Enhanced Recovery After Thoracic Surgery (ERATS)

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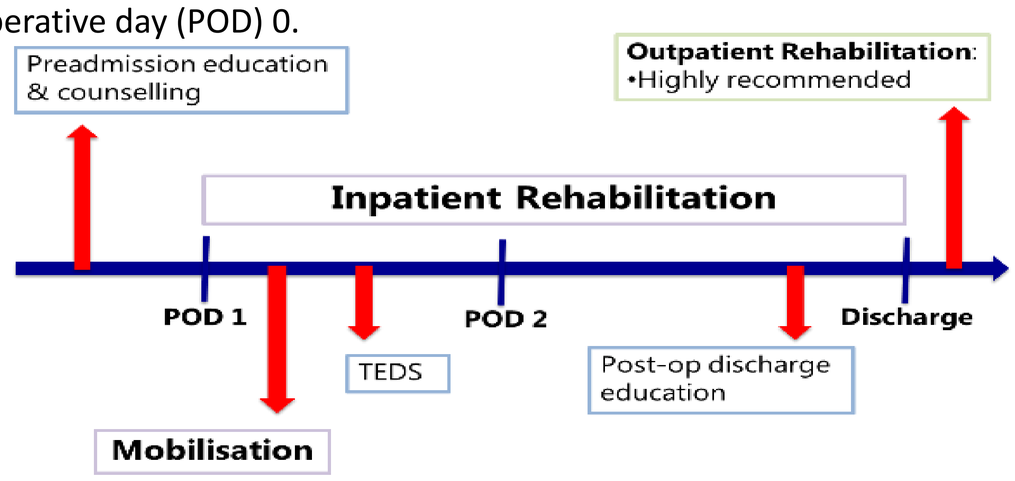
BACKGROUND

Enhanced recovery after surgery (ERAS) pathways are fast-track evidence-based multimodal protocols that aim to mitigate homeostatic changes and stress responses that may arise from undergoing a surgery. Early mobilization is recommended as it is reported to be safe and feasible.

Standardised care is not always consistently practiced in NHCS due to the lack of awareness of such recommendations and the absence of a fast-track pathway with clear protocols in place. Furthermore, suitable patients are not referred for prehabilitation prior to surgery and patients are not mobilized early on postoperative day (POD) 0.



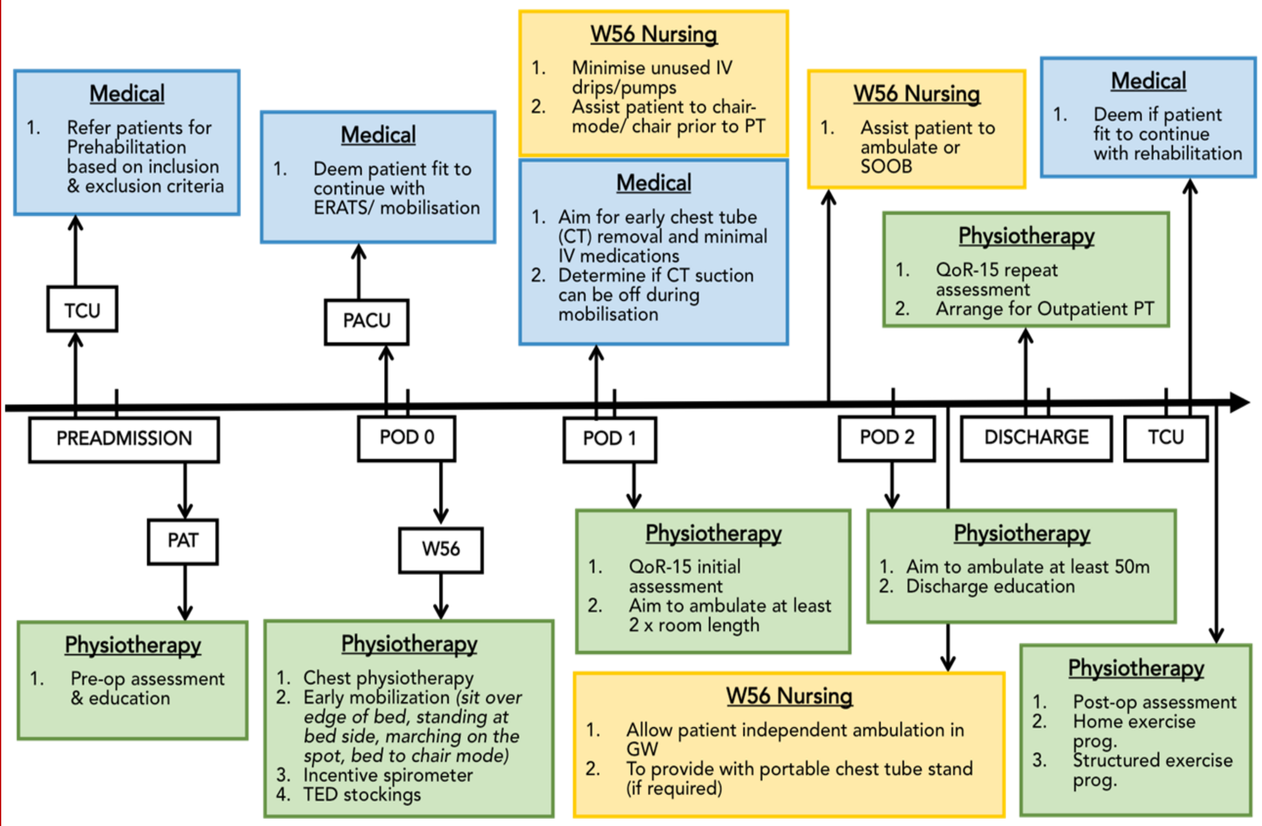
TARGET

- To reduce average length-of-stay (ALOS) by **at least one day**
- To enhance early recovery by **achieving functional independence (FI)** before discharge

METHODOLOGY

The ERATS pathway was developed to include the **Medical, Nursing and Physiotherapy staff** in a structured rehabilitation pathway for the patients. The roles of the different groups of staff are clearly defined, as showed in the figure below.

