

Project Title

Framework for Inpatient care of the Frail Elderly (FIFE)

Organisation(s) Involved

Tan Tock Seng Hospital

Project Period

Start date: 08-2014

Additional Information

- Inpatient Frail Elderly Care Team was awarded the Gold Award for the 2018 NHG Team Recognition Awards
- NutriCaRe for FIFE was awarded the Silver Award for the 2018 NHG Team Recognition Awards
- Project on “Data-Driven Approach to Predict Inpatient’s Estimated Discharge Date” was awarded the Best Presentation Award for the ICH2018: 20th International Conference on Healthcare

Project Category

Care Redesign, Process Improvement, Quality Improvement

Keywords

Care Redesign, Process Improvement, Quality Improvement, Patient-Centred Care, Framework for Inpatient care of the Frail Elderly, Multidisciplinary Collaboration, Geriatric Syndromes, Loss of Function and Independence, Patient Care Outcomes, Patient Satisfaction, Early identification of Risk, Comprehensive Geriatric Assessment, Timely Discharge, Discharge Planning, Seamless Care Transition, Appropriate Care Goals, Rehabilitation for the Elders Team, Geriatric Resource Nurses, Integrated Process, Inter-professional Collaboration, Optimal Nutritional Care , Evaluation Framework, Continuous Education & Training, Tan Tock Seng Hospital, Geriatric Medicine.

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Asian Hospital Management Awards

*Required Fields

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Clinical Service

(This category is for the medical or clinical side of "customer service". Programs of patient centered care belong here as do those that demonstrate physician involvement and leadership.)

This award recognises programs of patient-centred care with a focus on clinical practice improvement with little or no capital outlay. The project could have been completed in any of the specialised areas of hospital management e.g. nursing, laboratory, radiology or in specialty clinics such as eye centre, renal centre etc. More weight is given to projects where clinical outcomes are measured and how well are these measurements used – or how involved where the physicians in the project.

Complete All Information Below:

Project Title (Maximum 256 Characters): Framework for Inpatient care of the Frail Elderly (FIFE)

Date Project Started (Maximum 128 Characters) (i.e. May 24, 2015): 1 August 2014

Department Name (Maximum 256 Characters): Geriatric Medicine, Nursing, Operations, Pharmacy, Speech Therapy, Nutrition & Dietetics, Physiotherapy, Care & Counselling, Management Information Department, Case Management Unit, Transitional Care, Community Referral Team, HSOR

Names of Key Staff Involved in this Project (Maximum 512 Characters) (Separate names with comma):

A/Prof Tan Thai Lian, Dr Margaret Soon, Dr Chew Aik Phon, Dr Abengana Jennifer Ang, Ms Jasmine Kang, Ms Tan Hongyun, Ms Anna Soh, Ms How Ai Xin, Ms Wang Xia Xia, Ms Crystal Sim, Dr Lim Yen Peng, Ms Laura Ho, Ms Aylana Dharmawan, Mr Heng Yong Sheng, Ms Lily Goh, Ms Tan Keng Teng, Ms Melissa Chew, Ms Agnes Teo, Ms Zenne Tng, Ms Eunice Lim, Ms Hayley Chau, Ms Yeoh Yin Cheng, Ms Lynn Wu, Ms Shermaine How, Dr Joseph Antonio De Castro Molina, Ms Michelle Jessica Pereira, Ms Palvinder Kaur, Mr Marchze Chng

1. Provide some background as to how the project originated e.g. what problem/opportunity were you faced with. (Maximum number of words – 350)

Singapore is seeing a rapidly ageing population and hospitalization is a major risk for older persons. These older adults with acute medical illness, when hospitalized, are particularly vulnerable to adverse events such as delirium, pressure ulcers, falls, functional decline and hospital-acquired infections. Geriatric syndromes potentially contribute to complications during their inpatient stay. Moreover, elderly inpatients are more likely to suffer from loss of function and independence, leading to caregiver burden, institutionalization and increased healthcare cost from readmissions.

Recognising the heterogeneity in elderly needs and constraints presented by the specialty and acute care system of the hospital, TTSH established the Framework for Inpatient care of the Frail Elderly (FIFE) in 2014 to address the gaps in caring for elderly inpatients and enable the acute tertiary hospital to be senior-friendly with excellent patient-centred geriatric care that promotes independence, participation, self-fulfilment, dignity and quality of care through the delivery of systematic geriatric care across the entire institution.

