

Delivering Hassle-free Integrated Care for Patients Undergoing Emergency Laparotomy

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Background

- Emergency Laparotomy (EL) is a common yet life-threatening surgery fraught with much risk
- Substantial variations in care processes for EL exist but to date, there is no standardized management in Singapore

Aims

- Implement an integrated Emergency Laparotomy Pathway (ELAP) and a transdisciplinary team to deliver **hassle-free** and **best-practice** care
- Improve the clinical and functional outcomes of patients who undergo EL
- Deliver high quality clinical care, improve patient satisfaction with value driven care (Optimal Care Index) approach

Methodology

- The transdisciplinary clinical team consists of Emergency Department (ED) physicians, General Surgeons, Geriatricians, Anaesthetists, Nurses, and Allied Health Professionals who care for the patients along the ELAP workflow from start to end
- A prospective study was conducted upon implementation of the pathway between 1 January-31 December 2019 (ELAP group)
- Comparisons were then made with retrospective data from the pre-implementation period between 1 January-31 December 2017 (pre-ELAP group)
- A total of 314 patients were included in this study: 152 patients in the pre-ELAP group vs 162 in the ELAP group

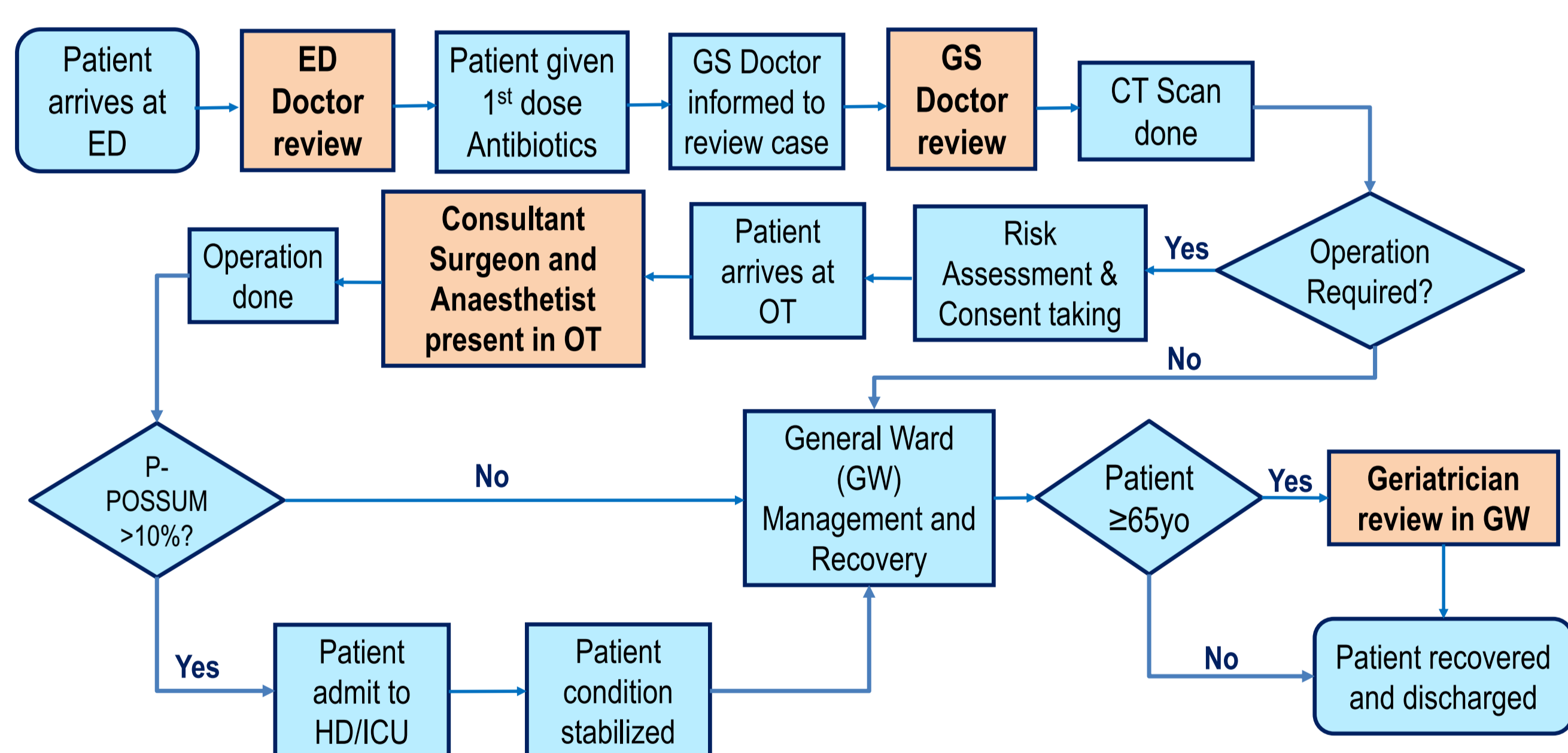
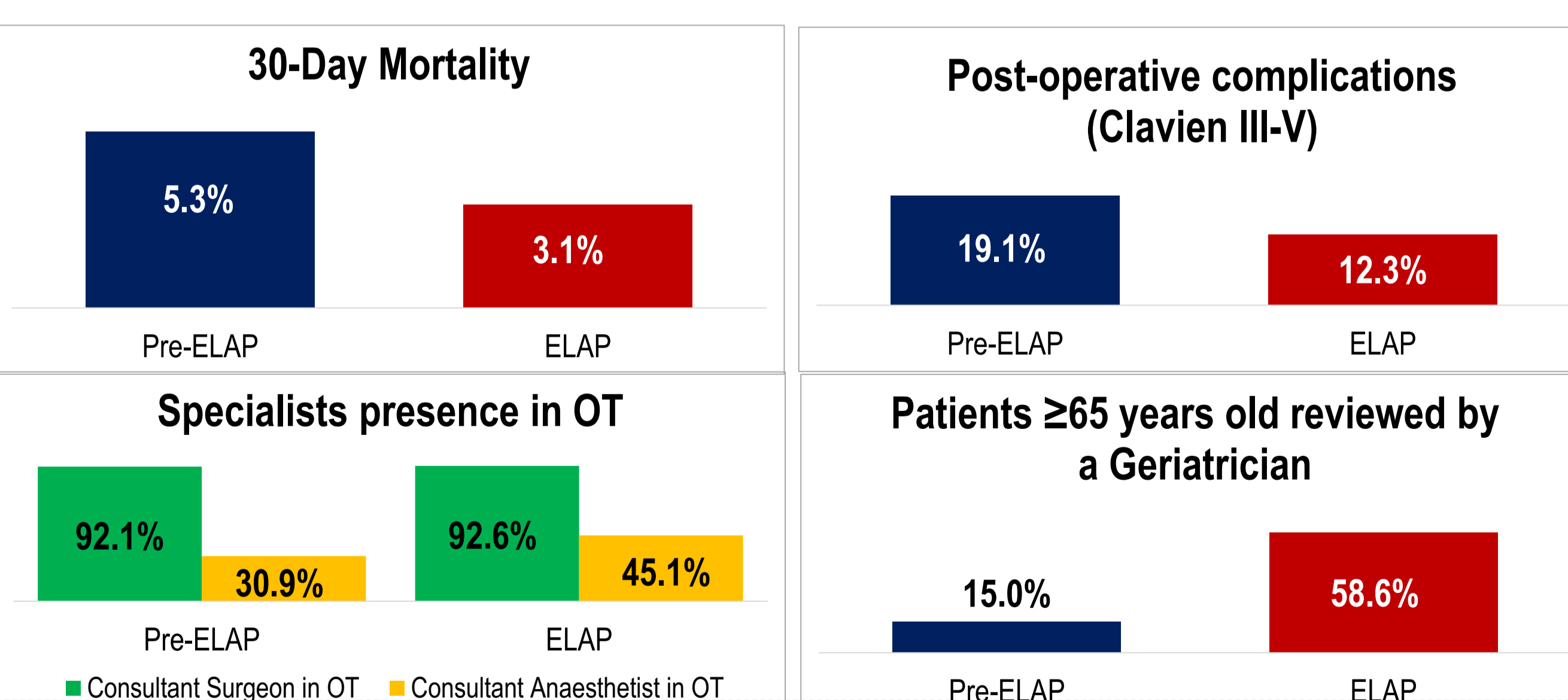


