Reducing the Patient Journey of Follow-up Patients in SGH ENT Specialist Outpatient Clinics

Singapore Healthcare Management 2024

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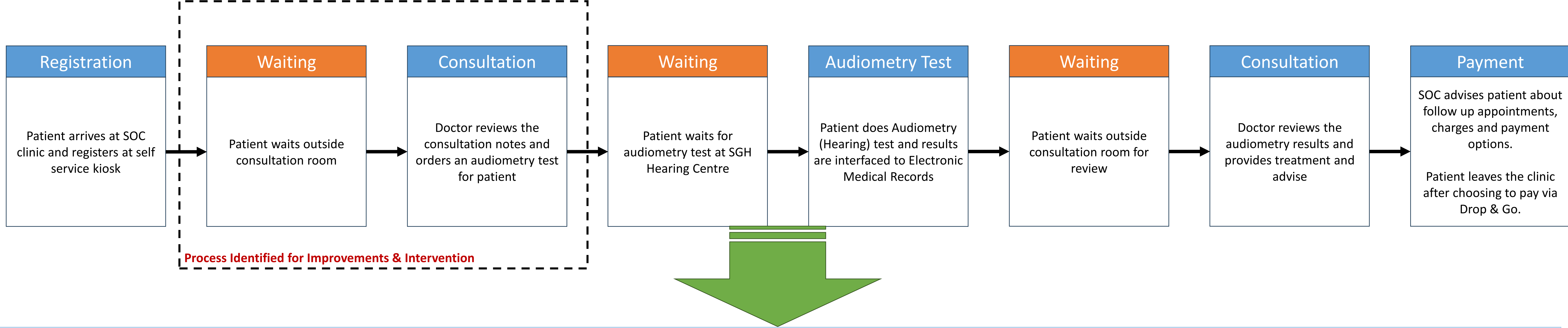
OBJECTIVE

The project aims to reduce the patient journey and total waiting time of Otolaryngology (ENT) follow-up patients with on arrival audiometry at SGH ENT Specialist Outpatient Clinics(SOC).

BACKGROUND

The Department of Otolaryngology-HNS (ENT-HNS) saw approximately 46,000 patients in 2023 for a range of conditions relating to the ear, nose or throat. As part of the care provision, patients may undergo procedures and investigations to assess and treat their conditions, thus resulting in extended SOC visits. The combination of high patient volume and longer SOC visits contributes to a longer patient journey at ENT-HNS SOC Clinics, and subsequent patient complaints.
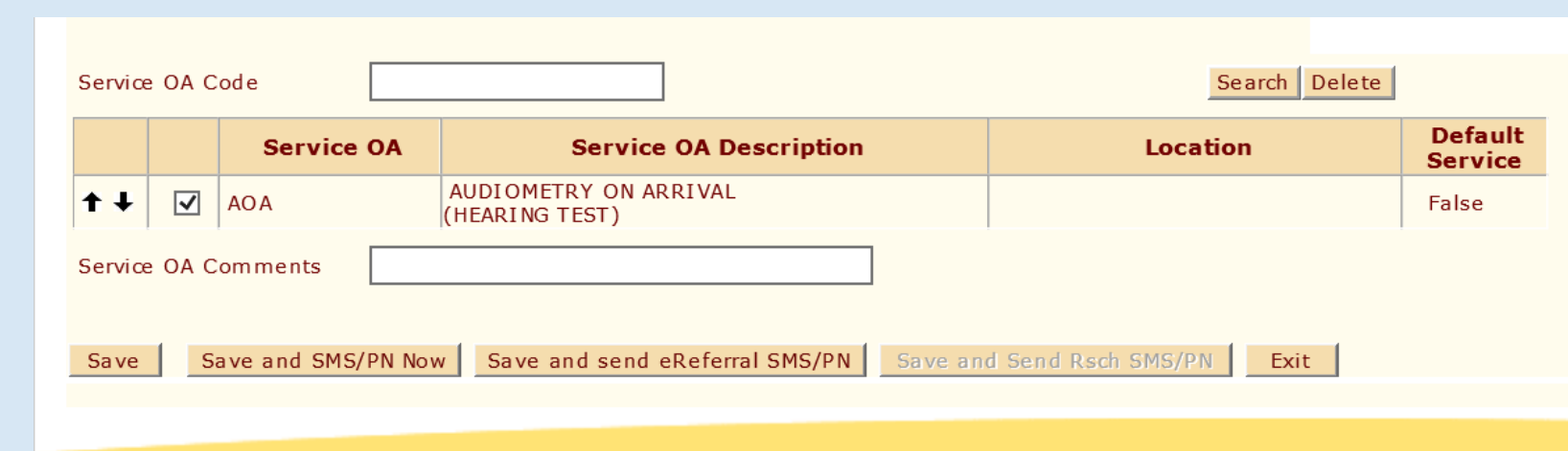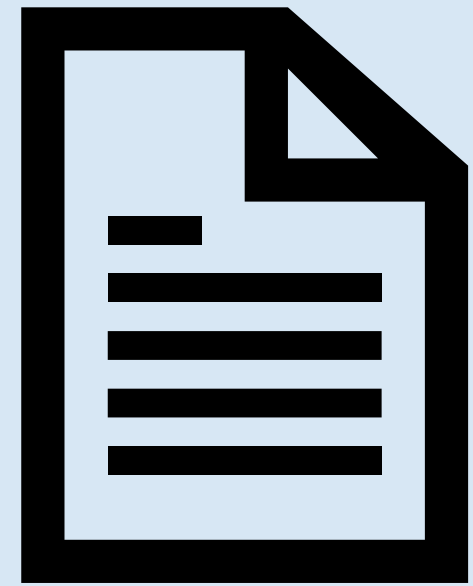
Patients coming for ear related conditions may require on-arrival audiometry testing as part of their continuity of care. During each follow up visit, these patients would follow a standardized patient journey (*in the diagram below*) which includes a doctor's consultation and an audiometry test. Due to the standardized nature of the care plans of this group of patients, a value steam mapping and analysis was performed on the patient journey. Based on the data collected, improvements were introduced together with the involvement of SOC staff and ENT-HNS doctors.

