



Changi  
General Hospital  
SingHealth

# ANNUAL REPORT 2016 - 2017

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Department of  
Geriatric Medicine

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5 Tampines Central 1  
Tampines Plaza #08-01/05  
Singapore 529541

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**Dr Koh Lip Hoe**  
Chief, Geriatrics - Palliative Care Services

## MESSAGE FROM THE CHIEF

I am delighted to share this report for the Department of Geriatric Medicine with you. The Department has indeed come a long way since it started almost 20 years ago. This report chronicles our journey and contributions from 2016 - 2017.

With Singapore's rapidly ageing population, it is imperative that we look after our pioneers who have contributed to the development of Singapore.

Currently we have more than four dedicated Geriatric Medicine wards in the purpose-built Integrated Building to cater to the needs of our elderly patients. The Department works closely with other departments such as Orthopaedics and General Surgery to help look after older patients under their care. In addition, there are also outreach programmes to support our seniors in the eastern community.

The Department continues to be passionate in education and training. My colleagues contribute towards undergraduate, postgraduate and nursing education. In fact, we are honoured that we have been asked to assume the Programme Directorship for the SingHealth Geriatric Senior Residency programme in 2018. In addition, we have also participated in various research activities to help improve care for our patients.

I am grateful for the hard work of our fellow colleagues, including doctors, nurses, allied health professionals, as well as administrative and support staff as we continue to work together to deliver care for our patients.

Sincerely,

# YEAR IN REVIEW

## Emergency Department (ED) Sub-acute Care Ward Direct Admission Protocol

Initiated in April 2016, the ED sub-acute care ward direct admission protocol ensures that patients over the age of 65 with geriatric syndromes are right sited to the care of the Geriatric team from the start of their inpatient journey.

Right siting suitable patients to the sub-acute geriatric care ward has helped the department to:

- Achieve acute admission avoidance and hospital diversion, freeing up beds for patients in need of acute medical care
- Deliver timely and appropriate care to patients
- Reduce unnecessary hand-offs, lowering the risks of hospital-acquired infections and improve patient safety

The success of this project is supported by the CGH bed management unit, which matches appropriate patients to Geriatric Medicine Department's (GRM) discharge beds daily, as well as the opening of additional acute bed availability within the Geriatric wards in October 2016.

## Nursing Home Medicine for Family Medicine Trainees

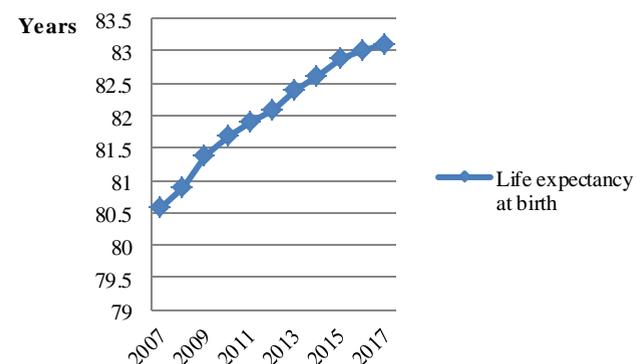
A SingHealth-CGH initiative that commenced in 2016, this rigorous and comprehensive training aims to familiarise Family Medicine trainees with some common aspects of care for frail elderly with advanced chronic disabling diseases within a residential care setting. Trainees also learn to appreciate the ethical issues involved in the care of the severely demented and extremely frail patients in the nursing home.

The initiative has successfully cultivated interest and imparted skills to Family Medicine trainees and prepared them for practice in a long-term care setting.

# CGH GERIATRIC MEDICINE – AT A GLANCE

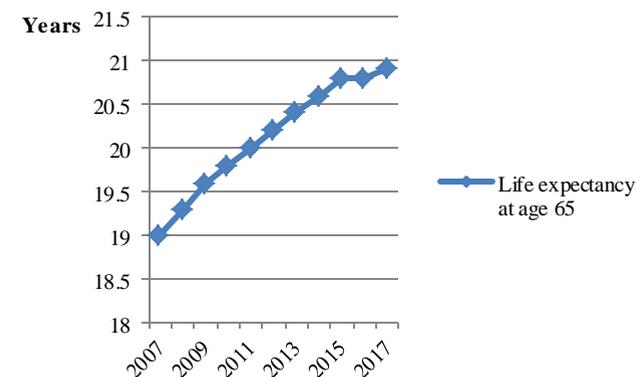
## Elderly in the East

Changi General Hospital (CGH) is an award-winning public hospital with over 1,000 beds caring for a community of more than 1 million in the east. In 2016, residents aged 65 years and over comprised 12.4 per cent of the total resident population in Singapore, a rise from 11.8 per cent in 2015.