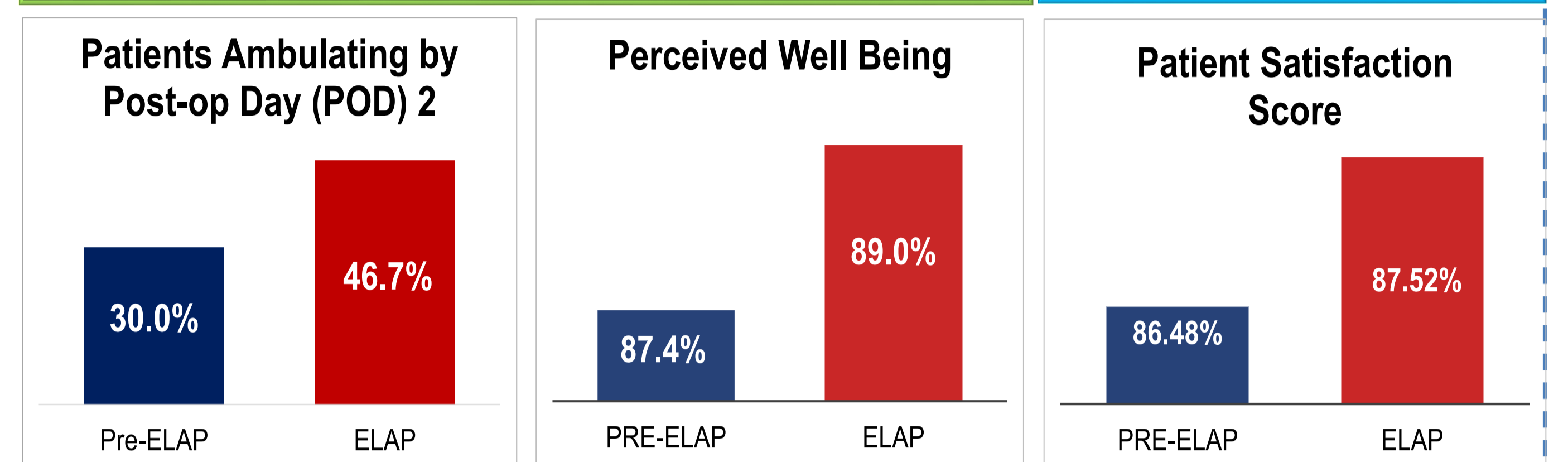
Figure 1. ELAP pathway workflow for a patient from time of arrival in ED to discharge. Boxes highlighted in orange represent transdisciplinary team involvement in the care of a patient in need of an emergency laparotomy.