Previous Patient Journey

Registration	Waiting	Consultation	Waiting	Audiometry Test	Waiting	Consultation	Payment
Patient arrives at SOC clinic and registers at self service kiosk	Patient waits outside consultation room	Doctor reviews the consultation notes and orders an audiometry test for patient	Patient waits for audiometry test at SGH Hearing Centre	Patient does Audiometry (Hearing) test and results are interfaced to Electronic Medical Records	Patient waits outside consultation room for review	Doctor reviews the audiometry results and provides treatment and advise	SOC advises patient about follow up appointments, charges and payment options. Patient leaves the clinic after choosing to pay via Drop & Go.

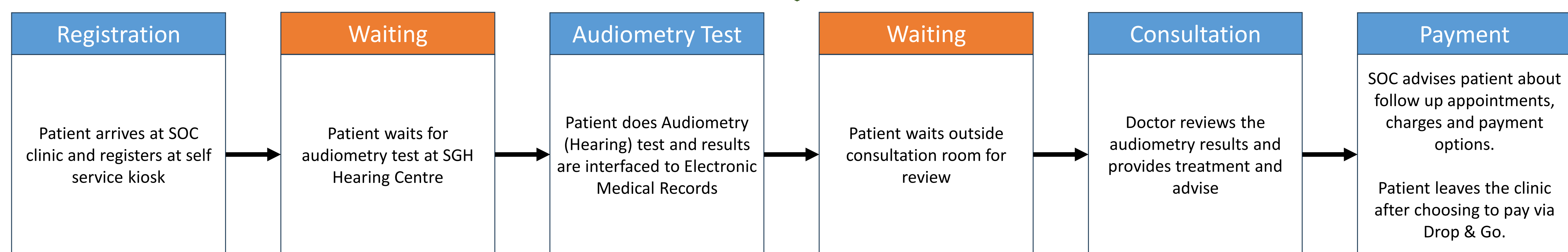**Process Identified for Improvements & Intervention**

IMPROVEMENTS INTRODUCED

1. Doctors would document in EMR the need for on arrival audiometry and pre-order for subsequent follow up visit. Audiometry order form is given to patient.

2. SOC Room Assistant will advice patient about the instructions for the next follow up consultation.
   - To Bring along audiometry order from for the next visit
   - To go directly to SGH Hearing Centre for audiometry test before consultation
   - To come 30 minutes earlier for audiometry test