### Longer life expectancy at birth

Singapore residents can expect to live longer as the life expectancy at birth rose from 80.6 years in 2007 to 83.1 years in 2017.



### Longer life expectancy at age 65

Life expectancy at age 65 years also rose from 19.0 years in 2007 to 20.9 years in 2017.

## Department Statistics

The CGH Geriatric Medicine (GRM) department covers both the acute and sub-acute geriatric medicine wards. The department runs the ambulatory geriatric clinics, sub-specialty clinics and the Geriatric Day Hospital. It also hosts geriatric liaison services for the surgical wards, the ValuedCare hip fracture programme and the Emergency Department's Short Stay Unit.

The GRM community division has outreach services to two community hospitals and three nursing homes, and also participates in community falls prevention projects.

### Resources

The medical faculty consists of 19 Geriatrician consultants, one senior aged-care physician and one principal resident physician, and is supported by a team of resident physicians, clinical associates and visiting consultants .

The geriatricians and geriatric-trained nurses are also supported by:

- Physiotherapists
- Occupational therapists
- Speech therapists
- Dieticians
- Podiatrists
- Social workers

Specialty clinical services are also readily available within the hospital .



### Sub-specialties

Geriatric patients tend to have multiple medical, functional and social care needs which have to be addressed in order to prevent functional decline, maintain functional status and attain optimum clinical outcomes.

The department provides sub-specialty services covering major geriatric syndromes including falls, impaired mobility, impaired cognition, incontinence and palliative care.

# AREAS OF EXCELLENCE

## Inpatient Services

The GRM inpatient service spans four acute geriatric medicine wards and one sub-acute geriatric medicine ward in The Integrated Building. Each ward contains 32 beds in a dedicated setting and is available 24-hours a day.

All our consultants and associate consultants are accredited specialists with subspecialty fellowship training. Junior and senior residents are also trained according to the guidelines set by the Geriatric Medicine Residency Advisory Committee. Visiting consultants are also appointed to provide consultation as well as ad-hoc services to the department.

Furthermore, our medical officers are also registered medical practitioners who have undergone a structured training programme in Geriatric Medicine while attached to the department.



## Geriatric Medical Centre

The Geriatric Medicine Centre (GMC) comprises the outpatient specialist clinic and the Geriatric Day Hospital.

With a team of dedicated nurses and therapists, GMC adopts a multi-disciplinary approach to enhance the quality of life for older patients by stabilising and optimising their medical comorbidities and functional status.

GMC services cater to patients above 65-years-old. It also lends support to caregivers and families by providing education and training to equip them with the essential skills to manage the needs of their loved ones



## Geriatric Outpatient Specialist Clinic

The outpatient service receives referrals from various hospitals and external agencies such as polyclinics, general practitioners and other healthcare institutions. In 2016, GMC received a total of 7,073 patient visits.

Apart from the general geriatric clinics, the following sub-specialty services are also available:

### Memory Clinic

- Assessment clinic supported by dementia-trained nurses, geriatricians and psycho-geriatricians
- Caters to individuals presented with memory complaints as young as 55 years old
- Other services include memory assessments, education counselling and caregiver support

### Falls Clinic

- In-depth assessment and education services on falls prevention and bone health evaluation for patients with high fall risks
- Close collaboration between occupational therapists and physiotherapists to assist with intervention to reduce falls and injuries, and promote an active lifestyle

### Parkinson's Disease & Continence Clinic

- Helmed by geriatricians with special interest in Parkinson's disease and continence
- Expert management and support provided to older patients diagnosed with these issues

