

## Optimising Bed Utilisation in Cardiothoracic Intensive Care Unit (CTICU)

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### Problem Statement

The CTICU faced a critical challenge: increasing number of heart patients led to a **bed shortage**.

This led to the following:

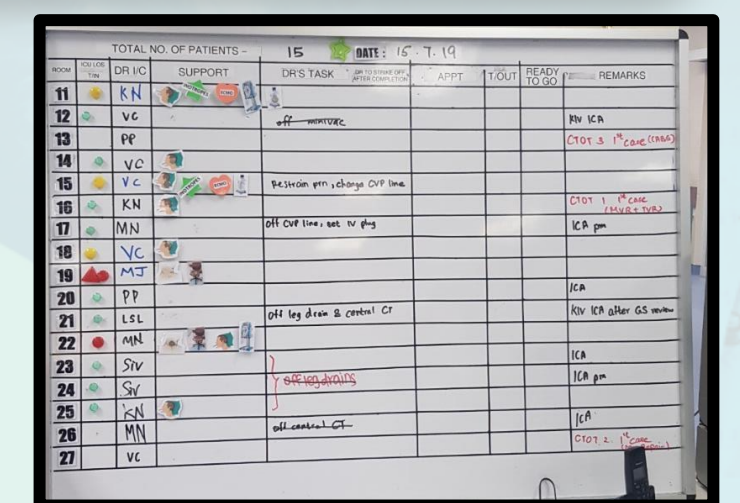
- Delayed/cancelled procedures
- Financial Implications
- Decreased reputation
- Increased patient acuity
- Heightened staff stress

Efficient bed utilisation is essential. It guarantees timely care, reducing health risks and optimising resources. Addressing this not only improves patient outcomes but also yields significant institutional savings.

### Potential Solutions

#### Centralised Visual Board

Visually track how patients move through the unit using symbols and colours.



#### Daily Work Huddle

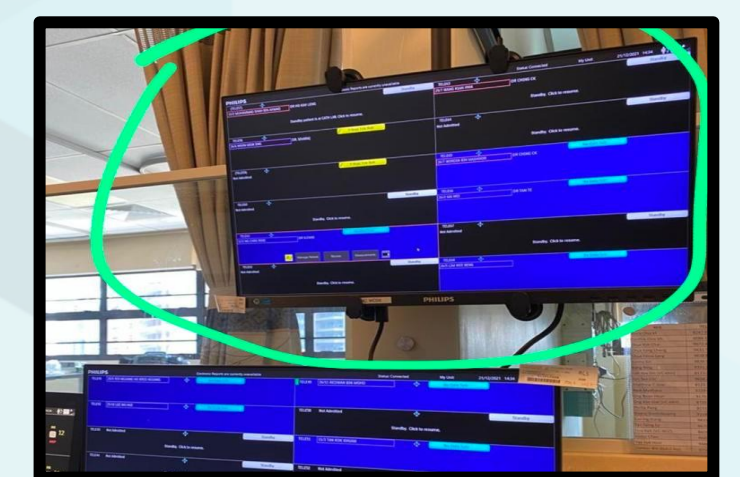
**Evening** – discussions on patient status & bed availability.

**Morning** – assessment to update ICU bed status.



#### Increase no. of Telemetry Devices

The number of telemetry devices was increased based on **demand reviews**.



