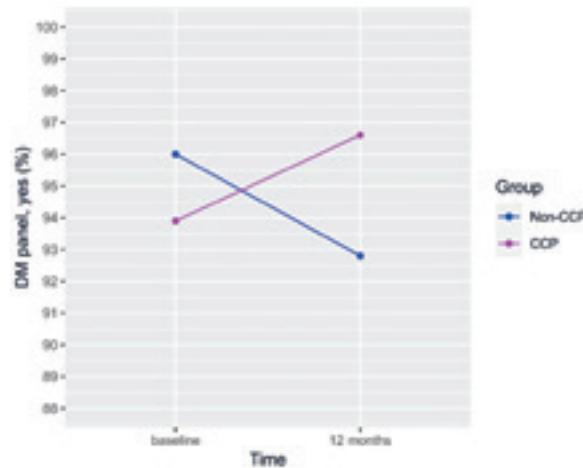
The Chronic Care Plan (CCP), a pre-paid bundle payment scheme, was introduced at Ang Mo Kio Polyclinic in January 2019. Key features included (i) pre-payment using Medisave and Flexi-Medisave and/or out-of-pocket, (ii) enrolment incentives, (iii) shared decision-making on chronic disease management, and (iv) financial rewards for achieving pre-specified health targets. A study was conducted to evaluate the impact of CCP on patients' adherence to care processes, chronic disease control, polyclinic healthcare utilisation, and total polyclinic gross charges at 1 year. Patients who had similar characteristics to the CCP patients and were followed up at the polyclinic for chronic conditions, but

not enrolled in CCP, served as the control group.

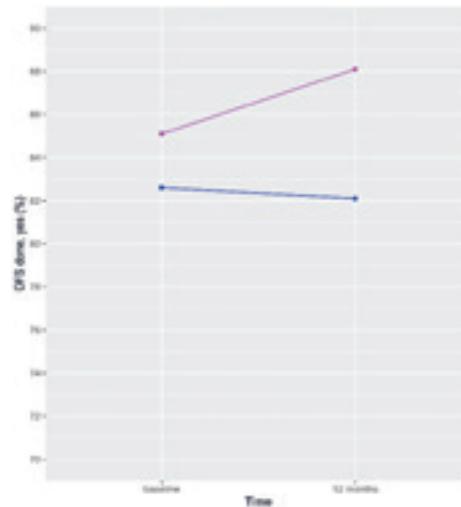
At 1 year, CCP patients with diabetes (n=2,359) were more likely to adhere to the diabetes test panel and foot screening compared to the control group, and a larger decrease in the number of doctor consultations for chronic care was observed. A similar decrease was also noted in the 2,455 CCP patients without diabetes (Figure 3). No significant differences were observed in chronic disease control, polyclinic healthcare utilisation, and total polyclinic gross charges. Findings suggest that a pre-paid chronic care financial package coupled with financial incentives could be useful to encourage adherence to care processes.

Figure 3. Adherence to care processes and chronic doctor consultations

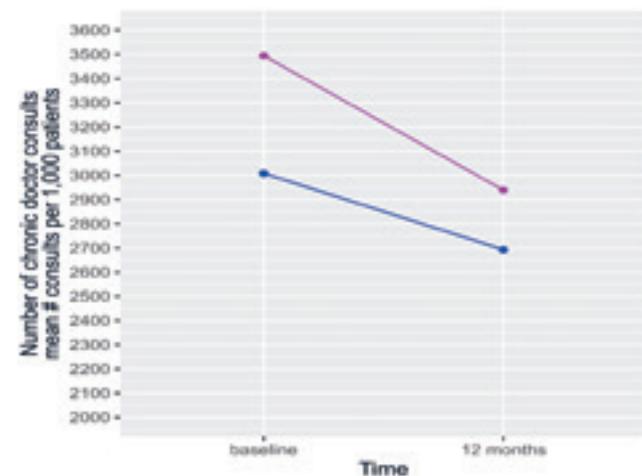
a) Diabetes Panel Attendance



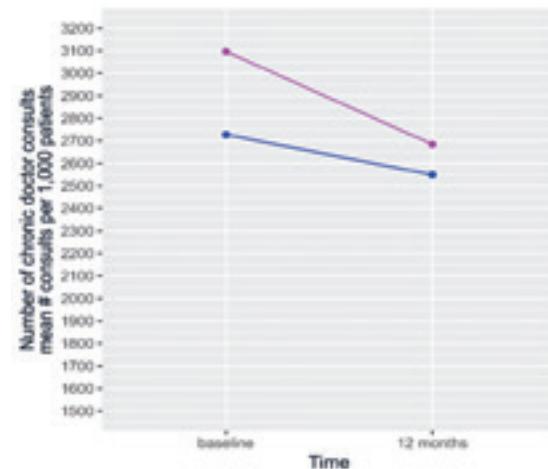
b) Diabetes Foot Screening Attendance



c) Chronic Doctor Consultations For Patients With Diabetes



d) Chronic Doctor Consultations For Patients Without Diabetes



4. ASSOCIATION OF SOCIAL ISOLATION, SOCIAL PARTICIPATION, AND LONELINESS WITH FRAILTY IN OLDER ADULTS

In the longitudinal Population Health Index Survey conducted in the Central region of Singapore, 606 participants aged 60 years and above were surveyed over 1 year. The mean age of the participants at baseline was 70.9 years old: 84.3% were Chinese, and 52.0% had no formal education or primary school qualification. Also, 58.6% were married, and 19.6% lived alone. Based on the 6-item Lubben Social Network Scale, 17.7% of participants were socially isolated from family members and 47.4% were socially isolated from friends. Based on the 3-item University of California, Los Angeles Loneliness scale, 7.3% of participants were categorised as feeling lonely. Social participation scores were measured using the social role domain of the Late-Life Function and Disability Instrument,

while level of frailty was measured with the Clinical Frailty Scale.

The associations between the above-mentioned social isolation, social participation, and loneliness with frailty were examined in an ordinal logistic regression model adjusted for demographics, lifestyle, and health-related factors. While scores denoting the extent of social isolation from family and friends were not associated with frailty; loneliness was. In addition, increased frequency of social participation was associated with lower levels of frailty (Table 1). Findings remained similar even after accounting for gender differences in the relationships. These observations suggest that loneliness and frailty should be measured and addressed concurrently among community-dwelling older adults.

Table 1. Associations of social isolation, social participation, and loneliness with level of frailty

	Adjusted Odds Ratio (95% CI)	p-value
LSNS-6 Family subscale scores	1.05 (0.97 - 1.14)	0.231
LSNS-6 Friends subscale scores	0.99 (0.92 - 1.07)	0.782
Social participation scores	0.96 (0.93 - 0.99)	0.019
Feeling lonely (Ref: Not lonely)	2.90 (1.44 - 5.84)	0.003

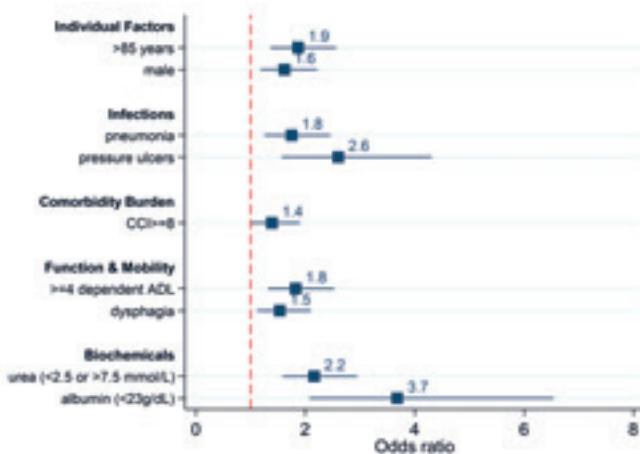
Number of observations: 782; number of individuals: 282. CI: confidence intervals; LSNS: Lubben Social Network Scale

5. PREDICTING MORTALITY IN ADVANCED DEMENTIA PATIENTS: THE PROGNOSTIC MODEL FOR ADVANCED DEMENTIA (PRO-MADE)

In Singapore, where dementia caregiving occurs primarily at home, early identification of individuals with advanced dementia (AD) can support proactive planning and the introduction of palliative care for such patients at high risk of one-year mortality. To support these efforts, HSOR collaborated with the Department of Palliative Medicine of Tan Tock Seng Hospital (TTSH) and the Geriatric Education and Research Institute to develop the PRO-MADE. This logistic regression model identifies AD patients at high risk of death within one year, therefore facilitating timely referrals to palliative care.

To develop this model, participants diagnosed with AD at inpatient or outpatient settings in TTSH were identified in a retrospective cohort study. Of the 1,077 AD patients studied, 318 patients died (29.5%), of which 996 patients (92.5%) were at Functional Assessment Staging Tool stage 7C. Potential prognostic variables were determined based on a scoping review previously conducted by the study team. The final model included age, gender, infections, comorbidity burden, function, mobility, and biochemical markers as predictors of mortality (Figure 4). The model

Figure 4. Predictors of mortality in Advanced Dementia

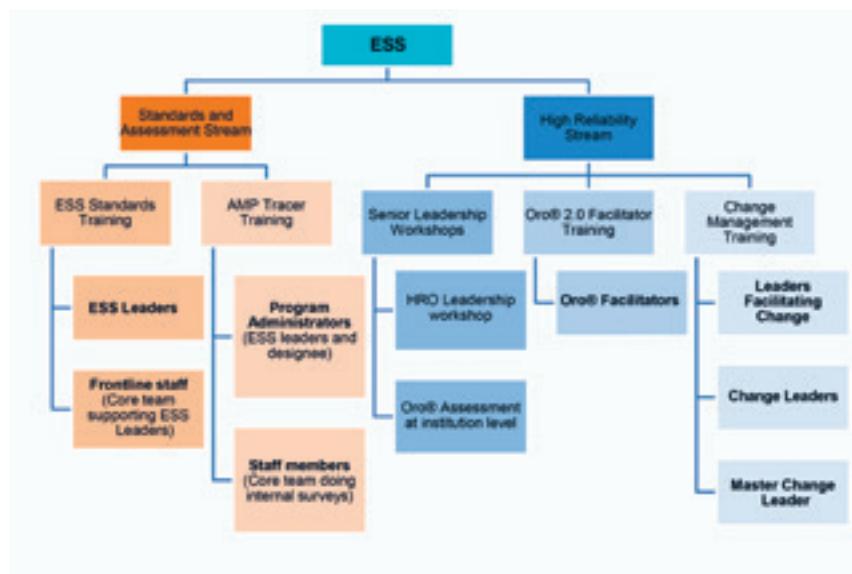


was able to distinguish the patients who were at high risk of mortality within one-year of AD diagnosis (optimism-adjusted area under the receiver operating curve: 0.763). Together with physicians and resources, PRO-MADE will be optimised and operationalised for use in the clinical setting.

Group Quality

ENROLMENT IN ENSURE SAFER SYSTEMS PROGRAMME

In August 2021, NHG enrolled in Ensure Safer Systems (ESS), a five-year programme by the Ministry of Health (MOH). ESS is a two-track programme that focuses on standards and assessment, as well as high reliability in clinical care. Dr Tung Yew Cheong, Deputy Group Chief Quality Officer, NHG, who is NHG's Deployment Lead, ensures coordination across NHG Institutions through the ESS Secretariats.



The ESS (Ensure Safer Systems) programme features two tracks.

ASSESSMENT STREAM

As part of this programme, Joint Commission International (JCI)'s standards and assessment methodologies were contextualised to local healthcare settings. This ensured that all standards were relevant to local laws, regulations, and culture, while simultaneously retaining the evidence-based nature of the programme and the ability to benchmark with JCI-accredited organisations globally. Khoo Teck Puat Hospital (KTPH) and Institute of Mental Health (IMH) completed the baseline assessment in February and March 2022, respectively.

HIGH RELIABILITY STREAM

From 16 February to 18 March 2022, 25 change leaders and facilitators from NHG Institutions participated in the *Leaders Facilitating Change*® course, which aimed to impart change management methodologies, and tools that could be applied in daily operations. NHG senior management were also invited to attend the *HRO Leadership Workshop*, which provided crucial leading indicators on strengths, opportunities, and potential investment strategies to achieve high and reliable performance in an organisation.

REDUCING PREVENTABLE HARM THROUGH COLLABORATION

The NHG Harm Reduction Collaborative (HRC) was launched in May 2020 and sought to reduce preventable harm to our patients by 50 per cent within the course of three years. The Collaborative is currently led by Associate Professor Gervais Wansacheong, Senior Consultant, Diagnostic Radiology (Clinical), Tan Tock Seng Hospital (TTSH) and Ms Claudine Oh, Assistant Director, Operation Admin, Yishun Health, and supported by institution representatives, facilitators, and an external specialist, who coached, helped implement change, and developed safer clinical care practices across the institutions. Group Quality's NEST (NHG Enhancing Safety Together) Office manages the coordination and planning of HRC's activities. To-date, 13 teams from eight NHG Institutions and units are involved in projects spanning three major work streams: i) Healthcare-Associated Infections, ii) Medication Safety, and iii) Procedural Safety. Each work

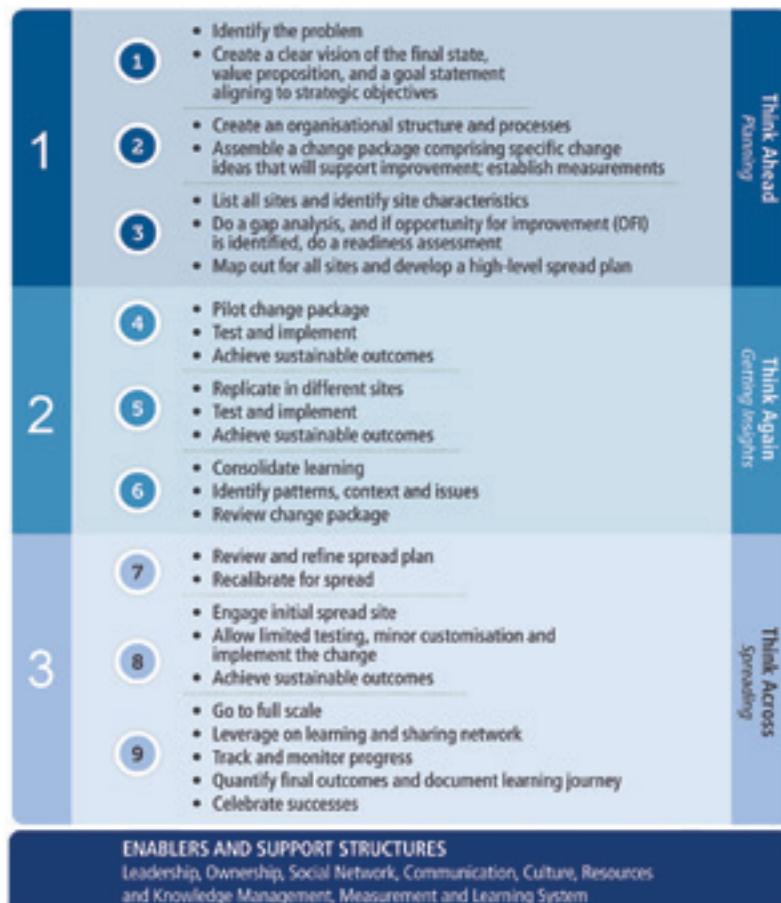
stream covers specific areas in which harm reduction efforts are targeted.

Success stories included a team from KTPH, which implemented effective interventions to counter methicillin-resistant staphylococcus aureus (MRSA) infections. The team subsequently extended the project to two additional wards to care for more patients. Another example would be the joint effort between National Healthcare Group Polyclinics (NHGP) and National Healthcare Group Diagnostics (NHGD) to champion greater procedural safety by ensuring zero Serious Reportable Event (SRE) for all patients requiring X-ray examinations. As a result, the number of SREs decreased from eight (2019-2021) to zero (2022). To improve medication safety, Project PopMed, a Pharmacy Transformation initiative, sought to identify patients at risk of inappropriate medication use and poor adherence to medication. These patients would be guided by a pharmacist health coach to practise better medication management.

NHG SPREAD AND SCALE SYSTEM

In September 2021, NHG Group Quality launched the 'NHG Spread and Scale System', a digital learning system designed to capture knowledge generated from each improvement project enrolled within the system. In addition to serving as a documentation platform for individual project teams, it functions as a repository of data and information for various quality improvement initiatives, which is readily accessible to Quality Teams across NHG Institutions.

Based on the NHG Spread and Scale Framework, this digital learning system also provides opportunities for coaching and peer learning to aid project teams to spread improvement insights and extend implementation to more sites beyond pilot studies. To-date, the 'NHG Spread and Scale System' has captured information on 15 improvement projects.



The three stages and nine steps of the NHG Spread and Scale Framework.

The screenshot shows the homepage of the NHG Spread and Scale System. The top navigation bar includes 'Homepage', 'HOME', 'PROJECT LEADERS', 'MY PROJECTS', 'PERMISSIONS', and 'LOGOUT'. The date '22 March 2022, TUESDAY' is also visible. A blue box on the left contains the 'FOREWORD' text. The main content area features a 'Team' icon with three stylized figures.

FOREWORD

Studies have shown that 70% of pilot studies do not go beyond initial success. Instead, there are a multitude of challenges faced by teams in their quest to effect permanent change and transformation throughout the organisation. These challenges range from planning to resourcing and to engaging with leaders and staff.

With this in mind, we have created a Spread and Scale framework to guide the processes beyond initial pilots so that effective changes can be made to the system. Featuring a step-by-step process, it guides the teams logically making the right moves each step of the way in:

- Planning for scale-up and spread activity from the beginning;
- Identifying the necessary resources; and
- Engaging both leadership and the workforce.

The development of the system was guided by Edwards Deming's Theory of Profound Knowledge. The underlying principles are appreciating System, managing Variation, getting insights through systematic Learning and comprehending the Psychology of change. We hope that teams would derive confidence from applying an approach that is grounded on reason and knowledge. We wish every team success in their Spread and Scale endeavours.

AP/Prof Tai Hwei Yee
Associate Chief Quality Officer
National Healthcare Group

The 'NHG Spread and Scale System' is a platform for improvement teams to track, spread, and scale-up their improvement initiatives.

NHG QUALITY DAY WEBINAR 2021

NHG held its annual Quality Day virtually in September 2021. Themed "*Co-Creating with Kindness*", Associate Professor Tai Hwei Yee, Group Chief Quality Officer, NHG emphasised the timeliness and relevance of reinforcing patient-centred care, especially during challenging times.

Keynote speaker, Dr Bob Klaber, Consultant, General Paediatrician, and Director of Strategy, Research, and Innovation at Imperial College Healthcare, NHS Trust, United Kingdom, issued a clarion call for greater focus on kindness in order to reconnect healthcare to its mission and purpose. When kindness is practised organisation-wide, there is greater joy in work, understanding, and empathy, with positive impact on patient and population outcomes.

The event also recognised individuals and teams across the NHG Family who had contributed towards quality improvement. In 2021, 34 projects were presented with the Quality Improvement Award, 36 individuals and eight teams received the Excellence in Action Award, and six individuals clinched the Exemplary Patient & Caregiver Award.

Group Nursing

- Nurses and care support staff are the bedrock of our healthcare system and they form an integral part of the patient care team. Over the years, the nursing role has broadened to keep pace with the care needs of the ageing population, a rise in the incidence and prevalence of chronic diseases, growing demand for healthcare services, and more complex medical and nursing care needs. NHG is committed to building up the nursing profession and providing career opportunities for motivated individuals with the passion to serve, and provide quality and safe care.

YOUR JOURNEY, OUR COMMITMENT

In line with NHG Nursing's strategic thrusts to build a positive and nurturing practice environment that empowers and engages our people, the NHG Nursing Council harmonised the progression criteria across the cluster for both nurses and ancillary care staff to create fair opportunities for career advancement. To ensure objectivity in the assessment, the following broad principles for progression apply:

- Years of relevant experience
- Performance rating
- Educational qualification
- Parity (e.g. between full-time and part-time staff)

In March 2022, the details of the harmonisation exercise and career progression criteria were shared with all nursing supervisors and nurses to guide them in their conversations with staff on their roadmaps in Nursing.



IMH, NSC, and WH nurses at the Community Treatment Facility (CTF) at Tampines NTUC Nursing Home.



NHG-CANS Nursing Leadership Dialogues were held to look at 'Deciphering Leadership Issues of Our Times'.



NHG-CANS NURSING LEADERSHIP DIALOGUES

From February 2021 to May 2022, NHG Group Nursing (GN) and the Centre for Asian Nursing Studies (CANS) collaborated to organise a series of NHG-CANS Nursing Leadership Dialogues themed 'Deciphering Leadership Issues of Our Times'. These dialogues sought to:

- Foster a culture of constructive and open dialogue
- Share best practices on challenging nursing leadership issues
- Serve as a cross-cluster platform/resource for NHG Nursing and CANS thought leadership
- Develop a Community of Practice (COP) for NHG Nursing leaders and nurses

The five virtual dialogues covered a range of topics, including performance management, staff favouritism, workplace bullying and harassment, intelligent disobedience, and Bed Baths: Dignified Intrusion.

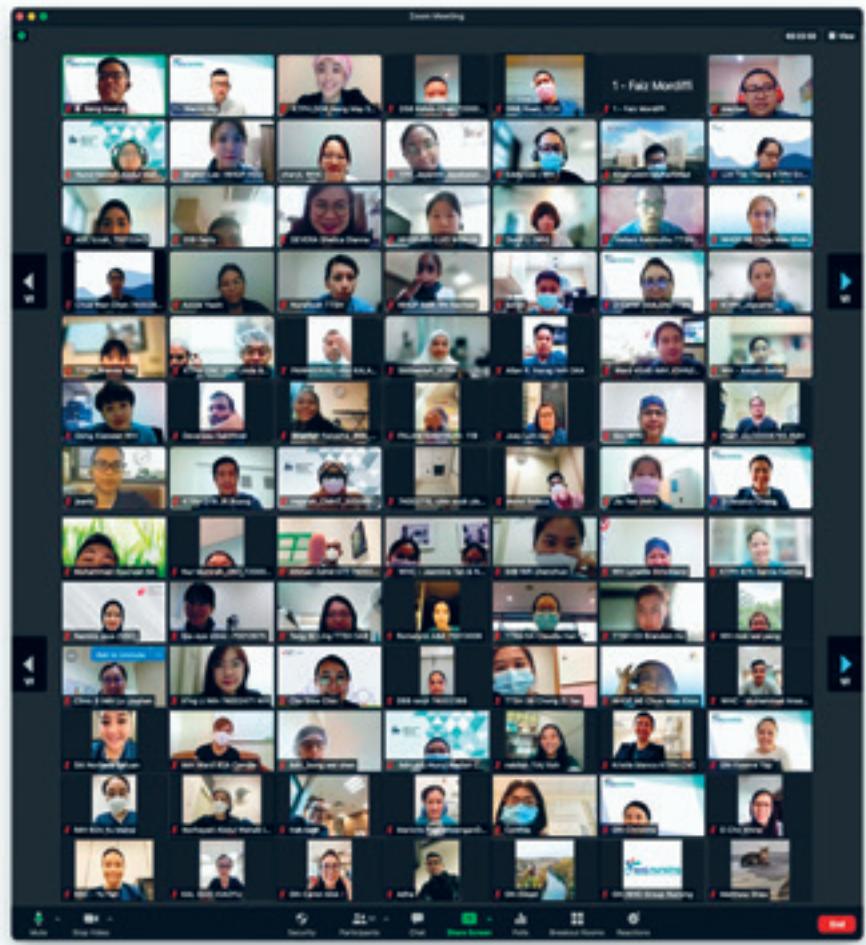
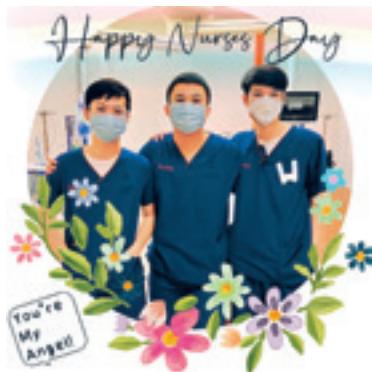


WH nurses checking their personal protective equipment.

