

## **Project Title**

Total Knee Replacement (TKR): A Patient-Centric Approach to Improving Length of Stay (LOS)

## **Project Lead and Members**

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## **Organisation(s) Involved**

Changi General Hospital

## **Healthcare Family Group Involved in this Project**

Medical, Nursing, Allied Health

## **Applicable Specialty or Discipline**

Orthopaedics, Physiotherapy, Occupational Therapy

## **Project Period**

Start date: 2018Q2

Completed date: 2023Q3

## **Aims**

Outcome measure: To reduce the post-operation length of stay (post-op LOS) of TKR patients to  $\leq 5$  days within 3 years of VDC project inception Balance measure such as all-cause readmission rate is also to be monitored, to ensure that in our pursuit of lowering LOS, care would not be compromised i.e. patients were not discharged too early without receiving the necessary care.

## **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**

Accorded the MOH National Quality Improvement Conference 2023 (Outstanding Poster Award)

## **Project Category**

Care & Process Redesign

Value Based Care, Length of Stay

Quality Improvement, Workflow Redesign

**Keywords**

Risk Assessment and Prediction Tool (RAPT)

TKR Pathway

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# National Quality Improvement Conference

## Total Knee Replacement (TKR): A Patient-Centric Approach to Improving Length of Stay (LOS)

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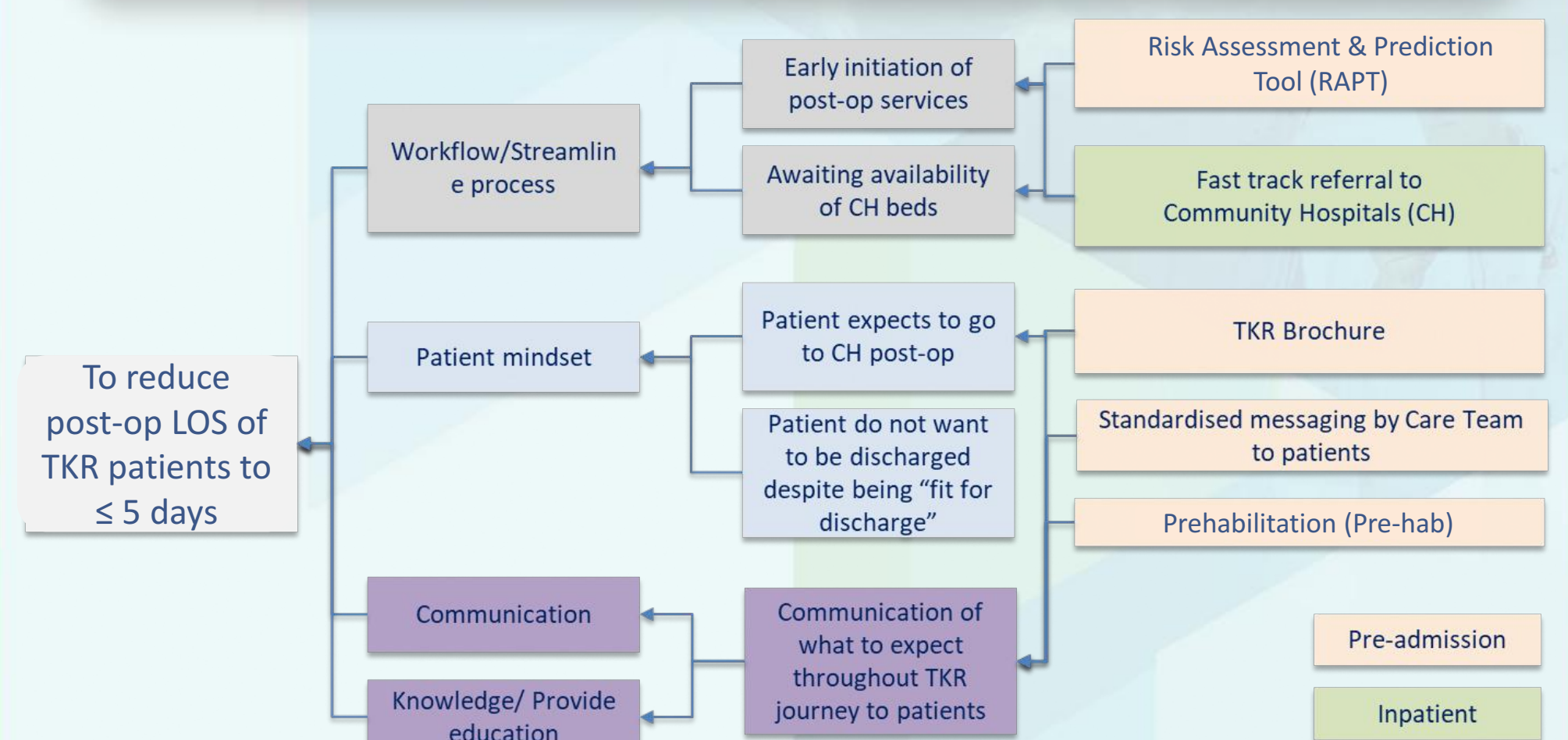


