

Project Title

Enhanced Recovery After Surgery for Total Knee Arthroplasty Patients

Project Lead and Members

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Project Members: Ms Lee Yoke Fun, Mr Jeremie Ng, Ms Eleanor Chew Shu Xian, A/Prof Pang Hee Nee, Prof Yeo Seng Jin, A/Prof Jerry Chen, Ms Anita D/o Sugumaran, Ms Rajashulakshana D/o Rajaram, Ms Liu Weihua, Dr Rachel Marie Towle

Organisation(s) Involved

Singapore General Hospital

Healthcare Family Group Involved in this Project

Allied Health, Ancillary Care, Healthcare Administration, Medical, Nursing

Applicable Specialty or Discipline

Physiotherapy, Surgery, Orthopaedics, Healthcare Administrators

Project Period

Start date: Aug 2019

Completed date: Mar 2023

Aims

The solution was co-created with patients and various healthcare professionals and a new model of care produced. This was a financially viable bundled package for patients undergoing knee arthroplasty and included.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

See poster appended/ below

Conclusion

See poster appended/ below

Additional Information

NHIP 2023 – Best Practice Medal (Care Redesign)

Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign, Clinical Practice Improvement, Value Based Care, Patient Satisfaction, Access to Care, Bed Occupancy Rate, Turnaround Time, Productivity, Cost Saving

Workforce Transformation

Job Redesign, Multi-disciplinary

Keywords

Teleconsultation, Model of Care, Ambulation, Knee Arthroplasties, Home Recovery

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Enhanced Recovery After Surgery for Patients undergoing Knee Arthroplasty

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Problem & Background

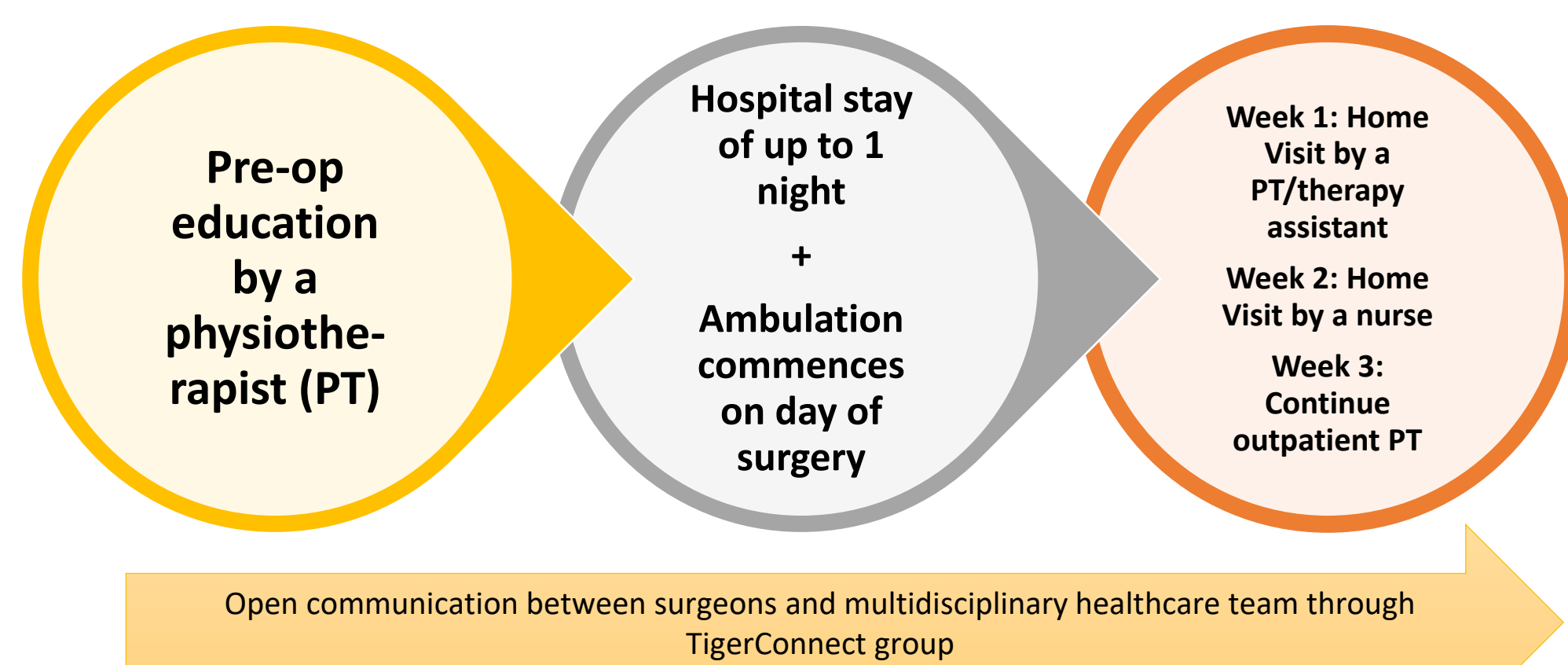
Internationally in Denmark, Europe and America, patients were able to do knee arthroplasty surgery as an outpatient day surgery. Yet in Singapore, this was unheard of and patients were staying up to 4-5 days in hospital.