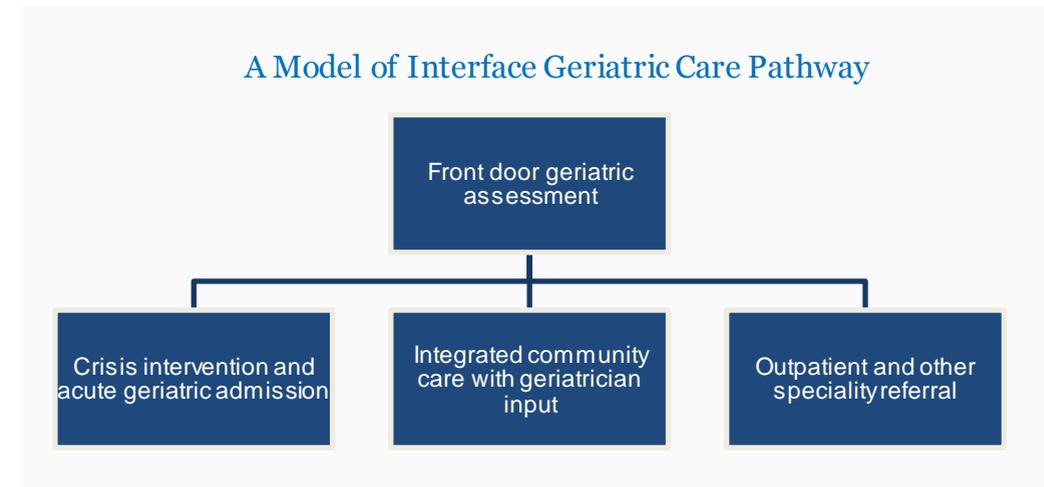
### Elderly Stroke Management & Dizziness Assessment Clinic

- Currently being developed in collaboration with the Department of Otorhinolaryngology and Head & Neck Surgery (ENT)

## Interface Geriatrics

### Working across specialties for the betterment of elderly patients

The ageing population has made managing elderly acute medical admissions a major challenge in many hospitals. The numbers admitted to acute medical beds are growing faster than any other age group over the decade, making effective acute geriatric assessment and care more important than ever before. Apart from the conventional geriatric medical model, the department also provides comprehensive geriatric assessment and care in other domains as shown below.



### Orthogeriatric Interface

Initiated in 2013, the ValuedCare hip fracture programme has enabled and delivered comprehensive care to hip fracture patients, resulting in significantly reduced time for surgery and length of stay in the hospital.

The programme's success reflects effective change management and strong interdisciplinary collaboration, while encouraging efforts to sustain best practices such as:

- Studying the reasons for operative delays
- Augmenting the gains achieved
- Analysing the outcomes e.g. complications, function and quality of life
- Focusing on the next phase of the programme in order to provide effective rehabilitation, and the implementation of secondary falls and fractures prevention measures in the community

## *Surgical Liaison*

Regular comprehensive geriatric assessment is provided to elderly patients who are awaiting surgical care to optimise their pre-surgery medical conditions and manage various possible emergency situations that may arise from surgical procedures.

Continuous educational programmes are also provided to medical, nursing and allied health professionals to create awareness of various medical issues faced by the elderly, as well as facilitate effective discharge planning.

## *Emergency Department Interface*

Comprehensive geriatric assessment is also provided to elderly patients who are present at the emergency department (ED) and subsequently admitted to the Short Stay Unit (SSU).

Various protocols are used to identify possible underlying problems such as fall risk, cognitive impairment and social issues. The clinical pathways are then initiated in the ED for right siting to the appropriate outpatient and community resources to ensure continuation of care.



The ED service aims to:

- Reduce A&E re-attendance in the geriatric population
- Reduce A&E inpatient readmission rate in the geriatric population
- Reduce A&E inpatient admission among the elderly by identifying suitable patients for direct admission to Saint Andrew Community Hospital's (SACH) sub-acute ward

## **Palliative Care**

The CGH Palliative Care Service was established in September 2012 under the auspices of the GRM department. Supported by a multi-disciplinary team of doctors, nurses and social workers, it provides consultation services and a weekly outpatient clinic. The CGH Palliative Care Service receives referrals from various specialties such as general medicine, general surgery, respiratory medicine and cardiology, and also helps with the control of difficult symptoms, complex psychosocial issues and terminal discharge in patients with advanced life limiting conditions. Eighty per cent of the patients referred have advanced cancers, with the remaining twenty per cent suffers from end stage organ failure or severe infections.