### Problem Statement

During the inception of MOH total knee replacement (TKR) Value Driven Care (VDC) programme in 2017 at Changi General Hospital (CGH), the team identified that many patients had common misconceptions that TKR require a long post-surgery recovery period with services to be initiated after surgery. This extends the length of stay.

The team reviewed the effectiveness of care aiming to reduce inpatient length of stay for patients having TKR surgery by 1) right siting of care 2) and initiating earlier discharge planning in the patient journey.

### Potential Solutions



After rigorous Plan-Do-Study-Act (PDSA) testing, the team implemented interventions such as RAPT assessment by nurses, pre-hab appointments by physiotherapists to improve patients' lower limb muscle strength prior to surgery, fast-track community hospital referrals to facilitate early review and discharge, and a TKR Brochure for patients and caregivers to adjust expectations on the TKR patient journey.

These interventions were incorporated into a revamped TKR "pathway" that served as a standardised workflow for TKR patients, which helped to facilitate early discharge planning and reduce LOS.

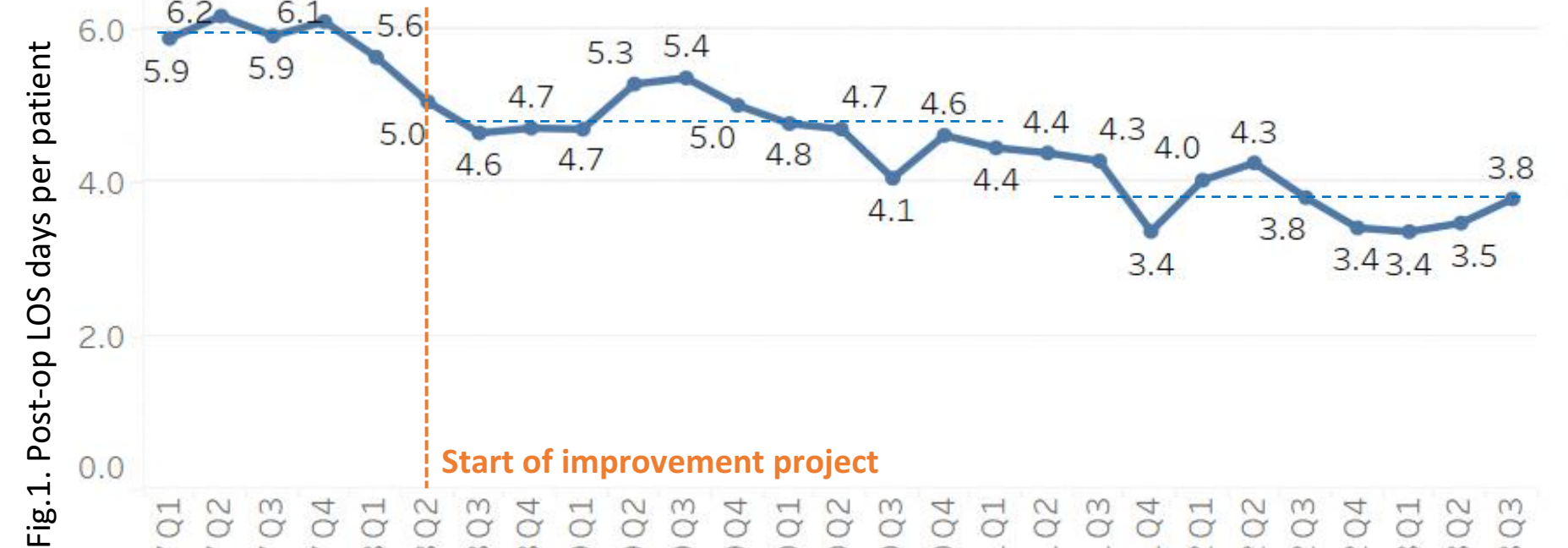
### Project Aim

Outcome measure: To reduce the post-operation length of stay (post-op LOS) of TKR patients to ≤ 5 days within 3 years of VDC project inception

