

National Quality Improvement Conference

Sustained Improved Emergency Laparotomy Outcomes Following A Transdisciplinary Perioperative Care Pathway

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Problem Statement

- Emergency Laparotomy (EL) is commonly performed for various potentially life-threatening intra-abdominal surgical conditions.
- Compared with elective surgery, EL bears significant global health burden with high post-operative mortality and healthcare costs.
- KTPH was the 1st hospital in Singapore to adopt a peri-operative care pathway – Emergency Laparotomy pathway (ELAP) since 2019.

Project Aim

- Key objective:** To *reduce post-operative complications* and *improve survival* following ELAP implementation.
- Aims:**
 - Surgery performed within 6 hours from time of decision for surgery in emergency cases
 - Consultant-led perioperative care
 - ALL patients with NELA predicted mortality > 10% transferred to ICU/HDU post-operatively
 - ALL patients aged ≥65 reviewed by Geriatrician post-operatively

Lessons Learnt

- Manpower diversion during Covid-19 posed a challenge as the clinical team struggled to ensure essential manpower is kept in order to keep the pathway running
- Limited resources at individual hospital such as insufficient beds in Surgical High Dependency unit has made us change our criteria for post-operative admission from NELA predicted mortality risk of 5% to 10% and pathway needs to be individualized according to resources and demands.
- The ELAP pathway has generated greater awareness of the problem and more ELAP QI initiatives have been implemented in TTSH and NTFGH, translating to more receptive improvement in emergency general surgery.

Potential Solutions

ACT

- Ongoing review and revision
- Regular training, reinforcements
- Research collaboration with other institution

CHECK

REDCap database established:

- 1st review at 6 months, then annually
- Data analysis, sharing and feedback

PLAN

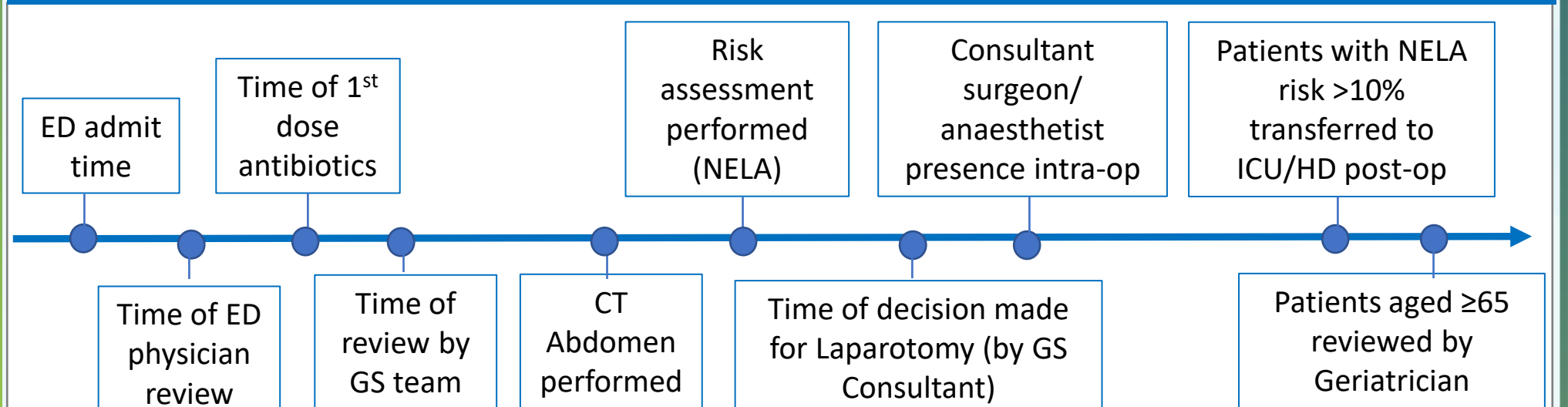
- Interdisciplinary collaboration – ED, GS, Anaesthesia, Geriatrician, Intensivist, Nursing
- Patient selection (Table 1)
- Integrated care bundle pathway -Fig.1