NHG GROUP NURSING'S STANDARD ON-BOARDING PROGRAMME FOR NHG NURSES

In November 2021, NHG Group Nursing introduced the in-house NHG Standard On-boarding Programme for NHG Nurses. The key objectives of this programme are to introduce newly recruited NHG Nurses to GN's strategic map and forge a strong NHG identity through GN initiatives and activities.

A total of 150 NHG nurses and healthcare assistants from all Institutions participated in the two pilot sessions via Zoom. The programme included e-learning and interactive engagement with Adjunct Associate Professor Yong Keng Kwang, Group Chief Nurse, NHG.



NHG Group Nursing's Standard On-boarding Programme for NHG Nurses.



NSC nurses at the Community Treatment Facility (CTF) at Ren Ci Community Hospital.

CONTINGENCY MANPOWER SUPPORT FOR COVID-19 COMMUNITY CARE FACILITIES

The resurgence of COVID-19 due to the Omicron variant in late 2021 and early 2022 resulted in the need for additional manpower to support patient care and ground operations in the community care sector. Between September 2021 and April 2022, some 203 registered nurses, nine enrolled nurses, and 47 healthcare assistants from the Institute of Mental Health (IMH), National Skin Centre (NSC), and Woodlands Health (WH) responded to the call to manage geriatric COVID-19 patients placed in the Community Treatment Facility (CTF) at NTUC Tampines Nursing Home. Another four NSC nurses were deployed to support the CTF at Ren Ci Community Hospital.

NHG Nursing deferred the advanced diploma in nursing studies of more than 100 NHG nurses at Nanyang Polytechnic from September 2021 to January 2022 to support the surge of patients due to the COVID-19 Delta variant. Following that, NHG Nursing also planned and coordinated the return of 121 NHG nurses from their Advanced Diploma in Nursing studies to the respective NHG Institutions for two weeks in March 2022 to support another surge due to the COVID-19 Omicron variant.

REFORMING HEALTH, REIMAGINING NURSING



With a focus on preventive care, the new *Healthier SG* strategy gets right to the heart of the nursing profession and provides another impetus to its on-going transformation.

THE MINISTRY OF HEALTH (MOH) RECENTLY ANNOUNCED A NEW *HEALTHIER SG* STRATEGY TO DRIVE PREVENTIVE CARE AND IMPROVE POPULATION HEALTH. From 2023, each resident will be invited to enrol with a family physician of his/her choice at a private General Practitioner (GP) clinic or polyclinic. This doctor will be the first point of contact for the patient's care needs, including health screening, early intervention, and coordination with hospitals and specialists, as well as social-sector partners to manage complex health conditions.

From left: Pua Lay Hoon, Chief Nurse, Woodlands Health; Dr Margaret Soon, Director Of Nursing, National Centre For Infectious Diseases; Shirley Heng, Chief Nurse, Khoo Teck Puat Hospital & Yishun Health; Adjunct Associate Professor Yong Keng Kwang, Group Chief Nurse, National Healthcare Group; Brenda Lim, Head Of Nursing, National Skin Centre; Dr Hoi Shu Yin, Chief Nurse, Tan Tock Seng Hospital & Central Health; Lim Voon Hooi, Chief Nurse, National Healthcare Group Polyclinics; Chua Gek Choo, Director Of Nursing, Yishun Community Hospital; Raveen Dev Ram Dev, Chief Nurse, Institute Of Mental Health.





NHGP Chief Nurse Ms Lim discussing how the Next Generation Electronic Medical Records (NGEMR) Outpatient Dashboard works.

Through regular visits, it is hoped that patients will develop trust in and heed their doctors' advice. Family physicians can also gain a full picture of their patients' health and well-being, resulting in better care.

Naturally, this strategy means the primary care sector will assume greater importance than it already does. Healthcare clusters – including the National Healthcare Group (NHG) – will need to better support GPs operating within their respective regions to ensure continuity of care. Polyclinics must also build manpower capabilities to scale up their services. "Health promotion and preventive care are part and parcel of what we do as primary care providers," says Lim Voon Hooi, Chief Nurse of the National Healthcare Group Polyclinics (NHGP). "Healthier SG is very exciting for us, and we look forward to getting more clarity on the details once the White Paper on it comes out later this year."

Nurses, being the largest professional group of healthcare workers in Singapore, form the backbone of healthcare. They are the ones who spend the most time with patients, and they are likely to deliver the bulk of preventive services under *Healthier SG*. What they think and how they feel about the initiative will therefore impact its rollout.

To get their take on *Healthier SG* and its perceived challenges and opportunities, Lifewise speaks with nurse leaders across NHG. Alongside Adjunct Associate Professor Yong Keng Kwang, NHG's Group Chief Nurse, are Ms Lim; Dr Hoi Shu Yin, Chief Nurse, Tan Tock Seng Hospital (TTSH) & Central Health; Shirley Heng, Chief Nurse, Khoo Teck Puat Hospital (KTPH) & Yishun Health; Pua Lay Hoon, Chief Nurse, Woodlands Health; Raveen Dev Ram Dev, Chief Nurse, Institute of Mental Health (IMH); Chua Gek Choo, Director of Nursing, Yishun Community Hospital (YCH);

Dr Margaret Soon, Director of Nursing, National Centre for Infectious Diseases (NCID); and Ms Brenda Lim, Head of Nursing, National Skin Centre (NSC). With Singapore Nurses' Day falling on 1 August, we salute this profession and its critical contributions to healthcare and to keeping our population well.

FINE-TUNING THE '3 BEYONDS'

Preventive care is not a new concept. It is already built into MOH's 3 Beyonds – 'Beyond Hospital to Community', to provide better care closer to patients' homes; 'Beyond Quality to Value', to make quality healthcare more affordable; and 'Beyond Healthcare to Health', to nip diseases in the bud.

A/Prof Yong notes that the 3 Beyonds strategy has drawn a mixed



Healthier SG is a stronger articulation of intent for the 3 Beyonds, especially '**Beyond Healthcare to Health**'.

**ADJUNCT ASSOCIATE
PROFESSOR YONG KENG KWANG
GROUP CHIEF NURSE, NHG**





NCID Director of Nursing Dr Soon attending a Zoom meeting.

response so far. "There has been some attention on preventive care, for example, in school canteens which now serve more nutritious food. Adults and the elderly are harder to convince, though. It may be easier to get the message across to the young as they are still impressionable, whereas adults have already formed habits that are hard to break," A/Prof Yong notes. Many seniors feel their best days are behind them and so are less proactive about their health, even though statistics show that life expectancy is increasing.

Cost is usually a deciding factor. "Many are not used to the idea of paying for something they cannot 'see' or where benefits are not immediately apparent, like for a health screening. There are also opportunity costs, as some feel receiving counselling and advice from nurses is a waste of time when they could look up the information online themselves," A/Prof Yong elaborates. Not everyone can afford to

keep up with preventive health practices either, such as sticking to a healthy diet which tends to be pricier than hawker fare. Despite efforts by healthcare institutions to promote preventive care in the community, a lack of public awareness remains about the importance of healthy habits such as eating well and exercising regularly.

"The COVID-19 pandemic has highlighted how individual responsibility can reduce the chances of being infected, and how those with multiple chronic illnesses are at a higher risk of experiencing severe COVID-19 symptoms," says Dr Margaret Soon. "But without regular reminders like what we saw during the height of the pandemic, people may lose the discipline to maintain good health over longer periods."

That is where the *Healthier SG* strategy can make a real difference, As A/Prof Yong explains. "*Healthier SG* is a stronger articulation of intent for the 3 Beyonds, especially 'Beyond Healthcare to Health'. It calls for a more concerted effort from healthcare providers and community partners to support and follow up on preventive services and healthier living. Hopefully, the enrolment scheme and the frequent nudges from family physicians will lead to sustainable behavioural change."

Nurses, too, would need to innovate, continuously learn, adapt, and evolve to help meet the goals of *Healthier SG*. A/Prof Yong and his colleagues bring up various issues and necessary changes, which can be categorised according to the four interrelated thrusts in NHG Nursing's Strategic Map:



DID YOU KNOW?

ONLY
3 in 5
SINGAPOREANS
CURRENTLY
HAVE A
REGULAR
DOCTOR.

SOURCE:
MINISTRY OF HEALTH

STRENGTHENING RELATIONSHIP-BASED CARE

While laypersons tend to associate preventive care simply in terms of not getting sick in the first place, it can in fact apply to other stages of life. To borrow from NHG's *River of Life* population health framework, the focus on preventive care means devoting resources not just to the 'Living Well' segment, but also to those who are 'Living with Illness' (through regular check-ups for patients with chronic conditions to avoid complications), or 'Living with Frailty' (by enabling the elderly to live in the community for as long as possible and stave off hospital admission and/or institutional care). Nurses are therefore moving away from transactional or episodic to holistic care and building long-term relationships with patients. After all, says Ms Chua, "Health promotion and prevention does not happen overnight."

The NHG-wide commitment to 'One Care Plan' is rooted in strong patient-provider relationships.



Under this arrangement, healthcare professionals across the care continuum – including nurses in different settings – work hand in hand to integrate care around patients, based on care goals that are co-determined with patients and/or their family. No matter whether a patient visits a primary care worker or a specialist, this single care plan makes the patient's medical records visible to all providers. They can then deliver shared care and adhere to shared referral protocols, thus ensuring the right-siting of care and preventing unnecessary hospital visits.

Relationships should be forged not only with patients but with their families too. Besides being the main caregivers, family members are the ones whose opinion matters most to patients. "A person's health-seeking behaviour is prompted by intrinsic motivation, and most of the time family members are the driving force," says Ms Pua. For instance, it is not uncommon for a grandchild who is passionate about clean eating to hold more sway than an 'outsider' in getting their grandparent to adopt the practice. If nurses have difficulty persuading older residents to make lifestyle changes, engaging grandchildren may be the key.

Extending this idea further, patient-centric care must consider the social determinants of health – an individual's socioeconomic status, education, neighbourhood, employment, and other non-medical factors that affect health outcomes. This is precisely what the Agency for Integrated Care (AIC)'s Community of Care (CoC) initiative sets out to do. Aimed at helping seniors age well in place, CoCs are networks of collaboration between health providers and community partners (e.g. social service agencies) that address the medical and social needs of older residents within their neighbourhoods.

"Currently, CoCs conduct activities mostly for those who have regular contact with patient touchpoints and are already motivated to look after their health," says A/Prof Yong.

ON THE WAY UPSTREAM



NHG manages the health of about 1.5 million residents in Central-North Singapore with primary prevention – stopping a disease or injury from occurring – being the best-case scenario, which is supported by a network of community and tertiary hospitals. Although these facilities may be too late to prevent diseases from developing, they help to reduce the impact on patients' lives through secondary prevention (e.g. screening tests for early detection and treatment) or tertiary prevention (e.g. chronic disease management, post-stroke rehabilitation).

For example, KTPH and TTS defence each has a cadre of community nurses who is posted to heartland neighbourhoods and provides preventive health services within the neighbourhoods for residents, which include the monitoring of blood pressure, blood glucose/cholesterol, as well as weight management plans. KTPH patients who require sub-acute care and rehabilitation are transferred to YCH, where hospital staff aid their recovery to facilitate a smooth transition back to home or to a long-term care facility. NSC's dermatology nurses regularly visit nursing homes to assess and treat the skin condition of elderly residents, many of whom are frail and unable to travel for outpatient care, while venereology nurses provide sexually transmitted infection screening service. Meanwhile, IMH runs mental health awareness and support programmes to reach out to different groups in the community, including school-going children and youth.



Far left: YCH Director of Nursing Ms Chua in a multidisciplinary discussion with Dr Lee Kok Keng (Medical Director) in preparation for COVID-19 pandemic.

Left: Woodlands Health Chief Nurse Ms Pua at CCF Expo.

“CoCs will need to cast a wider net to draw in the not-yet-activated. This includes elderly persons who are reluctant to leave their homes, as well as working adults who let their health slide because they are busy with work.”

With GPs exerting a stronger influence under *Healthier SG*, A/Prof Yong notes it is imperative for them to be incorporated into CoCs, with nurses playing a bigger role to support and strengthen these interactions. Nurses will “break out of their silos” and coordinate with different stakeholders, he adds. For example, they can practise social prescribing and actively refer residents to non-medical interventions such as a brisk walking group, a community gardening club, or a mindfulness workshop.

Ms Lim from NHGP reiterates, “To encourage health-seeking behaviour among residents, we need to address their social determinants of health by emphasising the integration of health and social services. My hope is that we avoid medicalising what we do in the clinic, and instead work more closely with community partners.” NHGP’s Enhanced Maternal Baby ToddleR And Child SurvEillance (EMBRACE) programme, which offers integrated maternal and child health services for mother-child dyads, has an EMBRACE^{PLUS} component that does just that. The EMBRACE^{PLUS} team identifies vulnerable children under three years old from low-income families, and collaborates with community partners like KidSTART to address both health and social needs.

Given the challenges in getting the elderly to take up preventive care services – particularly those who live alone – NHG has specific programmes for them that feature social engagement. One example is the Wellness Kampung programme, launched by

Yishun Health in partnership with St Luke’s ElderCare and Nee Soon Group Representation Constituency (GRC) Grassroots Organisations. Residents can gather at these locations and take part in group activities such as exercise classes and healthy cooking sessions, as well as undergo health screening conducted by community nurses.

In a sense, these initiatives view residents less like ‘patients’ and more like ‘clients’ – individuals with holistic needs beyond their illnesses and hospital walls. The word change is subtle but significant. “It’s about putting clients first, and in the driver’s seat, when it comes to preventive care,” says Mr Dev.

NURSES BEYOND NURSING, NURSING BEYOND NURSES

Bringing more partners into the fold is crucial to delivering holistic care, but it could cause issues relating to the harmonisation of care among the various parties. One way to get around this is for nurses to upskill themselves across different fields so that they can handle certain cases themselves without



IMH Chief Nurse Mr Raveen coaching nurses on implementing nursing shared governance.

“To encourage health-seeking behaviour among residents, we need to address their social determinants of health by emphasising the integration of health and social services. My hope is that we avoid medicalising what we do in the clinic, and instead work more closely with community partners.”

LIM VOON HOOI
CHIEF NURSE, NATIONAL HEALTHCARE GROUP POLYCLINICS

the need to refer every patient to an Allied Health Professional. A/Prof Yong names three areas that are especially relevant for nurses – pharmacology, nutrition, and physical and occupational therapy. In addition, he suggests, community nurses can be mobilised to enhance the capabilities of CoC partners. This could entail being deployed to under-resourced GP clinics, where nurses would spend time with patients immediately after their GP consultations and counsel them on preventive care.

However, working closely with community partners and attending upskilling courses would increase nurses' already-heavy workload – and potentially exacerbate the well-documented nursing shortage. Allied Health Professionals (AHP) can help ease the burden by acquiring basic nursing skills. Another solution is to hire more laypeople as trained health coaches. Similar to the Health Promotion Board (HPB)'s Health Ambassadors, but working in a paid rather than volunteer capacity, health coaches are based in the community and give preventive care tips to their friends and neighbours. They also conduct wellness programmes such as workout sessions, health talks, and cooking workshops. Not only do they relieve nurses of this work but utilising a familiar presence in residents' lives may make them more receptive to the health advice.

Popular in countries like Sweden, the idea of health coaches has recently caught on locally, Ms Heng explains. "During the pandemic, when nurses had to deal with large volumes of cases or were down with COVID-19, we depended a lot on health coaches. We must keep up this momentum to ensure a successful *Healthier SG*." Doing so requires



KTPH Chief Nurse Ms Heng interacting with healthcare partners.

a mindset shift. "As clinical professionals, we are used to being paternalistic and may have frowned on non-medically qualified people dispensing health advice in the past. But times are changing," says Ms Heng. The focus is no longer on providing top-down care, but rather co-creating care through mutual understanding with patients and the general population.

Empowering patients and their families through self-management is also a key element of co-creating care and promoting preventive health. For example, TTSH's Project Carer Matters is a nursing initiative to support the caregivers of older adults warded at the hospital. Caregivers identified as being in distress are referred to the Carer Matters team who provide tailored resources and holistic

TTSH'S PROJECT CARER MATTERS HAS HELPED MORE THAN 600 CAREGIVERS SINCE NOVEMBER 2019

SOURCE: CNA



A CAREER OF CARING

Samantha Ong was just 20 years old on her first day as a nurse. Now 56, having recently stepped down as Chief Nurse of IMH, the recipient of the President's Award for Nurses 2019 reflects on what has been a humbling yet rewarding journey.

How much has the nursing field changed during your career?

Back in the day, nurses were simply assigned to morning, afternoon, or night shifts, and the only roles open to us were clinical nurse or administrator. Today, there's much more flexibility. The self-rostering system gives us more control over our working hours, and there are also many different tracks. You can be a nurse-educator, a nurse-researcher, an Advanced Practice Nurse, or specialise in nursing informatics. Training doesn't stop at a diploma either; bachelor's, master's, and even PhD degrees in nursing are now available. It is a highly-skilled and well-rounded profession with diverse responsibilities.

In your nine years as Chief Nurse, what has been your biggest challenge?

The COVID-19 pandemic has been a difficult time for all nurses. On the upside, the pandemic provided opportunities to learn and experience new things. With help from Dr Margaret Soon, Director of Nursing at NCID, we opened COVID-19 wards at IMH to nurse COVID-19-positive patients at IMH. We built up our competencies in managing patients' physical, as well as mental health.

What is the most valuable lesson you have learned?

Being Chief Nurse taught me what leadership really means – to motivate and influence staff, and to promote their professional effectiveness. At IMH, I implemented a shared governance model, where ground nurses can join or lead committees and workgroups, as well as engage in shared decision-making. This has empowered nurses and given them more autonomy and accountability. I also introduced the Back to Scrubs initiative to encourage all nurse

“As clinical professionals, we are used to being paternalistic and may have frowned on non-medically qualified people dispensing health advice in the past. But times are changing.”

SHIRLEY HENG
CHIEF NURSE, KHOO TECK PUAT HOSPITAL & YISHUN HEALTH

support (e.g. how to use a feeding tube, respite care services, financial grants, support groups) to address their physical, mental, emotional, and social needs. Through such assistance, caregivers learn to care for themselves as well as their loved ones at home better – thus reducing the likelihood of patients being readmitted to hospital or of caregivers falling ill.

CULTIVATING A DIGITALLY-ENABLED WORKFORCE

Since the COVID-19 pandemic, residents – including the elderly – have become more tech-savvy. They are now adept at searching for healthcare news online and in using virtual communication platforms. It would be remiss not to ride this wave and leverage technology to equip society with the knowledge and skills to manage its own health.

At present, NHG is exploring ways to adapt some of its hospital-based digital innovations for broader use. One is TTSH’s smart bed-exit prediction and fall prevention system called PreSAGE. Intended for patients at high risk of falling, PreSAGE uses thermal imaging and video analytics to give advance alert of patients who are about to get out of bed, so that nurses can reach them in time

leaders – myself included – to go on the ground and do some shift work. Working alongside staff nurses allows leaders to observe how things are done, hear from ground staff, and see if things can be improved.

What’s next for you?

I’m still based at IMH full-time, but in an operational role. Instead of clinical work, I now manage hospital processes and IT systems, and look at issues like innovation and quality. I do feel sad about not getting to interact with patients daily anymore, but I plan to work in the ward once or twice a month so that I can maintain my nursing practices and skills.

Can you give some advice to younger and aspiring nurses?

Nursing is tough work, so it’s important to find joy and meaning in what you do. Remember that every day is an opportunity to make a difference in patients’ lives. Draw strength from the passionate nurses who journey with you. Base your decision-making process on People-Centredness, Integrity, Compassion, Stewardship (PICS), as well as be resilient in your service, and you will be an amazing nurse!

to assist. It has led to safer patient care and improved productivity, as nurses now require less time to conduct frequent rounds to monitor patients at-risk. “While the exploration is still in its early days, we hope to expand the use of PreSAGE beyond anticipating bed exits and apply it to the community, specifically to detect – potentially through activity analytics – aged residents who are at-risk and show early signs of dementia or musculoskeletal deficits. Through built-in clinical algorithm, we could monitor identified residents/patients remotely to detect whether their condition is worsening, and if so, escalate for further assessment and hopefully early intervention. That way, residents can live longer in the community,” says A/Prof Yong.

NHG Nursing is also exploring to adopt a wound diagnostics mobile app as a decision support tool for wound care. A care provider would only need to take a photo of a patient’s wound using their smartphone. Subsequently, the app’s built-in protocol (powered by artificial intelligence) assesses the condition by detecting out-of-range parameters, recommends the best treatment, or advises the care provider to escalate for higher-level support.

Likewise, A/Prof Yong predicts that the wound diagnostics app may potentially expand its use to the community to manage more sophisticated conditions, for instance, patients with diabetes who are vulnerable to complicated ulcerated wounds. “What’s exciting about this technology is it can support NHG’s mission to enable activated patients to manage their own condition in real-time, as it is intuitively designed to enable patients to take photos of their wound through their phone. The app would analyse the image to track the wound’s progress in healing. If any deterioration is detected, the app would alert healthcare providers, so that patients can receive early intervention and possibly even prevent complications that can consequently lead to amputation.”

