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Mission Statement

Effective and safe surgical ambulatory emergency care unit which move patients to ambulatory pathway (akin to day operation units for elective procedures) rather than traditional inpatient management

Team Members

	Name	Designation	Department
Team Leader	Jerry Goo Tiong Thye	S. Consultant/ HOD	General Surgery (GS)
Team Members	Lee Jing Wen	Consultant	General Surgery (GS)
	Kang Min Li	S. Staff Physician	General Surgery (GS)
	Ong Yu Jing	Nurse Clinician (APN)	APN & Specialty Nurse
	Tew Chee Wee	S. Consultant	Geriatric Medicine / THINK Centre
	Shobhit Swarup	S. Consultant	Acute & Emergency Care (A&E)
	Lyndsay Christie	Consultant	Acute & Emergency Care (A&E)
	Lee Ching Ching	S. Manager	THINK Centre
	Lee Ngok Lin	Manager	Case Management/THINK Centre
	Wong Sue May	S. Staff Nurse	THINK Centre
	Lim Woan Wui	Manager	General Surgery (GS)

Evidence for a Problem Worth Solving

- Increased demand for hospital beds**
 - Estimated bed occupancy rate 95.7% in April 2023¹
 - Demand for beds in northern part of Singapore has increased and is expected to grow¹
- More ill patients**
 - "We are seeing more ill patients than before, coming to our ED and presenting with complex conditions and comorbidities → ↑ ALOS"¹
- Long wait time for hospital beds**
 - Median wait time in April 2023 was more than 20 hours¹
 - "Longest median wait time was 40 hours on March 27"¹

- Acute surgical conditions contributes to a significant portion of the GS dept workload, with about 2500 patients/year admitted via the ED, of which ~ 1360 patients (54%) were discharged within 72 hours (2021).
- This calls for a paradigm shift in clinical practice and a rethinking of the traditional approach to acute surgical patients with an increased focus on ambulatory care for uncomplicated general surgical conditions → **ACES** formation

AIMS:

- Assess, diagnose and treat patient, with early discharge within 24 hours
- Reduce inpatient emergency surgery admissions: 80% patients to be discharged home from ACES
- Improve overall patient experience: **ALL** patients to receive senior clinician review with at least 85% reviewed within 4 hours and at least 75% within 2 hours.

Methodology

- Encourage staff to provide details on unexpected events that may have an impact on patient safety and care
- Strong leadership support and teamwork from clinical and admin leads, providing dedicated time and resources
- 3-monthly review and analysis of ACES service outcomes
- Communication: Discuss progress and improve performance, providing feedback
- Patient satisfaction – THINK Centre



- Engagement with service leads - GS, A&E Nursing and KTPH THINK Centre*
- Patient selection (Fig. 1a)
- Discussion, design and finalise ACES workflow
- Facility: 2 beds in EDTU* + follow-up clinic (Fig. 1)
- Early supported discharge with THINK Centre follow-up calls, supported by surgical team
- Dissemination of new workflow (Figure 2)
- First patient recruitment in June 2022

(* THINK Centre: Telehealth and Integrated Network Centre, EDTU: Extended Diagnostic Treatment Unit)