Suitable patients are referred for prehabilitation prior to surgery where physiotherapists will conduct pre-op assessment and education for patients. Additionally, patients who undergo uncomplicated thoracic surgery will be attended to by the physiotherapists in Ward 56 on POD 0. However, for patients who do not arrive in Ward 56 by 5pm after surgery, they will not be recruited into the **standard ERATS pathway starting on POD 0**. Instead, they will receive **structured care programme starting from POD 1**.



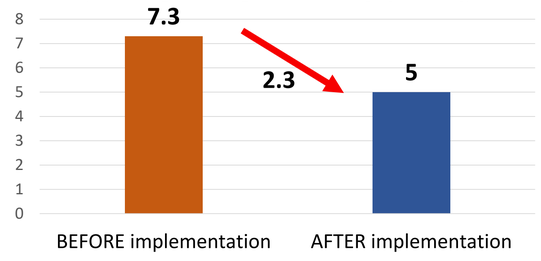
Patients' outcome is monitored based on these factors:

- Average length-of-stay (ALOS)
- The number of days required for a patient to achieve functional independence
- Adverse events during physiotherapy sessions on POD 0
- Quality of recovery was measured using the **Quality of Recovery – 15 Questionnaire (QoR-15)** on POD 1 and before discharge
- 30-day readmission rates

RESULTS

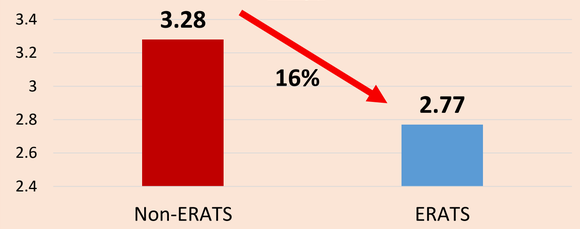
227 patients were assessed and 51% of them were recruited into the ERATS pathway starting on POD 0 & the remaining 49% Non-ERATS patients starting the structured care programme on POD 1.

Average Length-of-Stay (ALOS)



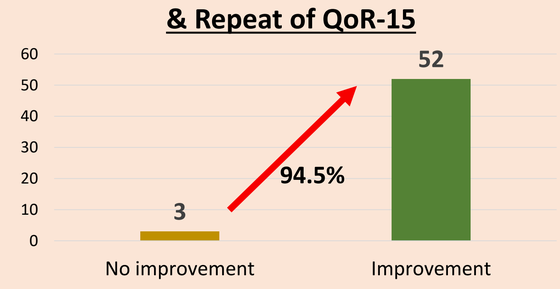
ALOS of patients is reduced by **2.3 days** from an average of 7.3 days to 5 days

Functional Independence (Post-Op Day)



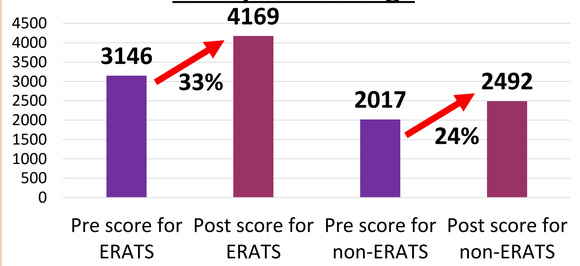
ERATS patients took an average of **2.77 days** to achieve functional independence, which is **16% shorter than non-ERATS**

Improvement between the Initial & Repeat of QoR-15



94.5% of the patients who took the initial and repeat of the QoR-15 **showed improvement**

Quality of Improvement from POD 1 to Day of Discharge



ERATS patients had a **9% higher improvement** in QoR-15 results compared with non-ERATS patients

- **82%** of the ERATS patients were successfully mobilized by physiotherapists on POD 0 with zero adverse events recorded
- **Two** non-ERATS patients were readmitted to CTS within 30 days of discharge while **one** ERATS patient did

Patient saving on hospitalisation per annum

522 Bed days × $591.70 per day = **$308,867 saved per annum**

ALOS of 2.3 Days saved x 227 patients = 522 Bed days saved/annum

Total time savings per annum

340.5 Physio sessions saved × 30 mins per session = **170 hours saved per annum**

1.5 Physio sessions saved x 227 patients = 340.5 sessions saved/annum

Intangible benefits

- Improve the delivery of health care
- Adverts complications in patients' recovery
- Earlier mobilization of patients which allows earlier chest tubes removal, thus, improving patients' lung ventilation
- Patients are more confident as they can be independent sooner
- Physiotherapists will have more time to treat more patients
- Improved satisfaction of patients, Next of kin and staff
- Bed days saved will free up beds for more patients to receive treatment

CONCLUSION

Early mobilization on POD 0 is safe and feasible. ERATS promotes shorter LOS and earlier functional recovery. Moreover, ERATS has shown to reduce ALOS by 2.3 days when compared to data from 2019. This ERATS initiative has been successfully implemented continuously for a year, during which data collected was shared with the thoracic surgeons every six monthly. Having a structured pathway provides more clarity where the roles played by different stakeholders are clearly defined. Therefore, this allows the stakeholders to provide patients with the best possible care as they implement this ERATS pathway as part of the standard practice in NHCS.