One-to-one telemedicine sessions between doctors and patients have soared during the height of the pandemic. Virtual meetings between primary care providers and specialists to discuss complex cases are now the norm. Moving forward, A/Prof Yong envisions nurses would host group telehealth sessions on preventive care topics like proper wound management. This would spread the message to a greater cross-section of the population – especially the not-yet-activated or those who prefer to stay at home – in a quicker and more convenient manner.

Under *Healthier SG*, MOH plans to introduce tools such as clinical dashboards to help family physicians track patients’ conditions and health trends. It is also ramping up adoption of the National Electronic Health Record (NEHR) among healthcare institutions island-wide. “As more care providers – public and private, acute and primary – contribute to NEHR and consolidate data on patients’ test results, drug allergies, prescribed medicines, and other essential information, the effectiveness of



TTSH Chief Nurse Dr Hoi at the opening of COVID-19 Ward 11B.



NSC Head of Nursing Ms Lim observing a nursing team handling emergency equipment.

**TTSH'S PRESAGE
WON THE
'OUTSTANDING
ICT INNOVATION'
CATEGORY
AT THE
ASIA PACIFIC
HIMSS-ELSEVIER
DIGITAL
HEALTHCARE
AWARDS 2019**

NEHR will improve," says A/Prof Yong. "It will readily present healthcare professionals a comprehensive health history of their patients, increasing adherence to the 'One Care Plan' and reducing fragmentation of care."

Ms Lim from NSC notes that it could even open the door for healthcare workers outside of NHG to adopt the 'One Care Plan'. "Provided the right IT infrastructure is in place to access patient data easily and securely, and the information is up-to-date, sharing our 'One Care Plan' with different healthcare clusters would help make processes flow more seamlessly. It would allow patients to receive the same level and standard of care, no matter where they go."

FOSTERING A POSITIVE PRACTICE ENVIRONMENT

The global shortage of nurses was of concern even before the pandemic, with heavy workloads and occasional reports of physical and verbal abuse from patients. The COVID-19-related stress and burnout over the last two-and-a-half years have contributed to the already stretched situation. If left unaddressed, these challenges could put the success of *Healthier SG* in jeopardy.

On one hand, demand for nurses is rising, as more facilities, such as nursing homes and the upcoming Woodlands Health campus, are springing up. However, on the supply side, the pool of working-age citizens is shrinking due to Singapore's ageing population, and caps on foreign nurses make it difficult to complement the nursing workforce. The problem is further compounded by the recent exodus of nurses.

"Finding meaning and pride in our work as nurses is what keeps us going," Ms Pua points out. "Nurses stay because they know the value they bring to their jobs. Conversely, nurses leave because they feel that they are not valued."

Nurses' Day in Singapore is an annual celebration of the profession and reminds everyone to respect and thank nurses for all their hard work and sacrifices. Beyond that, NHG's nurse leaders propose various measures to improve nursing recruitment and retention. Examples include offering more flexible work arrangements and shorter hospital shifts, expanding peer and staff support services, and sharing the incremental workload of preventive care with non-nurses. Nursing leaders are also systematically strengthening the meaning of nursing care for nurses. "Nursing must transform, and it will," states Dr Hoi. "Leveraging technology and robotics to perform mundane, labour-intensive duties will free nurses up for other tasks such as heading preventive care programmes. The future nursing workforce is one where patients will be viewed as 'activated' carers themselves."

Bringing their collective experience to bear and share feedback on ways to improve preventive care puts nurses in a unique position. Delivering care and showing compassion to patients will always be the bread and butter of a nurse's work. However, Ms Heng notes, the evolution to a *Healthier SG* presents opportunities for nurses to "move from compassion to courage – the courage to step forward as health advocates, expand skillsets, change our model of care, and elevate to the next level."



NURSING IS A NOBLE PROFESSION AND NURSES ARE AN INDISPENSABLE PART OF OUR HEALTHCARE SYSTEM. THE PANDEMIC HAS SHOWN US HOW TOUGH YET COMPASSIONATE OUR NURSES ARE. EVERY DAY, A NEW CHALLENGE AWAITS. BUT YOU CHOOSE TO FACE IT WITH GRIT AND RESOLVE, AND IN DOING SO, YOU HEAL AND TOUCH LIVES.”

MASAGOS ZULKIFLI
SECOND MINISTER FOR HEALTH

NHG Pharmacy

- As Singapore transitions from pandemic to endemic COVID-19, and embarks on *Healthier SG*, the National Healthcare Group Pharmacy (NHGPh) remains committed to caring for our patients by advocating the safe and responsible use of medication, as well as dispensing holistic care to those we serve.

A NEW GROUP PHARMACY COUNCIL FORMED

In November 2021, NHG inaugurated a Group Pharmacy Council (GPC) that brings together the pharmacy fraternity in NHG with a collective vision to advance the pharmacy practice, deliver better care, experience, and value – beyond medication use – for our patients and the population we serve. GPC is represented by pharmacy leaders from across NHG Institutions, and guided by the NHG Clinical Board. The four primary drivers for GPC's strategic direction and shared vision are:

- Providing accessible, seamless, and personalised pharmaceutical care for the population
- Reducing drug-related problems and healthcare utilisation through medication management
- Developing preventive health strategies to promote wellness and reduce complications
- Creating joy in work by enabling pharmacy staff to practise at the top of their licence or capability

POPULATION-BASED APPROACH TO MEDICATION MANAGEMENT (POPMED)

Patients often seek care across multiple healthcare settings and inevitably face challenges in managing their medications. In August 2019, Tan Tock Seng Hospital (TTSH) and National Healthcare Group Polyclinics (NHGP) started Project PopMed in Toa Payoh Polyclinic to address medication-related problems, and improve health literacy and communication with patients across different care settings. Under this collaboration, pharmacists conduct medication reviews for their patients at planned intervals, address patients' medication-related challenges, and collaborate with other healthcare professionals to provide a holistic, person-centred care experience. Preliminary results showed that Project PopMed has helped to reduce healthcare costs by

Population-Based Approach To Medication Management (PopMed).



The NHG Group Pharmacy Council (GPC) held its inaugural strategic meeting on 2 November 2021.

S\$2,968 per patient per annum and resolved medication-related problems by 84 per cent. In addition, medication adherence and beliefs on medication measures showed improved or sustained scores in 90 per cent and 86 per cent of patients, respectively. Based on these promising results, there are plans to implement Project PopMed in more NHG Institutions.

MEDICATION THERAPY MANAGEMENT CLINIC

The Medication Therapy Management (MTM) Clinic supports the core teamlet model of care in NHGP with a holistic review approach to address the increasingly complex and overlapping issues of primary care patients. Clinical pharmacists proactively review, identify, and resolve patients' pressing medication-related needs.



NHGPh staff packing medication for delivery.

Clinical pharmacists also address medication-related issues such as non-adherence, adverse drug reactions, and drug use without indication, especially in elderly patients taking multiple medications or have conditions which present more risks. Complex medication regimens are then simplified for patients by recommending changes or removing medication, as appropriate. Providing patients with a simpler medication regimen helps them to adhere to their medication, reduces potential side effects, and improves well-being.

CHANGES IN PATIENTS' PREFERENCES AND NEEDS ON MEDICATION USE AND ACCESS

The COVID-19 pandemic has driven changes in patients' preferences on how healthcare is being delivered. In March 2021, collective data from a cluster-wide survey of 890 responses, and a series of virtual Patient Focus Group (PFG) discussions that involved 25 participants, provided insights on users' expectations and needs on pharmacy services in the new normal.

The research showed that patients are more receptive to digitalisation, with 79 per cent stating that they were comfortable with teleconsult for medication-related queries or minor ailments. Sixty-seven per cent preferred to collect or receive their medications from the Institution pharmacies, which have been the conventional mode of dispensing. These findings strengthened NHGPh's resolve to transform pharmacy services. The findings would also form the basis of design and planning of medication management and supply strategies in creating a more person-centred experience for our patients.

SAFETY CHECKS FOR ORAL ANTIVIRALS

As part of the Ministry of Health (MOH)'s efforts to treat COVID-19 in community settings, oral antivirals (OAV) such as Paxlovid and Molnupiravir have been made available for eligible patients to reduce the likelihood of developing severe COVID-19 symptoms that would require hospital admission. At the polyclinics, suitable patients are referred to pharmacists for further checks to determine their active medication list, identify potential drug interactions and contraindications with OAVs, and review patients' kidney function. Recommendations are then made to the doctor on the need for any dose adjustments for OAVs or patients' current medication, temporary cessation of their medications, and the choice of OAV.

SUSTAINED DEMAND FOR MEDICATION DELIVERY

Since January 2022, patients at NHGP have been able to use the Self-Payment kiosks to activate home delivery of their prescription medications instead of waiting to collect them from the pharmacy at the polyclinic. The initiative was jointly implemented by NHGP and NHGPh across all polyclinics after a successful pilot at Ang Mo Kio Polyclinic in early 2021. From January to March 2022, an average of 18 per cent of medication deliveries were activated via the Self-Payment kiosk by patients who opted for next-day delivery.

The benefits of medication delivery include less time spent for a patient at the polyclinic and lower patient load at the pharmacy. As the fulfilment of the order is done backend, at the Central Fill Pharmacy, frontline pharmacy staff are able to devote more time and attention to patients' needs.

NHG Diagnostics

- To help build a pandemic-ready and healthier population, National Healthcare Group Diagnostics (NHGD) has further expanded its services to the community. NHGD supported the nation-wide efforts on the COVID-19 pandemic, including the testing of swab samples, and tapped on technology to ensure the efficacy and accuracy of its processes.

X-RAY FOR ONE-STOP PRIMARY CARE AT MIGRANT WORKER MEDICAL CENTRE

NHGD co-designed and set up an X-ray facility at St Andrew's Migrant Worker Medical Centre (SAMWMC), in partnership with St Andrew's Mission Hospital. NHGD radiographers continue to provide X-ray services at the Centre, which caters to the outpatient care for about 57,000 migrant workers living in the surrounding areas.

Officially opened in February 2022, SAMWMC is the first of six regional medical centres planned by the Ministry of Manpower (MOM) as part of the new and integrated Primary Care Plan for migrant workers in Singapore. The centres are purpose-built to be pandemic-ready to reduce the risk of disease outbreaks.

RIGHT-SITING DIAGNOSTIC AND PREVENTIVE SCREENINGS IN THE COMMUNITY

Between November 2020 and March 2022, NHGD expanded its bone mineral density (BMD) service to five new venues in the Central-North region, such as community clubs and sports complexes. BMD tests are important for the early detection, diagnosis, and treatment of osteoporosis and risk of bone fracture, especially for Singapore's elderly population. In 2021, more than 9,000 patients benefitted from the convenience of this service.

In October 2021, NHGD set up a laboratory and imaging centre in Kallang Polyclinic, enabling nearby residents to have easy access to quality diagnostic services, including breast cancer screening, X-rays, and ultrasound.

By increasing its capacity for diagnostic and preventive screenings, NHGD strengthened its support to General Practitioners (GPs) and community partners in providing care to their patients.

NHGD co-designed, set up, and operates the X-ray facility at St Andrew's Migrant Worker Medical Centre.



NHGD's Mobile BMD at Fuchun Community Club in Woodlands.



NHGD's Mobile BMD at Nee Soon East Community Club in Yishun.



Breast cancer screening at Kallang Polyclinic.

SWIFT DELIVERY OF SWABS TO PCR LABORATORIES TO EXPEDITE URGENT TESTING

In October 2021, the Delta variant caused a surge in daily COVID-19 cases, creating the need for urgent swab testing to identify and quarantine positive cases. In response to the Ministry of Health (MOH)'s request, NHGD activated its medical couriers to deliver PCR swabs of ART-positive cases safely and quickly from the polyclinics to the laboratories. By expediting the turnaround time for tests, NHGD enabled patients to receive their PCR results early, which helped stem the community spread of the virus.

FASTER X-RAY RESULTS AT IMH MEDICAL WARD

Since the early phase of the COVID-19 pandemic, NHGD has extended its radiography services to Sundays, for the Institute of Mental Health (IMH) to triage its patients for timely medical follow-up.

In 2021, NHGD upgraded its mobile X-ray machine at IMH to a new Digital Radiography (DR) system that provided on-site radiography services in the ward at the medical block. The new mobile X-ray system helps to facilitate clinical decisions by producing images instantaneously on screen, allowing doctors to review cases more quickly.



An NHGD medical courier collecting PCR swabs from a medical technologist at a polyclinic for urgent delivery to a COVID-19 testing laboratory in a hospital.

NHG Diagnostics



NHGD staff at the laboratory and imaging centre in Kallang Polyclinic.

Integrated with NHGD's Radiology Information System (RIS) / Picture Archiving and Communication System (PACS), the DR system is also able to send digital images to the reading centre, and produce reports of results within an hour.

CROSS-CALIBRATION OF BMD READINGS FOR HIGHER DIAGNOSTIC CONFIDENCE

NHGD completed a month-long cross-calibration exercise of two mobile BMD scanners using the updated International Society of Clinical Densitometry's 2019 recommendations. Bone mineral density measurements taken by each machine can now be accurately compared, enabling higher diagnostic confidence.

SYSTEM ENHANCEMENT FOR LABORATORY ORDER COLLECTION

The collection of laboratory orders from the polyclinic patient electronic management system at NHGP centres was enhanced in 2021. This shortened the pre-phlebotomy processing time by 50 per cent, and also reduced the corresponding wait time for patients.

HANDS-FREE TECHNOLOGY FOR INFECTION CONTROL AND PRODUCTIVITY

In 2021, NHGD implemented the Full Field Digital Mammography (FFDM) system – the first in primary care – designed with hands-free technology for radiation exposure in Kallang Polyclinic. The system uses

a foot pedal switch instead of a hand switch to activate the system. By minimising the radiographer's physical contact with the equipment, the risk of cross-infection to other staff and patients is further reduced.

NHGD also equipped Kallang Polyclinic with a General X-Ray system designed with hands-free technology for equipment control. A foot pedal switch controls the movement and position of the chest stand against the region of interest. Additionally, the system's new automated tracking feature moves and aligns the X-ray tube with the patient's position at the chest stand. These two features shortened the contact time between the radiographer and the patient.

➤ PRINCIPAL MEDICAL TECHNOLOGIST WINS THE NHG YOUNG ACHIEVER AWARD

Ms Janet Teng, Principal Medical Technologist, NHGD, received the NHG Young Achiever Award in 2021 for leading innovations and quality improvements. She led initiatives that spurred technological adoption and removed manual processes for more than 90 per cent of diagnostics tests, improving patient safety. Ms Teng also chaired the Quality Improvements Committee, which spearheads more than 30 initiatives annually.

Group Corporate Development

- Group Corporate Development (GCD) provides strategic planning support for NHG and is the key liaison office with the Ministry of Health (MOH) on corporate governance and workplans. GCD also helms NHG's Enterprise Risk Management, Crisis and Business Continuity Management, Audit and Compliance, and Data Protection Office.

FACILITATING BEST PRACTICES IN DATA AND RISK MANAGEMENT

NHG ENTERPRISE RISK MANAGEMENT AND DATA PROTECTION WEBINAR

The annual NHG Enterprise Risk Management and Data Protection Webinar was held in November 2021. It featured speakers from the Infocomm Media Development Authority (IMDA), MOH Holdings (MOHH), Group Internal Audit (GIA), NHG Group Information Security Office (GISO), Cluster Data Exchange Office, and Good Doctor Technology. Some 500 participants attended the webinar, which covered topics on current and emerging risks in areas such as telemedicine, updates to the Personal Data Protection Act (PDPA), data sharing, cybersecurity, procurement and contract management, laboratory operations, and claims.

PUBLIC HEALTHCARE CYBERSECURITY TABLE-TOP EXERCISE

In January 2022, the Integrated Health Information Systems (IHIS) organised a Cybersecurity Table-Top Exercise (TTX) across the public healthcare sector, which was attended by over 180 participants from IHIS, MOH, the Agency for Integrated Care (AIC), ALPS Pte Ltd, Health Sciences Authority (HSA), NHG, National University Health System (NUHS), and SingHealth.

NHG participated in the TTX at Yishun Community Hospital (YCH), which involved key stakeholders



The Group Corporate Development team at the NHG Enterprise Risk Management and Data Protection Webinar.



Senior management and key stakeholders across NHG and its Institutions participated in the Public Healthcare Cybersecurity Table-Top Exercise (TTX).



in crisis management from NHGHQ and Khoo Teck Puat Hospital (KTPH), including the Crisis Management Team, Operations, Corporate Communications, IT, GISO, and Data Protection, as well as support from the IHIS team.



- **TAN TOCK SENG HOSPITAL
AND NATIONAL CENTRE
FOR INFECTIOUS DISEASES**





“With *Healthier SG*, we are bringing care closer to our residents, working alongside our General Practitioners and Community Partners. The hospital of the future is no longer just brick and mortar, but one without walls.”

PROFESSOR EUGENE FIDELIS SOH
DEPUTY GROUP CEO (INTEGRATED CARE), NHG
& CEO, TAN TOCK SENG HOSPITAL & CENTRAL HEALTH



Tan Tock Seng Hospital

- As Singapore moves towards endemic COVID-19, Tan Tock Seng Hospital (TTSH) remains a crucial vanguard in this transition, working closely with the National Centre for Infectious Diseases (NCID), the Ministry of Health (MOH), community partners, and the public to manage COVID-19 cases in the community. In tandem with battling COVID-19, TTSH continues to forge ahead in transforming care for residents in the Central Region of Singapore. Its strong relationships with health and social partners, culture of continuous learning and innovation, as well as sustained emphasis on collective leadership, have been instrumental in building a 'Community of Care' to achieve better population health outcomes for a *Healthier SG*.

BELOW Patients participating in rehabilitation exercises.

TRANSITIONING TO ENDEMIC COVID-19

TTSH-REN CI SUB-ACUTE TREATMENT FACILITY FOR STABLE COVID-19 PATIENTS

To support the nation's COVID-19 response efforts, TTSH opened its own sub-acute COVID-19 Treatment Facility (CTF) at Ren Ci Community Hospital in November 2021, with



RIGHT SAF volunteer LCP Khairul and Principal Physiotherapist Chua Ying Lynn with a patient.



the support of the Singapore Armed Forces (SAF), NHG HQ, National Healthcare Group Polyclinics (NHGP), National Skin Centre (NSC), and private medical agencies.

The TTSH CTF cared for COVID-19 patients who had recovered from the acute phase of their infection, but still required longer-term close monitoring. This facilitated the right-siting of patients and eased the patient load at NCID, TTSH, and other hospitals, allowing healthcare staff to better manage patients with more serious illnesses that needed specialised acute and critical ICU care. Patients at TTSH CTF received therapy treatments, which focused on helping them regain their functional abilities by improving their strength and nutrition through close monitoring of their condition, and reconciling their follow-up appointments as well as referrals to day rehabilitation and home nursing services, if needed upon discharge. The CTF cared for over 400 patients between November 2021 and April 2022.



We are empowering individuals to care for their own health through preventive health measures, anchoring disease management within the primary and community care setting, and networking together agencies and community partners to coordinate healthcare and social support.”

PRIME MINISTER LEE HSIEH LOONG



Left to right: Prof Chin Jing Jih, Chairman Medical Board, TTSH and Central Health; (then) Senior Minister of State for Health Dr Koh Poh Koon; Prime Minister Lee Hsien Loong; Tan Tee How, Chairman, NHC; and Prof Eugene Fidelis Soh, Deputy Group CEO (Integrated Care), NHC and CEO, TTSH and Central Health, at the official opening of AMKSC.

DRIVING BETTER POPULATION HEALTH

OFFICIAL OPENING OF ANG MO KIO SPECIALIST CENTRE

In March 2022, TTSH officially opened the Ang Mo Kio Specialist Centre (AMKSC), bringing affordable healthcare closer to the community. The event was graced by Prime Minister Lee Hsien Loong as Guest-of-Honour. To make healthcare more accessible to residents,

AMKSC partnered with General Practitioners (GPs), polyclinics, and community partners to design and develop new services and models of care. These allow patients to seek treatment for specific conditions closer to home, while enabling more timely identification and management of potentially serious issues.

The suite of specialist care and services provided includes:

- **Transdisciplinary diabetes care**

Patients with diabetes are seen by specially-trained Clinical Diabetes Educators (CDE), who provide more holistic diabetes care education and advice, reducing cost and the number of clinic visits for patients while improving compliance and outcomes.



• **Community Eye Clinic**

Patients with chronic eye conditions such as blurring of vision, suspected glaucoma, and who require post-cataract surgery follow-up, are reviewed by optometrists, enabling faster access to care near their homes.

• **Community Hearing Evaluation**

Audiologists provide basic hearing examinations and hearing aid interventions, which allow more residents to be screened in the community, and facilitate more timely identification and management of hearing-related issues.

• **Integrated musculoskeletal care services**

Patients from the polyclinics or GPs, presenting with common musculoskeletal conditions, can access timely physiotherapy or occupational therapy services without needing to first see an Orthopaedic or Hand surgeon, thus reducing unnecessary wait time and costs.

The co-location of TTSH's Community Health Teams with the ambassadors at the Silver Generation Office also helps to establish closer links between health and social care providers, and foster more place-based

models of care, active outreach to residents, and closer care coordination among partners and providers in the community.

OFFICIAL OPENING OF THE CLINIC FOR ADVANCED REHABILITATION THERAPEUTICS

In April 2022, the TTSH Clinic for Advanced Rehabilitation Therapeutics (CART) celebrated its 10th Anniversary and expanded premises, which was graced by Minister for Health Ong Ye Kung. CART offers conventional therapy equipment and state-of-the-art rehabilitative robots to meet the growing demand for such services, helping patients with stroke, brain, and spinal cord injuries in their recovery journey. With its newly-expanded premises, CART now offers therapy for those with neurodegenerative disorders and patients recovering from multiple serious injuries.

To enable more patients gain greater access to innovative technology-enabled rehabilitation, CART has inked partnerships with leading rehabilitation care partners:



Left to right: Prof Eugene Fidelis Soh, Deputy Group CEO (Integrated Care), NHG and CEO, TTSH and Central Health; Tan Tee How, Chairman, NHG; Minister for Health Ong Ye Kung; Prof Philip Choo, Group CEO, NHG, and Dr Loh Yong Joo, Head, Rehabilitation Medicine, Integrative & Community Care, TTSH, at the official opening of CART.

RIGHT TTSH inking the service and research agreement with Stroke Support Station and Fourier Intelligence.



- Through a three-year Master Research Collaboration Agreement (RCA) with Fourier Intelligence (FI), CART will make robotic therapies more accessible to patients in the community, and will function as a living lab to test-bed and contextualise FI's technologies to local settings.
- Through a Memorandum of Understanding (MOU) with Stroke Support Station (S3), TTSH will refer stable stroke patients to S3 for continued active rehabilitation, wellness activities, and access to a peer support network. This shared care model will allow S3 and TTSH to better co-manage stroke survivors and ensure continued support through their rehabilitative journey. They will also explore telecollaboration and teleconsultation services.