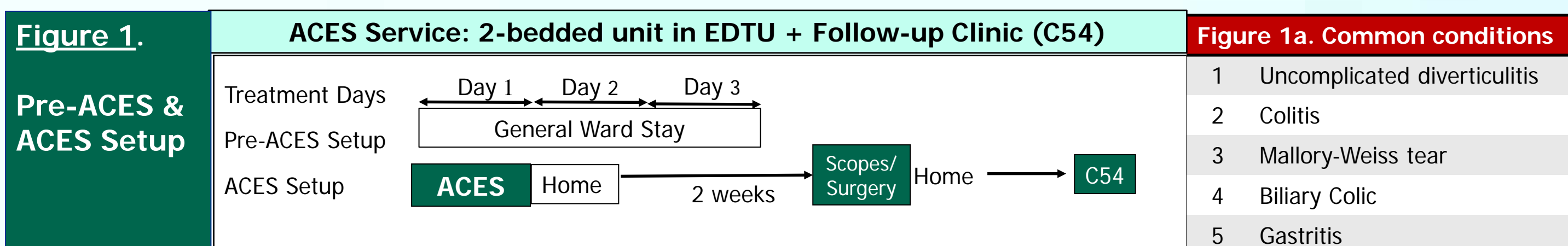
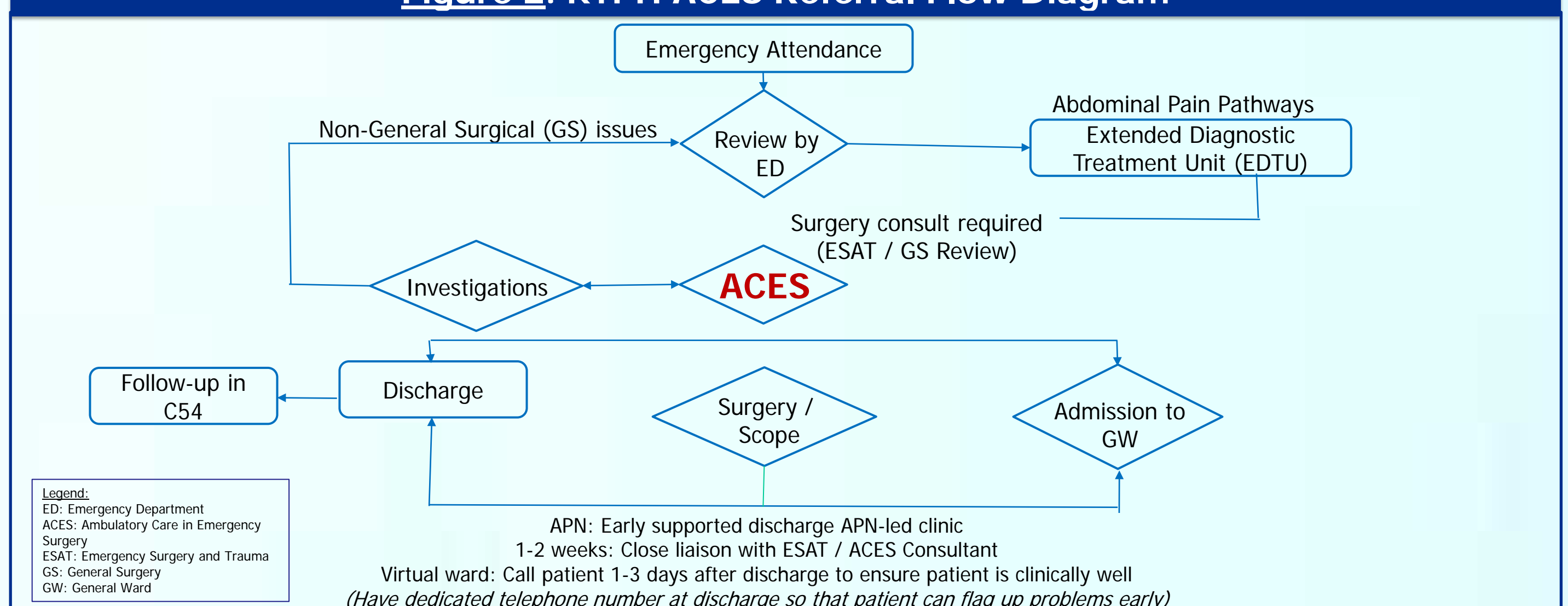


