# Transforming and Redesigning Patient Journey through IT Innovations

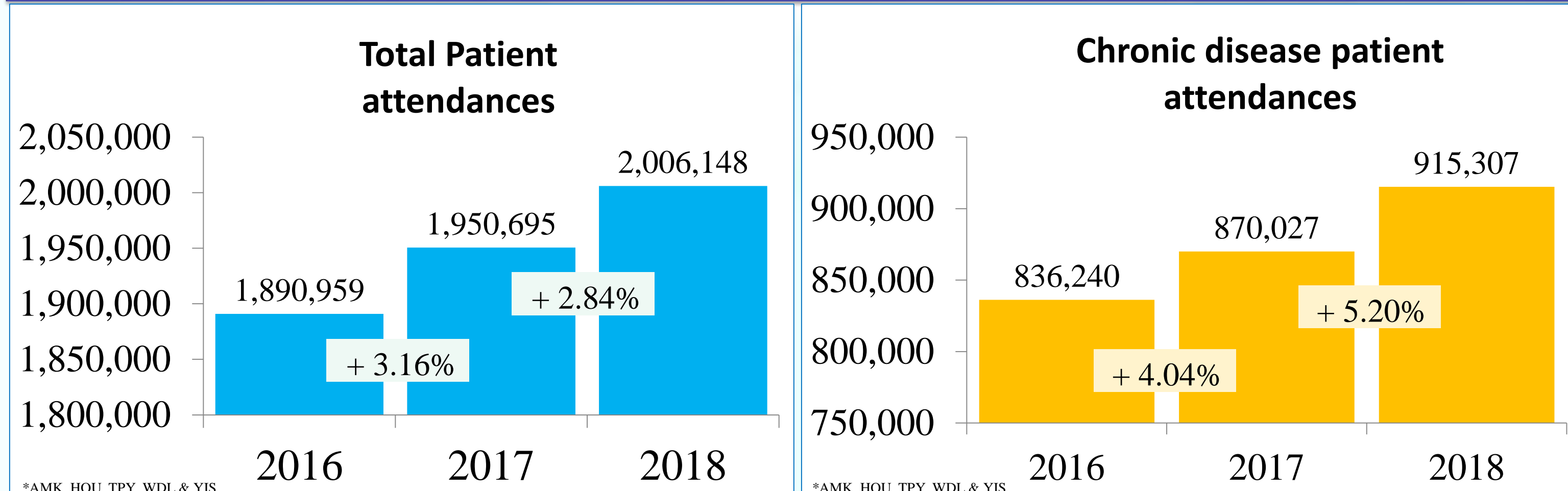## Sharon Chen, Asha Pandey, Yee Liu Lee
## Operations

## Mission Statement

To create a **seamless and efficient** patient journey through IT innovations

## Team Members

| | Name | Designation | Department | Role |
|---|---|---|---|---|
| 1 | Sharon Chen | Deputy Director | Operations | Leader |
| 2 | Asha Pandey | Executive | Operations | Leader |
| 3 | Yee Liu Lee | Senior Executive Assistant | Operations | Leader |