The team was trained with the ESTHER philosophy and methodology to seek to answer the question, "What is best for Esther?" by putting the individual at the heart of all its work. Esther here refers to patients. ESTHER cafes were conducted with patients who underwent total knee arthroplasty (TKA) to understand patient's preferences and perspectives to develop a patient-centred rehabilitation pathway for patients after knee arthroplasty.

ESTHERS share on hospital stay:	Prefers to walk around more and not spend so much time in bed	Wants more physiotherapy sessions in the hospital to build confidence in exercises and walking	
	More engaging information before surgery could have been given to ensure compliance with exercises and able to go home early		
ESTHERS prefer early discharge due to:	Not helpful being in a room full of equally or even more sick patients for too long	Have to depend on others for care and assistance to move around	Night sleep is disturbed by other patients coughing and calling nurses
	I'm not sure if I can walk fast enough to get into the lift	I am not sure what walking aid to use	
	I have to wait for my children to bring me out	I'm not sure if I am doing the exercises correctly	
ESTHERS share on challenges at home:	I have pain but I worry that pain medication is bad for my health	I'm unsure how to sleep. May I lie sideways?	

Solution

The solution was co-created with patients and various healthcare professionals and a new model of care produced. This was a financially viable bundled package for patients undergoing knee arthroplasty and included:

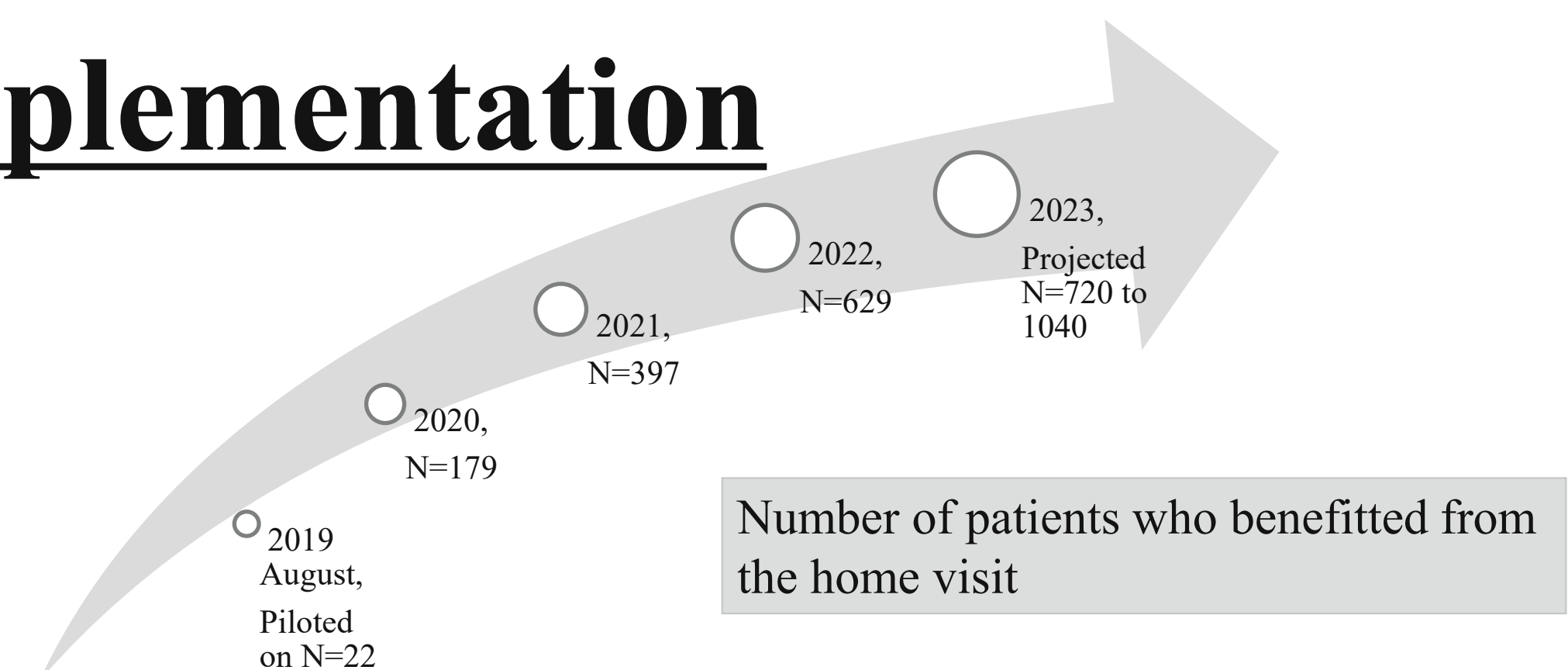


A group chat was set up to facilitate communication within the multi-disciplinary healthcare team including members from admissions office, finance, nursing, therapists and the surgeons themselves. This allowed direct communication between the healthcare personnel conducting the home visits and the surgeons where a photo of the wound as well as a brief update of the patients will be conveyed to the surgeon, including patient's pain levels, mobility and any specific queries/issues that the patient might be facing.

The surgeons and nurse clinicians follow up on non-physiotherapy related queries and the community nurse visit may be brought forward if required. Patients are therefore supported in the immediate acute and sub-acute phase of their recovery post-surgery.