Figure 1a. Common conditions

1	Uncomplicated diverticulitis
2	Colitis
3	Mallory-Weiss tear
4	Biliary Colic
5	Gastritis

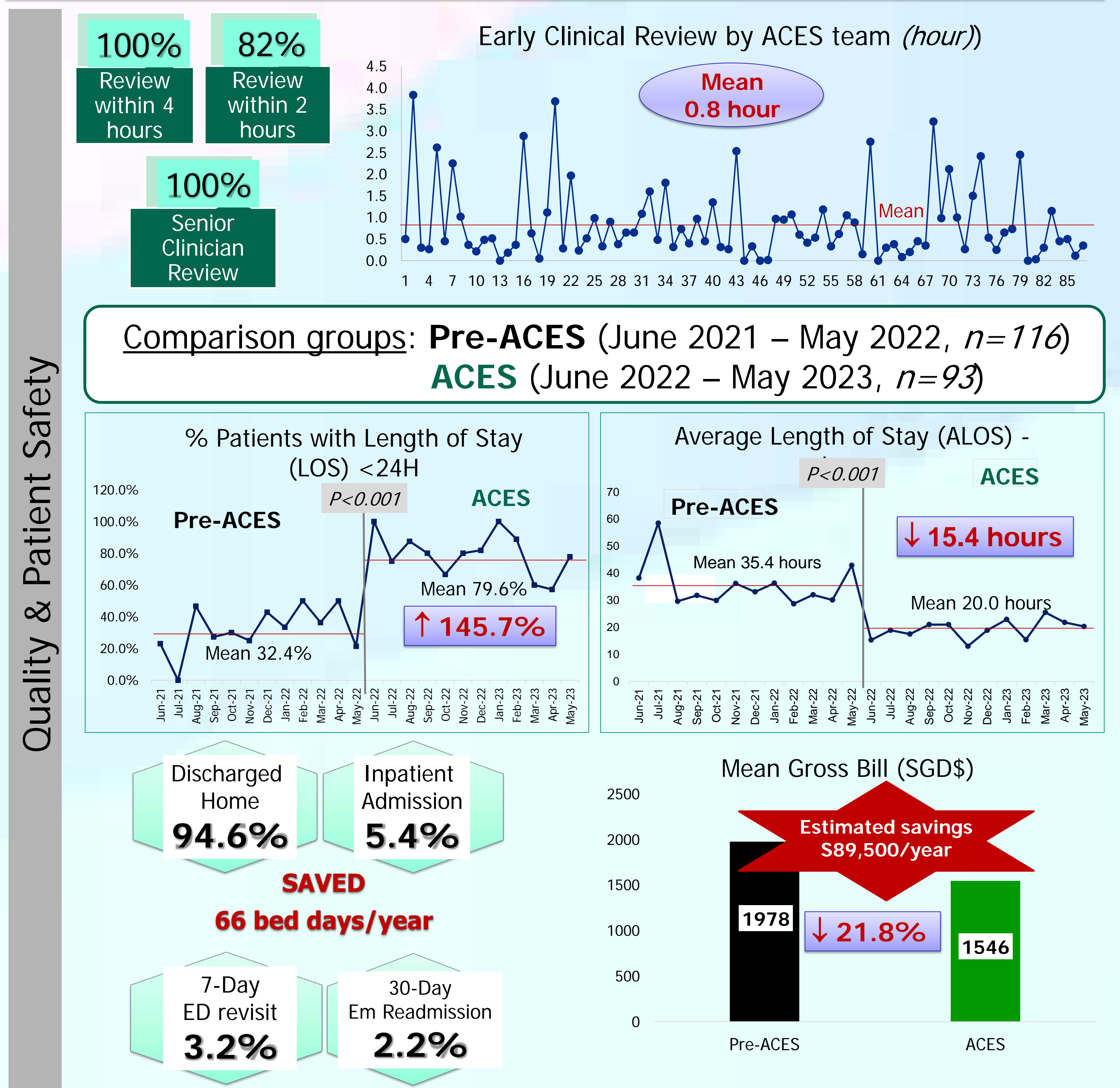
Figure 2. KTPH ACES Referral Flow Diagram



