

CHI Learning & Development (CHILD) System

Project Title

Continuous Quality Improvement for Excellence: Care Transition Practices Using an Acute Hospital – Community Hospital Care Bundle Approach

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Organisation(s) Involved

SingHealth Community Hospitals, Singapore General Hospital

Healthcare Family Group(s) Involved in this Project

Medical, Healthcare administration

Applicable Specialty or Discipline

Orthopaedic, Colorectal, Financial analytics

Project Period

Start date: May 2018

Completed date: Apr 2021

Aim(s)

 A quality improvement (QI) project sought to implement the AH-CH care bundle within Singhealth



CHI Learning & Development (CHILD) System

 To evaluate the care bundle's effectiveness in reducing acute hospital length of stay (AH LOS) and unfavourable patient outcomes in orthopaedic and colorectal surgery

Background

See poster appended/below

Methods

See poster appended/below

Results

See poster appended/below

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign, Access To Care, Waiting Time, Turnaround Time, Valued Based Care, Patient Reported Outcome Measures, Functional Outcome, Length Of Stay, Discharge Planning

Keywords

Care Transition, Acute Hospital-Community Hospital (AH-CH) Care Bundle, Length Of Stay, Total Hip Replacement (THR), Total Knee Replacement (TKR), Colorectal Surgery, Fast-Track Carepath, Postoperative Rehabilitation

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Defining Tomorrow's Medicine

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Collaboration between acute (AH) and community hospitals (CH) can help improve clinical outcomes and service quality

Singapore Healthcare

Management 2022

Background **Problem:**



Singapore's healthcare system is confronted with <u>bed</u> shortages as one of the world's fastest ageing countries



Senior patients recovering from surgery often stay for <u>prolonged periods</u> in acute hospitals, placing a strain on the nation's limited healthcare resources

Solution:

An Acute Hospital - Community Hospital (AH-CH) care bundle has been developed to assist patients in postoperative rehabilitation



Patients are transferred out of acute hospitals when clinically recommended into community hospitals, where they can recieve more beneficial dedicated care to aid their recovery



Bed capacities are freed up in acute hospitals

Objective

- A quality improvement (QI) project sought to implement the AH-CH care bundle within Singhealth- the country's largest cluster of public healthcare instituitions
- To evaluate the care bundle's effectiveness in reducing acute hospital length of stay (AH LOS) and unfavourable patient outcomes in orthopaedic and colorectal surgery

Methods

Implementation



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- 3-month retrospective audit was conducted between May and July 2018 to analyze and validate historical data from AH/CH sites and other stakeholders across Singhealth instituitions
- A poll was created to ascertain current practices in postoperative care for orthopaedic and colorectal surgery
- Finance analytics team received educational sessions on data collection, analysis and interpretation



Key stakeholders





Alignment of

recovery •

expectations

Patients and their

families were involved

making with the

clinical care team to

enhance recovery and

in post-op decision



Utilizing data

analytics to

optimize processes

to reduce patients'

AH LOS

Valuing therapy

and nursing care

in CHs:

rehabilitation

after knee &

hip surgery

subacute care

surgery

after colorectal

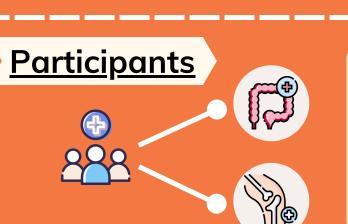
clinical operations & specialty HODs

 healthcare professionals • finance analysts & directors

Personnel

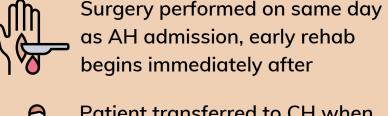
• orthopaedic & colorectal surgery

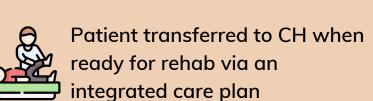
departments

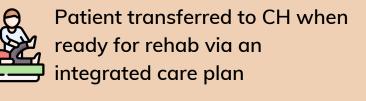


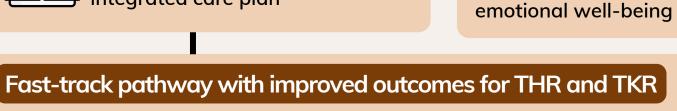
AH-CH care bundle components began to be implemented in <u>August 2018</u>. Patients who agreed to be transferred from AH to CH following orthopaedic (THRtotal hip replacement & TKR- total knee replacement) or <u>colorectal surgery</u> were enrolled in this QI project