DO

- Disseminate workflow
- Training of health care professionals

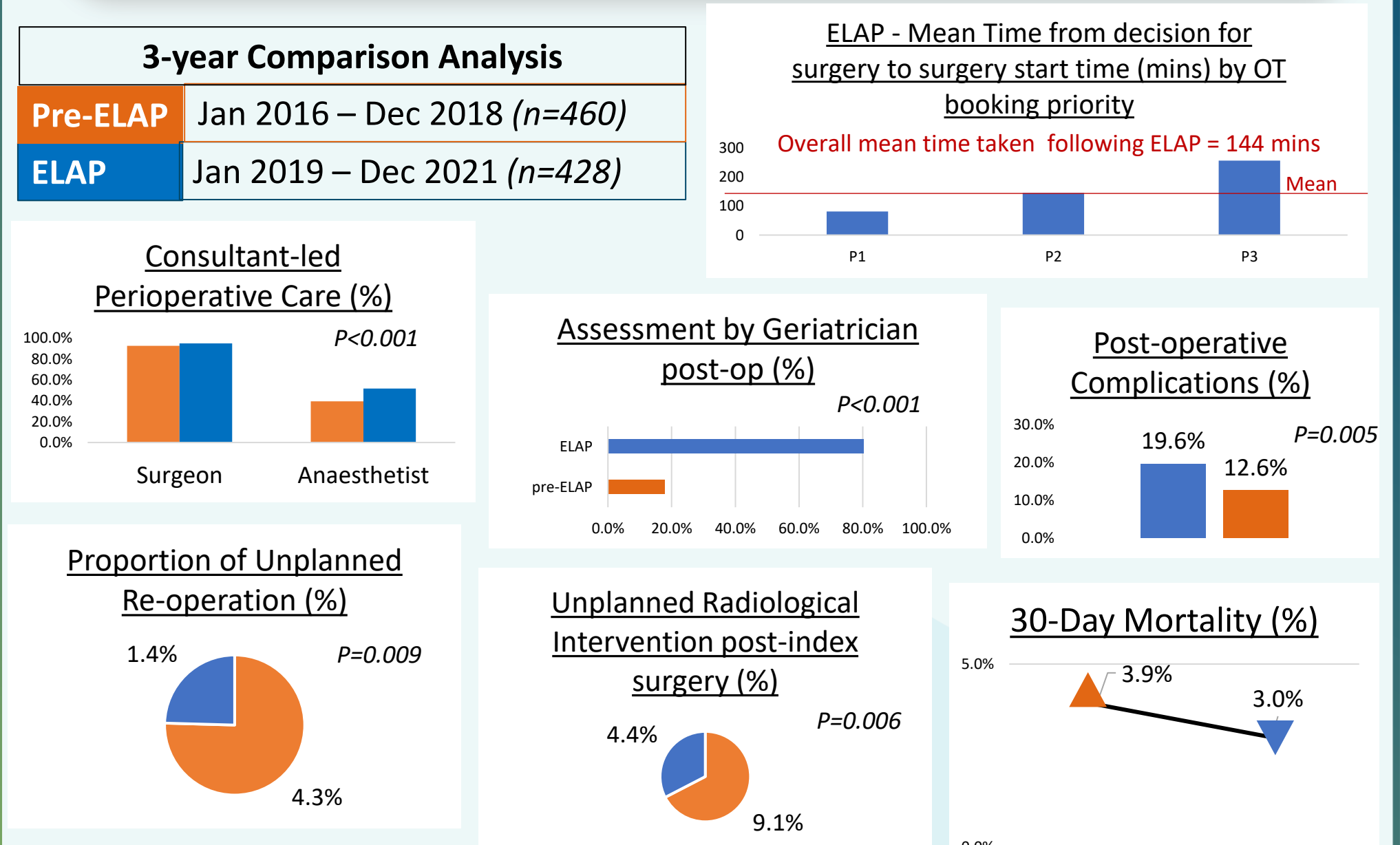
Table 1. Target Population	Inclusion Criteria	Exclusion Criteria
	<ol style="list-style-type: none"> Intestinal obstruction Perforated viscus Bowel ischaemia Adhesiolysis Gastrointestinal (GI) bleed requiring laparotomy Any other suspected acute abdomen requiring laparotomy 	<ol style="list-style-type: none"> Trauma laparotomy Appendicitis Cholecystitis Hepatobiliary (HBS) sepsis Vascular surgery

Fig. 1. Emergency Laparotomy pathway (ELAP) workflow



CFS: Clinical Frailty Score, CT: Computed Tomography, ED: Emergency department, GS: General Surgery, HD: High dependency, ICU: Intensive care unit, NELA: National Emergency Laparotomy Audit – mortality risk score

Outcomes & Impacts



- ❖ **Sustained Outcomes after ELAP**
 - **Efficiency:** ↑ participation of senior anaesthetist and higher geriatrician input
 - **Clinical:** reduced major morbidity (CD ≥3), lower unplanned re-operation/radiological intervention post-index surgery
- ❖ Institutions should consider implementation of similar peri-operative care pathways for patients requiring EL.