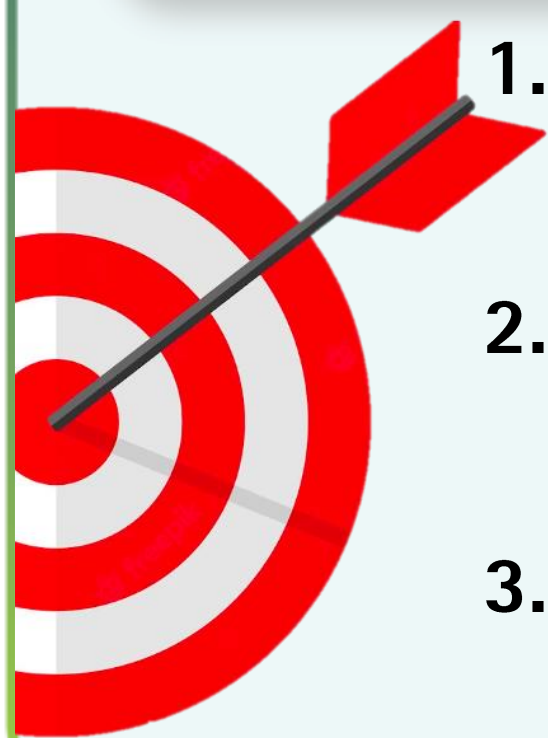
#### Redistributing ECMO Patients

Inter-hospital referrals are assessed, diverting non-surgical candidates to the CCU to reserve CTICU beds.

#### Encourage Doctors to use SDA

SDA utilisation was monitored, and engagement sessions were held to share the benefits.

### Project Aim

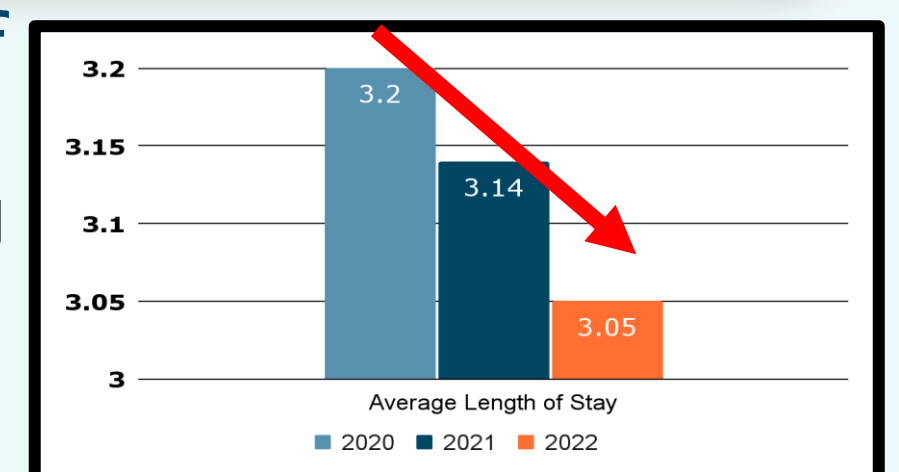


- Reduce average length of stay to **3.05 days** or below
- Increase same-day admission (SDA) to **75%**
- Reduce no. of surgery cancellations due to 'no ICU bed' by **40%**

### Outcomes & Impacts

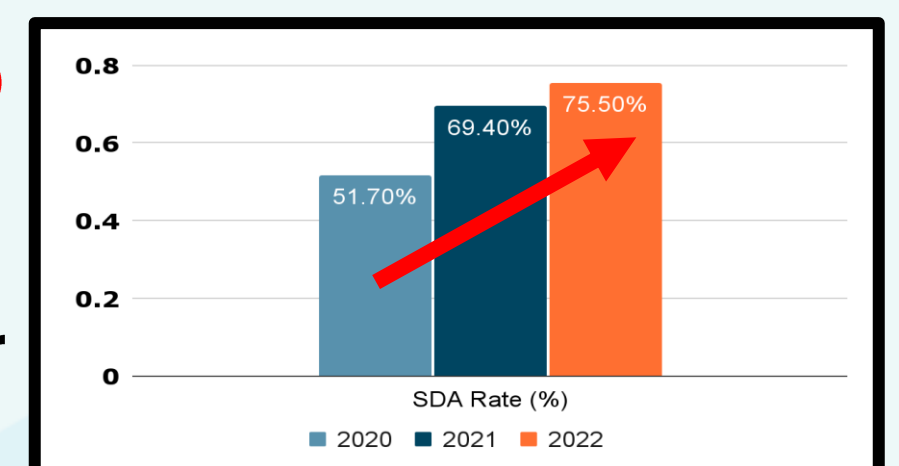
#### 1. Reduced average length of stay to **3.05 days & below**.

- An estimated 195 CTICU bed-days saved per annum.
- Saved up to **\$934/day**.