Implementation



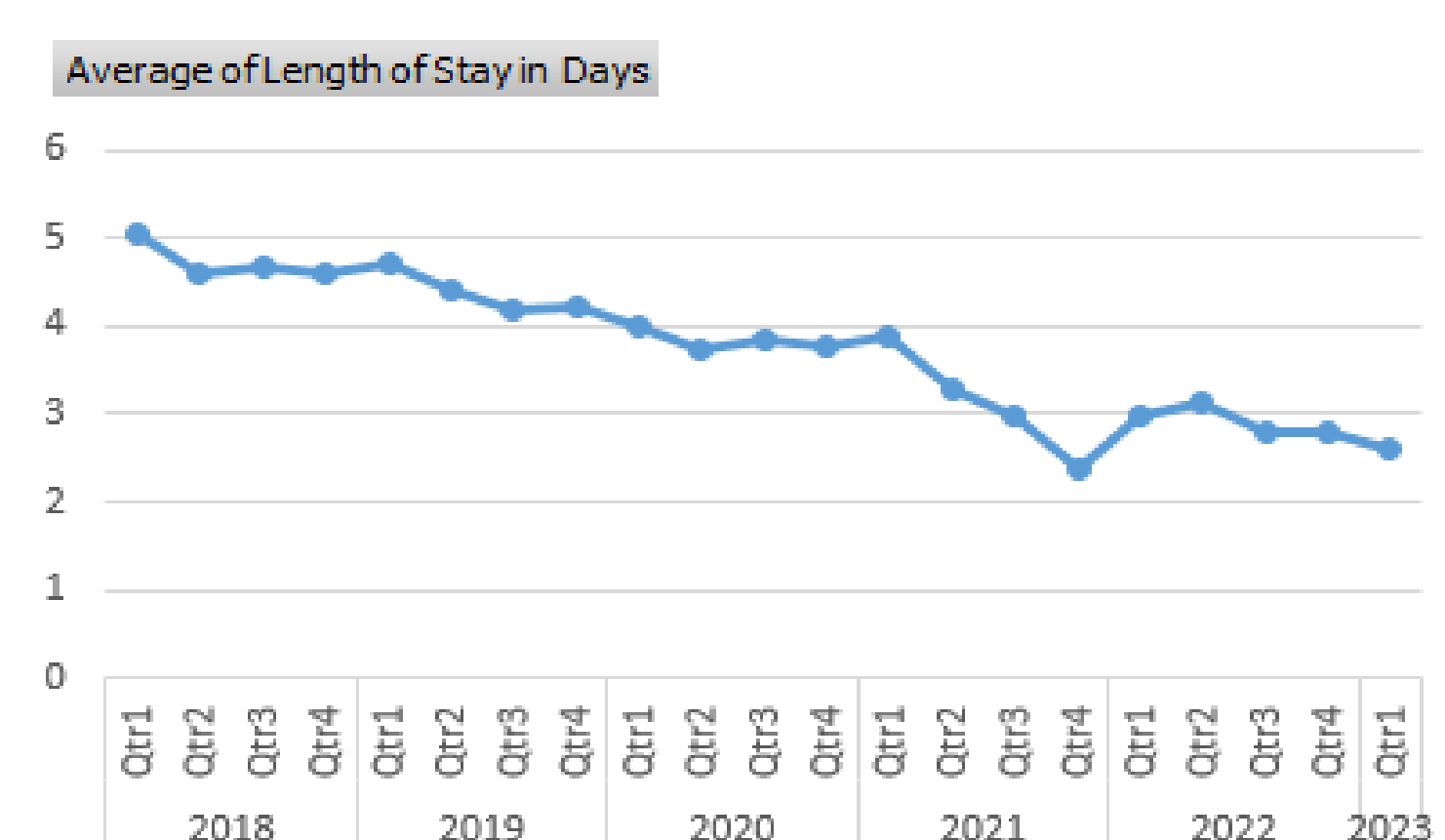
The Enhanced Recovery After Surgery (ERAS) package for knee arthroplasty patients was first piloted in August 2019 for private patients under 3 Orthopedic surgeons in Singapore General Hospital (SGH). In August 2020, this was expanded to include subsidized patients and subsequently more surgeons. In September 2022, there was a transition for a portion of the home visits to be conducted by our NTUC Health community partner and they have since taken over the home visits fully since January 2023. As of March 2023, the program has expanded to include 11 Orthopedic surgeons from SGH.

For sustainability, there was early collaboration and partnership with our NTUC Health community partner to take over the home visits where they are better situated geographically to conduct the home visits and can help transit the patients to community services with ease.

Outcomes

Length of stay for all knee arthroplasties in SGH was reduced from an average of **4.55 days** in 2018-2019 to **2.92 days** in the year 2022. This number was gradually reduced as more surgeons and patients were recruited into the program. In the year 2022, about 30% (629 out of ~2000) of knee arthroplasties were carried out under this new model of care.

The reduced length of stay resulted in cost savings for the hospital in terms of hospital bed days, and freed up the hospital bed space for other patients who require hospital admission.



Apart from length of stay, telephone surveys conducted with the first 50 patients also found that patients were extremely satisfied with the care they received. They were pleased to discharge home earlier and to receive personalized care in their own homes. Some wanted more home visit sessions. Functional outcomes were not affected as well.

Challenges

One of the challenges the team faced was correct identification of patients suitable for the ERAS package. One key consideration was the presence of family support for the patients to discharge as well as pre-surgical functional status and co-morbidities. Apart from that, patient's anxiety and expectations were addressed during individualized pre-operative education by the multidisciplinary team.

Patients also felt re-assured as therapists and nurses could relay their concerns immediately to the surgeon and this ERAS protocol has broken barriers of communication between healthcare professionals while improving delivery of patient-centred care. It has also succeeded in meeting patient's desires to recover at home.