Results

Clinical & Efficiency Outcomes

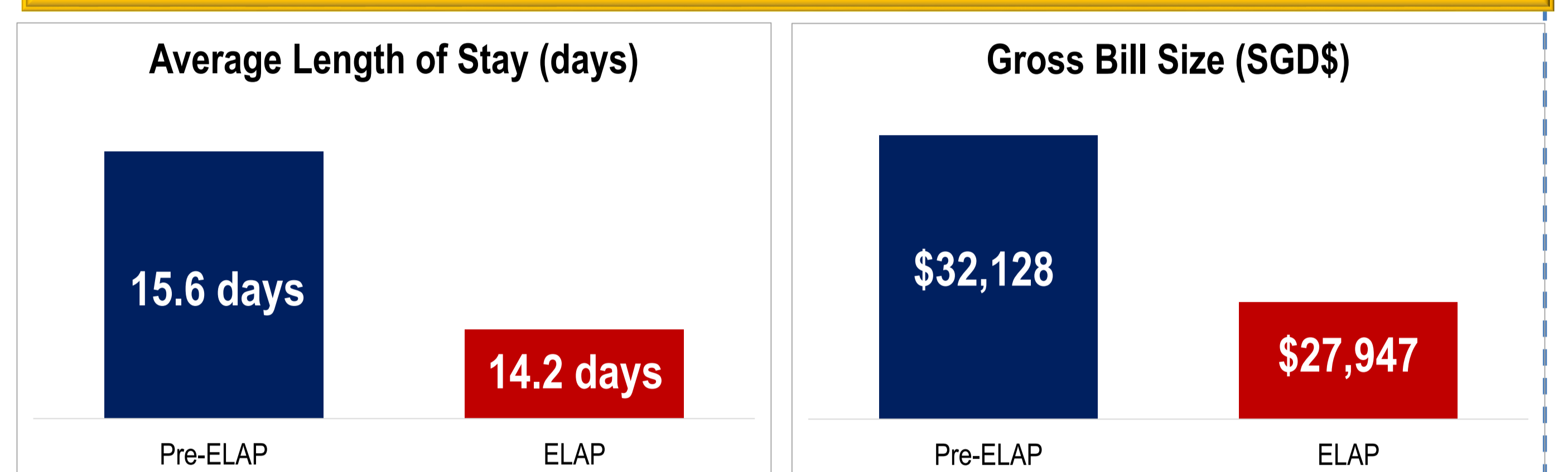


Functional Outcomes



Experience Outcomes

Costs-to-Patient Outcomes



Optimal Care Index (OCI)

Pre-ELAP

$$\text{OCI per \$1,000 spent} = \frac{23.7}{32,128} * 1,000 = +0.7$$

ELAP

$$\text{OCI per \$1,000 spent} = \frac{46.8}{27,947} * 1,000 = +1.7$$

The OCI score demonstrated a **2.5X increase in patient value gain** based on the 4 major outcome indicators guided by the Patient Value Compass (PVC)

Sustainability

- The ELAP workgroup meets quarterly to perform regular data auditing and discuss areas to improve on
- On a larger scale, KTPH is working with other hospitals including TTSH, SGH and NTFGH to improve overall EL outcomes nationally
- The eventual goal is to develop a nation-wide EL network where new innovations can be shared and deficiencies be optimized across hospitals

Lessons Learnt

- Transparency and regular audit have been shown to drive improvement and lead to better outcomes in surgery
- The main drivers of successful implementation were:
 - Effective multidisciplinary teamwork
 - Regular QI-focused measurement of outcomes
 - Appointment of dedicated local champions
 - Progressive cultural change

Conclusions

- Implementation of a transdisciplinary team and perioperative care pathway has helped to *save lives* and led to improvement in outcomes across the various measures for patients undergoing emergency laparotomy.
- Patients under the ELAP pathway received operations *Quicker*, recovered with fewer deaths and complications *Safer*, stayed in hospital for lesser days *Cheaper*, and had improved overall OCI Value *Better*.