BUILDING A HEALTHIER SG 'WHAT MATTERS TO YOU' WORKSHOP SERIES

To reach out to partners in the community, TTSH's Psychology Department collaborated with the Agency for Integrated Care (AIC)'s Silver Generation Division in July 2021 to launch the 'What Matters to you' workshop series, which focused on how to conduct meaningful conversations with seniors on their priorities, and engaging them to motivate and influence behavioural change to achieve better health and social outcomes. These workshops used a person-centred approach and leveraged relationship-based care to help seniors lead meaningful



With a rapidly ageing population and higher prevalence of chronic diseases, demand for rehabilitation services will grow. Through community partnership, **we can shift the care models to make rehabilitation more accessible to patients not just in hospitals but also in the community.**

ONG YE KUNG, MINISTER FOR HEALTH

and fulfilling lives. Four workshops were conducted for AIC's Silver Generation Officers (SGOs), and each workshop comprised two half-day sessions. Over 100 SGOs attended the training, and they have since trained other SGOs, and incorporated 'What Matters' conversations in the preventive health visits they conduct.

Together with the Centre for Allied Health & Pharmacy

Excellence (CAPE), the Psychology Department also conducted four workshops to train TTSH staff from various disciplines, including the Division of Central Health's Community Health Team, Allied Health, nursing, pharmacists, and medical teams, to incorporate 'What Matters' conversations into care encounters.



'What Matters to you' workshop.



Carers being taught safe wheelchair handling techniques.



Carers experience how it feels like to use a walking aid.

at strengthening the community-enabling programmes, aligned with *Healthier SG*. Residents were invited to identify and discuss specific factors affecting community health and how the community could help shape the health of each person. The session also raised greater awareness and understanding among the local population on the correlation between individuals and the community in health and social care. The valuable insights gained from the residents helped improve TTSH's outreach programmes and co-created localised, community-driven solutions, making them more impactful, scalable, and sustainable in the community.

POWERING UP PEOPLE, CHARGING UP LIVES

TTSH's Centre for Health Activation (CHA) launched the CHARGE Up! Learning Programme in October 2018 to meet the health needs of neighbourhoods in Central Singapore. The programme aims to empower carers (patients, caregivers, volunteers, and residents) with the health skills, knowledge, and confidence to take charge of their health and, in turn, look after the health of others in the community.

To adapt to the COVID-19 pandemic and safe management measures, the programme adopted digital learning in 2020 and conducted virtual sessions to teach carers proper handling of a wheelchair, chronic disease management, and how to stay active. Continual improvements to the programme are made through research evaluation studies and developing new modules. In collaboration with 33 different

partners, CHARGE Up! has trained over 490 carers to-date, and plans to further expand across the Central Region.

ENGAGING RESIDENTS TO BUILD HEALTHIER COMMUNITIES

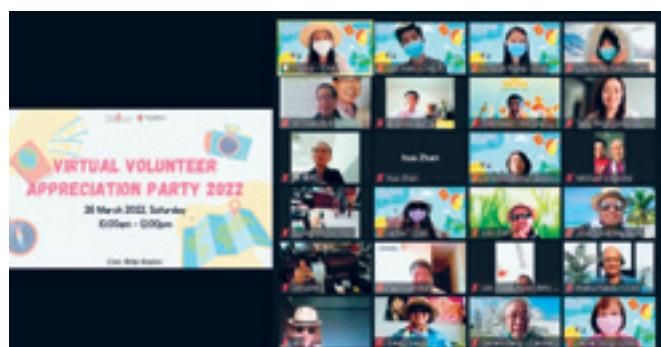
In May 2022, CHA and Kaizen Office engaged residents in Ang Mo Kio for guerilla research, the first session in two years since the COVID-19 pandemic. Themed 'Building Healthier Communities', the research kick-started a year-long quality improvement project aimed



ABOVE AND LEFT Residents in Ang Mo Kio participating in a guerilla research session organised by TTSH's Centre for Health Activation and Kaizen Office.

TTSH & CENTRAL HEALTH VOLUNTEER APPRECIATION PARTY

In recognition of the pivotal roles that volunteers play in supporting the healthcare workforce and the recovery journey of patients, TTSH's CHA organised the annual TTSH & Central Health Volunteer Appreciation Party (VAP) in March 2022. Held virtually, the event appreciated and celebrated the accomplishments of over 100 volunteers and community partners. Participants shared personal stories of resilience, hope, and empowerment, kindling the camaraderie among the family of volunteers.





TO HELP ACTUALISE *HEALTHIER SG*, NHG IS DEVELOPING A PLACE-BASED ‘COMMUNITY OF CARE’ NETWORK IN THE NEIGHBOURHOODS WE OPERATE, TO FACILITATE FAMILY DOCTORS AND THE RESIDENTS IN THEIR HEALTH AND SOCIAL CARE NEEDS. NHG WILL CONNECT LOCAL NEIGHBOURHOOD RESOURCES, CARE PARTNERS, AND VOLUNTARY GROUPS TO THE RESIDENTS, SO AS TO BETTER UNDERSTAND THEIR HEALTH AND SOCIAL NEEDS, AND TO PROVIDE APPROPRIATE AND TIMELY CARE.”

PROFESSOR EUGENE FIDELIS SOH
DEPUTY GROUP CEO (INTEGRATED CARE), NHG
& CEO, TAN TOCK SENG HOSPITAL & CENTRAL HEALTH

National Centre for Infectious Diseases

- In FY2021, the National Centre for Infectious Diseases (NCID) continued to focus its efforts on battling COVID-19, including tackling new waves of infections caused by the Delta and Omicron variants. Besides NCID's contributions to Singapore's COVID-19 response, it also worked at keeping the population safe from other infectious diseases.

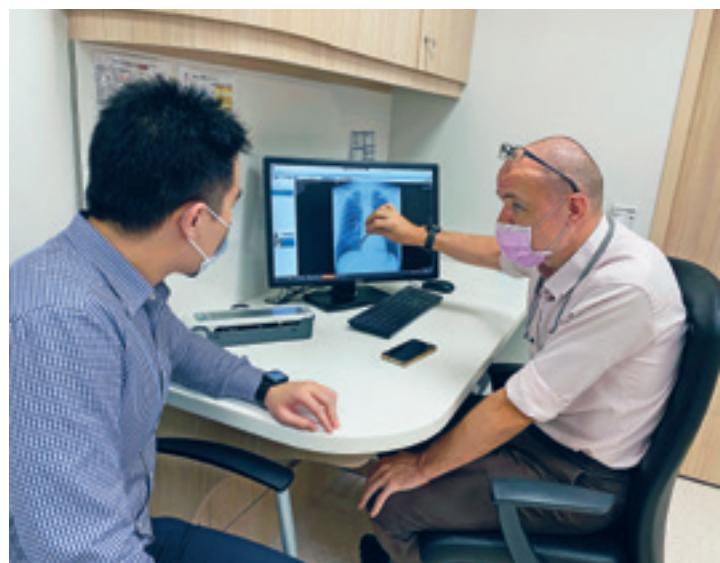
PROVIDING PSYCHOSOCIAL SUPPORT TO COVID-19 PATIENTS

Providing quality patient care requires a collective effort by the multidisciplinary team at NCID. Its Medical Social Workers (MSWs) have been counselling and supporting patients with psychological, social, and practical needs stemming from their medical conditions, or who were in isolation and had to stay away from their families during the COVID-19 pandemic. MSWs served as the 'bridge' between patients and their families and facilitated video calls. MSWs also acceded to the requests of family members, such as holding the hands of their loved ones in their final moments so that they would not feel alone.

During the Delta and Omicron waves, NCID provided care to many elderly patients. The MSWs supported their family members with care and discharge planning by linking them up with community resources for financial assistance.

TOP RIGHT A Medical Social Worker attending to a COVID-19 patient in an isolation room at NCID.

RIGHT An Infectious Disease doctor going through the chest X-Ray results with a patient during a consultation session.



LONG COVID CLINIC AT NCID

In November 2021, NCID set up the Long COVID Clinic as a hub for patients in Singapore suffering from the complex condition. The clinic accepts patient referrals from General Practitioners (GPs), polyclinics, and other public or



Today, as Singapore embraces the 'new normal' of living with COVID-19, NCID stands ready to be Strong, Trusted, and United in responding effectively to support Singapore's strategies to reopen its economy further, and stay resilient."

PROFESSOR LEO YEE SIN
EXECUTIVE DIRECTOR, NATIONAL CENTRE
FOR INFECTIOUS DISEASES

private hospitals who have had persistent symptoms for four to eight weeks or longer since their acute infection. Its work aims to exclude other causes of the persistent symptoms as well as provide symptom relief. The clinic also conducts further assessments to determine if a subsequent referral to rehabilitation specialists for a graded exercise programme is required. Doctors will discuss with patients their fears and expectations, and provide reassurance and guidance to help pace their recovery.

The number of patients referred to the clinic increased rapidly in the first quarter of 2022 as a result of the large number of infections during the Omicron wave. With multidisciplinary support from Tan Tock Seng Hospital (TTSH), the infectious disease (ID) consultant-led clinic increased the frequency of its service from fortnightly to weekly and is involved in several Long COVID research projects.

SURVEILLANCE OF AMR AND RISK ASSESSMENT

To better support the health needs of residents across Singapore, the Antimicrobial Resistance



ABOVE Attendees of a TB awareness talk at the AWWA Active Ageing Centre.

LEFT A/Prof Jeffery Cutter, Director, National TB Programme, and the host/moderator from SWCO, Ms Nabilah.

Coordinating Office (AMRCO) in NCID piloted the Primary Care Antimicrobial Utilisation (AMU) initiative. AMU is a partnership with GPs to facilitate clinic-level monitoring of trending antibiotic usage, as well as baseline data-gathering for the assessment of future interventions.

AMU data from 29 sentinel GP clinics for the period of 2018 to 2019 were collated and analysed in FY2021. The findings indicated that the utilisation of first or second-choice antibiotics (Access antibiotics) for empirical treatment met the World Health Organization (WHO)'s recommendation of at least 60 per cent in 2019. This initiative highlighted GPs' contributions to national efforts in controlling antimicrobial resistance through the longitudinal monitoring of prescribing practices.

This surveillance initiative will continue in FY2022 to include more GPs. It is supported by the National GP Advisory Panel (NGPAP) and the Primary Care Network (PCN) Council.

WORLD TUBERCULOSIS DAY

The tuberculosis (TB) incidence rate in Singapore has remained at a lower-moderate level over the past few years. To effectively manage the disease through preventive care, the National TB Programme in NCID engaged the community and public through two TB awareness talks held in conjunction with World TB Day 2022.

Conducted in collaboration with Sembawang West Constituency Office (SWCO) and AWWA, both talks educated the public on the symptoms of Active TB disease, and debunked common misconceptions surrounding TB. They also shed light on current treatment and management of both Latent TB infection and Active TB disease, as well as encouraged early screening for those who have been identified as close contacts of Active TB cases.

These public education and community engagement efforts served to get the public to take proactive steps to safeguard their health, and the health of those around them.



ABOVE A Pharmacist utilising the smart shelves to dispense medicine at the outpatient clinic.

RIGHT The Smart Shelf's weight-sensing ability is able to indicate if the wrong quantity of medicine has been picked.

NCID PHARMACY SMART SHELVES

Leveraging on technology and digitisation, NCID has implemented Smart Shelves at its outpatient pharmacy as part of a pilot initiative to improve efficiency and service quality of pharmacy operations. The current medication system with an automated loose tablet-counting machine that picks and packs medication, has been augmented by the Smart Shelves which feature a 'Pick to Light' function and weight-sensing ability. LED lights on the shelf with the bin that contains the medication

light up to indicate the location of the medicine to be picked for dispensing. Concurrently, the weight-sensing ability calibrates the weight of each medication bin such that verbal commands and visual reminders will alert pharmacists if an incorrect medicine or quantity was picked from the shelves.

NCID Pharmacy will continue to evaluate this pilot project on its enhanced efficiency and accuracy of dispensing medication to deliver convenient and seamless care to patients in FY2022.





EMERGING INFECTIOUS DISEASES WILL BE A RECURRENT CHALLENGE AND THERE IS A NEED TO BE PREPARED. NCID WILL CONTINUE OUR MISSION, KEEPING PACE WITH THE EVOLUTION OF MICROBES. WE WILL FURTHER STRENGTHEN OUR CONNECTIONS AND COLLABORATIONS WITH PARTNERS WITHIN THE REGION AND GLOBALLY TO MAINTAIN A STATE OF PREPAREDNESS, WHETHER FOR TACKLING SARS-COV-2 OR OTHER NOVEL PATHOGENS THAT MAY EMERGE.”

PROFESSOR LEO YEE SIN
EXECUTIVE DIRECTOR,
NATIONAL CENTRE FOR INFECTIOUS DISEASES



• YISHUN HEALTH





 **HEALTHIER YOU • HEALTHIER SG**

“Yishun Health is committed to caring for patients in and beyond the hospital. Our initiatives are testament to our contribution to *Healthier SG*, where a focus on person-centred care and collaboration forms the foundation of a thriving preventive care health ecosystem in the North.”

PROFESSOR CHUA HONG CHOON
DEPUTY GROUP CEO (STRATEGY & TRANSFORMATION), NHG
& CEO, KHOO TECK PUAT HOSPITAL & YISHUN HEALTH



Yishun Health

- In the past year, Yishun Health has continued to be adaptive, flexible, and agile across its three institutions: Khoo Teck Puat Hospital (KTPH), Yishun Community Hospital (YCH), and Admiralty Medical Centre (AdMC). From being operationally resilient to cross-training staff, the campus remains equipped and ready to care for patients in the North, while also prioritising the well-being of staff. In the community, the Population Health & Community Transformation team continues to educate and empower residents and partners, and is a bedrock for the nation's move towards a *Healthier SG*.

COMMUNITIES OF CARE

At Yishun Health, health is delivered and managed mainly outside the walls of its hospitals and in the community, where residents participate and care for one another (Participatory Care Ecosystem), and are supported by relevant services (Community Services Ecosystem). In a crisis, residents are linked to Safety Net Services from the formal healthcare system, after which they are supported in navigating their Communities of Care (CoCs). To build individual and community capacity and resilience to meet residents' different health and care needs, Yishun Health aims to achieve a good balance of all elements of the CoCs, in partnership with residents and community-based organisations.



PARTICIPATORY CARE ECOSYSTEM

In the Participatory Care Ecosystem, resident-led and healthcare-facilitated activities are combined to form a collection of co-produced activities in the community. More participation strengthens overall social capital and networks, and stimulates self-management of health.

Resident-initiated, resident-led activities

- Blessing Corner** at the Blk 364A Sembawang Crescent void deck began after more than a year of conversations among residents.

- Dance UP** is a programme which started in February 2022 with 15 residents, and aims to build balance, mobility, and posture in older adults who are frail or at risk of falls.

- Share a Pot @ Home** was launched in collaboration with the Rotary Club of Singapore in October 2021.

- Wellness Kampung** is a community space that supports healthier living.

Community-based healthcare facilitated activities

- Skill UP** uses online activities creatively to promote better health through eating and has engaged 419 residents to-date.

Yishun Health's Regional Teams, comprising community nurses and connectors, as well as telehealth support, were awarded the National Healthcare Group (NHG) Team Recognition Award 2021 (Bronze).



CLOCKWISE FROM TOP LEFT The residents behind Sembawang Blessing Corner; Graduates of the Stepping On programme; a Tune UP session; A community nurse at the Community Health Post; Participants of Share a Pot @ Home.

- **Stepping On** began in December 2021 to build capability in persons at risk of falls.
- **Sweet Truths** seeks to raise awareness on health literacy and resources. About eight runs have been organised since it started in September 2021, and 280 residents have attended the programme.
- **Tune UP** began in January 2022 to support persons with breathlessness problems. Two singing sessions are held every week, each attended by 10-15 residents.

COMMUNITY SERVICES ECOSYSTEM

In the Community Services Ecosystem, Yishun Health works with its partners to provide crucial care and support for persons with progressive frailty and residual disabilities.

- **Advance Care Planning (ACP)** through Tele-ACP discussions was implemented from April 2020. The conduct of ACP training also went online during the COVID-19 pandemic.
- **Community Health Posts (CHP)** continue to support residents to self-manage their health. In FY2021, seven new posts opened in the neighbourhood, and a total of 1,143 residents visited the 18 health posts.
- **GeriCare** involves partnerships with nursing homes to enhance care.
- **Shared Care Partnership Office** has been establishing partnerships with General Practitioners (GPs), polyclinics, and Family Medicine Clinics to support patients when

they transit between hospital and the community, depending on their care needs. In FY2021, 716 patients were right-sited to primary care.

SAFETY NET SERVICES

Yishun Health's extended healthcare team provides safety net health and care services to residents in their home and communities during periods of acute decompensation or transition.

- **Ageing in Place (AIP) Community Care Transitions** provides a spectrum of home healthcare services to aid the transition of patients from hospital to the community. In FY2021, 2,253 patients benefitted from the services.



Senior Staff Nurse Lilian Liew treating the wound of an AIP Medical Home patient.

- **AIP Medical Home** offers short-term intensive management for patients with acute or sub-acute medical problems in the home environment. In August 2022, AIP Medical Home joined the Mobile Inpatient Care @ Home pilot announced by the Ministry of Health (MOH) to test the care model in which Medisave and Medishield Life are used to pay for the service.
- **Telehealth Integrated Network (THINK) Centre** provides health advice and support to recently-discharged patients from the hospital remotely, minimising unnecessary trips by patients to the hospital.
- **Assertive Intervention (AI)** is a multidisciplinary programme where a community nurse and/or a medical social worker, together with health and social care partners, proactively work with Accident & Emergency (A&E) frequent attenders to address their biopsychosocial issues.



ABOVE (From left to right) Dr Marc Ong, Dr Jerry Goo, Dr Pek Chong Han, and Dr Clement Chia at the Breast Cancer Public Forum in 2019.

ABOVE RIGHT (Third and fourth from left) AEC Service's Dr Thofique Adamjee and Dr Kanak Naidu received the National HIP Award together with Prof Chua Hong Choon, A/Prof Phoa Lee Lan, and A/Prof Pek Wee Yang.

RIGHT Minister in the Prime Minister's Office Indranee Rajah unveiling the centrepiece 'BE STRONG' at the Fullerton Hotel Art Gallery during the BCAM 2021 art exhibition.

REDESIGNING CARE AND EDUCATION AMBULATORY EMERGENCY CARE (AEC) SERVICE

KTPH launched the Ambulatory Emergency Care (AEC) Service¹ – a first in Singapore – in September 2019. Under this new service, patients with acute medical conditions such as hypertensive urgency, severe anaemia, or deep vein thrombosis, can be treated without a long hospital stay. Patients are able to stay up to 23 hours in the AEC Unit, as well as go for follow-up at the AEC Clinic, if needed. Since the start of the AEC Service, the average length of stay per patient with acute medical conditions has shortened by 28.8 hours. It was presented the Best Practice Medal under the Care

Redesign category at the National Healthcare Innovation and Productivity (HIP) Awards 2021.

BUILDING BREAST CANCER SERVICES

In 2021, the KTPH Breast Unit implemented a 'Fast Track Breast Clinic' to provide seamless breast cancer evaluation for patients referred from polyclinics. The time taken to reach diagnosis was shortened from one month to about a week, which helped minimise patient anxiety as they waited for the results.

The Breast Unit also partnered the Plastic, Reconstructive, and Aesthetic Surgery Service to provide a wide and comprehensive range of breast reconstructive options, tailored to individual patients. A pilot study





conducted by the Breast Unit revealed that the multidisciplinary approach, including having breast care nurses and physiotherapists in the care team, helped optimise upper limb rehabilitation, and quickened patients' post-surgery recovery.

CELEBRATING LIFE, TOGETHER

For the Breast Cancer Awareness Month (BCAM) in 2021, KTPH collaborated with the Breast Cancer Foundation to organise an inaugural art exhibition titled 'Celebrating Life, Together'. The event raised public awareness on the disease, as well as more than S\$34,000 for breast cancer patients in need.

REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION (RTMS) SERVICE

In January 2022, a team from the Department of Psychological Medicine at KTPH rolled out the repetitive transcranial magnetic stimulation (rTMS) service for patients with treatment-resistant depression. rTMS is a brain stimulation method that has been shown to be effective for the treatment of major depressive disorder in patients who did not respond to conventional treatment with antidepressant medications. It is non-invasive, and uses a focused rapidly-changing magnetic field generated by a coil placed on the

head to induce electrical pulses, to stimulate nerve cells in targeted areas of the brain. The procedure allows patients to return to their everyday activities, including work or school, immediately after treatment. KTPH plans to extend this service to patients from other public and private clinics, and healthcare institutions from early 2023.

LEARNING ORIENTED TEACHING TRANSDISCIPLINARY EDUCATION (LOTTE) MEDICAL STUDENT ELECTIVE PROGRAMME

KTPH launched its inaugural Learning Oriented Teaching in Transdisciplinary Education (LOTTE) elective programme

ABOVE LEFT The rTMS team from Psychological Medicine.

ABOVE RIGHT Participants at the successful completion of the LOTTE elective programme.

LEFT Winners of the 'Best Peer Teacher' Award with their elective supervisors Dr Clement Chia and Dr Ruth Chua.

for Year 4 NUS Yong Loo Lin School of Medicine students in April 2021. The four-week module was conducted in an inter-professional collaborative setting, and tapped on adult learning theory to spur optimal learning.

Faculty, comprising clinician educators from surgical, medical, and Allied Health fraternities in KTPH, covered seven themes that students could pre-select based on their interests. These included diverse topics such as trauma medicine, diabetic foot ulcers, palliative surgery, geriatric surgery, breast cancer care, liver cancer management, and bariatric surgery. Students divided their time equally for both surgical and medical sub-specialties, and attended ward rounds, clinics, operating theatres, and home visits. This provided them with real-world ground experience in transdisciplinary care to deliver better health outcomes.

CONTRIBUTIONS TO THE NATIONAL COVID-19 RESPONSE

In the past year, Yishun Health continued to contribute significantly to the national COVID-19 response, while providing quality care for its business-as-usual (BAU) acute and complex care patients. Yishun Health converted 31 per cent of its total campus bed capacity to support the pandemic response, with frontline staff and hospital support teams maintaining operations for the daily high bed occupancy.

Capacities at YCH were enhanced to manage the increased load of sub-acute cases. Two additional patient holding areas located near YCH's Emergency Department were established and could take up to 80 patients. In October 2021, a 68-bed Community Treatment Facility was also set up in the hospital.

