The project aims to automate queue management in Specialist Outpatient Clinics (SOCs) by providing real-time and accurate updates to patients of their approaching queue through:

- Providing timely and accurate updates to patients to improve wait time experience
- Automated tracking of pre-consultation test results that is linked with queue system

This initiative is in line with the Government’s call for greater productivity through leveraging technology to automate processes and therefore redirecting time savings for job upskilling.

### METHODOLOGY

The SMS notification feature is a product of enhancing the Electronic Queue Management System (eQMS) by integrating it with the clinical laboratory system. The system interface takes into account real-time checking of pre-consultation test status and automatic slotting of patients into the queue for doctor’s consultation when test results are ready.

A “Status Panel” is an added feature in eQMS providing clinic staff a quick overview of patients’ test results status to facilitate efficient monitoring of delayed, cancelled or failed blood test results and necessary follow-ups.

### RESULTS

SOC staff are freed up from repetitive unproductive tasks such as toggling across systems to check the status of pre-consultation tests, contacting patients to provide regular updates on their queue status, and informing them to return to the clinic.

- **SMS notification received when turn is nearing**
- **Automated tracking of pre-consultation test results**

**Manpower Productivity**

An estimated 5.6 FTE savings (translated to $282,190 per annum) is expected following the implementation to 18 SOCs.

**Positive Ground Feedback & Patient Satisfaction**

TTSH’s SOCs Patient Experience Score was 93.9%, above National’s and NHG’s standing at 86.9% and 88.2% respectively.

**Better Patient Management**

SOCs experienced a drop in the number of missed queues despite an increased workload. In one pilot clinic, missed queue was reduced by 0.4% despite a 23.7% increase in workload.

**Recognition**

First-of-a-kind integration in local hospital setting and the project have received support from TTSH managements and Group Chief Information Officers. This feature would be adopted by all other public healthcare institutions from FY2019 onwards.

### CONCLUSION

With an improved clinic workflow, staff no longer need to monitor the pre-consultation test status and follow-up with manual queue management which can be time consuming and distracting while assisting during consultations. Focus can now be placed on more patient-centric and value-added roles such as medication supply verification etc.

Patients are now presented with a clear visibility of their queue status, empowering them to manage their wait time better and to avoid unnecessary missed queues.

### A Typical SOC Patient Journey with Blood Test

#### Before

- **Pt registers at Self-Reg Kiosk**
- **Pt goes for pre-consult test**
- **PSA repeatedly checks system for blood results**
- **Test results ready**
- **PSA manually calls pt**
- **Dr sees pt**

#### After

- **Pt registers at Self-Reg Kiosk**
- **Pt goes for pre-consult test**
- **Test results ready**
- **System auto checks for results & sends SMS to pt when queue is approaching**
- **Dr sees pt**

No manual monitoring by PSAs

The project team would like to extend the recognition and appreciation to IHIS (for their support and work on integrating the systems), the laboratory team (for their inputs), and last but not least to all our clinic colleagues (for their inputs and hard work to implement a new workflow).