## Evidence for a Problem Worth Solving

**Total Patient attendances**

- 2016: 1,890,959 (+ 3.16%)
- 2017: 1,950,695 (+ 2.84%)
- 2018: 2,006,148

*AMK, HOU, TPY, WDL & YIS

**Chronic disease patient attendances**

- 2016: 836,240 (+ 4.04%)
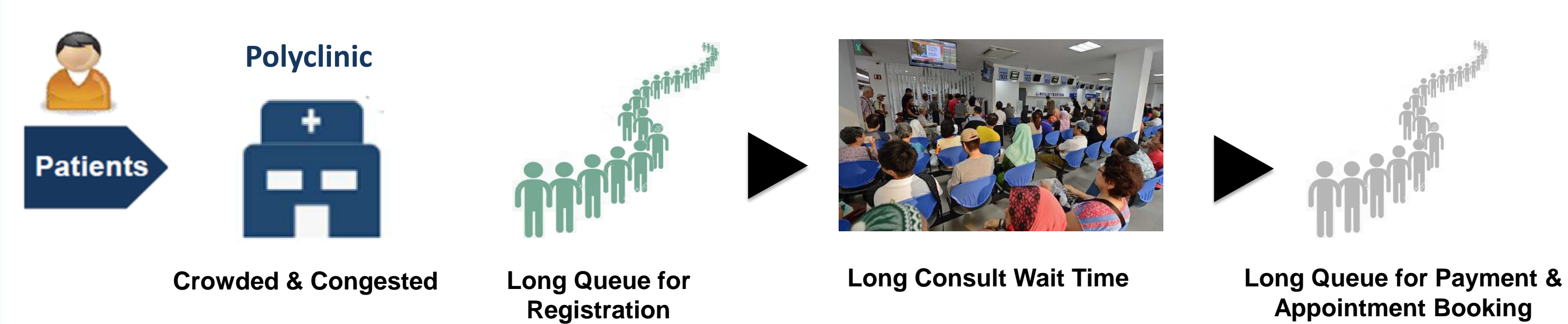- 2017: 870,027 (+ 5.20%)
- 2018: 915,307

*AMK, HOU, TPY, WDL & YIS

Upward trend in patient attendances as well as chronic disease patient attendances over the years which would translate into increasing patient wait time for registration, payment and appointment booking

## Current Performance of a Process

1. All walk-in patients have to register and book an appointment through the manned counter with a wait time of **~30minutes**.

2. Patients have to physically queue up at the manned counter to update any change in address or contact number, wait time was **~30minutes**.

3. To obtain an appointment to see a doctor, patients have to either call in to the contact centre or walk-in to the clinic.

4. All patients would be issued with at least **2 queue numbers** during each clinic visit i.e. 1 for consultation/lab, and 1 for pharmacy. This often caused confusion to patients.

5. All patients who require follow-up appointments have to physically queue up at the appointment-making counter with wait time of **~15minutes** to schedule their next appointment. PSAs could only verbally communicate with the patients on the proposed appointment date and time, which often led to miscommunication and hence, subsequent rework to reschedule the appointment.

## Patient Journey

**PATIENT JOURNEY - PAST**



Patients → Polyclinic (Crowded & Congested) → Long Queue for Registration → Long Consult Wait Time → Long Queue for Payment & Appointment Booking

**PATIENT JOURNEY - PRESENT**



Patients → Mobile appointment booking through HealthHub → Self Registration Kiosk → One-Queue → Self Payment & Appointment Kiosks

Same day appointment • Update Patient Particulars • Follow-up appointment booking

## Implementation

1. **Self-Registration Kiosks (SRKs)** with **smart routing feature**, **personalized language**, **update of patient particulars**, **same-day appointment booking** and **queue checker**
2. **Mobile appointment** booking through HealthHub
3. **One Queue-One Bill**
4. **Self-Payment Kiosks (SPKs)** with **personalized language** and **auto-generation of follow-up appointments**

