



# Minimizing delay in hip fracture surgery and surgical cancellations through a multi-prong approach

Singapore Healthcare Management 2024

Dr Lim Wan Yen<sup>1</sup>, Dr Siow Wei Ming<sup>2</sup>, Alex Koh<sup>1</sup>, Kelvin Ho<sup>3</sup>, A/Prof Sharon Ong<sup>1</sup>

<sup>1</sup>Department of Anaesthesiology, SKH

<sup>2</sup>Department of Orthopaedic Surgery, SKH

<sup>3</sup>Operating Theatre Management Unit, SKH

## Background

The rising annual incidence of hip fractures (HP) among the elderly is a significant public health concern.

Guidelines advocate early surgery (within 48 hours of admission), reported benefits include:

- improved postoperative functional outcomes
- reduced mortality
- postoperative complications
- hospital length of stay

Pre-operative medical assessment/optimization and Operating Theatre (OT) availability are common factors delaying surgeries worldwide.

Surgical cancellation also causes considerable physical, psychological, and emotional stress for patients.

## Methods

Causes for surgical delays/cancellations for frail elderly HP patients were evaluated, these include:

1. Anticoagulation medications
2. Suboptimal health status (anaemia, thyroid disease, electrolyte abnormalities)
3. Incidental findings requiring further evaluation (cardiac murmurs, abnormal ECGs)
4. Resource limitations (e.g. lack of OT availability)

Three PDSA cycles were conducted from 2021 to 2023 with measures aimed at addressing delays in HP surgeries and surgical cancellations.

PDSA Cycle 1  
July 2021

1. Automatic enrolment of HP patients aged  $\geq 60$  into a standardized, evidence-based clinical **hip fracture pathway**
2. **Early preoperative anaesthesia evaluation** (and risk stratification) for HP patients planned for surgical fixation upon hospital admission
3. **Expedited cardiology review** for patients with new cardiac murmur

PDSA Cycle 2  
May 2022

**Prioritization** of HP surgeries in emergency OTs after hours (weekdays from 5pm and weekends)



PDSA Cycle 3  
May 2023

Engage OT Management Unit to expedite HP listings in a **designated Daily trauma OT**

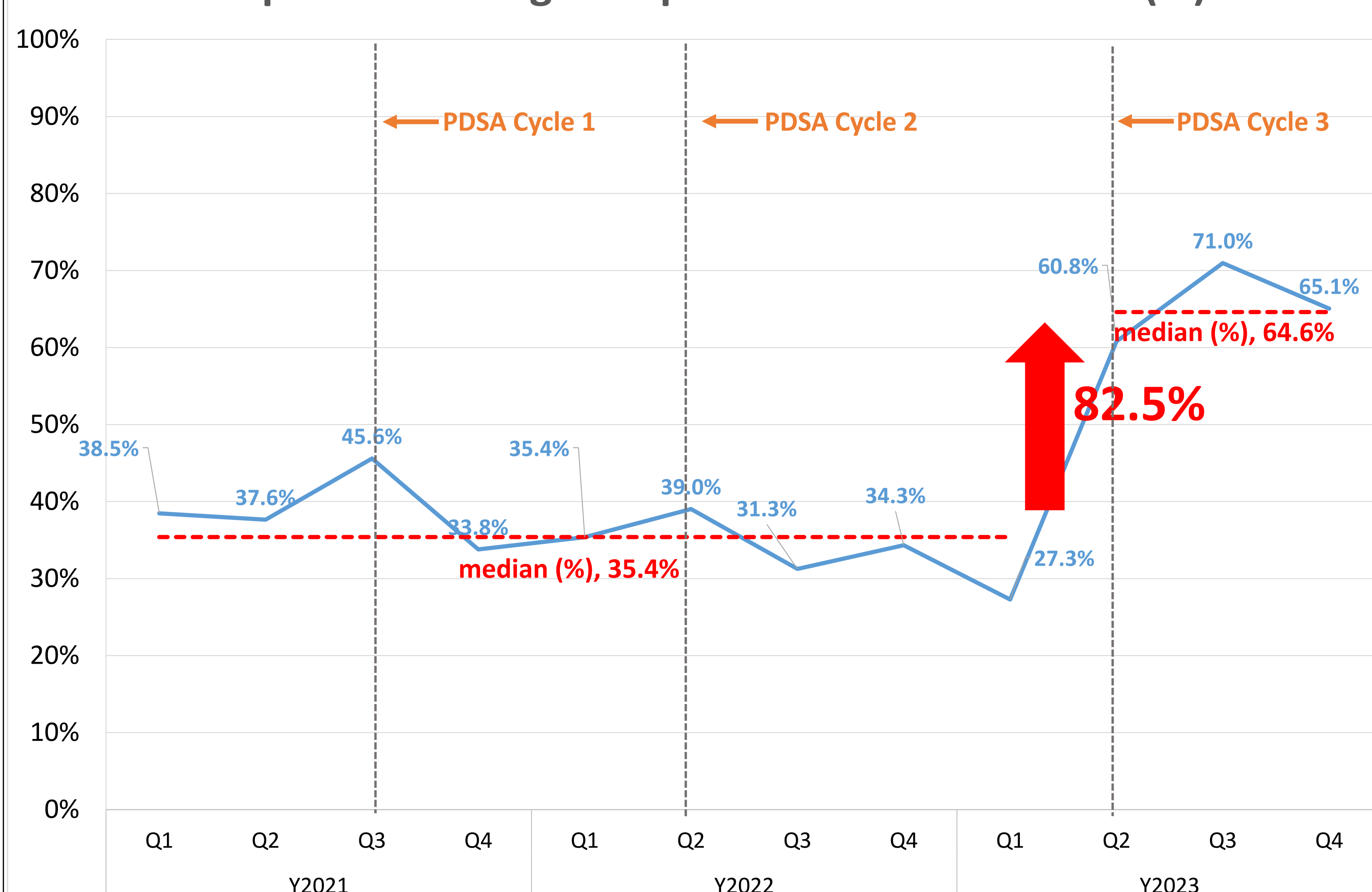


## Results

The proportion of patients undergoing HP surgeries within 48 hours **improved by 82.5%** (from 35.4%  $\rightarrow$  64.6%).

Surgical cancellation was **reduced by 43%** (from 10.5%  $\rightarrow$  6.1%).

Hip fracture surgeries performed within 48hrs (%)



Hip fracture surgical cancellation (%)



A **designated daily trauma OT** reduced reliance on unpredictable emergency OT resources.

## Conclusion

A **multi-prong approach** targeting **early** preoperative evaluation, optimization and resource allocation facilitates timely surgery for hip fracture patients.