The CGH Palliative Care Service works closely with the Saint Andrew's Community Hospital (SACH) palliative care team, which runs the palliative care violet ward in SACH. CGH patients may be referred to the Violet Ward for interim care if they require symptom control, caregiver training or if they are awaiting inpatient hospice. The Violet Ward is also able to provide terminal care should the patient's condition deteriorate.

The CGH Palliative Care Service collaborates with the SACH palliative team to conduct weekly teaching sessions. This partnership is also collaborating to develop a community palliative programme to support patients with end stage non-cancer conditions.

# PRIDE OF GERIATRIC MEDICINE – GERIATRIC DAY HOSPITAL

The Geriatric Day Hospital (GDH) is the only day hospital in Singapore, and is located next to the geriatric outpatient clinics. The GDH programme is a hospital-based outpatient service catering to elderly patients, particularly the frail with complex needs, who can benefit from well-coordinated medical, nursing and functional interventions.

In 2016, GDH saw around:

**2,812**

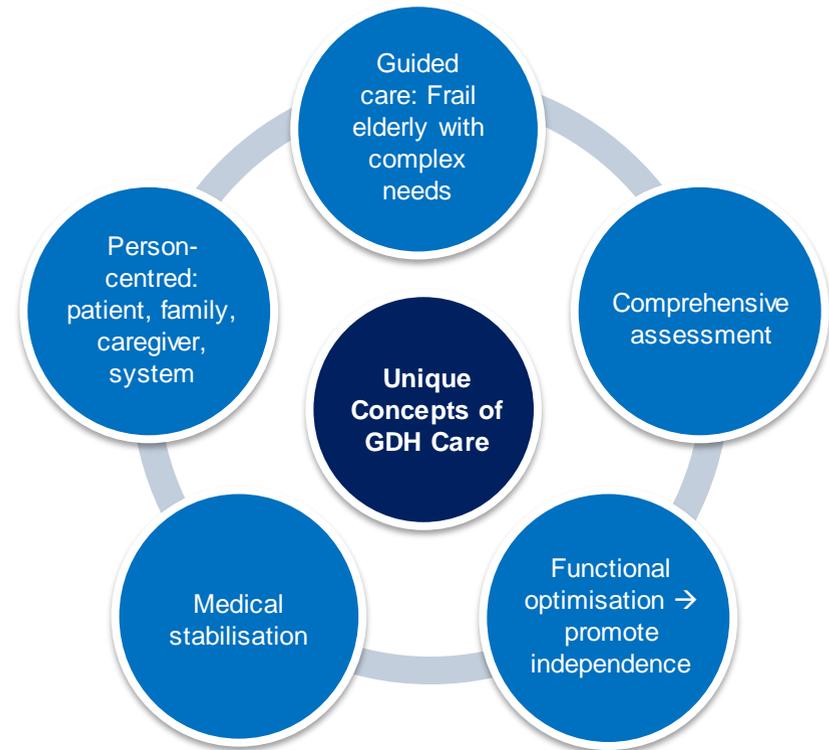
visits

**81%**

of patients successfully referred and enrolled in the programme

Only **13%**

drop-out rate



There are plans for GDH to serve as an ambulatory centre to provide rapid comprehensive assessment and interventions for suitable patients from ED, so that hospital admissions can be avoided. Other developing plans include:



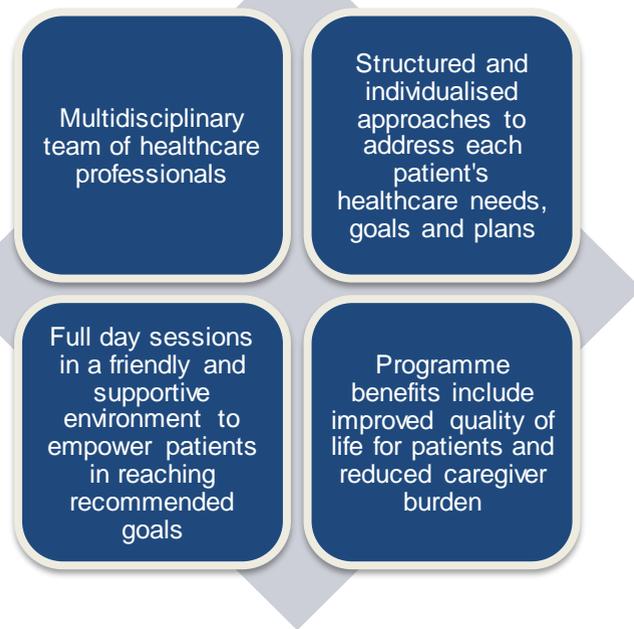
Extending geriatric care outside the hospital through a collaboration with co-located healthcare facilities with geriatric services in Our Tampines Hub. This will provide a continuum of such services to address the full spectrum of care needs for the elderly living within the eastern community.



