



Reduce Length of Stay (LOS) for Low Risk Acute ST Elevation Myocardial Infarction (AMI) patient



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INTRODUCTION

- Between January 2017 and December 2017, 450 AMI patients were admitted to NUH for percutaneous coronary intervention (PCI) and these patients stayed in the hospital for 4 days at the 50th percentile.
- Recent studies have shown the possibility of early discharge of low risk AMI patients is safe and feasible and have outcomes similar to patients with length of stay (LOS) from 4 to 5 days.
- The goal is to reduce the LOS of low risk AMI patient by 25% from 4 to 3 days at the 50th percentile because keeping patients beyond the required stay is not cost effective.

METHODOLOGY

A team of doctors, nurses and administrators came together during a 2.5 days **Rapid Improvement Event (RIE)** in October 2017 to review, brainstorm and address the challenges. Lean management methodologies including Value Stream Mapping (VSM), 8 Wastes (DOWNTIME), Gap Analysis and Paradigm Breaking were applied to understand the process, identify wastes and root causes. VSM and Gap Analysis revealed inconsistent discharge planning process, long wait time for bed in general ward and delayed Echo report had contributed to longer LOS. Lack of discharge criteria and unclear guidelines also led to excessive telemetry monitoring and variations in clinical practices. Further tweak to the new workflow was made post RIE to include post discharge follow-up by the CareHub Team to address the need for safe and appropriate early discharge. Review meetings were conducted to monitor the implementation status, identify and resolve new actionable items as well as to share the post implementation data.