¹ The AEC service was placed on hold from February to October 2020 due to the COVID-19 pandemic.



• **WOODLANDS
HEALTH**





—HEALTHIER YOU • HEALTHIER SG

“At Woodlands Health, we have already taken concrete steps to align with *Healthier SG*. In addition to the collaborations we have with community partners to engage and empower residents, our pre-hospital initiatives such as the GPFirst programme, Urgent Care Centre and NurseFirst helpline have been improving the accessibility and right-siting of care within the community.”

PROFESSOR JASON CHEAH

DEPUTY GROUP CEO (ACCOUNTABLE CARE), NHG
& CEO, WOODLANDS HEALTH



The Woodlands Health Campus
topping out event on
12 February 2022.

Woodlands Health

- In line with our promise to deliver “Better Health. With You”, Woodlands Health (WH) has been working closely with community and primary care partners to bring care to residents in the North-Western region, ahead of its official opening in 2023. Driven by innovative ideas which encourage the right-siting of care, our outreach initiatives empower residents to make better healthcare and lifestyle choices, and to stay well in the community.



TOPPING OUT OF WOODLANDS HEALTH CAMPUS

WH marked its topping out milestone on 12 February 2022, and will progressively open from December 2023, starting first with the specialist outpatient clinics. The rest of the hospital, including the emergency department and inpatient wards, will open from May 2024.

The event was graced by Health Minister Ong Ye Kung, Senior Minister of State for Health Dr Janil Puthucheary,

grassroots advisers from Sembawang and Marsiling-Yew Tee GRCs, Woodlands Health Development Board Committee members, community partners, contractors, and consultants. They witnessed the lifting of a steel beam to the top of Tower B of the Integrated Acute and Community Hospital. To commemorate this milestone, more than 200 people, including WH staff and consultants, penned their well-wishes on the beam.



Receiving the first patient at the CTF.



Patients engaging in physical activities at the CTF.



The nursing team at the CTF.



CONTRIBUTING TO THE NATIONAL COVID-19 RESPONSE

In 2021, when Singapore experienced new surges of COVID-19 infection brought on by the Delta variant, WH lent its support in setting up and running a new COVID-19 Treatment Facility (CTF) at NTUC Health Nursing Home (Tampines) in September. The nursing home was converted into a CTF for COVID-19 patients who were generally well, but had underlying health conditions that required close monitoring.

WH medical professionals and operations colleagues oversaw the development of the clinical workflows for CTF@Tampines and ensured that the facility ran smoothly. A multidisciplinary team – including geriatricians, rehabilitation and community hospital physicians, palliative care physicians, Emergency Department clinicians, nurses, psychiatrists, medical social workers, physiotherapists, occupational therapists, and pharmacists – provided comprehensive and quality care to the patients. WH cared for about 2,600 patients for more than six months at this facility.

PILOTING AN INNOVATIVE CARE ECOSYSTEM

In February 2022, WH launched NurseFirst – a helpline manned by nurses trained in emergency triage. These nurses would advise callers on where to seek treatment depending on their medical conditions. Healthcare options included advice to visit the nearest General Practitioner (GP) clinic, the Urgent Care Centre (UCC), or the Emergency Department of a hospital. In the first three months of its launch, the NurseFirst team attended to some 900 triage calls.

This helpline, together with the GPFirst programme in the Northern

region and UCC@Admiralty, demonstrated WH's efforts to create a holistic system of care, improve the right-siting of care, and make care more accessible within the community. As of March 2022, more than 60 per cent of GP clinics in this region had enrolled in the GPFirst programme, which coached residents to consult their family doctor first for non-emergency conditions. In FY2021, the UCC@Admiralty attended to over 10,000 patients with urgent but non-life-threatening episodes, of which 10 per cent were referred by the GPFirst programme.

The NurseFirst helpline was launched in February 2022 to provide callers with advice on where to seek treatment.



PROVIDING CARE IN THE COMMUNITY

For patients transiting from hospital to home, the WH Community and Integrated Care Team (CIC) are on hand to support them with their care needs so that they are able to stay well and age gracefully in the community. Residents who are well or who have chronic illnesses can also visit any of the nine WH Community Nurse Posts located within their neighbourhoods to have their conditions reviewed or to seek health advice.

To increase public health literacy, WH continued its collaboration with the National Library Board (NLB) in 2021 to organise health talks for senior residents, to encourage them to keep healthy and stay active. A pilot programme named 'Action: Strengthen Mental Resilience' (A:SMR) was also held at the Woodlands Regional Library to educate youths and working adults on how to strengthen their mental resilience during the COVID-19 pandemic. In addition, WH partnered Muis, MENDAKI, and MESRA (M³) and Masjid Yusof on a series of health talks for residents living in the North region.

In FY2021, WH held eight virtual NLB talks attended by more than 500 residents, and six virtual sessions for M³ with some 200 participants.



The Topping Out is a major milestone in our Campus construction journey. With this event, we are another step closer towards coming together in a beautiful, purpose-built Campus – one that serves the health needs of our residents, and is also a manifestation of our hard work.”

PROFESSOR JASON CHEAH
DEPUTY GROUP CEO (ACCOUNTABLE CARE), NHG
& CEO, WOODLANDS HEALTH



Senior Staff Nurse Jeya Periasamy (centre), a community nurse, at the home of a patient.



THE ROLE OF COMMUNITY PARTNERSHIPS, WILL BE EVEN MORE CRITICAL AS PART OF OUR *HEALTHIER SG* STRATEGY. WITH THE RISING NEEDS OF OUR AGEING POPULATION, COMMUNITY CARE ORGANISATIONS WILL TAKE ON LARGER ROLES AS PART OF THIS NATIONWIDE STRATEGY ON PREVENTIVE HEALTH.”

DR JANIL PUTHUCHEARY
SENIOR MINISTER OF STATE FOR HEALTH



“Attaining a balance of regular exercise, healthy eating habits, adequate rest, and a good relationship with family, as well as friends and colleagues, are critical for mental well-being and physical health.”



ASSOCIATE PROFESSOR DANIEL FUNG
CEO, INSTITUTE OF MENTAL HEALTH





• INSTITUTE OF MENTAL HEALTH

Institute Of Mental Health

- Social isolation caused by the COVID-19 pandemic has reinforced the importance of mental health and how it relates to physical health. With preventive health as the main tenet of *Healthier SG*, the Institute of Mental Health (IMH) – together with community partners, social service agencies (SSAs), and General Practitioners (GPs) – is spearheading a collective effort to provide early intervention by incorporating mental health initiatives within physical health setups, to ensure the holistic well-being of Singapore residents.

IMPROVING CAPABILITIES AND EXPANDING TRANS-DISCIPLINARY SKILL SETS **NEW E-LEARNING COURSE FOR GENERAL PRACTITIONERS**

IMH developed an e-learning course to deepen GPs' understanding of common mental health disorders and mental health issues, and to better equip them to support patients at the primary care level. In August 2021, IMH conducted seven interactive training modules under the GP Partnership Programme, which has about 100 GPs registered as of March 2022.

STRENGTHENING CAPABILITIES OF SOCIAL SERVICE AGENCIES PROVIDING YOUTH MENTAL HEALTH SERVICES

Recognising the need to improve the availability and accessibility of youth

mental health services, the Ministry of Health (MOH) provided IMH's Community Health Assessment Team (CHAT) a five-year grant to build up the capability of selected SSAs across Singapore. The funding from April 2020 to March 2025 will enable the SSAs to screen and assess help-seeking youths and young adults aged 12 to 25 years old for mental health issues. CHAT's 'Integrated Youth Service Capability Building Programme', comprises a three-tier training curriculum, which provides a progressive learning experience for the selected SSAs. The curriculum includes foundational and masterclass topics on youth mental health screening, and in mental health assessment. To-date, CHAT has trained four CREST-Youths, also known as the Youth Community Outreach Team,

at Resilience@SHINE, INSiGHT@ Care Corner, Limitless, and Fei Yue Community Services, as well as two Youth Integrated Teams from the Singapore Association for Mental Health (SAMH)'s SAMH SAY-IT! and Touch Community Services. Training for the teams at SAMH and TOUCH is on-going, and training for the third Youth Integrated Team at Care Corner Singapore will start in 2023.

MENTAL HEALTH CRISIS RESPONSE TEAM SERVICE FOR SUICIDAL INDIVIDUALS

In March 2021, IMH partnered the Singapore Police Force (SPF) to pilot the Crisis Response Team (CRT), as recommended by the 2017 Inter-Agency Research Workgroup for Youth Suicides. The CRT is the first mental health crisis response team in Singapore dedicated to providing timely care and support to persons with suicidal tendencies in the community. Under this programme, IMH's helpline counsellors provide the police round-the-clock crisis support through a dedicated phone service. Where necessary, a team of psychiatric nurses will be sent on-site to conduct risk assessment of the person in crisis, and advise on the necessary follow-up. The service was rolled out island-wide in December 2021 and to-date, the CRT has assisted the police on more than 2,000 calls. There are plans in

New e-Learning Course: Bridging the Knowledge Gap in Mental Health Among the General Practitioners

Past studies have shown an increase in the lifetime prevalence of mental illness from 10% (2010) to 13.9% (2019)¹ in Singapore. The current COVID-19 pandemic could also lead to more people experiencing mental health issues. Often the first point of contact, GPs play an important role in identifying signs of mental health issues in patients.

IMH has developed an e-learning course for GPs. It aims to deepen your understanding of common mental disorders and mental health issues, and enable you to manage patients with such issues more confidently.

You can access these 7 bite-sized e-learning modules (1 hour each) at your own convenient time, place and platform:

- 1 An Introduction to Psychology and Mental Health
- 2 Anxiety
- 3 Depression
- 4 Psychoses
- 5 Child & Adolescent
- 6 Geriatric
- 7 Addiction

¹ Singapore Mental Health Study



REGISTRATION IS FREE!

For registration and enquiries, please email IMH-GPF@moh.gov.sg

Organised by
Mental Health-GP Partnership Programme



The electronic direct mailer (EDM) for an e-course on understanding common mental health disorders and mental health issues for GPs.



the future to further the partnership with the police in expanding CRT to individuals with behavioural health issues.

ADVANCING WORKPLACE MENTAL HEALTH

On 16 November 2020, the National Mental Health Curriculum for Management of Crisis & Emergency Situations project was launched under the NHG Population Health Grant to strengthen the mental health response following the COVID-19 pandemic. IMH provides Mental Health Literacy and Psychological First Aid courses under this project to improve the capabilities of frontline workers, managers, and HR personnel in workplaces to manage mental health and psychological issues. In FY2021, more than 1,000 participants were trained in mental health

literacy. Ninety per cent of them found the training useful. It helped them better understand mental health, mental illnesses, and the benefits of seeking help early.

PROVIDING QUALITY PATIENT CARE ENHANCING CARE DELIVERY FOR INPATIENTS

In November 2021, IMH completed phase one of refurbishing and improving its premises to strengthen inpatient care and increase operational efficiency. A new Short Stay Unit (SSU) was created and five acute wards – including a child and adolescent ward – were renovated to enhance IMH's recovery-focused model of care, which advocates holistic and patient-centred treatment and management. Refurbishment of another five inpatient wards is on-going and expected to be ready in 2023.

• Short Stay Unit

The SSU is a 30-bedded ward set up for persons in a state of mental health crisis. These patients typically present to the hospital with severe stress and adjustment issues. A short stay at IMH helps to stabilise the patients' crisis situation, and manage their symptoms. Where necessary, patients are connected to relevant community and family resources post-discharge. Patients are admitted for a longer stay if they need to seek further treatment and/or be observed by the care team.

• Child and Adolescent Ward

The refurbished child and adolescent ward provides an environment more conducive for staff to provide higher-quality, personalised and safe care to patients. The enhanced facilities include an open-concept day space, equipped with a pantry, anti-ligature toilets, and a new triage room.

• Acute Wards

Sky gardens, adorned with plants and benches, have been added to each of the refurbished acute wards. The biophilic design of bringing nature into the wards improves air quality, as well as boosts patients' well-being. The new Enhanced Care Area in each ward provides clinical interventions for patients who require closer observation and monitoring.



An open-concept day space with kitchen and anti-ligature furniture in SSU.



A sky garden adorned with plants and benches for the refurbished wards.

PATIENTS BENEFITTED FROM rTMS AT SUBSIDISED RATE

Since January 2022, patients undergoing repetitive transcranial magnetic stimulation (rTMS) at IMH have been eligible for subsidies for the service. This non-invasive treatment uses magnetic fields to stimulate nerve cells in the brain to reduce symptoms of depression. This procedure has benefitted many patients, especially those who are suffering from treatment-resistant depression.

POST-TRAUMATIC STRESS DISORDER SERVICE

The Department of Mood and Anxiety has introduced a Post-Traumatic Stress Disorder (PTSD) Service after its successful pilot in February 2019. A multidisciplinary team comprising a doctor, psychologists, a case manager, and a medical social worker provides regular and intensive clinical interventions for clients with trauma-related concerns that range from single-episode PTSD to complex trauma. The team is also actively involved in trauma-informed care initiatives in the hospital and the community. The PTSD service also trains and collaborates with internal and external partners and stakeholders to increase preventive care and early detection of PTSD, as well as enhance accessibility of trauma-informed care within the community.

SUPPORTING YOUTH IN COMMUNITY

On 15 March 2022, IMH and Presidents' Challenge in collaboration with four SSAs, Club HEAL, SAMH, Singapore Children's Society, and TOUCH Community Services, launched the Supporting Youth in Community (SYINC) programme to boost community-based support for youths with mental health conditions. Under the programme, IMH trains and supports the SSAs to provide timely interventions and psycho-social care to youths receiving treatment at IMH. The three-year pilot project is being carried out in phases, starting with SSAs' recruitment of Allied Health Professionals, followed by training for these staff, and referral of cases to the SSAs. Training began in June, and will continue to December 2022. IMH will start referring cases to the SSAs from January 2023.

EXPANDING ACCESS TO ADDICTIONS TREATMENT THROUGH COMMUNITY COLLABORATIONS

People struggling with addiction often do not seek help or may overuse healthcare emergency services during acute episodes of their addictions. The National Addictions Management Service (NAMS) has introduced several initiatives to address these challenges and to better support those with addictions:

• **Alcohol-Related Frequent Attender (AFRA) Programme**

Following the successful pilot of its Community Addictions Programme (CAP) to help patients with severe Alcohol Use Disorder reduce their alcohol-related Emergency Department (ED) visits, NAMS has provided training and supervision to enable four public hospitals across Singapore to run similar programmes to meet the needs of patients in their respective geographical catchment areas. The programme uses Assertive Community Treatment principles of home and community visits, holistic care, and a harm reduction approach to improve patients' health, psychosocial, and occupational functioning so that patients do not misuse emergency services resources. The CAP team conducted training for Khoo Teck Puat Hospital (KTPH) in December 2019 and Tan Tock Seng Hospital (TTSH) in September 2021, and the Singapore General Hospital (SGH) in June 2022.

• **On-site Addictions Service (OSAS)**

Since September 2021, NAMS's new On-site Addictions Service (OSAS) at the Family Justice Courts (FJC) has been catering to Court users with suspected addiction concerns. The weekly service is provided by the CAP team for users with addictions related to alcohol, drugs, gambling, internet, gaming, sex, and pornography. Court users who present with mental health symptoms are screened, provided with brief interventions and referred for follow-up treatment. This motivational approach focuses on educating clients about addictions. A single-session screening is done through a physical meet-up, telephone call, or video conferencing session. Clients may subsequently be directed to appropriate community resources, including services provided by NAMS. Since the introduction of the service, 49 clients have been engaged and referred to community resources for follow-up. In February 2022, the CAP team started a similar service in collaboration with the Singapore Prison Service-Community Corrections Command (SPSCOMC).



A NAMS Counsellor conducting the AFRA training for clinicians in KTPH.



SOME TYPES OF MENTAL ILLNESSES ARE GENETIC IN NATURE, OTHERS ARE TRIGGERED BY FACTORS SUCH AS PROLONGED STRESS. IMH WILL PUT MORE FOCUS ON THE LATTER GOING FORWARD. WE WILL BE TRANSFORMING INPATIENT CARE WHERE MENTAL ILLNESSES ARE CONCERNED, BUT WE ALSO WANT TO LOOK AT IMPROVING THE MENTAL HEALTH OF SINGAPOREANS.”

ASSOCIATE PROFESSOR DANIEL FUNG
CEO, INSTITUTE OF MENTAL HEALTH

targeting inmates in community-based programmes – such as those placed in halfway houses or on work-release scheme – but who are still under the Prison's purview.

RESEARCH AND EDUCATION

NEW STUDY TO TRACK DEMENTIA AND DEPRESSION AMONG ELDERLY

In March 2022, IMH launched the second Well-being of Singapore Elderly (WiSE) study to establish the latest prevalence and incidence of dementia and depression in adults aged 60 and above, as well as to examine factors associated with these conditions. Data gathered from some 6,000 participants, of which 3,000 consisted of the elderly, with the remaining comprising family members and caregivers nominated by elderly participants, will guide future policies and resource-planning.

GENOME STUDY IDENTIFIES SCHIZOPHRENIA RISK

IMH researchers were part of a global effort that involved more than 100 researchers and 300,000 participants that found 287 regions in the human DNA harbouring genes that increase the risk of schizophrenia. Findings from this largest genomic study of

its kind were published in *Nature* in April 2022 and signalled the potential for novel treatment approaches for the mental illness.

STUDYING THE IMPACT OF COVID-19 PANDEMIC

In May 2020, IMH's Research Division was awarded a joint-funding from MOH, Temasek Foundation, and the NHG-National Centre for Infectious Diseases (NCID) COVID-19 grant to assess the social and psychological well-being of Singapore's general population and their behavioural responses to the pandemic. The three-year research study is led by Professor Chong Siow Ann, Senior Consultant, IMH, and Associate Professor Mythily Subramaniam, Assistant Chairman Medical Board (Research), IMH, in collaboration with Hong Kong University. About 1,300 Singapore residents have since been interviewed to establish the prevalence of mental health conditions, and will be subject to a follow-up interview in one-year to establish longitudinal health and the social impact of the pandemic.

HONOURING OUR STAFF

NATIONAL MEDICAL EXCELLENCE AWARD 2021

Professor Chong Siow Ann, Senior Consultant, Research Division and Department of Psychosis, IMH, was

among four individuals and two teams honoured at the annual National Medical Excellence Awards (NMEA) jointly organised by MOH and NHG in 2021. The award acknowledges the achievements of outstanding clinicians, clinician scientists, and other healthcare professionals in advancing healthcare, improving the standards of patient safety, and driving research and education to improve people's lives.

NHG-LKCMEDICINE CLINICIAN/CLINICIAN SCIENTIST AWARD 2021

Associate Professor Jimmy Lee, Regional Chief (North and Central), Senior Consultant, Department of Psychosis and Research Division, IMH received the NHG-Lee Kong Chian School of Medicine (LKCMedicine) Clinician/Clinician Scientist Award in 2021. The award recognises individuals and teams who have made outstanding contributions to improve health outcomes or delivery, as well as promote the spirit for continuous research, and innovation in NHG.

NHG CLINICIAN-SCIENTIST PREPARATORY PROGRAMME

Ms Cherie Choo, Senior Occupational Therapist, IMH, was selected to join the FY2021 NHG-LKCMedicine Clinician-Scientist Preparatory Programme (CSPP). The CSPP aims to provide



ABOVE A/Prof Jimmy Lee, Regional Chief (North and Central), Senior Consultant, Department of Psychosis and Research Division.

LEFT Prof Chong Siow Ann receiving the National Outstanding Clinician Scientist Award 2021 from Health Minister Ong Ye Kung.



LEFT Prominent landmarks in Singapore lit up in blue for World Mental Health Day 2021.

BELOW Panel discussion for NAAD 2021.



clinicians with opportunities to conduct research in the early phase of their career through research training and project experience. Ms Choo's research study on the effectiveness of tele-rehabilitation in vocational rehabilitation will be supported by CSPP funding.

PUBLIC EDUCATION AND OUTREACH

WORLD MENTAL HEALTH DAY 2021

In October 2021, to celebrate World Mental Health Day (WMHD), IMH, together with the Agency for Integrated Care (AIC), Health Promotion Board (HPB), and National Council of Social Service (NCSS), rallied 21 community partners to stage activities under the theme 'It's OK – Take 5'. More than 80 talks, workshops, exhibitions, a

fundraising run, and masterclasses were organised, with 13,000 event participants overall. IMH also initiated 'Light Up in Blue' to raise visibility and awareness of WMHD. Some 41 landmarks and buildings took part in the light-up, including the Singapore Flyer, Marina Bay Sands, St Andrew's Cathedral, healthcare and educational institutions, and iconic bridges managed by the Land Transport Authority (LTA). President Halimah Yacob and Prime Minister Lee Hsien Loong lent their support to the celebrations by sharing social media posts on the initiatives, including the light-up.

NATIONAL ADDICTIONS AWARENESS DAY 2021

Launched on 20 August 2021, the first virtual National Addictions Awareness Day (NAAD) – 'Let's Face It Together'

– included an opening event graced by Guest-of-Honour Senior Minister of State for Health Dr Janil Puthucheary, where he highlighted the important role of NAMS and community partners in supporting people recovering from addictions. NAAD's outreach efforts included a three-month social media campaign that featured bite-sized educational videos on addiction, as well as a four-part mini-series following a fictional journey of addiction and recovery. To cap off the event, a public forum focused on Internet Disorders was held on 16 December and live-streamed on social media to provide a more rounded perspective on the topic.

SINGAPORE MENTAL HEALTH CONFERENCE 2021

Themed 'Future Paradigms of Mental Health', the sixth edition of the Singapore Mental Health Conference 2021 organised by IMH together with AIC, HPB, and NCSS, was held on 24 to 25 August. The two-day virtual conference featured 70 local and international speakers who addressed recurring and upcoming mental health challenges amidst the current COVID-19 pandemic. About 1,300 participants from the healthcare, community care, and social service sectors as well as service users attended the conference.

➤ BOOSTING STAFF MORALE WITH CARE PACKAGES

Following the Staff Well Being Survey conducted by the IMH HR Department, a host of initiatives were rolled out to boost staff morale during the height of the COVID-19 pandemic. One key initiative was the distribution of care packages contributed by organisations such as Temasek Foundation, Lam Soon Singapore Pte Ltd, Mandai Wildlife Group, and Gardens by the Bay.



Care packages distributed to IMH staff in January 2022



“As a primary care provider, the National Healthcare Group Polyclinics manages patients holistically by providing preventive care as well as engaging, educating, and empowering them to take charge of their health so as to reduce the risk or delay the onset of developing chronic diseases. We also work collaboratively with partners in the community to develop customised care plans in order to achieve better health for the population – one patient at a time.”