FIFE was incepted following earlier hospital efforts in 2011-2013 on the Frail Elderly Carepath for the Integrated Cluster, with work done primarily with General Medicine and Geriatric Medicine departments as a pilot model to look at implementation issues.

In 2014, the FIFE Steering committee, comprising clinicians, nurses, allied health, operations, management informatics and Health Services & Outcomes Research (HSOR) team, was formally set up to spearhead efforts in developing innovative care interventions for better quality of elder care (improved patient care outcomes) and patient satisfaction (cost-neutrality while providing value to patient care). In May 2016, with a Health Service Development Programme (HSDP) funding grant from Ministry of Health (MOH), the programme was able to cover the costs of programme coordination, education, research and nursing staff training.

2. Describe what was required to address the aforementioned problem/opportunity. Outline what your targets/goals were and whether any approach was outlined to correlate this program with better clinical service from the patient's perspective. Also, provide an overview of the team that was put together to undertake this and how involved the physicians were in the project. (Maximum number of words – 250)

The main objectives of the FIFE team include:

- 1) Early identification of elderly patients at risk and in need of a Comprehensive Geriatric Assessment (CGA) so that interventions can be administered timely concurrent with the management of acute issues;
- 2) Prevention and reduction of complications by the universal implementation of principles of care;
- 3) Facilitation of timely discharge and appropriate care transition with tight coordination of inpatient and outpatient care services;
- 4) Assisting in the setting of appropriate goals of care with patients/caregivers.

FIFE adopts a dual-pronged approach where the Geriatric Comprehensive Assessment and Rehabilitation for the Elders (GeriCARE) team and Geriatric Resource Nurses (GRNs)/Ward Resource

Nurses (WRNs) work closely to implement an integrated process to develop comprehensive services for the delivery of systematic geriatric care to frail elderly inpatients. Please see *Appendix 1* for a description on the roles of the GRNs/WRNs and GeriCARE team.

The geriatricians, geriatric nurses and allied health professionals are also instrumental in shaping and enhancing the knowledge of the GRNs/WRNs through educational trainings, multidisciplinary case discussions and journal clubs. Moreover, the geriatricians are highly involved in providing consultation and clinical advices to the nurses and primary specialists on geriatric care management.

With close inter-professional collaboration working in synergy to support the above key processes, the needs of the frail elderly patients could be better met and addressed timely. This aids to prevent and reduce the risk of complications from hospitalization and facilitate timely discharge and appropriate care transition integrating back to the community.

3. Outline the steps or stages of the project and how these were executed by the team.
(Maximum number of words – 200)

FIFE workgroup was formed to lead and support the multi-disciplinary care teams in developing innovative care initiatives for the delivery of better, safer and more systematic care management for the frail elderly. The workgroup comprises three subcommittees with FIFE Steering Committee as the overarching committee:

- 1) FIFE Discharge Planning Subcommittee
 - a. Promote timely discharge as a key priority
 - b. Improve discharge and care transition processes through deployment of resource nurses to facilitate communication of care plans within the care team and coordination of services
- 2) FIFE Nutritional Subcommittee
 - a. Promote nutrition as a key priority
 - b. Develop an optimal nutritional care culture for patients through an interdisciplinary approach with development of protocols and initiatives for the prevention and management of malnutrition
- 3) FIFE Evaluation Subcommittee
 - a. Develop an evaluation framework to establish the effectiveness of FIFE in its process deliveries, improving patient outcomes and its impact on TTSH's overall geriatric care culture
 - b. Identify areas of strength and areas of improvement through an evidence-based approach

With the dual-pronged approach of FIFE, enhanced by a culture of continuous education and training provided by the multi-disciplinary care teams, improved quality of geriatric care and better patient outcomes could be achieved.