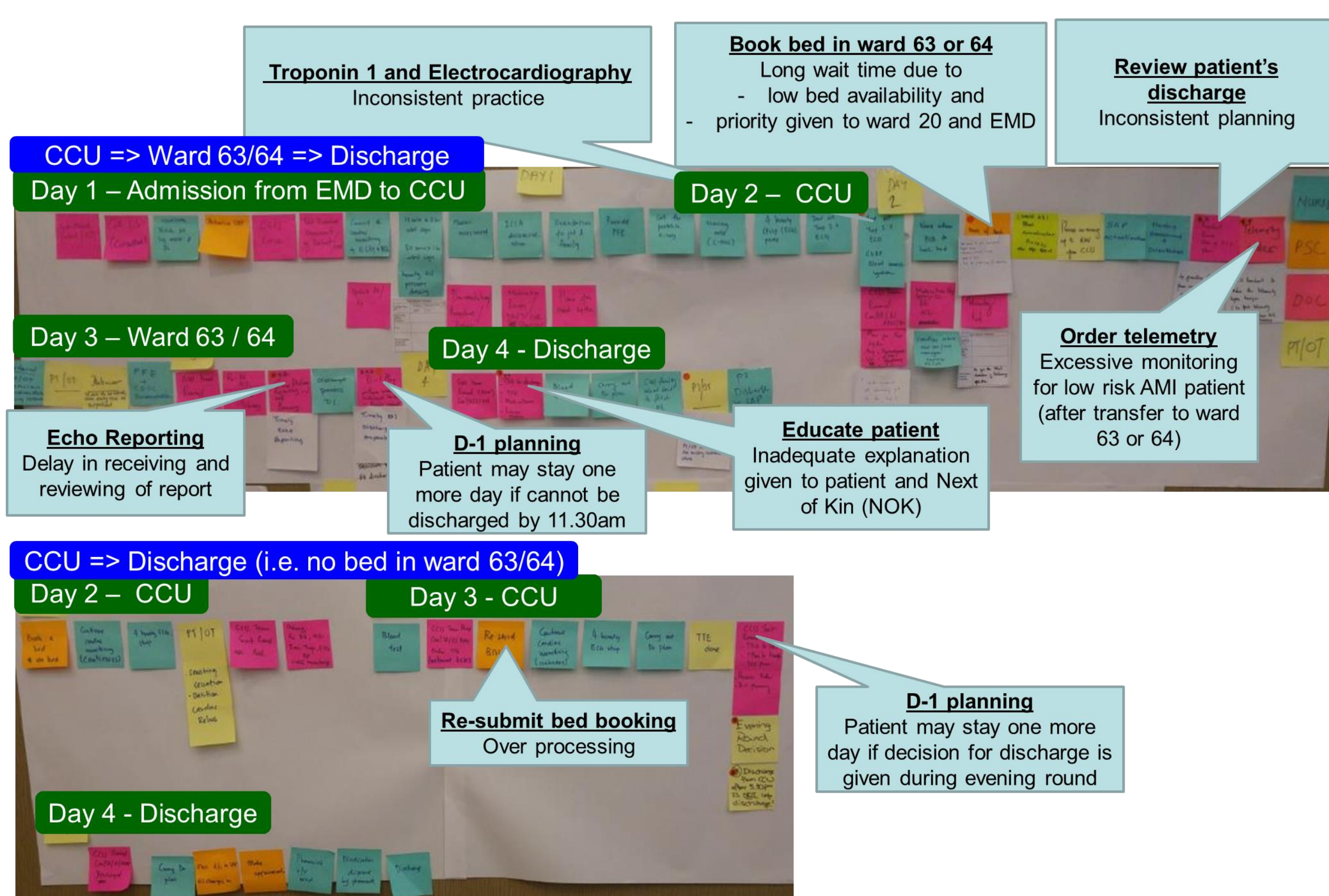


Figure 1. "As-Is" process and identified problems