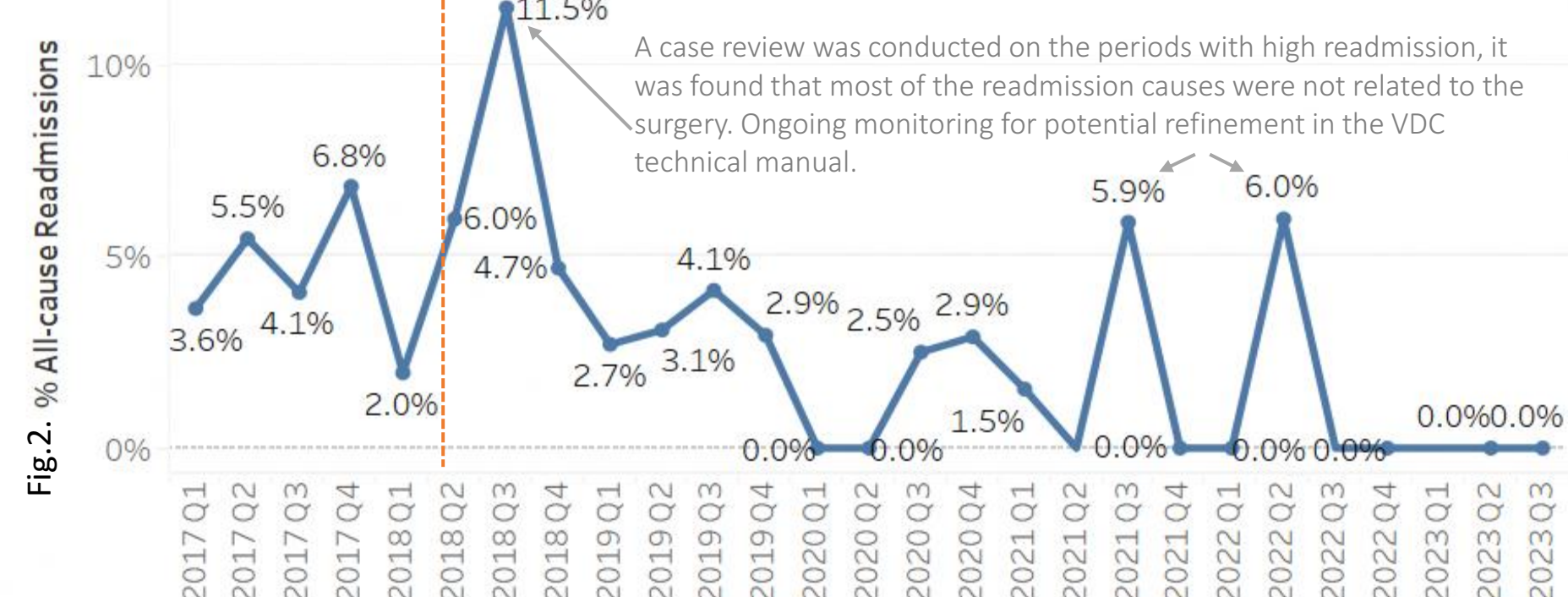
Balance measure such as all-cause readmission rate is also to be monitored, to ensure that in our pursuit of lowering LOS, care would not compromised i.e. patients were not discharged too early without receiving the necessary care.

### Outcomes & Impacts

The post-op LOS of TKR patients (Fig. 1) in 2017 was a median of 5.9 days and exhibited a downward shift to **4.7 days in 2021Q1**, further reducing to **3.8 days in 2023Q3** (P=0.001).



To ensure that the post-op LOS results sustained without negative impact, the 30-day all-cause readmission (Fig 2) was monitored.



### Lessons Learnt

The introduction of RAPT assessment and revised TKR pathway ensured that a common language is used in all patient interactions, to align patients' expectations that post-surgery recovery would take ≤ 5 days. RAPT & fast-track referrals were spread to other VDC patients at CGH, e.g.: total hip replacement, spinal fusion and stroke.