



# Reduction in Wait Time for Patients doing ECGs only at KKH Pre-Admissions Services

Cheah Rui'En Lynette, Sylvia Sim, Jennifer Chew, Division of SAS, KKH  
Dr Dirk De Korne, Medical Innovation & Care Transformation, KKH  
John Wong, QSRM, KKH

## 1. BACKGROUND & OBJECTIVES

Prior to August 2016, patients requiring Echocardiogram (ECG) services after their doctor consultation sessions at Women's Specialist Outpatient Clinics (WSOCs) were instructed to walk in to KKH Pre-Admissions Services (PAS) and queue together with other patients waiting for Pre-Admissions Testing (PAT) (see Figure 1).

Although an ECG procedure usually takes around 10 minutes, waiting time for patients awaiting ECGs only was prolonged due to the following reasons:

- (i) PAS works on a sequential queue system so all patients are served on a first-come-first serve basis regardless of appointment times;
- (ii) The same group of PAS nurses also attend to PAT patients, who require longer service times due to instructions and further assessments;
- (iii) One ECG machine was shared by PAS and eight WSOCs; and
- (iv) Co-location of ECG services and clerking of PAT patients as a result of space constraints meant that nurses could only perform ECGs when doctors' were not seeing PAT patients.

A team was formed to reduce the waiting time for patients awaiting ECGs only. By doing so, there is a potential to reduce overcrowding and long waiting time for patients awaiting PAT in PAS.