4-tiered Intervention Seamless transition from AH to CH Diagnosis made at outpatient specialist clinics prior to AH

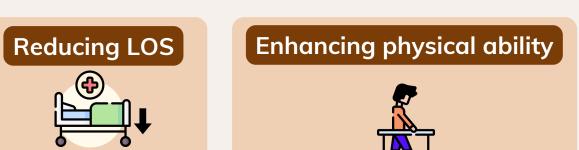








Fast-track pathway with improved outcomes for THR and TKR Patients receiving THR and TKR are screened for fast-track transfer to CH sites after surgery by nursing professionals from the orthopaedic surgery department

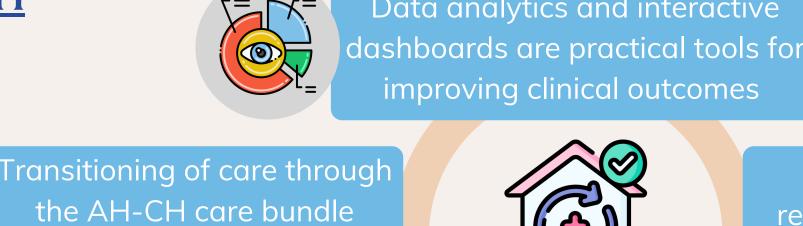


Patients' ability were measured by the **Modified Barthel Index** (MBI) - a scoring method that measures <u>activities in daily</u>

- living (ADL) • Increased scores suggest a gain in independence, while reduced scores suggest a
- decrease in independence Provides assessment of
- rehabilitation efficacy • Generates insights to opitimize rehab capabilities