## Intervention

- Enhancement of SPKs with **follow-up appointment-making** function improved accuracy and reduced time spent on appointment scheduling
- Patients can view appointment slots available and book the option of their choice
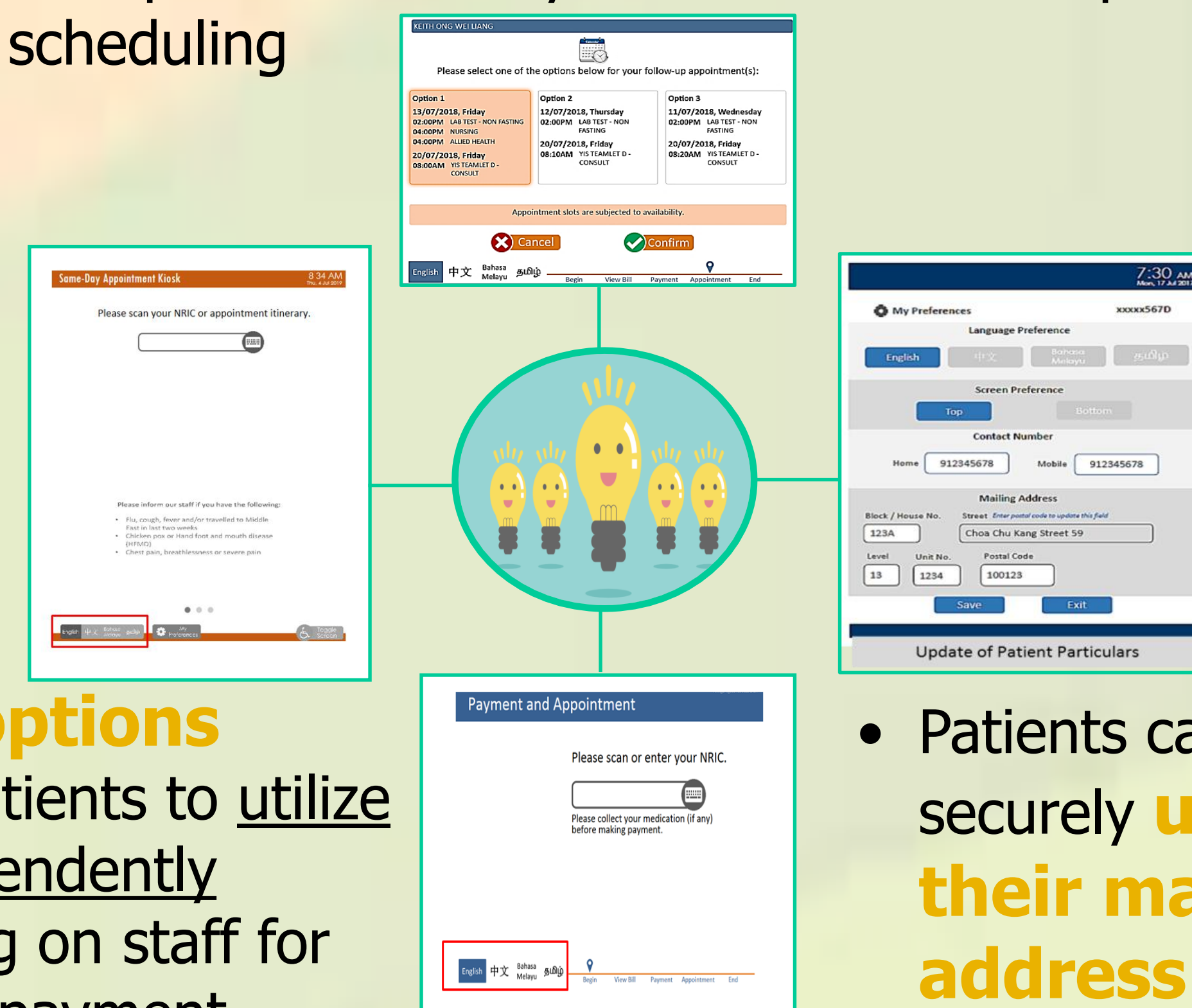


- **4 language options** allowed more patients to utilize the kiosks independently instead of relying on staff for registration and payment.
- The language option initially selected by patients is captured and retained.
- Patients can securely **update their mailing address and contact number** via the SRK on their own.

## Results

1. Self-Registration Kiosk (SRK)
   - **More than 55%** reduction in number of patients served over the manned registration counters with a growing number of patients now using the SRKs.