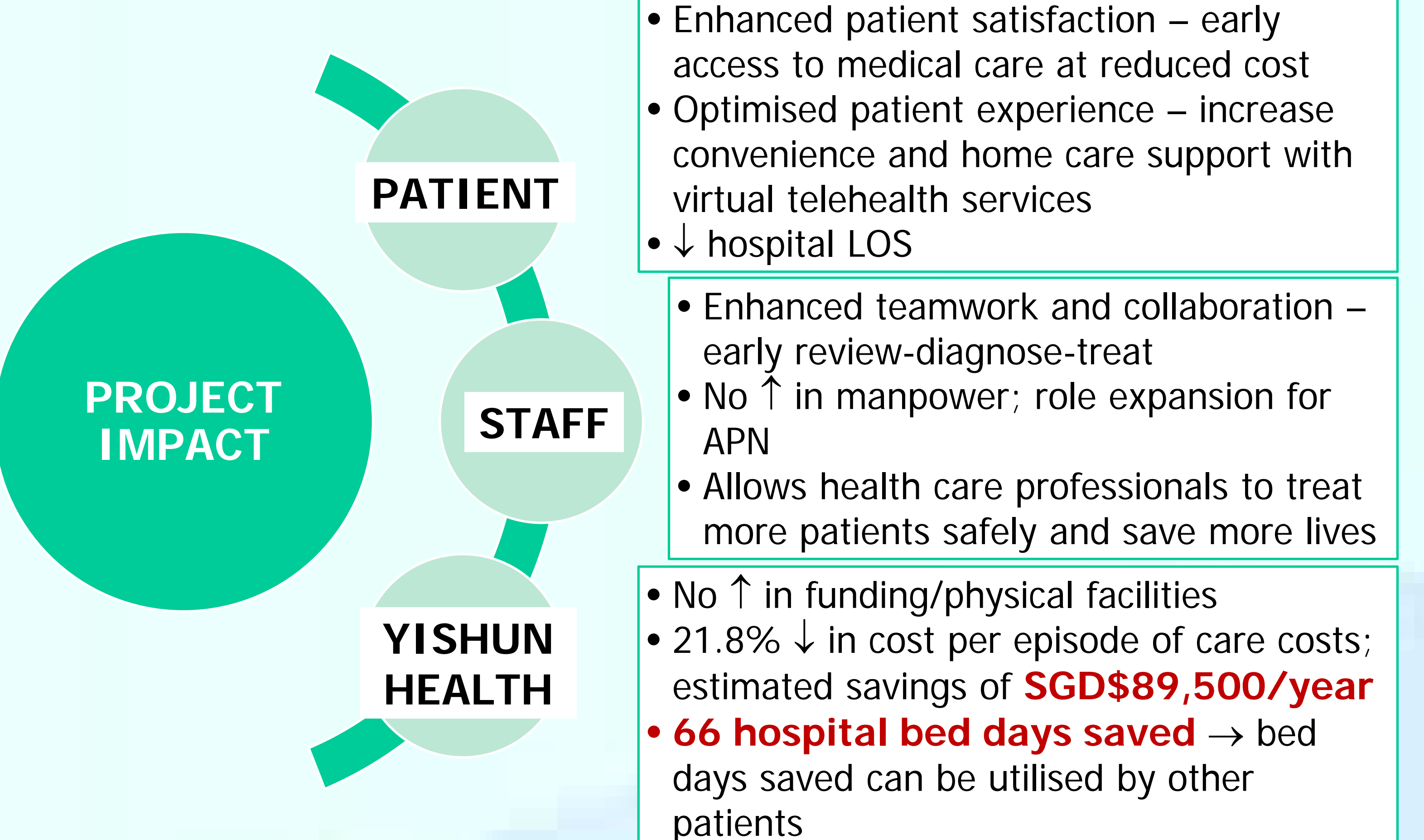
ACES initiative is a pilot service for the management of acute surgical conditions under the department of GS led by the ESAT team in tandem with ED and KTPH Think Centre

¹Data Source: Longer waiting times for beds in some hospitals, but treatment not delayed: MOH. The Straits Times 21 Apr 2023. Accessed on 26 July 2023

Results & Project Impact



Operational Resilience & Staff Well-being



Strategies to Sustain

- The ACES model of care is achievable and sustainable. It uses available manpower and physical facilities and integrates with existing workflows to improve uptake by the clinicians. KTPH is an early adopter of this system and the first in Singapore to implement it. It may be used as a basis for other restructured hospitals in Singapore.
- Further review of ACES will be performed after one year with analysis of patient load, occupancy rates, and areas for improvement.
- ACES may be expanded after implementation of improvements with expansion of criteria to include diagnoses such as simple appendicitis, symptomatic inguinal hernia, and upper abdominal pain, as well as increasing bed capacity, creating a virtual ward for supported discharge, and developing an information booklet or video for patient education.

Conclusion

- Early experience of the ACES service in KTPH shows significant reduction in the hospital length of stay, improved patient experience, saved hospital beds and costs through an increase in same-day discharge for the selected surgical patients.
- ACES workflow, the first of its kind in Singapore context, has integrated itself within the workflow of our hospital and become an essential part of the pathway to right site surgical patients to the best possible care.