effectively reduces AH LOS and unfavorable patient outcomes following surgery

Data analytics and interactive



improving clinical outcomes

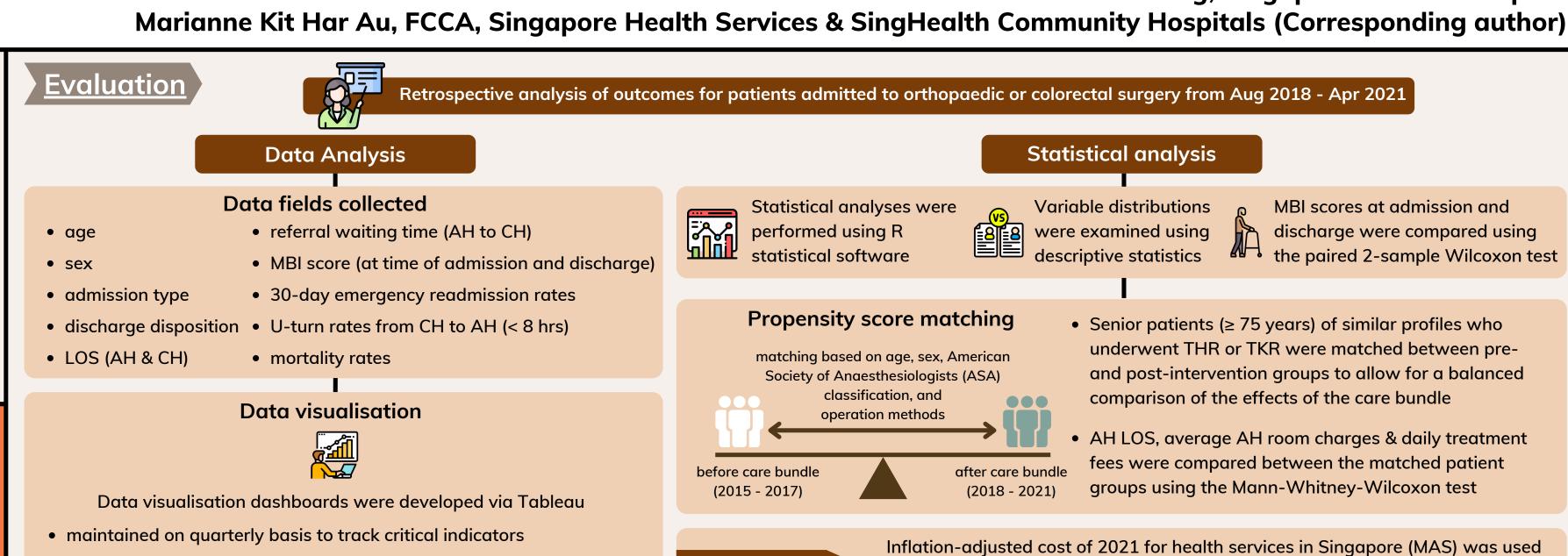


service quality

clinical outcomes

A well-designed post-op rehabilitation programme can help prevent complications and enable patients to achieve the best functional outcomes





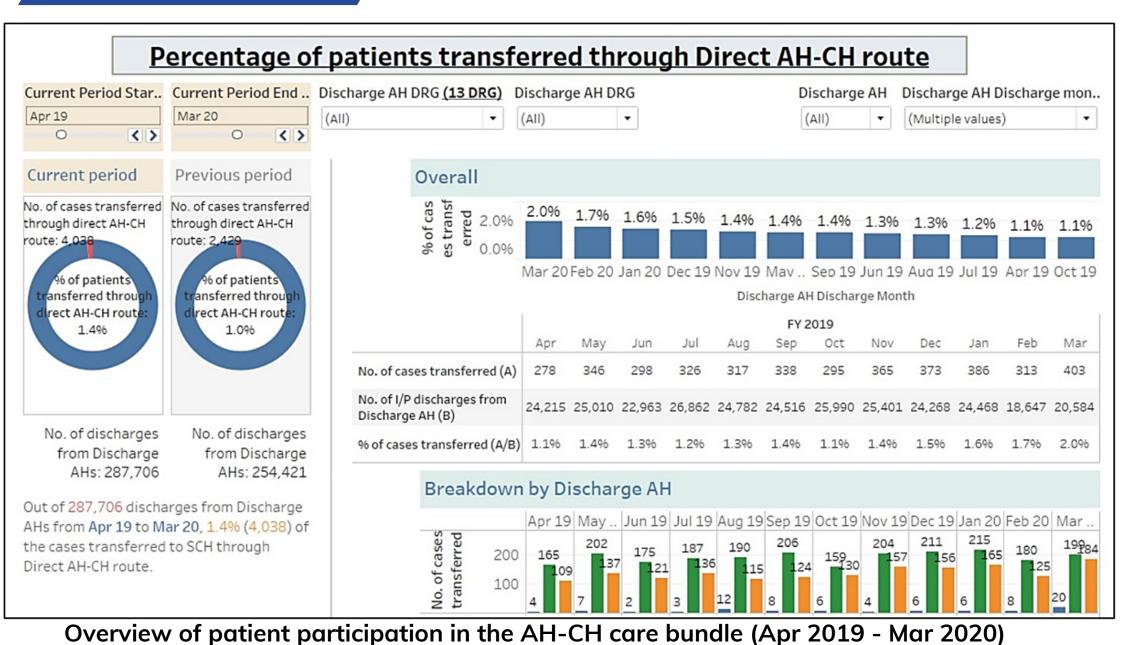
S Cost analysis

Analysis and Findings

• Data is reviewable at quarterly intervals to identify outliers and

Dashboard overview

implement improvements



 Interactive dashboards enabled the care bundle to be monitored closely throughout its implementation

to compare the cost before and after the care bundle was implemented. Inflation

rate was factored in for the comparison period to ensure a fair analysis

- Total number and percentage of patients transferred from AH to CH were tracked on a monthly basis
- Dashboards provided key information to initiate proactive changes:
- 1. Conduct advanced screening after surgery for seamless transitions from AH to CH
- 2. Coordinate with CH sites to shorten referral waiting time