ASSOCIATE PROFESSOR CHONG PHUI-NAH
CEO, NATIONAL HEALTHCARE GROUP POLYCLINICS & PRIMARY CARE





• **NATIONAL
HEALTHCARE
GROUP
POLYCLINICS**

National Healthcare Group Polyclinics

- Primary care is the bedrock of Singapore's care transformation journey. For more than two decades, National Healthcare Group Polyclinics (NHGP) has been working hard to achieve a future-ready primary care ecosystem – one that is sustainable, accessible, and effective in improving population health.



TOP A hybrid Mandarin dialogue was organised at Ci Yuan Community Club to address residents' concerns and queries on COVID-19 vaccination.

ABOVE A/Prof Chong Phui-Nah, CEO, NHGP & Primary Care (left) presenting the National Healthcare Innovation and Productivity Medals 2021's Best Practice Medal (Care Redesign) to Dr Sabrina Wong, Deputy Director of Clinical Services and Team Lead of the NHGP Teleconsultation Workgroup (right).

SUPPORTING SINGAPORE'S FIGHT AGAINST COVID-19 COVID-19 VACCINATION PROGRAMME

NHGP continued to play a key role in protecting the community against COVID-19, offering the vaccine at all seven polyclinics. In April 2021, Hougang Polyclinic organised a hybrid Mandarin dialogue session, in

partnership with People's Association (PA) and Ci Yuan Community Club, to help address residents' concerns and queries on COVID-19 vaccination. As of 31 March 2022, some 255,000 doses of the vaccine were administered by NHGP to members of the public.

COVID-19 HOME RECOVERY PROGRAMME

In support of the Ministry of Health (MOH)'s Home Recovery Programme, NHGP cared for about 500 COVID-19 patients who were unwell or had mild symptoms during October 2021. Teleconsultations were offered by doctors and nurses from 9am to 9pm daily to ensure continuous care and support for patients during their recovery.

EXTENDED OPERATING HOURS TO COMBAT COVID-19

In response to MOH's call for polyclinics to help manage the escalating number of patients with Acute Respiratory Infection (ARI), Woodlands Polyclinic and Kallang Polyclinic extended their operating hours on two weekends in February and March 2022.

TELEHEALTH SERVICES

In April 2020, NHGP introduced a range of new and enhanced telehealth services to provide patients with greater accessibility to healthcare services during the



(left to right): Dr Valerie Teo, Family Physician, Consultant & Head of Kallang Polyclinic; Minister for Health Ong Ye Kung; A/Prof Chong Phui-Nah, CEO, NHGP & Primary Care; and Tan Tee How, Chairman, NHG, at the official opening of Kallang Polyclinic.

COVID-19 pandemic, including Tele-Consultations, Tele-Wound Monitoring, Tele-Direct Observed Therapy (DOT), Tele-Dietetics, Tele-Physiotherapy, and Tele-Psychology. In recognition of these services, NHGP was awarded the Best Practice Medal in the Care Redesign Category for the National Healthcare Innovation and Productivity (NHIP) Medals in July 2021.

INTEGRATING HEALTH AND SOCIAL CARE FOR PATIENTS OFFICIAL OPENING OF KALLANG POLYCLINIC TO SERVE THE COMMUNITY

In May 2022, NHGP officially opened Kallang Polyclinic to better meet the growing healthcare needs of residents in the area. The event was graced by Minister for Health Ong Ye Kung.

In line with *Healthier SG*, Kallang Polyclinic offers a range of healthcare

services to help residents take charge of their health and well-being. Some novel initiatives that provide comprehensive care to improve patients' overall health outcomes include:

- **Fully-Automated Vaccine Management System**

Kallang Polyclinic is the first NHG Polyclinic to pilot the use of a fully-automated Safety Manpower Productivity Accountability Real Time Analytics Vaccine (SMARTVacc) System, which enables live inventory tracking, and cross-checking of dispensed vaccines against an in-built image recognition system for enhanced patient safety.

- **Patient Advisory Council**

The Patient Advisory Council (PAC) comprises residents who are also patients of the polyclinic, caregivers, and/or volunteers, who help co-create care solutions. The PAC serves as a voice for patients and the community, with members sharing their experience and insights with the care team to achieve better health outcomes.



ABOVE Under the RELATE programme, elderly patients with complex medical and social needs are identified by NHGP and its community partners, so that a shared care plan can be developed to address the patient's needs.

RIGHT The EMBRACE programme addresses health and social issues of vulnerable children aged 0-3 years old from low-income families.

RELATE PROGRAMME

Under the RELATE (RElationship-based HeAltH & Social InTEgration) programme, the NHGP care team works closely with community partners to identify and develop shared care plans to support elderly patients with complex medical and social needs.

First introduced in Ang Mo Kio Polyclinic in September 2020, the programme is available at all NHG Polyclinics. RELATE patients will be supported through their healthcare journey by a Care Coach, who acts as a health buddy and a single point of contact between the patient and his/her healthcare team. This would help empower patients and families to navigate between NHGP, community partners, and hospitals.

EMBRACE^{PLUS} PROGRAMME

The EMBRACE^{PLUS} (Enhanced Maternal Baby Toddler And Child SurvEillance^{PLUS}) Programme integrates NHGP's maternal and child health services, and is aimed at strengthening the mother and child dyad, particularly for at-risk families. EMBRACE^{PLUS} seeks to identify children aged 0 to 3 years old from low-income families, and address their health and social issues.



When these children visit the polyclinics for their vaccinations and developmental assessments, they will be screened for other medical, care, and financial needs.

Mothers will be screened for postnatal depression, and if required, be referred to the appropriate healthcare staff for interventions. For mothers with a history of gestational diabetes mellitus (GDM) during pregnancy, the care team will review and manage their conditions accordingly.

EMBRACE^{PLUS} was first piloted at Yishun Polyclinic in September 2020, and will be available in all NHG Polyclinics by March 2023.



Healthier SG is a key effort to activate and reform the public health system, empower individuals to choose health, and lay the foundation for the aged care system. **We need all stakeholders – family doctors, community partners, healthcare clusters, employers, and residents – to join us in this effort, to shape a healthier Singapore.”**

ONG YE KUNG
MINISTER FOR HEALTH

INVESTING IN RESEARCH AND EDUCATION

NHGP PRIMARY CARE RESEARCH SYMPOSIUM

In December 2021, NHGP held its first virtual Primary Care Research Symposium to facilitate information exchange and networking among primary care professionals. Titled ‘Understanding Diabetes in Younger Adults’, the webinar featured various distinguished speakers from NHGP, the Institute of Mental Health (IMH), and Khoo Teck Puat Hospital (KTPH), as well as the Baker Heart and Diabetes Institute based in Melbourne, Australia.



A second webinar was held in March 2022 on ‘Improving Primary Care Management of Asthma’. It featured Associate Professor Tang Wern Ee, Director of Clinical Research Unit, NHGP, and Chairperson of the Singapore National Asthma Programme-3, who shared research findings and updates on asthma management, as well as other experts from the National University Hospital (NUH), Lee Kong Chian School of Medicine (LKCMedicine) at Nanyang Technological University (NTU), and Singapore General Hospital (SGH).

ASIA PACIFIC PRIMARY CARE RESEARCH CONFERENCE 2021

In July 2021, three NHGP Family Physicians presented their research projects at the Asia Pacific Primary Care Research Conference 2021:

- Dr Gabriel Ding presented on ‘Factors associated with family caregiver burden among frail older persons with multi-morbidity’.
- Dr Jeremy Koh presented on ‘Clinical effectiveness of telephone compared to face-to-face consultations for sub-optimally controlled Type 2 diabetics’.
- Dr Quek Jing Sheng presented on ‘Patients’ journeys to nebuliser therapy in a polyclinic during an asthma exacerbation: a qualitative study’. He also clinched the Wong Heck Sing Award for Best Oral Presentation (1st prize) at the event.

ASIA PACIFIC MEDICAL EDUCATION CONFERENCE 2022

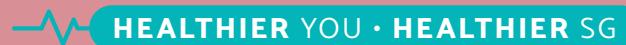
In January 2022, two NHGP staff presented their research papers and received awards at the Asia Pacific Medical Education Conference 2022. Dr David Ng, Head, Special Projects (Primary Care), NHGP, clinched the Short Communications Merit Award for his poster presentation on ‘Asynchronous Game-based Learning for Social Determinants of Health in Undergraduate Teaching’, while Dana Koh Hui Min, Staff Nurse at Geylang Polyclinic, was awarded the Free Communications Young Scholar Award (Runner-up) for her project on ‘Perceptions and Experiences of Nurses Transitioning to Primary Care: A Qualitative Study’.





• NATIONAL SKIN CENTRE





“Aligned to NHG’s *River of Life* framework for population health and *Healthier SG*, the National Skin Centre is focusing on upskilling and partnering primary care providers to right-site care in the community. We have also reduced hospital readmissions for elderly and frail patients who require intensive nursing treatment, by providing them with ambulatory care and elevating the standard of dermatological care in nursing homes.”

PROFESSOR TAN SUAT HOON
DIRECTOR, NATIONAL SKIN CENTRE



National Skin Centre

- The National Skin Centre (NSC) seeks to improve and advance the skin health of the population by setting the highest standard of excellence in dermatological care, education, and research. NSC's continued efforts extend into the community through collaborations with social and community partners to deliver holistic care for all residents.

ENHANCING CLINICAL

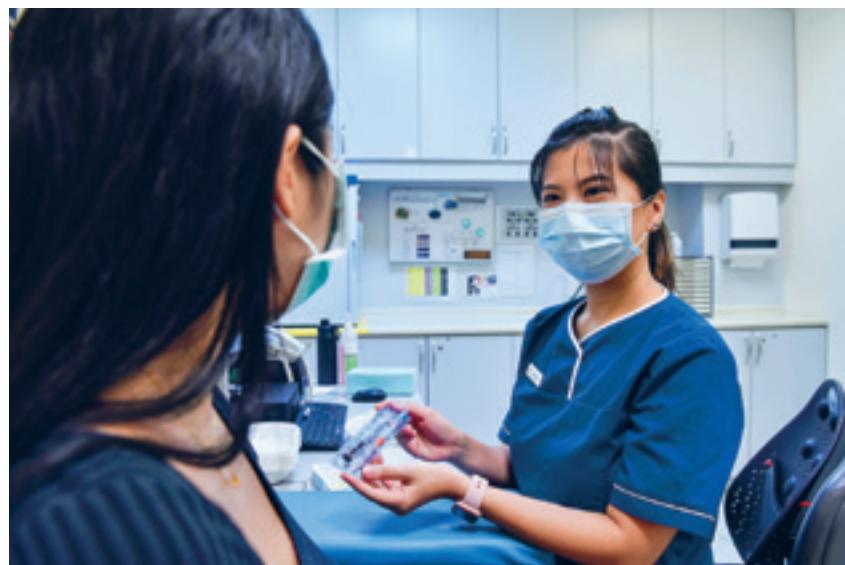
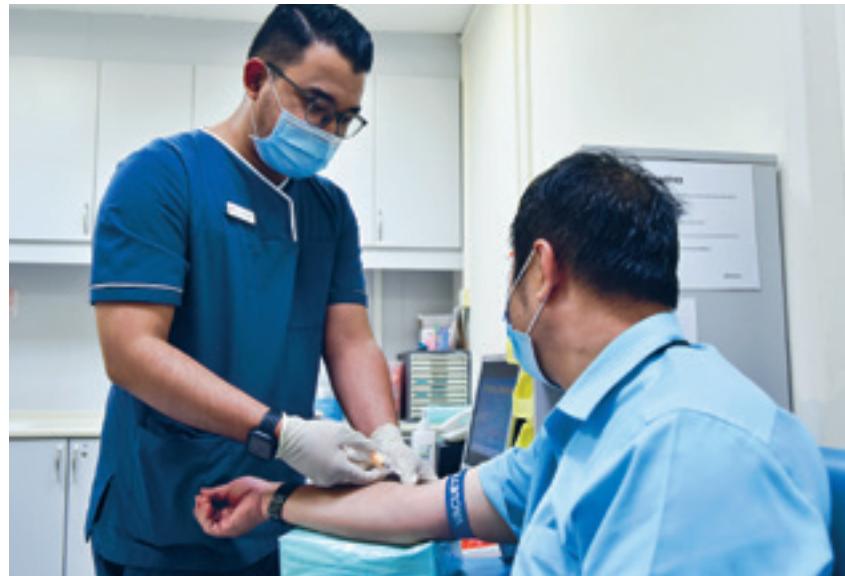
EXCELLENCE

NURSE-LED SERVICE IN MANAGEMENT OF SEXUALLY TRANSMITTED INFECTIONS

In February 2021, NSC implemented a nurse-led sexually transmitted infections (STI) screening service for asymptomatic patients at the Department of Sexually Transmitted Infections Control (DSC) Clinic. Under the new service, nurses have an expanded role, and attend to patients from their first visit to subsequent follow-up appointments. Patients with symptoms and more serious conditions are escalated to doctors for consultation. This enables patients to receive timely education on STI prevention, and doctors to focus on more complex cases. This has also allowed the DSC Clinic to free up more medical appointment slots, reduce waiting time and costs for patients, and in turn, have the capacity to see more patients. From January 2021 to June 2022, more than 1,900 patients were seen under this service.

INTRODUCTION OF CONFOCAL IMAGING AS A CLINICAL SERVICE

In November 2021, NSC introduced a quicker and less invasive diagnostic imaging alternative to skin biopsy for patients through the use of a Reflectance Confocal Microscopy (RCM) device, as part of





Brenda Lim, Head of Nursing, NSC (centre) with nurses at DSC Clinic.

an enhanced skin cancer screening programme. RCM allows the “*in vivo*” examination of the skin, down to the level of papillary dermis while providing a cellular resolution comparable with histology. This initiative was jointly developed by the RCM, Skin Cancer, Phototherapy, and Dermatologic Surgery teams.

Traditionally, patients would be required to undergo an invasive skin biopsy procedure and wait for the subsequent histology interpretation for their diagnosis, which could take up to two weeks. With RCM, early and “benign-looking” skin lesions and cancers can be quickly and accurately diagnosed on the same day for timely management. RCM has also been used successfully to monitor the treatment response of Bowen’s disease and superficial basal cell carcinoma with non-surgical methods such as photodynamic therapy. Since November 2021, 175 patients (239 skin lesions) have undergone this skin imaging service. The

sensitivity for detecting skin cancer with RCM was 89.58 per cent and the specificity was 97.72 per cent.

TEAM-BASED CARE FOR PATIENTS WITH ECZEMA

In September 2021, NSC’s Eczema Clinic introduced a team-based care model to provide enhanced and coordinated care for patients.

The multidisciplinary team comprises physicians, advanced practice nurses (APNs), nurse clinicians, clinical pharmacists, and medical social workers. During follow-up appointments for patients with moderate to severe eczema, APNs help identify issues and complications related to their treatment and disease.



NSC introduced confocal imaging as a clinical service to enhance skin cancer screening.

They also help provide assessment and consultation to eczema patients on immunosuppressant therapies. Pharmacists ensure safe and efficacious medication therapy through early detection and resolution of drug-related problems associated with biologics for stable eczema patients.

CARING FOR THE COMMUNITY

NSC HEALTH FUND'S ITCH PROGRAMME SUPPORTS NKF

In September 2021, as part of a one-year pilot of the NSC Health Fund's Itch Programme, Suu Balm was distributed to a dialysis centre managed by the National Kidney Foundation (NKF) to help patients with uremic pruritus. It is a dry and itchy skin condition, and a common symptom among patients with chronic renal failure as their condition progresses. If left untreated, patients may potentially develop complications, such as bacterial skin infections or cellulitis, from wounds inflicted through repeated scratching. More than 700 tubes of Suu Balm, an itch relief cream formulated by NSC, were donated to the centre every quarter, with some 60 patients receiving one tube per month. Results from a six-month review of the pilot indicated that the initiative was well-received, and NSC plans to roll it out to more dialysis centres.



The multidisciplinary team at NSC's Eczema Clinic.

CONTACT DERMATITIS DATABASE

NSC Pharmacy developed a first-of-its-kind Contact Dermatitis database containing the list of ingredients in its retail products. The prototype was soft-launched in August 2021, and houses the full product ingredient composition, with 900 retail products comprising 60 per cent of NSC's retail product inventory to-date. With filtering functions for users to include and exclude specific ingredients, the cloud-based platform assists healthcare professionals in selecting suitable retail products for patients with allergic and irritant contact dermatitis.



THE NEW NSC BUILDING WILL HOUSE STATE-OF-THE-ART FACILITIES TO ENHANCE CLINICAL FUNCTIONS, TRAINING, AND RESEARCH. WITH MORE CONSULTATION ROOMS, A FULLY-EQUIPPED DAY TREATMENT CENTRE FOR OUTPATIENTS, SKIN IMAGING LABORATORY, AND SKIN PHYSIOLOGY LABORATORIES, IT WILL PROVIDE A MORE SEAMLESS AND INTEGRATED CARE EXPERIENCE FOR PATIENTS.”

TAN TEE HOW
CHAIRMAN, NHG



“NHG is focused on building a culture of physical, psychological, social, and spiritual wellness aligned to our *River of Life* framework. We believe that mental wellness is central to satisfaction and productivity in the workplace. When our workforce is healthy, it would lead to better and more sustainable health outcomes for our population.”



PROFESSOR PHILIP CHOO
GROUP CEO, NHG





• OUR PEOPLE



By Ang Liping (GIC Clinical Integration) - Winner of the RIVER OF LIFE (ROL) ART CONTEST organised by Group Corporate Communications, NHG HQ.

Our People

- Our people are the cornerstone of NHG, and we are committed to co-creating a safe and collaborative environment for staff to grow and excel in their professions. As the NHG Family embarks on *Healthier SG*, we are stepping up our efforts to look after the health of our workforce, and empowering them to practise healthy habits at work and home.

The COVID-19 pandemic and its waves of new variant infections brought about significant workforce challenges across all sectors in Singapore, including healthcare. The challenges faced were not in numbers alone, but also the physical, mental, and well-being of staff. With strong support from one another, staff worked tirelessly to provide care to patients and the population. Such resilience is one of the hallmarks of public healthcare.

At NHG, we seek to:

GROW TOGETHER

Our staff will be imbued with the knowledge and expertise to provide better care to our population.

THRIVE TOGETHER

- Stay connected** – co-create sustainable ways to connect meaningfully, encourage, and motivate one another.
- Design activities** – rejuvenate the body, mind, and soul, including fitness for charity and mental well-being initiatives.
- Build a supportive workplace** – a purpose-filled work environment where staff feel supported, engaged, and valued through meaningful platforms.

TOGETHER WE GROW

COMMUNITY OF PRACTICE FOR PEOPLE MANAGERS

NHG is committed to developing our people managers. In March 2022, we piloted the first NHG Community of Practice (CoP) for People Managers to learn alongside and glean insights from one another. The inaugural session was attended by 15 participants from across NHG Institutions, and it focused on the topic 'Collaborating as a Team'. They acquired useful tips and techniques on how to build and strengthen team-based partnerships in NHG. More CoP sessions on various people management topics were rolled out every quarter in 2022.

Opportunities for staff to learn and develop their personal effectiveness continued in FY2021 even amid peak operations. Grounded on Stephen Covey's revolutionary book *The 7 Habits of Highly Effective People*, the workshops guided staff on new ways of working well together in virtual environments through the use



2022
MY HEALTH & FITNESS GOALS

New Year, New You.
Workplace Health wishes to share our goals setting worksheets in planning your new year's physical (Body), mental well-being (Mind), process and values (Soul) goals.

1. Set specific, measurable, attainable, relevant and time-bound goals that motivate you.

2. Plan the steps and actions you must take to realize your goals.

3. Cross off each one as you work through them.

Workplace Health wishes to thank our partners for their support:

- Ministry of Health
- Healthier SG
- SG Health
- SG Healthier
- SG Healthier
- SG Healthier



of simple and impactful visual aids. Other in-house learning aids such as the PICS e-learning module to reinforce NHG's core values were refreshed for better interactivity and with more gamification features.

LEADERS NETWORK AND MENTORING SERIES

To further develop NHG's leaders, we are enhancing our mentorship and coaching framework to help guide leaders in their career journey.

A new leadership mentoring series began on 8 April 2022 with the aim of co-creating a mentorship framework for NHG. Hosted by Professor Chua Hong Choon, Deputy Group CEO (Strategy and Transformation), NHG, this first of three sessions highlighted the key parameters needed to curate the framework. It is set to be launched by end-2022. A coaching series for the same purpose would follow.



This series augments the regular Leaders Network sessions organised for NHG's alumni of the Healthcare Leadership College programmes. Together, they serve to broaden the mentorship and coaching opportunities to a wider pool of talents. They also complement the NHG Collective Leadership (CL) team and system-level initiative that equips our leaders with skills and mental models to foster meaningful relationships and build high-performing teams.

HEALTHCARE LEADERSHIP 360

As part of our efforts to groom public healthcare leaders further, a Healthcare Leadership 360 (HL360) tool was established and launched in FY2021. Led by the MOH Holdings

in collaboration with the three public healthcare clusters, the HL360 tool was developed based on the ONE Leadership Framework for sectoral leadership development.

Since its launch, 132 NHG leaders across different levels and job families have utilised the new tool to gain multi-perspectives on their leadership strengths and developmental needs. Moving forward, NHG will be using HL360 as a benchmark to identify the areas for development for more leaders and talents across NHG Institutions. Plans to roll out executive coaching to support these leaders in bridging development gaps are also in progress.



The finale event of the NHG22 WALK.RUN.CYCLE MOVEMENT on 30 October 2022 was organised by NHG Group Corporate Communications, with support from NHGHQ/Institutions, NBA Committee, NHG Senior Management, and community partners.

TOGETHER WE CARE

NHG EMPLOYEE PULSE SURVEY

The repeated resurgence of COVID-19 cases from new variants was a stressful time for the healthcare workforce. While initiatives are in place to ensure their well-being, NHG saw the need to closely monitor staff morale, resilience, and their capacity to handle future adversities. Between February and April 2022, we conducted an inaugural pulse survey to better gauge the well-being of staff across NHG Institutions. The results showed that NHG staff are generally resilient, with more staff giving favourable responses on all areas surveyed. But the neutral stance given by a sizeable proportion of staff warranted a deeper analysis, and is an opportunity for NHG Institutions to design relevant interventions to shore up staff's morale and resilience. These pulse checks will continue to run once every six months.