Providing standardised caregiver training with the Agency of Integrated Care.



Functioning as a research site and working with Nanyang Technological University (NTU) to explore the use of social robotics for healthcare delivery.



A multi-disciplinary team of healthcare professionals comprising geriatricians, nurses and allied health professionals work closely to develop structured and individualised approaches to address each patient's healthcare needs, goals and care plans.

Regular attendance, usually weekly, over an average of three months allows the patients to maximise the benefits of the programme and improve their quality of life and reduce caregiver burden.

# PROVIDING QUALITY-ASSURED GERIATRIC MEDICINE CARE

Since its inception, clinical audits have been carried out in various formats and in various domains of health care including disease management, guideline usage, prescribing medication and vaccination for the elderly, as well as elderly patient safety and wellbeing. The clinical audit and formation of the quality improvement activity group were the foremost QIA tools used with the aim to discover if:

- Current practice meets required standards and published guidelines;
- Knowledge gained from research is effectively applied to clinical practice; and
- Current evidence is being applied in the holistic care of the elderly.

Service development has been conducted with significant findings, and subsequently shared with other departments, including the medical audit committee.

# LEADERSHIP IN EDUCATION & TRAINING

As one of the most prominent GRM departments in the SingHealth cluster, the department is fully committed to teach Geriatric Medicine from the undergraduate to post-graduate level, as well as contribute to nursing and allied health professional education. There is a total of 19 teaching faculties, ranging from Associate Consultant to Senior Consultant level.

## Residency Programmes

### *SingHealth Geriatric Medicine Senior Residency Programme*

This three-year structured training programme comprises a comprehensive mix of general geriatric training and sub-specialty training in acute, sub-acute, community and long-term care institutions. It strives to provide an enriching educational experience with a favourable resident-faculty ratio and a high level of resident supervision.

Besides teaching, the Associate Programme Director and Core Faculty members are actively involved in programme development for the SingHealth Geriatric Medicine Senior Residency Programme.

In 2018, there are plans for the department to assume the SingHealth Geriatric Medicine Program Director

leadership role, expand the Core Faculty numbers, and enhance faculty development, whilst continuing to contribute actively to the National Residency Advisory Committee for Geriatric Medicine

GRM Senior Residents spend 10 out of 24 months of their training in the CGH GRM department



Third year of the programme focuses on developing Residents' sub-specialty interests and external rotations to other clusters' GRM departments

4

CGH Senior Consultants accredited as GRM Senior Residency Exit Examiners

4.3 / 5

Average CGH-GRM faculty feedback score in 2016

8

Senior Residents currently enrolled in the 2017 programme

## Geriatric Rotation Posting

Each month, the department trains an average of three Family Medicine Residents and two Internal Medicine Residents through one to three-months rotation in acute and community geriatrics.

In line with the national agenda for all medical specialists to be competent in managing elderly patients holistically, the department also delivers training to medical sub-specialty Senior Residents.

# 8.11 / 10

Average feedback score from Senior Residents for geriatric rotation posting in Academic Year 2015 - 2016

# 24

Senior Residents underwent acute geriatric posting in 2017

### Most valued training methods cited by Residents

Multi-disciplinary rounds

Geriatric consultations

Teaching during ward rounds

### Most common educational components that Residents found beneficial

Geriatric syndromes

Comprehensive geriatric assessment

Holistic interdisciplinary care

Medication management

## Undergraduate Education

CGH remains one of the few restructured hospitals that provide a consistent and minimum 90% one-to-one student to consultant-level supervisor ratio for the entire duration of the NUS Yong Loo Lin School of Medicine (YLLSoM) Student Internship Program (SIP) for Geriatric Medicine.