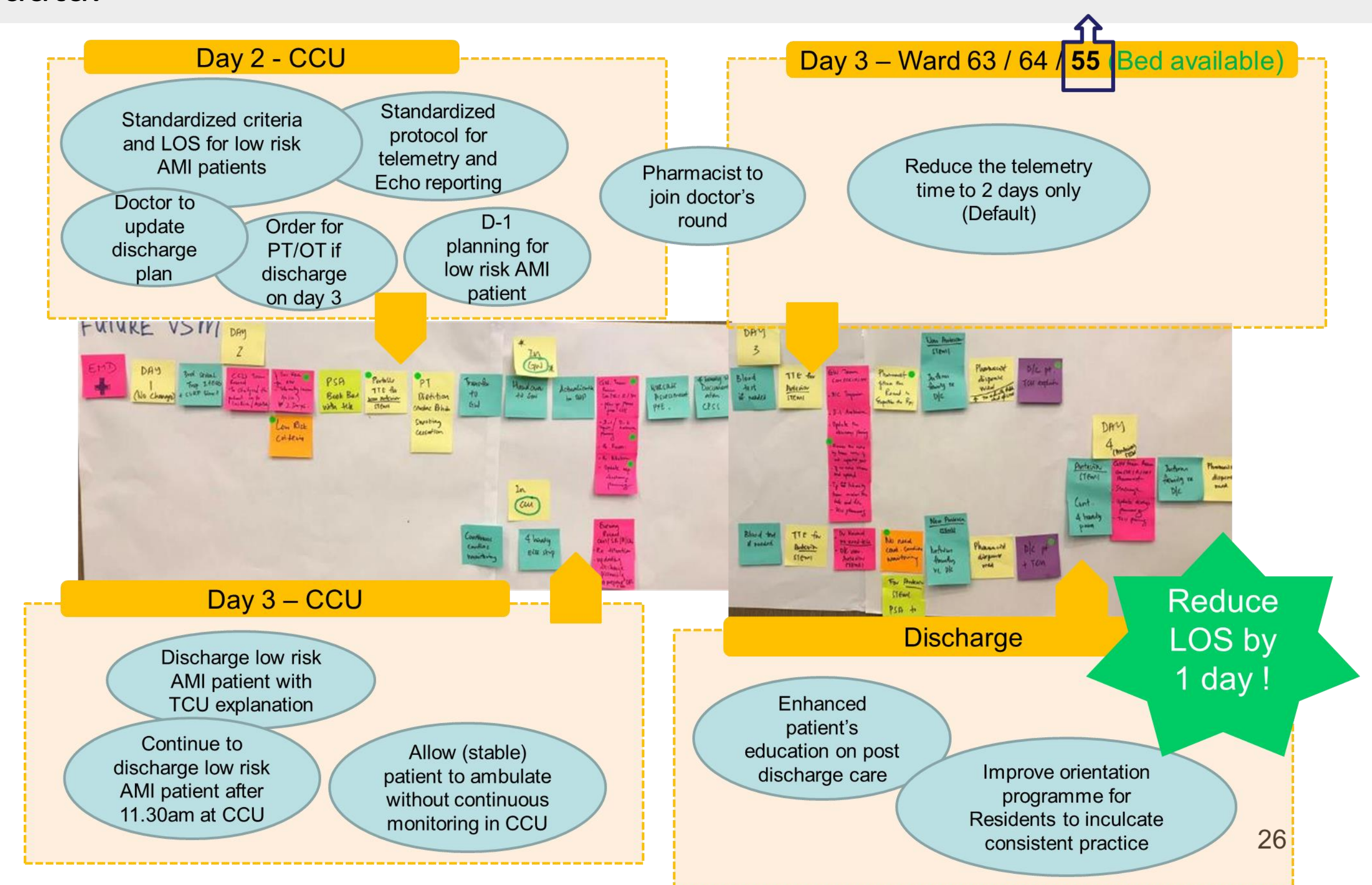
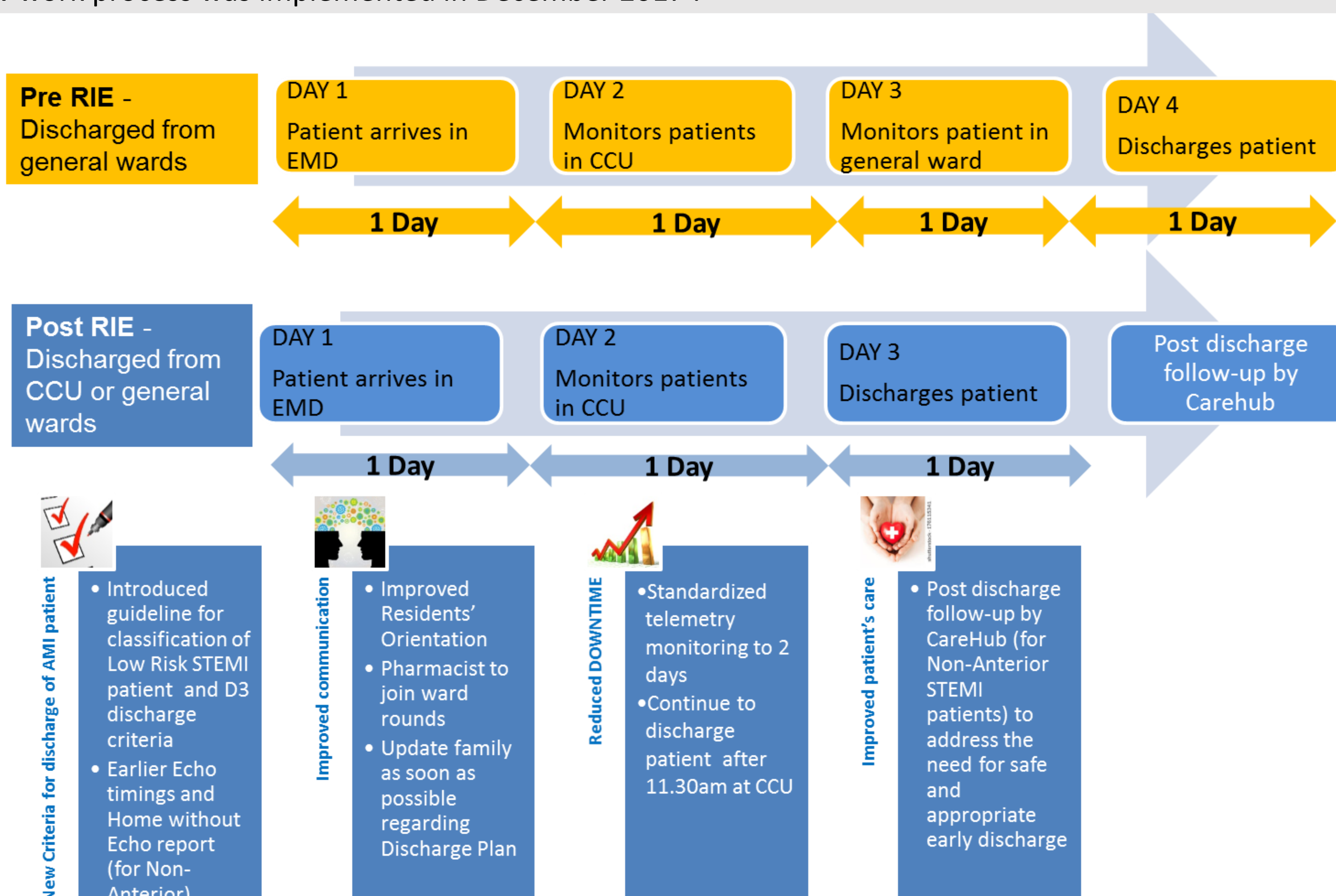