TOGETHER WE CONNECT

MOH-NHG TOWNHALL

In October 2021, a Ministry of Health (MOH)-NHG virtual Townhall was held with some 500 participants. MOH gave an update on Singapore's COVID-19 strategy, including Protocols 1, 2 and 3 for Antigen Rapid Test (ART) testing and self-care, and future steps to make the nation COVID-19 resilient. The event featured a panel dialogue session comprising Minister for Defence, Dr Ng Eng Hen; Senior Minister of State for Health (SMS) Dr Janil Puthucheary; Permanent Secretary for Health Mr Ng How Yue and other MOH officials; as well as from NHG – Professor Philip Choo, Group CEO; Professor Jason Cheah, Deputy Group CEO (Accountable Care); Professor Eugene Fidelis Soh,

Deputy Group CEO (Integrated Care); Professor Lim Tock Han, Group Chairman Medical Board; and Professor Leo Yee Sin, Executive Director of National Centre for Infectious Diseases (NCID). The session was moderated by Professor Chua Hong Choon, Deputy Group CEO (Strategy and Transformation), and Professor Benjamin Seet, Deputy Group CEO (Education and Research). Insights shared by Dr Ng included the importance of ground feedback, and how Government policymakers and administrators identified ways to better support the stretched healthcare workforce. Both Dr Ng and Professor Choo also expressed their gratitude to healthcare workers for supporting Singapore through the different pandemic phases.

UNLEASH YOUR TRUE SELF.
MIND. BODY. SOUL.

Experience deeper levels of self-awareness, connect to your true self, and cultivate gratitude and compassion in this retreat.

NHG VIRTUAL WELLNESS RETREAT



The virtual Mental Wellness Summit was launched in March 2022. It seeks to strengthen staff's capacity for empathy and resilience through in-depth discussions with subject matter experts.

NHG-SWC CO-FUNDING SCHEMES

The NHG Staff Well-Being Committee (NHG-SWC) co-chaired by Professor Chua Hong Choon, NHG Deputy Group CEO (Strategy and Transformation), and Mrs Olivia Tay, NHG Group Chief Human Resource Officer continued to identify, design, and roll out initiatives to engage staff, and boost employees' resilience by promoting Joy in Work.

In FY2021, the NHG-SWC Co-Funding Scheme for Staff Mental Well-Being supported the scale-up of several mental health initiatives in response to the pandemic. To-date, four institutions have sought support from the Scheme to augment their staff well-being efforts.

Under NHG's Zest For Life framework, the new workplace health initiatives implemented to improve employees' physical, emotional, and psychosocial well-being, included the launch of the virtual Mental Wellness Summit themed 'It's OK Not to Be OK' in March 2022. The Summit sought to strengthen staff's capacity for empathy and resilience through in-depth discussions with subject matter experts from the Institute of Mental Health (IMH), Ministry of Social and Family Development (MSF), Singapore National Employers Federation (SNEF), Republic of Singapore Air Force (RSAF), and Brahm Centre.

MENTAL WELL-BEING INITIATIVE

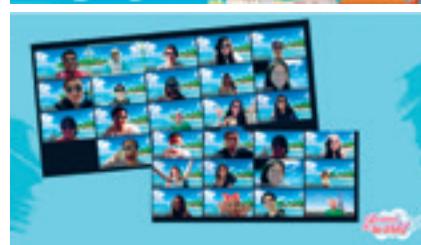
The HQ Mental Well-being Initiative was launched in January – March 2022, with the objective of raising awareness on mental health and addressing work burnout. As part of this initiative, a heart-warming video, titled *Expressing Gratitude – At the Workplace*, showcased five NHG staff sharing their personal stories regarding being grateful to their colleagues. Other wellness interventions and activities – including virtual exercise programmes, mindfulness sessions, positive psychology, and mental resilience and self-care lunchtime workshops – were organised to enhance camaraderie among staff and encourage team-bonding.

Another initiative, the NHG Peer Support Programme, aims to build a resilient workforce by giving employees a platform to support each other, and work towards improving psychological well-being in the workplace. To-date, there are more than 40 peer supporters in NHG HQ, and all were nominated by their Heads of Department. These peer supporters are trained by accredited organisations, and equipped with knowledge about

common mental health issues faced in Singapore. We have also made available @NHG WORKPLACE useful information and tips on how to improve mental wellness, as well as external helplines for any staff who wishes to seek help.

HQ VIRTUAL STAFF FIESTA 2021

NHG continued to promote engagement and social bonding for staff during the year, with more activities organised virtually. A HQ Virtual Staff Fiesta centred on the theme 'Around the World' to affirm staff resilience and dedication was held in August 2021. Its fringe activities with mini-games to inject fun and togetherness were held over three weeks, and they culminated in a main event on 20 August for more than 480 staff from NHG Corporate Office, NHG Diagnostics, and NHG Pharmacy.



APPRECIATING OUR PEOPLE

To show care and thank all staff in NHG Family for their contributions throughout the COVID-19 pandemic, NHG Management gave away 28,000 appreciation packs to the staff, including service partners between February and April 2022. Each gift pack of a mobile massager and wireless phone charger was accompanied by an appreciation letter from Professor Philip Choo, Group CEO, NHG.

The collective experience in managing the pandemic has enabled us to Emerge Stronger Together!



NHG Group Corporate Communications organised the 1st hybrid National Medical Excellence Awards (NMEA) 2020 & 2021 event on behalf of MOH, with very good engagement.



FITNESS FOR CHARITY

Fitness for Charity (FFC) was launched in 2021 in place of the Charity Carnival to promote healthy living among staff, while raising funds for charity. Participants had to achieve their fitness goals during the challenge period from 14 to 20 February 2022. Colleagues showed their support by pledging a donation based on the goals to be achieved by the participants. Some S\$11,702 was raised from NHG HQ and staff donations for Beyond Social Services, which supports disadvantaged young people and their families to move beyond their problems. It was the charity selected by NHG staff.



Staff sharing at Workplace to get likes and support.



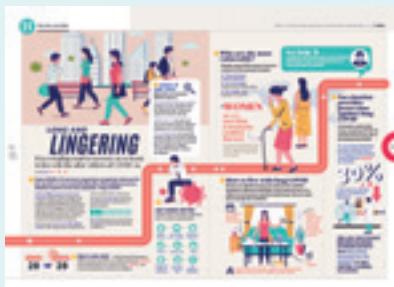
• APEX 2022 AWARDS

NHG and our Institutions clinched 12 awards across multiple categories at the APEX 2022, an annual US-based competition which recognises excellence in publishing. This year's APEX received some 1,200 entries from professional communicators worldwide.

NHG's print and digital publications, videos, and webinars continue to serve as channels for public education on health matters. They also provide insights into NHG's vision of *Adding Years of Healthy Life*, and the innovation, collaboration, and developments happening across our Institutions as we move towards a *Healthier SG*.

GRAND AWARD

MAGAZINES, JOURNALS & TABLOIDS



aha, Jul - Aug 2021,
Issue 3, KTPH

Lifewise, Jan - Mar 2022, Issue 91 (GCC, NHGHQ)

This issue also won the BEST MAGAZINE INFOGRAPHICS, THE WORLD ASSOCIATION OF NEWS PUBLISHERS (WAN-IFRA) Asian Media Awards 2022

AWARD OF EXCELLENCE

MAGAZINES, JOURNALS & TABLOIDS



Lifewise, Jul - Sep 2021,
Issue 89 (GCC, NHGHQ)

Lifewise, Oct - Dec 2021,
Issue 90 (GCC, NHGHQ)

IMAGINE, Feb - May,
2021, IMH

AWARD OF EXCELLENCE FOR COVID-19 MEDIA

NEWSPAPER / MAGAZINE ARTICLES



Lifewise, Apr - Jun 2021, Issue 88
[Article on page 8: 'Breaking the Chain of Transmission'] (GCC, NHGHQ)

AWARD OF EXCELLENCE

SOCIAL MEDIA



Behind the Mask: A Healthcare Worker's Story of the Pandemic [published on International Migrants Day - Ms Vithya] (GCC, NHGHQ)

AWARD OF EXCELLENCE

ANNUAL REPORTS



Embracing A New Normal In Primary Care FY2020 Annual Report, NHGP

NHG Corporate Yearbook FY2020:

Collective Leadership - Emerging Stronger, Together (GCC, NHGHQ)

AWARD OF EXCELLENCE

NEWSLETTERS (ELECTRONIC & EMAIL)



Transforming Primary Care,
Issue 13 - Mission:
Vaccination (COVID-19
Vaccination Drive), NHGP

Together@NHG - 31 Dec 2021
(GCC, NHGHQ)

AWARD OF EXCELLENCE

VIRTUAL COMMUNICATIONS



Webinar hosted by a panel of NHG medical experts to address concerns and questions on COVID-19 vaccines (GCC, NHGHQ)

• AWARDS & ACCOLADES FY2021

INTERNATIONAL AWARDS

ACCREDITATION COUNCIL FOR GRADUATE MEDICAL EDUCATION INTERNATIONAL (ACGME-I) AWARD	2
ASIAN HOSPITAL MANAGEMENT AWARDS 2021 - PATIENT SAFETY (EXCELLENCE AWARD)	1
KNIGHT OF THE FRENCH ORDER OF THE LEGION OF HONOUR	1
WITSA GLOBAL ICT EXCELLENCE AWARDS 2021 (RUNNER UP) - INNOVATIVE E-HEALTH SOLUTION	1

NATIONAL AWARDS

15 TH SINGAPORE PUBLIC HEALTH & OCCUPATIONAL MEDICINE CONFERENCE AWARD (MERIT - ORAL)	1
8 TH ASIA PACIFIC PRIMARY CARE RESEARCH CONFERENCE AWARD 2021	1
CERTIFICATE OF APPRECIATION TO NHG STAFF - SETTING UP OF CCF@EXPO	1
COMMUNITY CHEST AWARD	1
DISTINGUISHED CONTRIBUTOR AWARD FOR CLINICAL RESEARCH COORDINATORS (FINALIST AND MERIT AWARDS)	2
MINISTER FOR HOME AFFAIRS NATIONAL DAY AWARD 2021	1
NATIONAL DAY AWARDS	140
NATIONAL MEDICAL RESEARCH COUNCIL AWARDS	5
NATIONAL MEDICAL EXCELLENCE AWARDS	2
NATIONAL HEALTHCARE INNOVATION & PRODUCTIVITY MEDALS	5
NTUC MAY DAY AWARDS	2
NURSES' MERIT AWARDS 2021	28
OPENGOV RECOGNITION OF EXCELLENCE AWARD 2021	1
PRESIDENT'S AWARD FOR NURSES	2
PROFESSOR LUCY WAN OUTSTANDING PHARMACIST AWARD 2021	1
PUBLIC SECTOR TRANSFORMATION AWARD	8
SCS IT LEADERS AWARD 2021 - TECH HEROES FROM CRISIS AWARD (INFRASTRUCTURE)	1
SG HEALTHCARE AI DATATHON AWARD 2021	1
SINGAPORE'S BEST EMPLOYERS AWARD 2022	1
SINGAPORE BIODESIGN INNOVATION FELLOWSHIP	1
SINGAPORE WOMEN'S HALL OF FAME	1
TAN CHIN TUAN NURSING AWARD 2021	2
TECHBLAZER AWARD (SPECIAL MENTION) 2021	1
WORKPLACE HEALTH & SAFETY AWARDS - UV DISINFECTANT BOX	1

TERTIAL EDUCATION INSTITUTION AWARDS

NHG-LKCMEDICINE	10
NHG-LKCMEDICINE CLINICIAN SCIENTIST PREPARATORY PROGRAMME (CSPP)	7
NHG-LKCMEDICINE CLINICIAN SCIENTIST FELLOWSHIP	2
NHG-LKCMEDICINE CLINICIAN SCIENTIST CAREER SCHEME	1
NTU-LKCMEDICINE DEAN'S AWARD FOR EDUCATION	1
NTU AWARDS	3
NANYANG EDUCATION AWARD	1
KOH BOON HWEI SCHOLARS AWARD	2
NUS MEDICINE APPRECIATION FOR CLINICAL EDUCATORS AWARDS	52

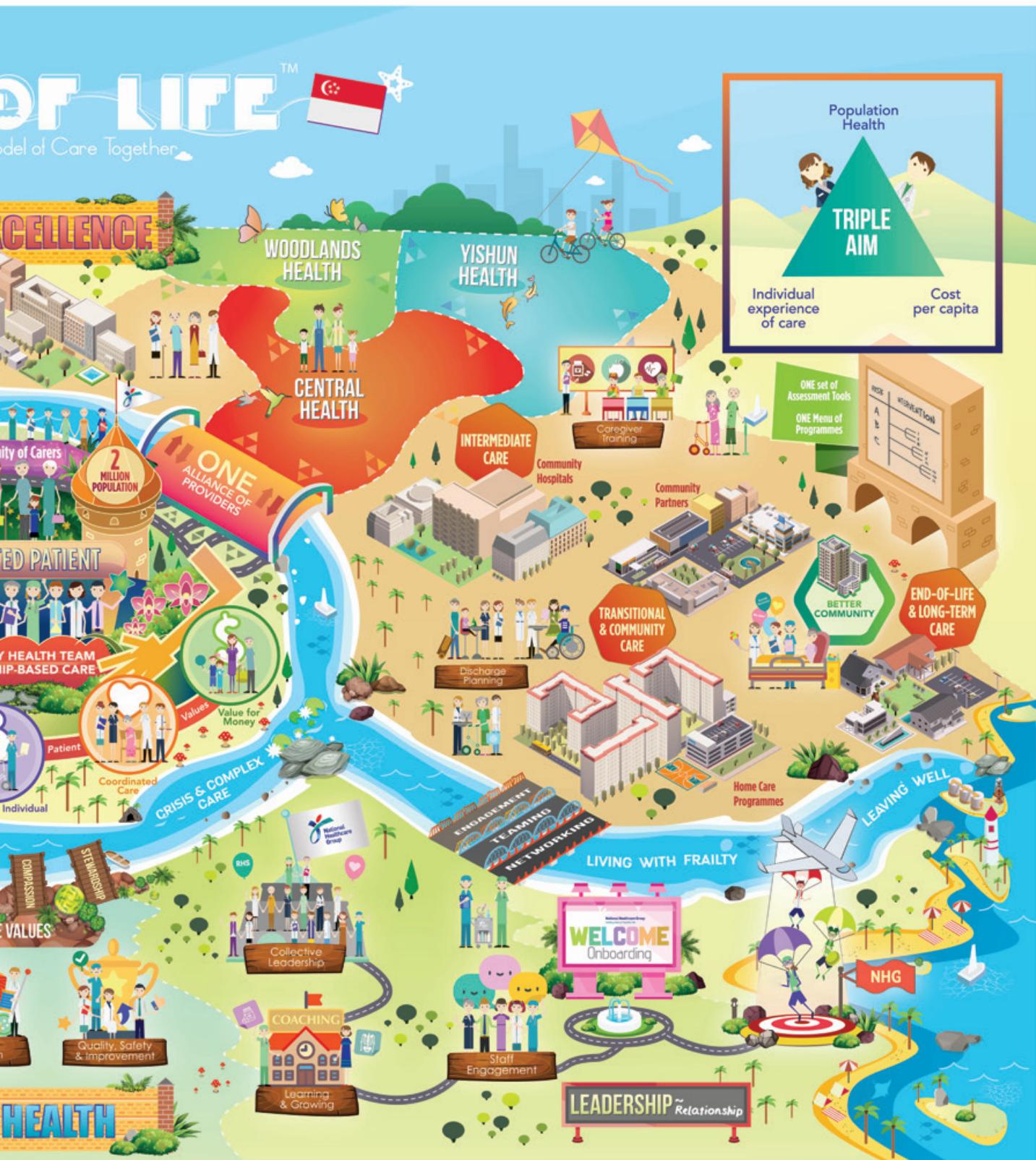


NHG AWARDS

SINGAPORE PATIENT ACTION AWARDS (ORGANISED BY TAN TOCK SENG HOSPITAL)	21
SINGAPORE PATIENT CAREGIVER AWARD (INDIVIDUAL)	8
SINGAPORE PATIENT ADVOCATE AWARD (INDIVIDUAL)	3
SINGAPORE PATIENT ENGAGEMENT INITIATIVE AWARD (TEAM-BASED)	4
SINGAPORE PATIENT SUPPORT GROUP/ VOLUNTEER GROUP AWARD (GROUP)	3
SINGAPORE COMMUNITY ENGAGEMENT INITIATIVE AWARD (TEAM-BASED)	3
 NHG RECOGNITION AWARDS	84
LEE FOUNDATION - NHG LIFETIME ACHIEVEMENT AWARD	2
NHG DISTINGUISHED SENIOR CLINICIAN AWARD	6
NHG DISTINGUISHED ACHIEVEMENT AWARD	6
NHG OUTSTANDING CITIZENSHIP AWARD	20
NHG YOUNG ACHIEVER AWARD	27
NHG DISTINGUISHED CONTRIBUTOR AWARD	2
NHG TEAM RECOGNITION AWARD	21
 SINGAPORE HEALTH AND BIOMEDICAL CONGRESS 2021 (ORGANISED BY NHG EDUCATION AND RESEARCH)	6
SINGAPORE YOUNG INVESTIGATOR AWARD - GOLD (HEALTH SERVICES RESEARCH) ORAL	1
SINGAPORE YOUNG INVESTIGATOR AWARD - BRONZE (HEALTH SERVICES RESEARCH) ORAL	1
SINGAPORE YOUNG INVESTIGATOR AWARD - MERIT (HEALTH SERVICES RESEARCH) ORAL	1
SINGAPORE YOUNG INVESTIGATOR AWARD - BRONZE (BASIC SCIENCE/TRANSLATIONAL RESEARCH) ORAL	1
SINGAPORE ALLIED HEALTH AWARD - GOLD	1
BEST POSTER AWARD (ALLIED HEALTH) - MERIT	1

NHG TEACHING EXCELLENCE AWARDS 2021	227
NHG EDUCATION LEADERS AWARD	4
NHG INTER-PROFESSIONAL TEACHING AWARD	13
NHG OUTSTANDING EDUCATION PARTNERS AWARD	2
NHG TEACHING AWARD FOR SENIOR DOCTORS	50
NHG TEACHING AWARD FOR JUNIOR DOCTORS	24
NHG OUTSTANDING NURSE TEACHERS AWARD	25
NHG TEACHING AWARD FOR NURSING PRECEPTORS	60
NHG TEACHING AWARD FOR PHARMACY SENIOR PRECEPTORS	8
NHG TEACHING AWARD FOR PHARMACY PRECEPTORS	10
NHG TEACHING AWARD FOR ALLIED HEALTH SENIOR EDUCATORS	17
NHG TEACHING AWARD FOR ALLIED HEALTH EDUCATORS	14
 NHG QUALITY IMPROVEMENT AWARDS 2021	87
JUNIOR MEDICAL DOCTORS AWARD	3
QUALITY IMPROVEMENT AWARD (BEST)	10
QUALITY IMPROVEMENT AWARD (MERIT)	24
NHG EXCELLENCE IN ACTION AWARD (INDIVIDUAL)	36
NHG EXCELLENCE IN ACTION AWARD (TEAM)	8
NHG EXEMPLARY PATIENT AND CAREGIVER AWARD	6
 NHG RESEARCH & INNOVATION AWARDS 2021	8
NHG RESEARCH MENTOR OF THE YEAR AWARD	1
NHG HEALTHCARE INNOVATION AWARD	2
NHG RESEARCH IMPACT AWARD	3
NHG INNOVATOR OF THE YEAR AWARD	1
NHG-LKCMEDICINE CLINICIAN/CLINICAL SCIENTIST AWARD	1
 NHG DEVELOPMENT AWARDS - MOH IN-SERVICE SCHOLARSHIP	15
 CHI & TEMASEK FOUNDATION HEALTHCARE INNOMATCH AWARD	1





Designed by NHG Group Corporate Communications (adapted from Central Health Model of Care by Tan Tock Seng Hospital). This diagram is meant for NHG and its staff for use in their work. It is not to be reproduced elsewhere for other purposes without the permission of NHG Group Corporate Communications.

- www.nhg.com.sg
- [Nationalhealthcaregroup](https://www.facebook.com/Nationalhealthcaregroup)
- [National Healthcare Group](https://www.linkedin.com/company/national-healthcare-group)
- [@nhgig](https://www.instagram.com/nhgig)
- [@wearenhg](https://www.tiktok.com/@wearenhg)

Statistics

WORKLOAD FIGURES

BED COMPLEMENTS

ACUTE & COMMUNITY HOSPITALS

Institutions: TTSH, NCID, KTPH, IMH & YCH

FY2021

4,907

FY2020

4,907



BED OCCUPANCY RATE

ACUTE & COMMUNITY HOSPITALS

Institutions: TTSH, NCID, KTPH, IMH & YCH

FY2021

89%

FY2020

87%



INPATIENT DISCHARGES

ACUTE & COMMUNITY HOSPITALS

Institutions: TTSH, NCID, KTPH, IMH & YCH

FY2021

108,301

FY2020

109,447



INPATIENT DAYS

ACUTE & COMMUNITY HOSPITALS

Institutions: TTSH, NCID, KTPH, IMH & YCH

FY2021

1,491,927

FY2020

1,408,820



AVERAGE LENGTH OF STAY

ACUTE HOSPITALS

Institutions: TTSH, NCID & KTPH

FY2021

8.4 days

FY2020

7.6 days



AVERAGE LENGTH OF STAY

IMH - SHORT STAY

Institution: IMH (short stay)

FY2021

33.7 days

FY2020

30.8 days



IMH (long stay) for FY2021 is 594.3 days (FY2020: 753.0 days) and this relates to the average length of stay of long-staying patients who were physically discharged during the year.