Number of patients served over the manned registration counters
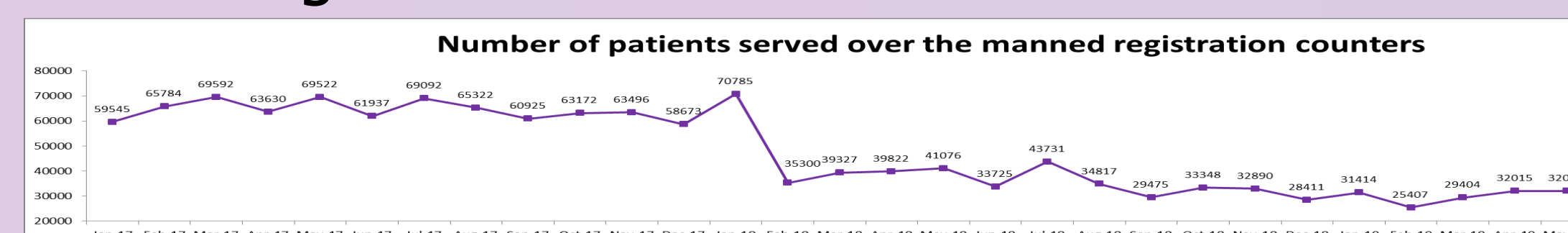
   - Average transaction time of **less than 1 minute** per patient using the SRKs

2. Self-Payment Kiosk (SPK)
   - **More than 60%** reduction in the number of patients served over manned payment counters with the increasing utilization of the SPKs.


SPK Utilisation Jan 17 - May 19
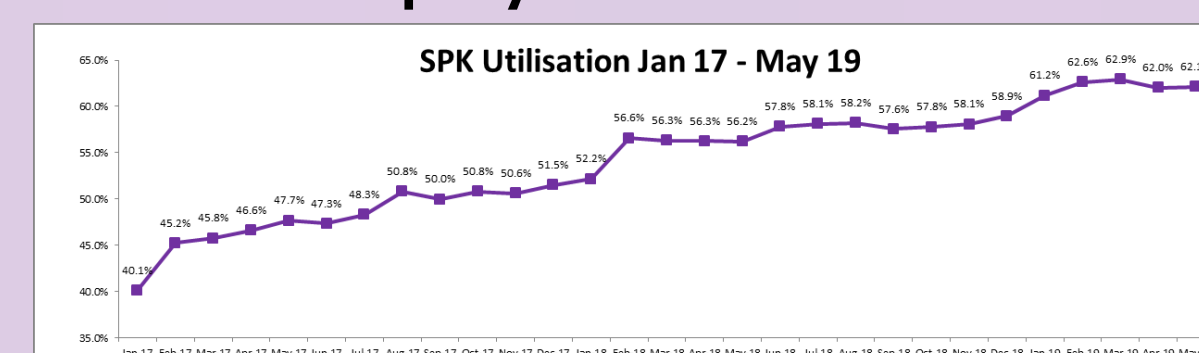
   - **60%** follow-up appointments generated from the SPKs for patients.
   - Average transaction time of **less than 1 minute** for patients making payment & appointment via the SPKs

3. Higher productivity
   - The same number of staff can **manage a higher volume** of patients, **provide higher quality** and **more patient centric service**.

## Cost Savings

1. With the myriad of functionalities at the self-help kiosks, multiple touch points that were previously an unavoidable part of the patient journey have now been eliminated. Patients' clinic dwell time has been **reduced significantly by ~50minutes/visit.**

2. These innovations have resulted in higher productivity and a total **savings of 35 PSA FTEs** (equivalent to cost savings of $1,792,560/year) to date. Furthermore, there is a **~30-40% reduction in the floor area** needed for traditional manned counters. The floor space saved could hence be put to better use e.g. clinical space, patient activity area.

## Problems Encountered / Solution



- Staff's resistance to change → • Regular staff engagement sessions • Roll call, training
- Patients' resistance to change → • Intuitive kiosk interface • Assistance from Staff / Service ambassador
- Machine downtime → • Regular maintenance • Downtime training • Root cause analysis team

## Strategies to Sustain



- HealthHub Promotion Booth
  - Posters
  - Banners
  - Brochure
  - E-Poster
- Assistance from Staff / Service ambassador
- videos on self-help services
- Getting feedback from patients and staff
- Performing data and needs analysis
- Ongoing improvement efforts and enhancements to keep systems up-to-date

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