4. Demonstrate the results of the project and how this was beneficial for the patients. How did you measure this? Present quantifiable information such as before and after measurements and percentage improvement. (Maximum number of words – 200)

An independent team of evaluators was engaged to study the effectiveness of FIFE. The evaluation utilized a cluster randomized design, in which outcomes were compared between wards randomly assigned as FIFE or Control. Data collection involved direct observation and extraction of administrative data. Preliminary evaluation results, from August 2016 to April 2017, demonstrated that patients who were cared and exposed to FIFE's geriatric care interventions achieved better patient outcomes in seven measures (see *Appendix 2*) than Control. There was no significant difference in inpatient fall rates, timeliness of referral to speech therapist, 7-day and 30-day readmission rates. The evaluation study is expected to be completed on attainment of the target sample size in March 2019.

The GeriCARE team conducted a study titled "The impact of a mobile geriatric assessment team service (GeriCARE) in improving clinical care outcome among older adults". In the analysis of the impact of the GeriCARE-GRN services on the functional status of the admitted elderly from June 2015 to June 2016, patients who received comprehensive geriatric assessment and interventions reported statistically significant functional improvement on discharge compared to those who did not (see *Appendix 3*).

5. Please give any other information, including third party testimonial regarding your project which you think would help convince the judges that this project (or program) should win this category. (Maximum number of words – 300)

Awards

The list of awards awarded to FIFE team is as follows:

- 1) *Inpatient Frail Elderly Care Team* was awarded the Gold Award for the 2018 NHG Team Recognition Awards
- 2) *NutriCaRe for FIFE* was awarded the Silver Award for the 2018 NHG Team Recognition Awards
- 3) Project on "*Data-Driven Approach to Predict Inpatient's Estimated Discharge Date*" was awarded the Best Presentation Award for the ICH2018: 20th International Conference on Healthcare

Presentation and Sharing

In October 2017, the team presented at the Singapore Health and Biomedical Congress 2017, the topics that were covered include the following:

- Overview and summary of FIFE, by A/Prof Tan Thai Lian
- A Nurse Improving Care for Healthsystem Elderly (NICHE) in TTSH, by Dr Margaret Soon
- GeriCARE, by Ms Jasmine Kang
- Malnutrition in the hospitalized older adults – A system approach to improve care, by Dr Lim Yen Peng
- Safe discharge for the at risk elderly, by Dr Abengana Jennifer Ang
- The impact of FIFE, by Dr Joseph Molina

Appendix 1.

Roles of GRNs/WRNs and GeriCARE team:

GRNs/WRNs who are empowered and well equipped with geriatric nursing care principles and skill sets based on the best practices of the Nurse Improving Care for hospital Elders (NICHE) care model, focuses on conducting geriatric screening and risk stratification of patients, implementing improvement in geriatric care assessments and interventions at the ward level and promoting interdisciplinary inpatient care and discharge coordination for the elderly patients. In addition, the team nurses also ensure coordinated and individualized care is being rendered to patients by collaborating with a multidisciplinary team of doctors, physiotherapists, occupational therapists, speech therapists, dieticians, pharmacists, Transitional Care Specialist and medical social workers.

GeriCARE, a mobile geriatric assessment team, comprise of geriatricians, geriatric Advanced Practice Nurses (APN) and an administrative coordinator. The team focuses on conducting Comprehensive Geriatric Assessment (CGA) for the frail elderly inpatients identified by the GRNs/WRNs, formulating appropriate personalized geriatric care plans and recommendations for early diagnosis of new geriatric syndromes to patients and their primary inpatient specialists and providing support to GRNs/WRNs in their ward-level efforts in geriatric care delivery.

Appendix 2.

Table 1: Indicators that demonstrated positive patient outcomes

Indicators	Intervention	Control	Impact	Result
Proportion of elderly patients on restraints	2.13%	2.77%	23.1% reduction	RR 0.77 (95% CI 0.61, 0.96)
Proportion of elderly patients who developed pressure ulcer in inpatient stay	0.20%	0.31%	35.5% reduction	RR 0.64 (95% CI 0.41, 1.00)
Timeliness of referral to therapists	PT: 1.84 days OT: 1.86 days	PT: 2.10 days OT: 2.33 days	PT: 12.4% reduction OT: 20.2% reduction	PT: Difference 0.26 (95% CI -0.48, -0.03) OT: Difference 0.47 (95% CI -0.73, -0.21)
Average number of geriatric syndromes identified	0.10	0.02	400% improvement	Difference 0.08 (95% CI 0.05, 0.10)
Proportion of patients who received at least 1 post-discharge service	9.0%	6.2%	45.2% improvement	OR 1.50 (95% CI 1.11, 2.04)
Proportion of patients screened for malnutrition	100%	99.4%	0.6% improvement	P-value 0.02 (95% CI 0.05, 0.10)
Proportion of patients referred to a dietitian	71.9%	63.0%	14.1% improvement	OR 1.22 (95% CI 1.01, 1.47)