AVERAGE LENGTH OF STAY
COMMUNITY HOSPITAL

Institution: YCH

FY2021

18.9 days

FY2020

21.4 days



DAY SURGERIES

Institutions: TTS, KTPH & AdMC

FY2021

92,585

FY2020

84,329



SOC ATTENDANCES

Institutions: TTS, NCID, KTPH, IMH, NSC & AdMC

FY2021

1,271,968

FY2020

1,216,981



A&E ATTENDANCES

Institutions: TTS & KTPH

FY2021

214,908

FY2020

237,223



DAY REHABILITATION CENTRE ATTENDANCES
COMMUNITY HOSPITAL

Institution: YCH

FY2021

2,149

FY2020

1,406



POLYCLINIC ATTENDANCES

FY2021

2,205,275

FY2020

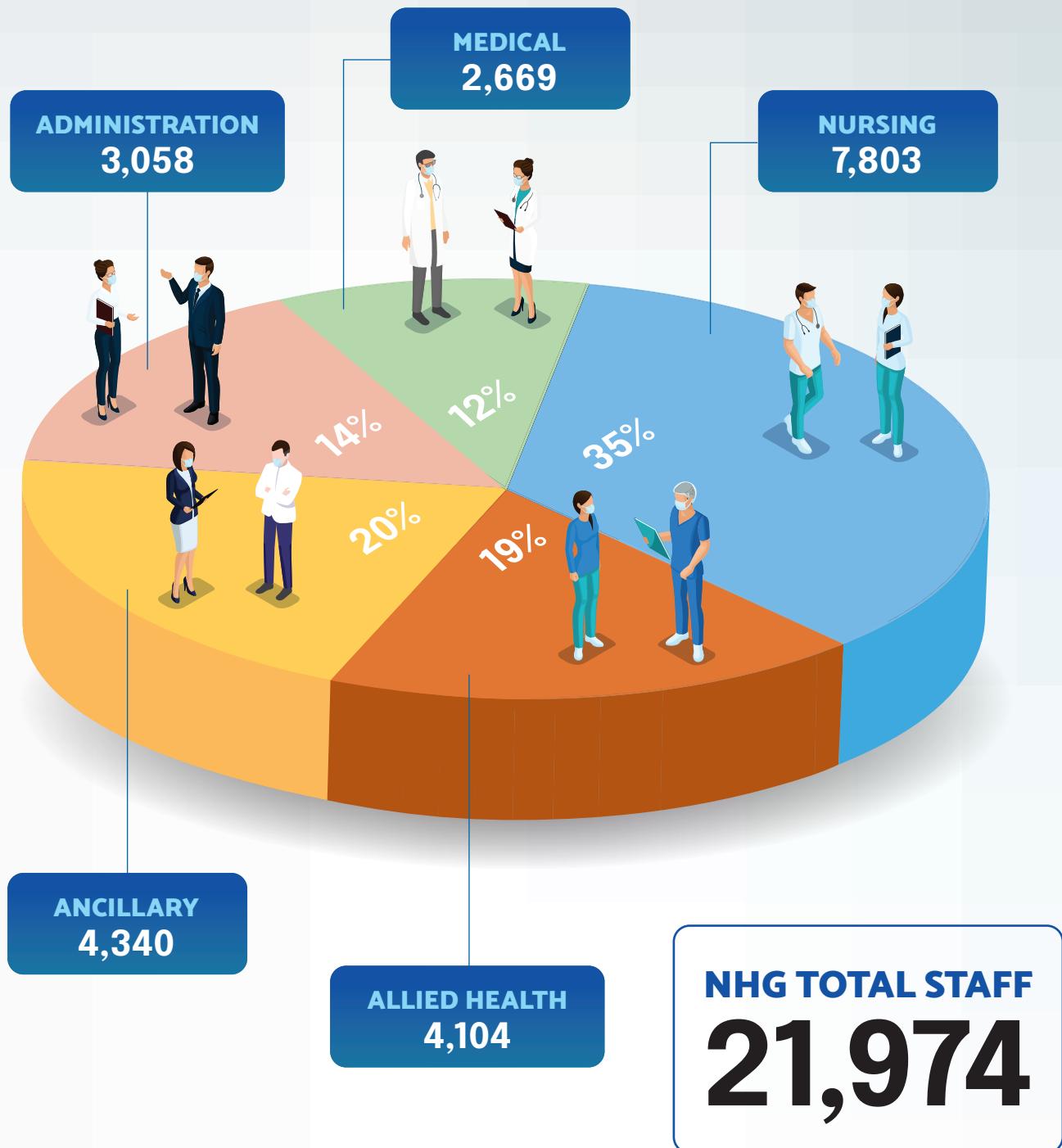
2,266,793



Statistics

DISTRIBUTION OF STAFF

AS AT 31 MARCH 2022 (FY2021)



DIRECTORY

ABOUT OUR INSTITUTIONS



Tan Tock Seng
HOSPITAL

National Healthcare Group

TAN TOCK SENG HOSPITAL

11 JALAN TAN TOCK SENG
SINGAPORE 308433
TEL: 6256 6011
www.ttsh.com.sg

Tan Tock Seng Hospital (TTSH) is the flagship hospital of NHG and part of Singapore's public healthcare system. As a pioneering hospital with strong roots in the community for over 175 years, TTSH is recognised as the People's Hospital, serving a resident population of 1.4 million living in Central Singapore.

Together, with 70 community partners and 80 community health posts, it brings care beyond the hospital into the community as an Integrated Care Organisation – Central Health.

As one of the largest multidisciplinary hospitals in Singapore, TTSH operates more than 1,700 beds with centres of excellence including the National Centre for Infectious Diseases (NCID), Institute for Geriatrics & Active Ageing (IGA), NHG Eye Institute (NHGEI), TTSH Rehabilitation Centre, and Ang Mo Kio Specialist Centre (AMKSC).

TTSH's 600-bed Integrated Care Hub will be ready in 2023 to provide for sub-acute care and rehabilitation. As a healthcare leader in population health, systems innovation, health technologies and workforce transformation, TTSH hosts Singapore's largest purpose-built innovation centre for healthcare – the Ng Teng Fong Centre for Healthcare Innovation (CHI) and its Co-Learning Network of 37 local and international partners.



National Centre for
Infectious Diseases

National Healthcare Group

NATIONAL CENTRE FOR INFECTIOUS DISEASES

16 JALAN TAN TOCK SENG
SINGAPORE 308442
TEL: 6256 6011
www.ncid.sg

The National Centre for Infectious Diseases (NCID) is a purpose-built facility designed to strengthen Singapore's capabilities in infectious disease management and prevention. NCID houses clinical services, public health, research, training and education, and community engagement functions under one overarching structure. In addition to the clinical treatment of infectious diseases and outbreak management, the expanded roles and functional units of NCID include the National Public Health and Epidemiology Unit, the National Public Health Laboratory, the Infectious Disease Research and Training Office, the Antimicrobial Resistance Coordinating Office, and the National Public Health programmes for HIV and Tuberculosis. Benchmarked to international standards and best practices, NCID will enhance Singapore's ability to effectively manage infectious diseases.



KHOO TECK PUAT HOSPITAL

90 YISHUN CENTRAL
SINGAPORE 768828
TEL: 6555 8000
www.ktph.com.sg

Khoo Teck Puat Hospital (KTPH) is a 795-bed general and acute care hospital which opened in June 2010. Serving more than 550,000 people living in the north of Singapore, KTPH combines medical expertise with high standards of personalised care, set within a healing environment, to provide care that is good enough for our own loved ones. From intuitive wayfinding to logical clustering of services, KTPH's design is focused on providing a hassle-free experience for patients.

The hospital has been designed with patients' comfort in mind. Since its opening, the building has garnered numerous awards for its green and energy efficient design. Patients can enjoy comfortable accommodation in different categories of wards with views of greenery and naturally cool air from improved ventilation. KTPH also provides a wide range of outpatient specialist services.



YISHUN COMMUNITY HOSPITAL

2 YISHUN CENTRAL 2
SINGAPORE 768024
TEL: 6807 8800
www.yishuncommunityhospital.com.sg

Yishun Community Hospital (YCH) is a 224-bed hospital which provides intermediate care for recuperating patients who do not require the intensive services of an acute-care hospital. Opened in November 2016, YCH provides a range of services from rehabilitation and sub-acute care to geriatric, dementia and palliative care services, to help support the growing ageing population in Singapore.



WOODLANDS HEALTH

CORPORATE OFFICE
9 MAXWELL ROAD
MND COMPLEX ANNEX A
#03-01A
SINGAPORE 069112
TEL: 6363 3000
www.wh.com.sg

Woodlands Health (WH) provides care for the north-western population in Singapore. We will operate a purpose-built integrated Campus set to open progressively from 2023. The campus will include a fully integrated acute and community hospital, specialist outpatient clinics, intermediate and long-term care facilities and green healing spaces. We will offer a comprehensive range of acute, sub-acute, rehabilitative and transitional care services, working closely with partners to deliver seamless care within and beyond our Campus.

Since 2016, WH has started serving and empowering residents in their health journey through our Community Health Posts and outreach efforts. WH also introduced initiatives to help improve the right-siting and accessibility of care within the community, such as the GPFFirst Programme in the North, the first community-based Urgent Care Centre at Admiralty Medical Centre and the NurseFirst helpline. These initiatives are closely aligned with *Healthier SG*.



NATIONAL SKIN CENTRE

1 MANDALAY ROAD
SINGAPORE 308205
TEL: 6253 4455
www.nsc.com.sg

The National Skin Centre (NSC) is an outpatient specialist dermatological centre with a team of dermatologists who have the experience and expertise to treat a wide variety of skin conditions. The Centre also aims to facilitate subspecialisation and be the national focus for the treatment, research, and training on all aspects of skin diseases.

With a comprehensive range of subspecialty services, and serving about 80 per cent of dermatology outpatients in Singapore, NSC is firmly established as a reputable dermatology centre in Singapore and the region. NSC also collaborates with the Agency for Science, Technology and Research (A*STAR) and Nanyang Technological University (NTU) to operate the Skin Research Institute of Singapore (SRIS), which focuses on conducting high impact, interdisciplinary skin research designed to translate into improved health outcomes and quality of life.



NATIONAL HEALTHCARE GROUP POLYCLINICS

HEADQUARTERS
3 FUSIONOPOLIS LINK #05-10
NEXUS@ONE-NORTH (SOUTH LOBBY)
SINGAPORE 138543
CONTACT CENTRE: 6355 3000
www.nhgp.com.sg

National Healthcare Group Polyclinics (NHGP) forms the primary healthcare arm of NHG. Its seven polyclinics serve a significant proportion of the population in the central and northern parts of Singapore.

NHGP provides a comprehensive range of health services for the family, functioning as a one-stop health centre providing treatment for acute medical conditions, management of chronic diseases, women and children health services, and dental care. The focus of NHGP's care is on health promotion and disease prevention, early and accurate diagnosis, disease management through physician-led team-based care, as well as enhancing the capability of Family Medicine through research and teaching.

Through the Family Medicine Academy and the NHG Family Medicine Residency Programme, NHGP plays an integral role in the delivery of Primary Care training at medical undergraduate and post-graduate levels. The Primary Care Academy provides a one-stop primary care training centre for primary healthcare professionals and the community.



INSTITUTE OF MENTAL HEALTH

BUANGKOK GREEN MEDICAL PARK
10 BUANGKOK VIEW
SINGAPORE 539747
TEL: 6389 2000
www.imh.com.sg

The Institute of Mental Health (IMH) is a 2,000-bed acute tertiary psychiatric hospital. Set amidst 23 hectares of serene surroundings, IMH offers a multidisciplinary and comprehensive range of psychiatric, rehabilitative, and counselling services in both hospital and community-based settings to meet the needs of children and adolescents, adults, and the elderly. Besides providing patient-centred clinical services, IMH dedicates resources to carry out mental health promotion and raise mental health literacy. IMH also leads in mental health research, and training the next generation of mental health professionals in Singapore.



ADMIRALTY MEDICAL CENTRE

676 WOODLANDS DRIVE 71 #03-01
KAMPUNG ADMIRALTY
SINGAPORE 730676
TEL: 6807 8000
www.admiraltymedicalcentre.com.sg

Admiralty Medical Centre (AdMC) is a one-stop medical centre for outpatient clinic consultation, day surgery, rehabilitation and diagnostic services, as well as community health outreach activities. It provides selected specialist outpatient services, day surgery procedures and endoscopies for patients. The medical and surgical services are run by clinical departments from Khoo Teck Puat Hospital. AdMC aims to provide hassle-free, holistic specialist care in a convenient community setting in collaboration with other healthcare partners.



INSTITUTE OF GERIATRICS AND ACTIVE AGEING

CENTRE FOR GERIATRIC MEDICINE
7 JALAN TAN TOCK SENG
SINGAPORE 308440
TEL: 6359 6332
www.iga.com.sg

The Institute of Geriatrics and Active Ageing (IGA) was established to be at the forefront of Tan Tock Seng Hospital's expansion of research and training initiatives to serve our rapidly ageing population.

Through rigorous translational research and innovation relevant to the needs of older persons, IGA aims to influence geriatric care and practice, propagate evidence-based knowledge through education and learning, and advance the health and quality of life of older persons.



NATIONAL HEALTHCARE GROUP DIAGNOSTICS

3 FUSIONOPOLIS LINK #05-08
NEXUS@ONE-NORTH (SOUTH TOWER)
SINGAPORE 138543
CALL CENTRE: 6275 6443 (6-ASK-NHGD)
www.nhgd.com.sg

National Healthcare Group Diagnostics (NHGD) is a business division of NHG, providing quality laboratory and imaging services at the primary healthcare level. Via its extensive network of imaging centres, laboratories and a fleet of mobile service vehicles, NHGD provides one-stop imaging and laboratory services that are accessible, cost-effective, timely, seamless, and accurate. In its continuous quest for quality excellence, NHGD received international accreditation such as ISO 15189 for medical testing and medical imaging.

Urgent Care Centre @ Admiralty

URGENT CARE CENTRE @ ADMIRALTY

676 WOODLANDS DRIVE 71 #01-01
KAMPUNG ADMIRALTY
SINGAPORE 730676
TEL: 6363 3000
www.wh.com.sg/for-patients/urgent-care-centre-admiralty

The Urgent Care Centre at Kampung Admiralty (UCC @ Admiralty) provides consultations for urgent but not life-threatening acute medical conditions requiring intermediate level of care, and treatments such as application of splint or cast for simple fractures and dislocations, stitching for cuts and wounds, and administration of intravenous fluid. Located in the community, the UCC makes urgent care more accessible to residents living nearby, without them having to visit the hospital emergency department (ED). The UCC @ Admiralty is an initiative by Woodlands Health in partnership with Khoo Teck Puat Hospital.



NHG PHARMACY

3 FUSIONOPOLIS LINK #05-07
NEXUS@ONE-NORTH (SOUTH LOBBY)
SINGAPORE 138543
TEL: 6340 2300
www.pharmacy.nhg.com.sg

National Healthcare Group Pharmacy (NHGPh), a business unit of NHG, provides a wide range of pharmacy services to meet the needs of the community. Our pharmacies offer trusted services to help the community use their medication in a safe, effective, and responsible manner. As the leading provider of pharmacy services in the long-term care sector, we actively address the needs of the senior community and their caregivers. Our team of pharmacists provides clinical pharmacy services to help customers achieve the best results for their prescribed therapy by working with other members of the healthcare team. Customers can seek advice on medication and purchase quality and affordable healthcare essentials from our retail branches and online store.



NHG COLLEGE

3 FUSIONOPOLIS LINK #03-08
NEXUS@ONE-NORTH (SOUTH LOBBY)
SINGAPORE 138543
www.college.nhg.com.sg

NHG College plays an instrumental role in facilitating continuous learning and development of our workforce, as well as driving leadership development in NHG. NHG College taps into our internal expertise, and collaborates with renowned institutions and industry partners to build collective capabilities of NHG leaders, educators, healthcare professionals, and staff, to improve the health of our patients and the community.



NHG EYE INSTITUTE

TEL: 6357 8000

NHG Eye Institute (NHGEI) synergises clinical expertise and services across all ophthalmology departments in NHG (Tan Tock Seng Hospital, Khoo Teck Puat Hospital and Woodlands Health) to provide the breadth and depth of eye care to our patients. Coordinated sub-specialty complex care, award-winning clinical research and innovation, and a rigorous culture of quality improvement, training and mentorship are our hallmarks. Together with NHG Polyclinics, we have developed an extended network of primary eye care units in the community, and we co-anchor the Singapore Integrated Diabetic Retinopathy Programme with Singapore National Eye Centre.



NHG HEART INSTITUTE

Established on 1 June 2019, the NHG Heart Institute encompasses the cardiology departments of Tan Tock Seng Hospital, Khoo Teck Puat Hospital and Woodlands Health. It seeks to strengthen the practice of cardiology across NHG through good clinical and administrative governance, consistency in standards of care, and harmonisation of manpower to facilitate right-siting of services and provide evidence-based care. It also serves as a platform for collaboration and coordination for clinical practice, research, education, training, and population health. NHG Heart Institute will partner providers in Primary Care to deliver seamless care and transition for our patients in the community.

USEFUL LINKS & HELPLINES

MENTAL HEALTH

IMH Mental Health Helpline: 6389 2222
Samaritans of Singapore (SOS) Hotline: 1767
Singapore Association for Mental Health (SAMH) Helpline: 1800 283 7019

National CARE Hotline: 1800 202 6868
Silver Ribbon (Singapore): 6386 1928
Community Health Assessment Team (CHAT): 6493 6500 / 6501
Community Wellness Clinics (CWCs)

- Geylang Polyclinic, 21 Geylang East Central, Singapore 389707
- Queenstown Polyclinic, 580 Stirling Road, Level 4, Singapore 148958

CAREGIVER SUPPORT

For caregivers to persons with mental illness:
Caregiver Alliance: 6460 4400 or visit www.cal.org.sg

For caregivers to the elderly:
The Seniors Helpline: 1800 555 5555
Dementia Singapore
Helpline: 6377 0700 or visit www.dementia.org.sg

Caregiving Welfare Association:
6466 7957 / 7996 or visit www.cwa.org.sg

Touch Caregivers Support:
6804 6555 or visit www.caregivers.org.sg

Agency For Integrated Care (AIC):
1800 650 6060 or visit www.AIC.sg

Tsao Foundation: 6593 9500 or visit www.tsaofoundation.org

Sage Counselling Centre: 6354 1191 or visit www.sagecc.org.sg

HOSPICE & PALLIATIVE CARE

Singapore Hospice Council:
6538 2231 or visit singaporehospice.org.sg
Dover Park Hospice: 6500 7272 or visit www.doverpark.org.sg
HCA Hospice Care: 62512561 or visit www.hca.org.sg

NURSES ARE OUR SUNSHINE Thank You

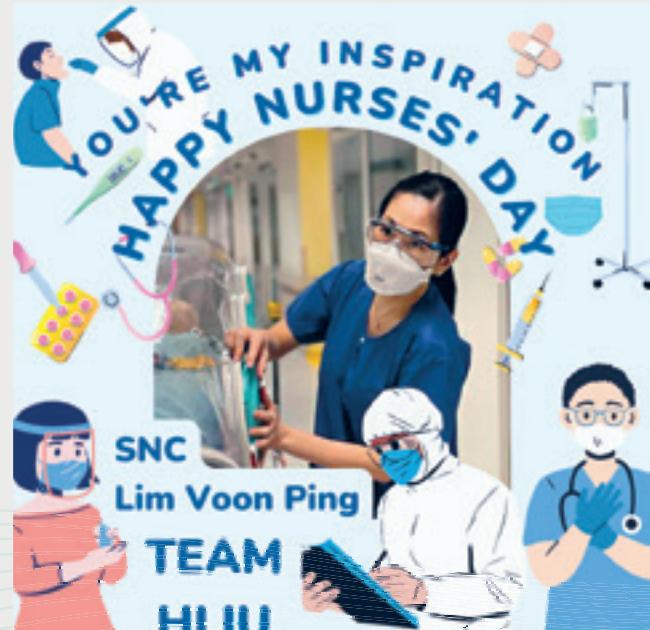
"The evolution to a *Healthier SG* presents opportunities for our nurses to go beyond being only emblems for healing the sick and frail, and be advocates for living well and health ownership, and coaches for self-care. Their efforts will contribute to improved patient experience, and better health outcomes in our transformation journey. On behalf of the NHG Board, Management and

Staff, I would like to express our deepest appreciation to all nurses for the strong teamwork and resilience displayed."

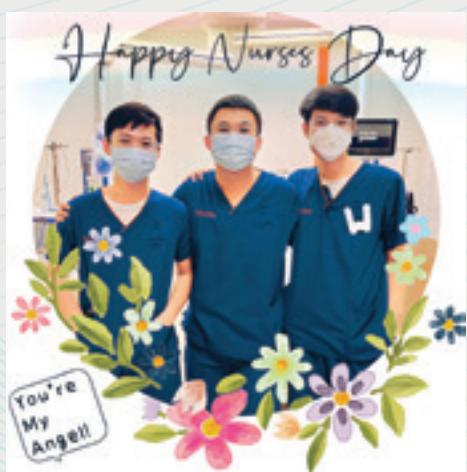
PROFESSOR PHILIP CHOO, GROUP CEO, NHG



Our nurses shine bright despite their tremendous work pressure under volatile situations, because of their dedication, hard work, and sacrifice.



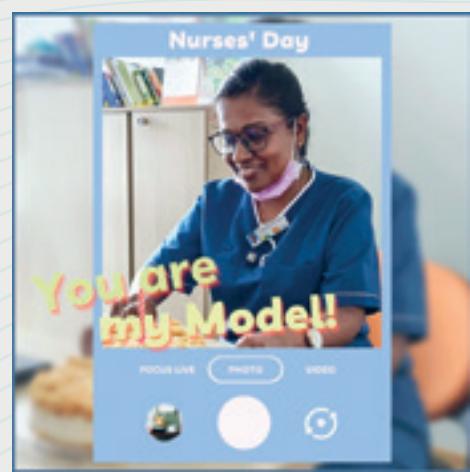
A great creative motivator, mentor, and leader!



Life in the Emergency Department is never easy during the pandemic, but our friendship extends beyond career – we LOVE our JOB!



The guardian 'Angel Nurse' who tirelessly educates us, aside from giving care to our patients.



A lovely smile never fails to brighten one's day, even in the darkest hours.

Photos are from the NHG River of Life Contest #4 (24 June – 17 July 2022) to celebrate our nurses who inspire us with their service.



BETTER HEALTH
FOR OUR
POPULATION



Background

NHG commemorated its 22nd Anniversary in April 2022.

The NHG22 Logo pays homage to the steadfast will and spirit of service alive in the people of NHG, which has propelled us to soldier on with unwavering dedication, and galvanised us to innovate and leverage technology to scale greater heights in the delivery of care for our population.

Tagline

Better Health For Our Population – signifies NHG's collective purpose to keep our patients and community healthy through preventive care, while continuing to meet the needs of an ageing population. At the same time, staying true and committed in the pursuit of our vision: ***Adding years of healthy life***. With People-centredness, Integrity, Compassion, and Stewardship (PICS), we will press on with fortitude and determination to serve and bring hope to our population and nation.

Rationale & Symbolism



Represents our strength and unity for "2day"; it ignites us to shine and to hope for "2morrow".

Interweaving 22

Represents the togetherness of our Institutions, stakeholders, healthcare professionals, patients, caregivers, and community partners. Collectively, they form our heart – serving our patients and the population.

Colours

The vibrant hues are made up of the colours of NHG and our Institutions; they represent us rallying together amid challenges to keep our population and nation well.

Stylised blue line

Represents NHG's evolving ***River of Life*** journey designed to care for our population from ***Living Well*** to ***Leaving Well***.