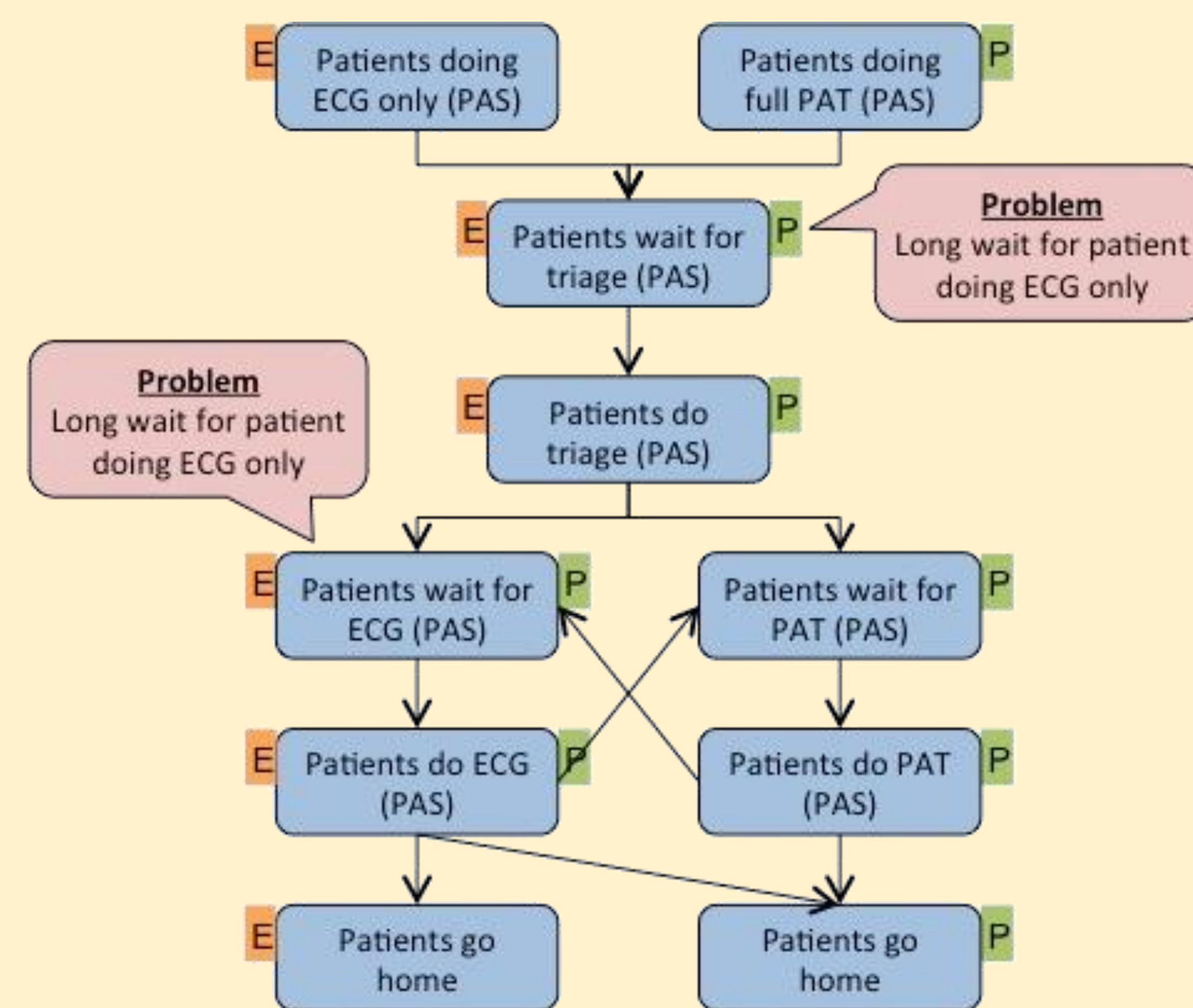


Fig 1: Flow of patients requiring ECGs only (E) versus those requiring PAT services (P) prior to implementation of Mobile ECG Clinic.

## 2. METHODOLOGY / APPROACH

Given the limitations in Figure 2, a **Mobile ECG Clinic** was piloted at SOC C to reduce waiting times of patients requiring ECGs only (Figure 3). This pilot was done from Tuesdays to Fridays as clinics always experience the highest absenteeism rate on Mondays, making it challenging to roster staff to run the mobile ECG clinic in addition to other clinic assignments.

