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Sustaining Improvement of Patient Care and Outcome with Implementation of a Weekly Consultant Rotation within the Dedicated Emergency Surgery and Trauma (ESAT) Team

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BACKGROUND

- The unpredictable and unplanned admission of emergency surgical and trauma (ESAT) patients with lack of emphasis of the care given results in manpower issues, inefficiency and reduced quality of care.
- The dedicated ESAT team was established in 2014 to address the gaps in the management of emergency surgical admissions.
- The initial 12-month review from 2014 to 2015 showed an improvement in patient outcomes when led by a single consultant.[1]
- In 2017, the ESAT service evolved to include more consultants in response to the optimization of the department's manpower and sustainability of ESAT service delivery.

AIM

- The aim of this project is to provide value-based, sustainable, effective, efficient and accessible care for this acute high-risk group of patients through the implementation of weekly consultant (WC) rotation.

METHOD

- In January 2017, ESAT team evolved to a weekly consultant rotation system instead of a single-consultant led team while preserving the fundamental characteristics of the ESAT team.
- Review of all emergency general surgical admissions (total of 2532 patients) during two distinct six-month time periods were made (May - October 2014 and January - June 2017).
- The former period corresponds to pre-ESAT and the latter corresponds to ESAT WC rotation.

RESULTS

Table-1. Demographics and discharge diagnoses

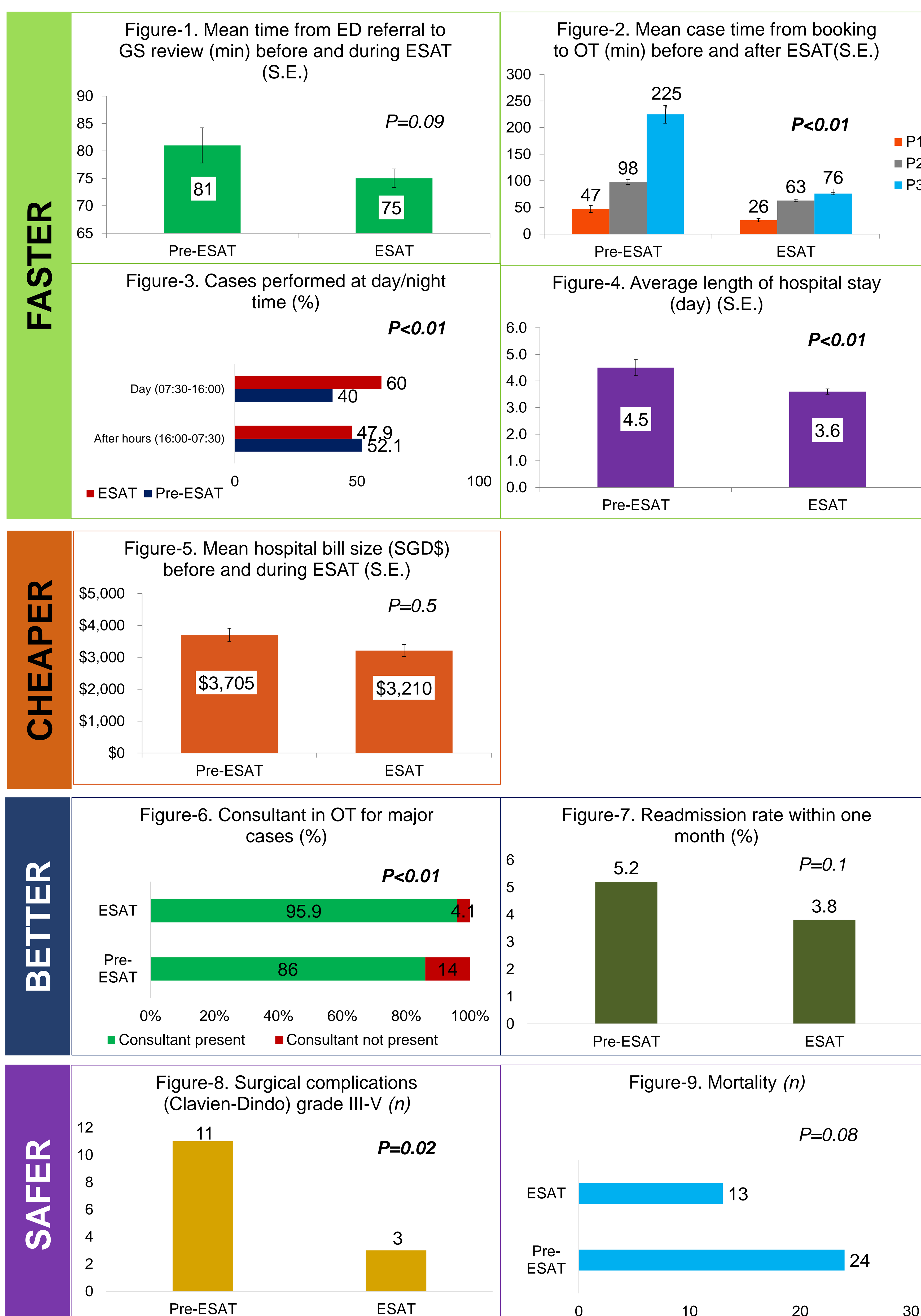
Variable	Pre-ESAT *N=1248*	ESAT WC *N=1284*	*P*
Age	50 (19)	51 (19)	*0.6*
Sex – M:F	786:462	807:477	*1.0*
Final Diagnoses – *n(%)*			
Acute appendicitis	192(15.4)	179(14.0)	*0.3*
Biliary disease/Pancreatitis	192(15.4)	216(16.8)	*0.4*
Diverticular disease	66(5.2)	80(6.2)	*0.3*
Soft tissue infection	221(17.7)	254(19.8)	*0.2*
Trauma	98(7.8)	122(9.5)	*0.2*
Bowel obstruction	99(7.9)	83(6.5)	*0.2*
Gastro-intestinal bleed	64(5.1)	49(3.8)	*0.1*
Gastritis/Colitis/Gastroenteritis	82(6.6)	145(11.3)	***<0.01***
Gynaecology diseases	12(1.0)	17(1.3)	*0.5*
Hernia	22(1.8)	20(1.6)	*0.8*
Non-specific abdominal pain	108(8.6)	52(4.0)	***<0.01***
Other*	93(7.5)	67(5.2)	***0.03***