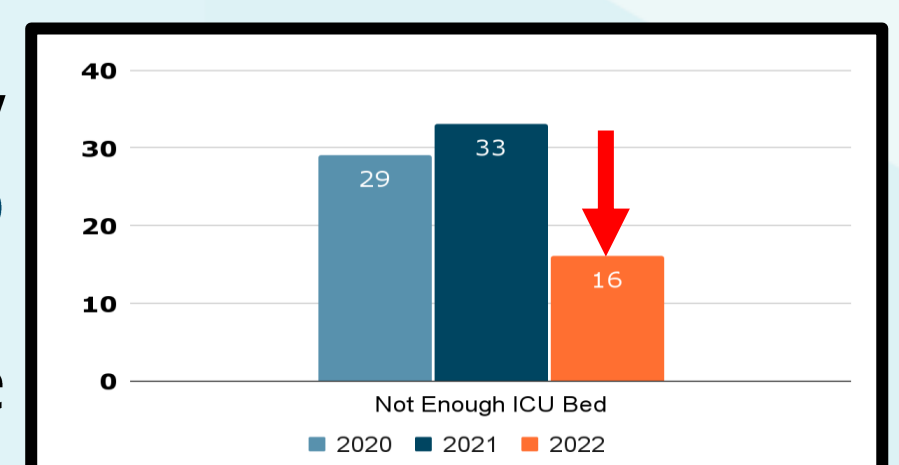
#### 2. Increased SDA admission utilisation from **51.7% to 75.5%**.

- An estimated 309 General Ward bed-days saved per annum.
- Saved up to **\$540/day**.



#### 3. Reduced no. of surgery cancellations due to 'no ICU bed' by **48%**.

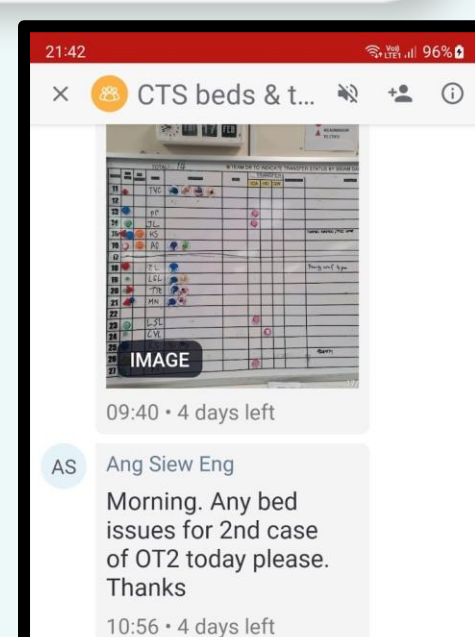
- More surgeries can take place as planned.



### Lessons Learnt

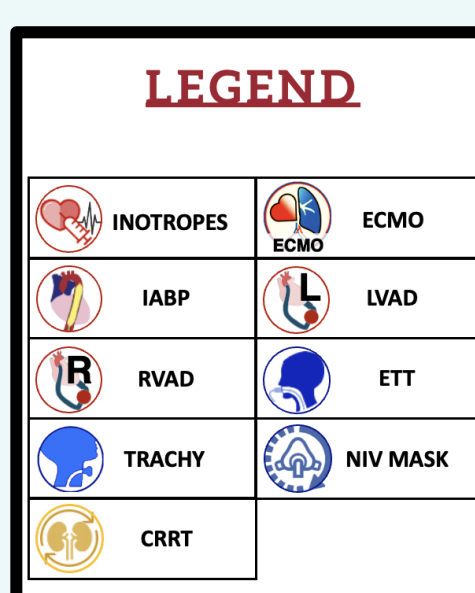
#### Communication Efficiency:

- OT listing messages specify if the patient is designated for ICU or Post Anaesthesia Care Unit.
- A photo of the board status is sent to the CTS chat group.



#### Visual Board Optimization:

- Added a column to highlight isolation cases to ensure arrangements are made.
- Refined board legend for enhanced clarity and increased size for better visibility.



**Total Patient Cost Savings = \$348,990/annum**