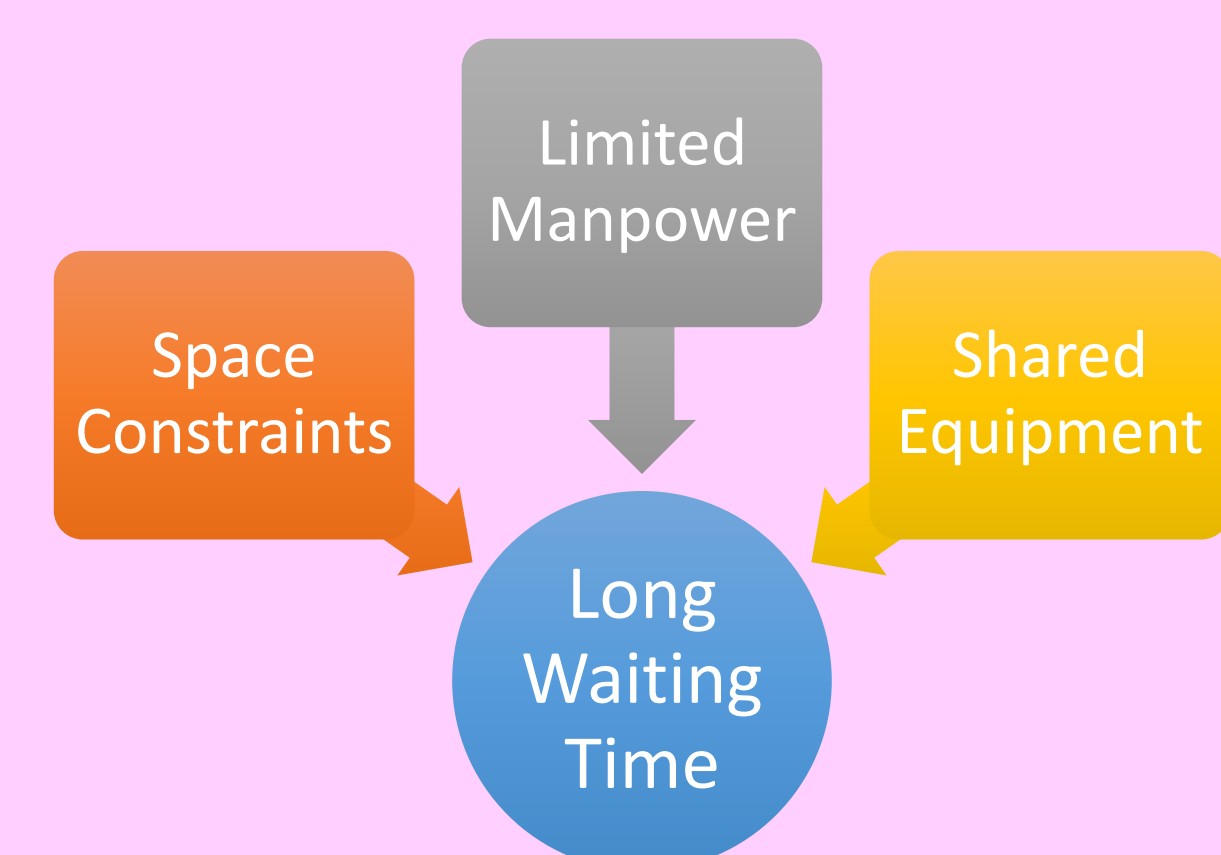


Fig 2: Limitations at PAS contributing to long patient waiting times and the poor patient experience.

(A) Identified selected Patient Service Associates and Enrolled Nurses from various WSOCs with potential to progress further in their career for ECG training.

- ✦ Theory session through curriculum developed by Nursing Development Unit
- ✦ Hands on training
- ✦ Series of competency checks before certification

(B) Purchased an additional unit of ECG equipment dedicated for WSOC patients requiring ECGs post-consultation

(C) Relocated ECG service for non-PAT patients away from PAS to WSOCs

- ✦ Fast-track queue system for this group of patients
- ✦ Reduce crowding at PAS