Fast-track pathway

- A Fast-track pathway from AH to CH was developed for THR and TKR patients
- standardization of reporting procedures and protocols allow for a smooth care transition
- integrated care plan developed by clinical care team in advance helps prevent delays in transfer
- streamlining of care from AH to CH helps reduce AH LOS without compromising post-operative care quality

Improvements from care bundle intervention

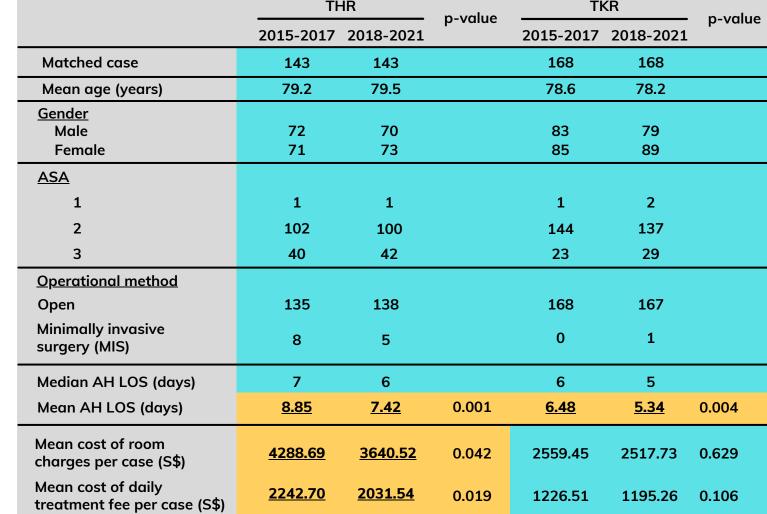
Patients are screened for fasttrack transfer to CHs by nursing Patients completed THR professionals in Orthopaedic and TKR surgery at AH **Surgery Departments** Consent is obtained from Patients remain at AH patients to be transferred to CHs and will be discharged for post-operative recovery at a later date Yes .

Patients are entitled to financial counselling and an estimate of the entire cost of their AH-CH stay

Surgeons in Orthopaedic Surgery Departments initiate referral letters

Patients are transferred and admitted to CH sites

Fast-track pathway from AH to CH for THR and TKR patients



Baseline characteristics and comparison of hospitalization outcomes between senior patients who underwent THR and TKR before and after the implementation of AH – CH care bundle

- 143 and 168 pairs of matched senior patients who underwent THR and TKR respectively were used to evaluate the effect of the care bundle project
- There was a <u>statistically significant (p < 0.05) drop</u> in the mean AH LOS for both THR and TKR patients

Conclusion

 Cost savings were noted as a result of the decrease in AH LOS

Orthopaedic surgery Colorectal surgery Orthopaedic surgery All Patients Admission Discharge Comparisons of MBI scores between admission and discharge in patients

receiving orthopaedic and colorectal surgery

| | Colorectal surgery | 51.83 ± 25.74 | 70.41 ± 24.56 | < 0.0001 | 51.80 ± 26.80 | 72.00 ± 23. | .84 < 0.0001 | |
|---|--------------------|-----------------------|---------------|----------------|---------------|-------------|--------------|-----|
| Table of comparison of MBI scores between admission and discharge | | | | | | | | |
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enrolled in the care bundle project undergoing orthopaedic

or colorectal surgery after being discharged from CH

• Increase in MBI score suggests that patients are able to

perform daily living activities with a greater degree of

<u>independency</u>, thus serving as an indicator of <u>improved</u>

MBI Score