Figure 2. "To-be" process and proposed changes

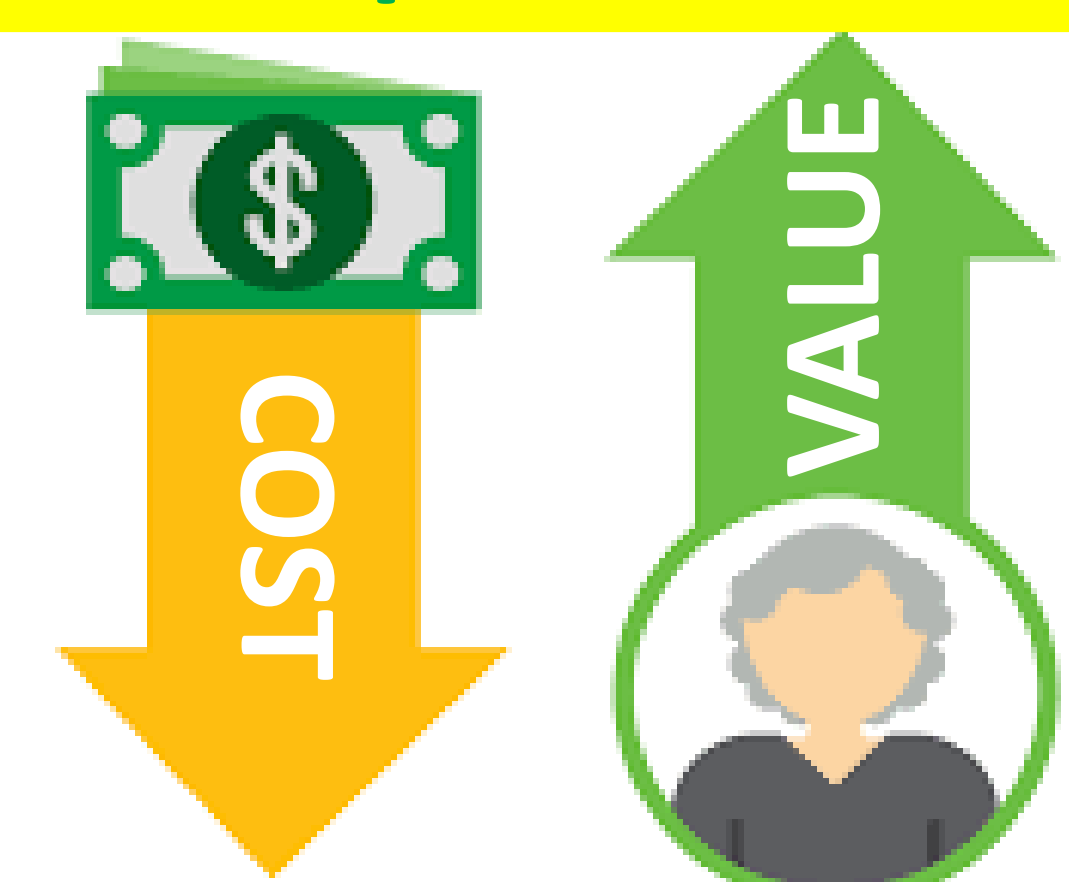
INTERVENTION STRATEGY

New work process was implemented in December 2017.



RESULTS

- LOS at the 50th percentile **reduced by 25%** from 4 days to **3 days**.
- Estimated savings of S\$1.5K per patient or **S\$675K p.a..**



CONCLUSION

- Tighter coordination between CCU and general wards ensure timely discharge of low risk AMI patient is sustainable.
- The team continues to monitor the LOS and target for 100% compliance rate.
- The team also monitor the rate of readmission within 30 days to ascertain that there is no sudden spike in readmission due to the early discharge of low risk AMI patient.