(Legend: RR = Relative Risk; OR = Odds Ratio; P-value = Probability; CI = Confidence Interval)

Appendix 3.

Table 2: Functional improvement in patient outcome

	Intervention: GeriCARE-GRN (n=56)	Control 1: GRN only (n=47)	Control 2: no GeriCARE and GRN (n=48)	Result
Functional improvement on discharge (Modified Barthel Index-MBI)	14.50 (18.39)	8.50 (11.95)	8.00 (12.15)	P-value 0.034

Appendix 4.

Testimonials

The empowerment of the frontline nurses with the support of the FIFE multi-disciplinary team members is essential in achieving our goals in making TTSH a senior friendly hospital with excellent patient-centered geriatric care that promotes independence, participation, self fulfillment, dignity and quality of care.

A living testimonial of a patient's family member shared with us "my mother was admitted to the hospital for pneumonia and confusion, we already noted that she was being very forgetful for the past few years but we thought it was part of aging. In the hospital, she was treated for her pneumonia and investigated for her confusion and was diagnosed to have dementia. We now understand her behaviour better and know what to do for and care for her better as shown by the healthcare team. We appreciate the sensitive elderly care that was given to my mum during her hospital stay."

Many feedback were also received from our patients' family, volunteers and nurses on the HELP Program, one of our GRN-led initiatives;

Patient's family feedback:

"These activities are beneficial to stimulate my mother's mind, I will get similar game set for home use."

"This is the first time I see hospital have such activities."

Volunteers' feedback:

"I have a better understanding and experience to communicate with elderly patients."

"Today I learnt that I can do more than just chatting with the patients."

Nurses' feedback:

"It's worth the effort as patients and family members show appreciation to what we do."

"A sense of achievement to see patient being well engaged."

FIFE is also well received by the other discipline of doctors as they feel that we can do more in prevention rather than episodic and reactive approach. They have also in tune by influence to provide better geriatric sensitive care for their patients.

Since FIFE care started, it does not limit to providing geriatric sensitized care in the acute hospital but it also involves safe and cost effective transition and right siting of care of elderly patients into the community. Involving patient and family to play an important role are critical to continue the same type of preventive care at home through care giver training and community support planned for patient before discharge.

All these examples reflect a spread of geriatric culture of prevention to the community which is part of our TTSH's mission.

FIFE Issue of CEO Tribune

The article on "Supporting Our Seniors: Our Framework for Inpatient care of the Frail Elderly" was featured and published in CEO Tribune in Sep 2017;



Dear Colleagues and Friends,

Walking around our inpatient wards, I can't help but notice that 1 in 2 of our patients are elderly above the age of 65 years. So I checked the statistics and it was no surprise that 53% of our inpatients are above the age of 65 years. The national average of inpatients above 65 years of age is 29% in Singapore. Our numbers are significantly higher as the population we serve in Central Singapore is older than the other parts of the country.

Interestingly, hospital care in Singapore has not changed very much to cope with an older inpatient population. Wards are built to deliver "acute and fast medicine" and to ensure operational efficiency. Yet our admissions have shown increasing mental and physical deficits in our ageing mix of inpatients. It was only in recent years that our hospital facilities were upgraded to make it more age-friendly and safer for our elderly inpatients. Our hospital thus embarked on a journey to better design the inpatient care of our frail elderly...

As the population ages, a group that is most vulnerable is the frail elderly. There are times when a frail older person requires care in hospital and that is exactly the right place for them to be. The journey of integrating these inpatients back into their homes starts upon admission, not discharge.

Because of their advanced age and a number of existing medical conditions, the frail elderly have reduced strength and their bodies don't work as well, increasing their susceptibility to increased dependency and vulnerability. An elderly patient may be admitted for a specific problem like a surgical procedure, but their frail condition has to be managed alongside the immediate one, to keep them from declining as much as possible.