Over the years, the department has grown from a non-structured Geriatric Medicine final-year attachment with a single Adjunct Assistant Professor of Medicine to a structured and targeted Student Internship Programme (SIP) with four Adjunct Assistant Professors. The number of final-year students enrolled in the SIP has also grown significantly from 49 students in the academic year 2011/2012 to 65 students in academic year 2016/2017.

Consistent and minimum 90% one-to-one student to consultant-level supervisor ratio for SIP

Structured and targeted small group tutorials led and taught by consultant-level tutors

Flipped classroom teaching, led by students and moderated by tutors, based on actual ward cases

Development of dedicated CGH handbook for SIP students that supplements with the NUS YLLSoM handbook

In the last five years, flipped classroom teaching has been used with the Acute Geriatric Medicine and Grand Round tutorials. This methodology will also be implemented in the Drugs and Clinical Therapeutics tutorial for the academic year 2017-2018.

The department is also involved in the annual Professionalism in Action and Team STEPPS (Team Strategies and Tools to Enhance Performance and Patient Safety) teaching of final-year medical students using 'standardised patients' and 'medical simulation' at the NUS YLLSoM's Centre for Healthcare Simulation.

# 1,515

Total teaching hours by 16 tutors

# 98.25

Average hours taught per tutor

# 4.4 / 5

Average teaching score in Academic Year 2016/2017

# 3.8 / 4

Average posting score in Academic Year 2016/2017

## Intermediate and Long-Term Care Staff Registrar Scheme

The Staff Registrar Scheme (SRS) is a two-year programme that trains doctors without registrable medical degrees to function at the registrar level. Started in 2012, the programme involves bedside teaching and individual tutorials delivered by the faculty. SRS candidates are required to pass the Post-graduate Diploma in Geriatric Medicine at the end of their first year and an exit examination at the end of the second year. Five doctors have since graduated from this scheme.

## Advanced Practice Nurse Education

In order to graduate as an Advanced Practice Nurse (APN), trainees have to undergo a two-year Master's degree course in nursing, followed by a year-long clinical posting, before sitting for the exit examination. Since 2012, the department has been involved in the clinical aspect of the APN training programme, which includes curriculum planning, direct teaching, ward supervision and preparation for exit examination. From 2014 to 2016, four geriatric APNs have successfully completed their training and passed their exit examinations.

Recognising the importance of holistic management of patients, other non-geriatric APN trainees have also been rotated to the department for their clinical training. Multiple non-geriatric APNs have elected to monthly rotations, including three in 2017.

## Nursing Education

The faculty delivers weekly bedside teaching for surgical ward nurses to address the management of restless or agitated elderly without restraint. Teaching sessions on delirium and dementia assessment have also been conducted for nurses in ambulatory services.

Working closely with geriatric APNs, our faculty also conducted two lecture series for the hospital's surgical ward nurses on topics including delirium, post-op delirium, dementia and the management of behavioural symptoms in dementia.

## AWARDS & RECOGNITION

Organised by the SingHealth Duke-NUS Academic Medical Centre since 2011, the Singapore Health Quality Service Award (SHQSA) is Singapore's first dedicated platform to honour healthcare professionals who have delivered quality care and excellent service to patients.

Dr Chew Teong Huang Samuel  
Dr Rosario Barbara Helen  
Dr Varman Surendra Doraiswamy

**SHQSA 2018**  
**Gold Award**

Dr Lim Si Ching  
Dr Wilkinson Stephen Paul  
Dr Low Shoulin  
Dr Yoon Peng Soon  
Dr Ooi Chun How  
Dr Chohan Shakil Ahmed  
Dr Nagasayi Subramaniam

**SHQSA 2018**  
**Silver Award**

# RESEARCH & INNOVATION

The rising demand for healthcare services presents opportunities to explore robotics in non-industrial applications, such as in hospitals and nursing homes. Singapore's population with its diverse ethnicities, languages, habits, preferences and technology-savvy levels, provides a highly variable and subjective environment, to explore the deployment of a social robot.



The department is exploring the deployment of 'Pepper', a social humanoid robot as an assistant to healthcare staff. Pepper will be programmed to serve at the GDH, with responsibilities such as interacting with patients and assisting healthcare staff in conducting certain activities.