Tue to Fri for ECG only patients

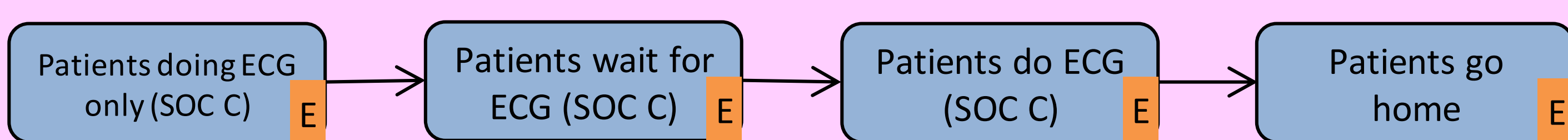
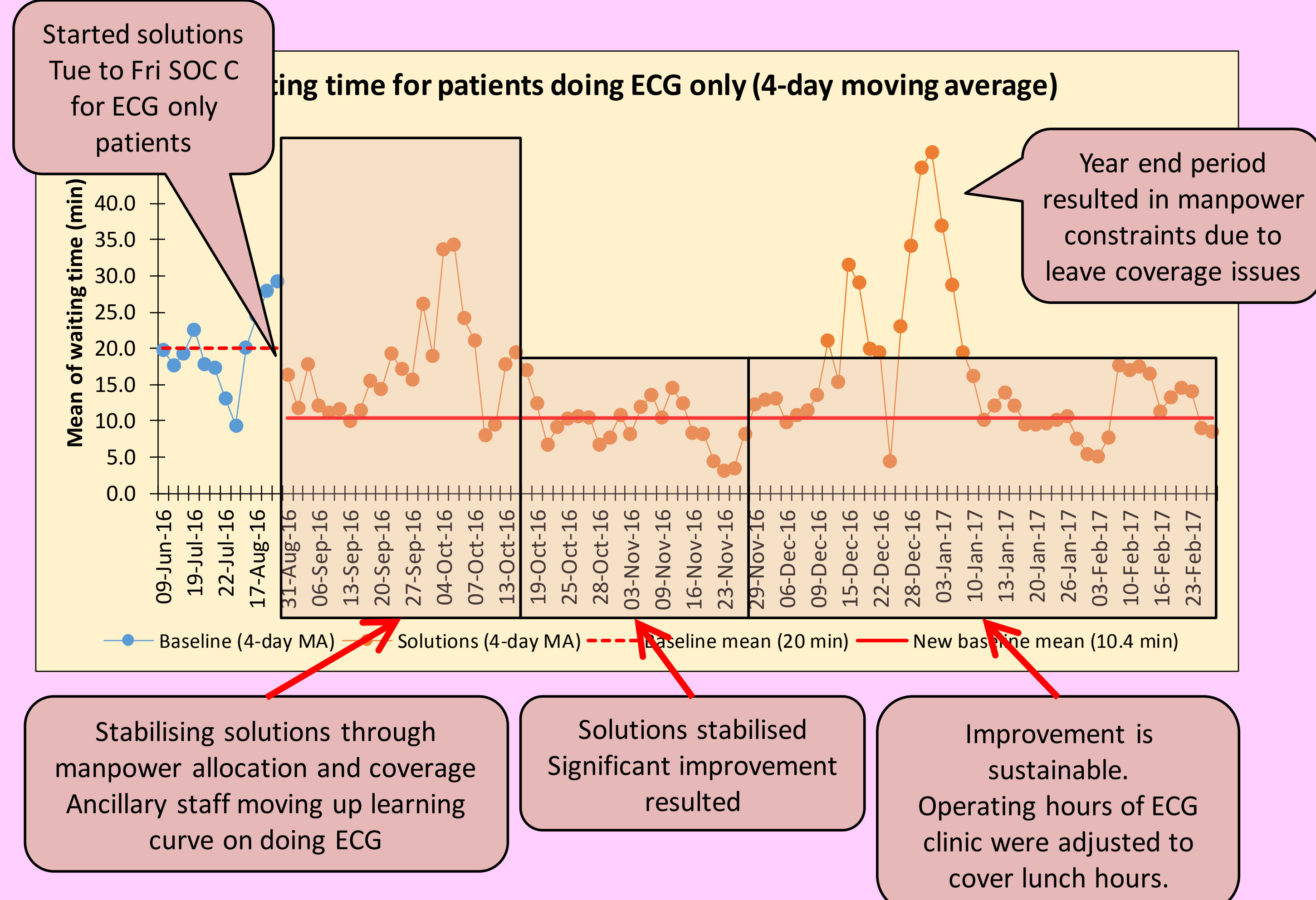


Fig 3: Patient flow in Mobile ECG Clinic at SOC C



(A) Sustainable Improvement in Waiting Time

- ✦ Waiting time for patients doing ECG only has been reduced sustainably from a mean of 20 min in PAS to mean of 10.4 min in SOC C.
- ✦ PAS patients who required ECG now have a shorter wait time in PAS (Tue-Fri)

(B) Job Enrichment for Staff

- ✦ Staff who are running the mobile ECG clinic are ENs or PSAs who have been selected to learn new skills

(C) Better Cross-Coverage

- ✦ Trained staff rostered to run the Mobile ECG Clinic are from various SOC. Hence allowing flexibility and better cross-coverage in the event of manpower shortages at a certain SOC.

## 4. CONCLUSION & LOOKING FORWARD

Staff support was critical to push through with the initial implementation of the Mobile ECG Clinic as training sessions were held on weekends and as the Mobile ECG Clinic taps on existing manpower – which is a challenge when multiple clinics experience staff shortages from Tuesdays to Fridays.

Plans to renovate and expand PAS premises are in the pipeline to allow for better management of patient flow. The 1 Queue system which has been implemented across all outpatient clinics will also be extended to PAS to allow for a more organised and efficient queue management system. The mobile ECG clinic will also be extended to Mondays once PAS renovation project is completed.