A few years ago, a team stepped up to address this need for a sustainable model of geriatric care. The multi-disciplinary Framework for Inpatient Care of the Frail Elderly, or FIFE, was set up in 2014 with the vision of making TTSH a patient-centred, senior-friendly hospital that promotes independence, participation, self-fulfillment, dignity, and quality of care. It has four main objectives:

- Early identification of patients at risk and in need of a comprehensive geriatric assessment
- Prevention or reduction of complications such as hospital-acquired infections or bed sores
- Timely discharge and coordinated care transition
- Setting of appropriate goals of care with patients and/or caregivers



The Framework's main goal is to create a geriatric resource network of healthcare professionals that reduces reliance on geriatricians and allows our Nursing and Allied Health colleagues to further enhance their skills and knowledge in managing the frail.

Chairperson of the FIFE Steering Committee A/Prof Tan Thai Lian elaborates: "We have tended to make unhelpful distinctions between compassionate, personal care and the more technical, medical model. In reality, if we assess frail older people well from the onset and treat underlying causes of deterioration, there is great potential to make them less dependent, less immobile, less fearful and less confused – and, in turn, better placed to receive the continuum of care outside an acute hospital like ours."

I highlight a few of the Framework's strategic initiatives.

SUPPORTING BETTER CARE IN THE WARDS

I've written before about our Geriatric Resource Nurses (GRNs) and Ward Resource Nurses (WRNs). Trained based on the NICHE (Nurses Improving Care for Hospital Elders) model by New York University, GRNs are skilled in meeting the unique care needs of the elderly, including management of dementia and delirium. Often, this type of care is less about medical knowledge, and more about understanding the person we're caring for; our GRNs think out of the box to care for our elderly patients.



“ I had a patient with dementia who had been refusing to eat. To boost her nutrition intake, the dietitian suggested that we add oral nutrition supplements to her diet, which she also didn't want. We suggested to the doctor to switch her to a diet of choice, so that her food choices would be wider and hopefully encourage her to eat more. When we offered her ice cream, she liked it very much, so I froze the oral nutrition supplement drink into ice cubes for her to eat like a dessert – she enjoyed it much more after that.”

Senior Staff Nurse Ong Poh Poh, Geriatric Resource Nurse



Designated “NICHE wards” have also engaged volunteers for HELP: the Hospital Elder Life Programme involves training volunteers in interacting with our patients in order to keep patients engaged and active. Activity boxes filled with resources like puzzles and visual aids allow patients to practise fine motor control and keep their minds active. The programme has recently collaborated with the Girl Guides of Singapore to encourage secondary school students to volunteer.



Advanced practice nurse Tan Hongyun (in blue uniform) guiding nurses (from left) Ibnu Firdaus Nooraman, How Ai Xin, 29, Jodelyn Garbo Losbanes, 30, and Liu Yunxia on how to better care for the elderly. Mr Ibnu is wearing an adult diaper while Ms Losbanes and Ms Liu are wearing glasses that simulate glaucoma. ST PHOTO: KUA CHEE SIONG

The Straits Times | 7 March 2015

Nurses in diapers? It could help the elderly.

Simulations at course give an idea
of what patients have to live with



WRNs handle discharge planning, and conduct falls or dementia counselling for patients and families. Patients used to be referred to specialist nurses for this counselling, but training WRNs to handle this task saves patients time as the WRNs are stationed in each ward.

Care for the frail doesn't have to be limited to our GRNs. In some wards, nurses have been actively promoting function in the elderly, assisting patients with sitting out of bed and ensuring regular bathroom breaks to encourage independence especially after discharge. Patients are also referred to Physiotherapists and Occupational Therapists early in order to address any physical or mobility issues they may have.

To reduce falls risk in frail patients with cognitive impairment while minimising the loss of their function, the SAFE (Safety in the Acutely confused and high Fall risk Elderly) initiative sets aside ward cubicles for these patients, allowing closer observation and greater interventions such as regular sleep and bathroom schedules. If a patient with dementia or delirium begins to exhibit signs of behavioral issues, ward staff can hail a GRN for a consultation. Fifty GRNs have been trained to provide behaviour consultations for these difficult-to-manage patients, and potentially identify escalating issues.