Feedback from both staff and patients will be gathered, to evaluate its effectiveness and user acceptance. This study will provide a better understanding of the issues accompanying the use of social robotic technology in healthcare settings. Valuable information can also be gathered in view of future deployment of such social robots on a larger scale, involving other patient groups and even extending the usage in homecare settings.

# COMMUNITY OUTREACH

## From Idea to Community Benefits

This is a Ministry of Health (MOH) framework, where geriatricians visit CGH-affiliated nursing homes and community hospitals on a regular basis to review patients' medical conditions and optimise their care. Patients benefit from the convenience of not having to visit the hospital to receive specialised healthcare, thus doing away with ambulance transfers, long waiting times and unnecessary hospital admissions.

As the pioneer in Community Geriatric Medicine, CGH has a strong foundation in collaborating with community partners, services and facilities such as Our Tampines Hub. Our past collaborations have also led to the formation of the Nutritional Health for Elderly Reference Centre with Abbott, and the successful development of textured modified meals with CGH Dietetic and Food Services and other community partners.

## EAGLEcare Programme

Set up in January 2016, the EAGLEcare Programme partners nursing homes in the east to empower them to deliver quality geriatric care for all residents.

CGH currently has partnerships with the following five nursing homes in the east, and is also continuously developing resources to support the needs of the homes and their residents.

CGH collaborates with our nursing home partners to:

- empower their staff in facilitating Advance Care Planning (ACP) discussions;
- develop capability in geriatric and end-of-life (EOL) care; and
- support EOL care preferences for nursing home residents.

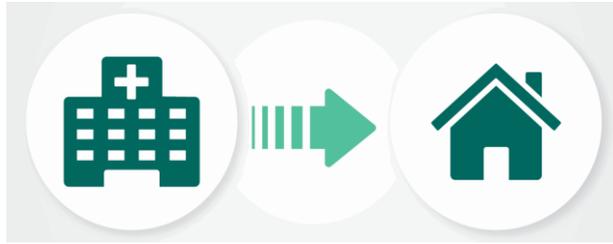
- The Salvation Army Peacehaven Nursing Home
- Moral Home for the Aged Sick
- Lions Home for the Elders (Bedok)
- All Saints Home (Tampines)
- NTUC Health Chai Chee Nursing Home

Preliminary data shows that a framework for identifying, training and supporting ACP, geriatric and EOL care is effective in reducing hospital admissions. Besides displaying new knowledge and skills, staff have also demonstrated an increase in confidence in facilitating ACP discussions.

Led by CGH Community Geriatrics, our collaboration with our first nursing home partner, The Salvation Army Peacehaven Nursing Home, led to many new initiatives, including care paths, learning needs assessment and training programmes.

## Hospital- to-Home (H2H) Programme

The Transitional Care Service was started by the department in 2011 as part of the Eastern Health Alliance's (EHA) disease management unit initially helmed by a geriatrician, a family physician and four Transitional Care nurses.



It has since evolved into the national Hospital-to-Home (H2H) programme (through the merger of the Transitional care service, the ACTION team and the 'Neighbours for Active Living' programme) and remains actively supported by the department, especially for the majority of at-risk elderly patients.

## Integrated Geriatric Services at Our Tampines Hub

Integrated Geriatric services at Our Tampines Hub is a newly integrated holistic care model that aims to enable seniors to age gracefully, stay healthy in the community and receive timely and appropriate care and help when necessary.



The model adopts a more upstream approach rather than treating seniors only when they are in the hospital.

It taps on the potential synergies of three service facilities: the Senior Care Centre, the Tampines Family Medical Centre (TFMC), and the Community Health Centre, which are co-located close to one another so that comprehensive, seamless care can be provided with better allocation and sharing of limited resources.

The objectives of this new model of care are:



To enhance and equip primary care providers with capabilities and supporting services to address and manage geriatric and chronic conditions within the community



To integrate health and social services to serve those with complex care needs, through partnerships with community and tertiary providers across various care settings



To adopt a pre-emptive and proactive approach in a care model and delivery and to make it more readily accessible within the ageing community in Tampines

The department is working with various stakeholders on the development of the care model and pathway.



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