*Other refers to small numbers of patients from a spectrum of disorders grouped together

Table-2. Operations performed

Variable	Pre-ESAT *n=568*	ESAT WC *n=1284*	*P*
Appendicectomy	176(31.0)	167(28.6)	*0.4*
*I&D/Wound debridement	208(36.6)	226(38.7)	*0.5*
Cholecystectomy	41(7.2)	83(14.2)	***<0.01***
Hernia repair	16(2.8)	13(2.2)	*0.7*
Laparotomy			
Adhesiolysis	8(1.4)	5(0.9)	*0.5*
Bowel resection	32(5.6)	27(4.6)	*0.5*
Exploratory & Trauma Laparotomy	33(5.8)	21(3.6)	*0.1*
Peptic ulcer	16(2.8)	12(2.1)	*0.5*
Gastric resection	2(0.4)	5(0.9)	*0.2*
Other	2(0.4)	4(0.7)	*0.4*
Thoracotomy	1(0.2)	2(0.3)	*0.5*
Minor	33(5.8)	19(3.2)	*0.05*

*I&D; Incision and Drainage
Other refers to conditions with small numbers that have been grouped together



CONCLUSION

- The current WC ESAT team optimizes resource utilization and improves patient outcomes such as reduction in time to surgical review, time to surgery, length of stay, hospital costs with fewer complications and mortality.
- The KTPH model has been described in the newspaper *Lianhe Zaobao* and Singapore Medical Journal.[2,3]

SUSTAINABILITY/FOLLOW-UP

- Continuous improvement plan includes streamlined care pathways for common acute surgical conditions, dedicated operating theatre and ward allocation and multi-disciplinary perioperative collaboration with geriatricians and allied health professionals for elderly patients.

References
1.Mathur S, Lim WW, Goo TT. Emergency general surgery and trauma: outcomes from the first consultant-led service in Singapore. Injury 2017;09.002 [Epub ahead of print]
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3.Mathur S, Goo TT, Tan TJ, Tan KY, Mak KSW. Changing models of care for emergency surgical and trauma patients in Singapore. Singapore Med J 2016; 57(6):282-286

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