Supporting the GRNs is the GeriCARE team, which comprises geriatricians and Advance Practice Nurses. This mobile team is activated whenever ward-based GRNs refer patients to them for geriatric syndromes: falls, cognitive impairment, or behavioral issues related to dementia or delirium or other serious condition associated with frailty. After a holistic assessment by the APNs and team doctor, the team follows through with the patient until discharge.

“Mr C was admitted to a non-geriatric discipline and the GRN referred him to GeriCARE team for fall and cognition evaluation. His family was requesting a nursing home placement because of carer stress as they did not understand his difficult behaviour. A Comprehensive Geriatric Assessment was conducted to evaluate his cognition and recurrent falls, which revealed and led to a diagnosis of Alzheimer’s dementia. Mr C was also on a high dose of sedative medications which was reviewed and reduced. The GeriCARE team advised, educated and supported Mr C’s family about risk factors for falls as well as strategies to manage his challenging behaviour. Together with the GRN in the ward, we managed to discharge this patient back home with dementia day-care instead of sending him to a nursing home.”

APN Tan Hongyun



from left: APN Tan Hongyun, A/Prof Tan Thai Lian, GeriCARE Coordinator Anna Soh, APN Jasmine Kang, Dr Jennifer Abengana, Dr Chew Aik Phon

SUPPORTING NUTRITIONAL NEEDS

One of the physical functions that the frail often see deteriorating is that of swallowing. Weaker throat muscles result in difficulties eating, which leads to potential malnutrition. The FIFE Nutrition Subcommittee has been looking into helping patients get the nutrition they need through a number of ways.

In 2016, our nurses and Allied Health colleagues were empowered to do more for patients' nutritional needs. CCOE ordering rights mean that nurses can order dietitian referrals and reviews, Speech Therapists can order supervised feeding, and dietitians are able to order diet, enteral, and oral nutrition supplements. This means that patients' nutritional needs are met in a more timely and holistic fashion by care teams.

To better identify the patients who require additional nutritional support, our colleagues in the Nutrition & Dietetics department and F&B Services implemented tray tagging – this reminds ward staff to pay closer attention to the patient's needs or provide more encouragement for the patient to finish their meal. There is also an ongoing project to launch a new menu, as well as enhancements to the Electronic Meal Ordering System with features to prevent inaccurate meal ordering.



SUPPORTING A SMOOTH DISCHARGE

To ensure Better Care within a Better Community, the FIFE team has also been constantly updating our discharge processes for smoother transition back home and into the community. Some of these improvements include better discharge coordination among different members of the care team, functional assessment as part of discharge planning, and consideration towards follow-up in the outpatient or community setting.



Newly-designed discharge folders organise patients' documents into neat categories, making it easier for them to refer to. The folder also encourages them to put all their medical information from different institutions in a single place, so that healthcare providers outside of TTSH are able to have a better understanding of the patient's conditions.

SUPPORTING THE FUTURE OF FIFE

As with all initiatives, the FIFE team constantly evaluates the Framework to ensure that it's working well for our patients. In the 13 months from August 2016 till August 2017, 4,512 patients were studied to determine the effectiveness of the Framework. An international survey – the Geriatric Institutional Assessment Profile – also helps to assess TTSH for its geriatric care environment.

GRN training also continues, with an eventual aim of having all TTSH nurses trained and certified as GRNs. The GeriCARE team is also working towards covering all TTSH wards, so that at-risk patients are able to get the holistic care they need more quickly.

Historically, acute care has tended to focus on single conditions, whereas the frail have a number of conditions and want to be treated as an individual who needs coordinated, person-centred care, rather than as a collection of diseases. Too often, existing acute strategies haven't evolved to address common conditions and challenges associated with frailty as these patients require a different level and type of support. We need to make inpatient care a less "hostile environment" for our frail elderly.

As our population ages and our patients' needs evolve, our Care needs to stay ahead and anticipate these changes. Congratulations to our FIFE team! They are a testimony of our collective efforts towards Better People Better Care Better Community!

Yours sincerely,
Dr Eugene Fidelis Soh
CEO, TTSH