3. Existing features Outpatient Appointment System (OAS) and 1Queue system were enabled to automate and direct patients to undergo audiometry testing prior to consultation.
   - Service On Arrival Function was enabled in OAS for Audiometry
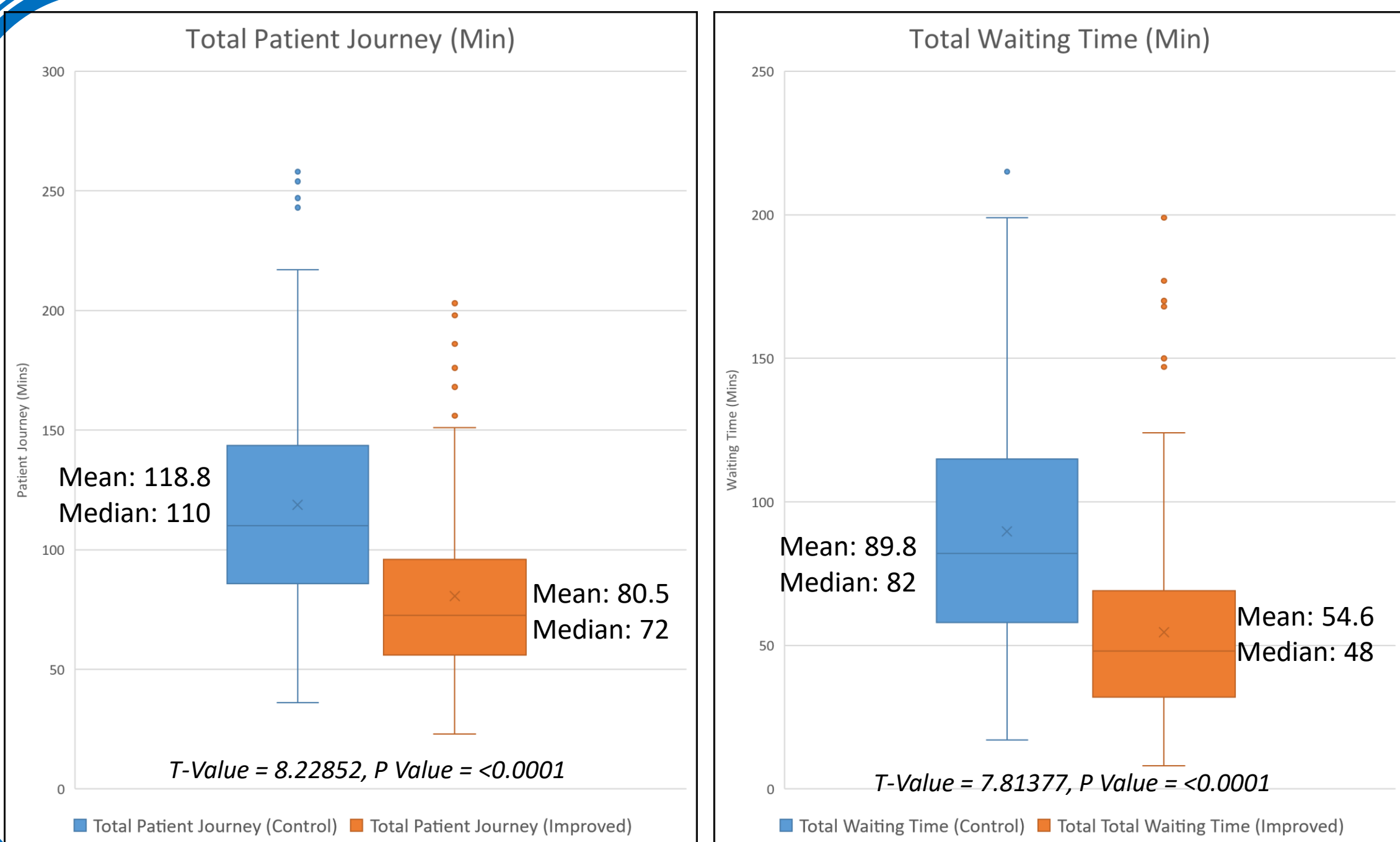   - 1 Queue system would automatically include audiometry test

Improved Patient Journey

Registration	Waiting	Audiometry Test	Waiting	Consultation	Payment
Patient arrives at SOC clinic and registers at self service kiosk	Patient waits for audiometry test at SGH Hearing Centre	Patient does Audiometry (Hearing) test and results are interfaced to Electronic Medical Records	Patient waits outside consultation room for review	Doctor reviews the audiometry results and provides treatment and advise	SOC advises patient about follow up appointments, charges and payment options. Patient leaves the clinic after choosing to pay via Drop & Go.

OUTCOMES

Total Patient Journey (Min)
Mean: 118.8 Median: 110
Mean: 80.5 Median: 72
T-Value = 8.22852, P Value = <0.0001

Total Waiting Time (Min)
Mean: 89.8 Median: 82
Mean: 54.6 Median: 48
T-Value = 7.81377, P Value = <0.0001

Data Analysis
A total of 413 follow up visits with on arrival audiometry in March 2024 was used to analyze for improvements. 175 patients underwent the improved patient journey. 130 patients formed the Control Group which followed the previous patient journey. These patients had appointments booked more than one year ago hence were unable to be included. 108 patient visits were not included due to incomplete or non-standard patient journey. Unpaired T-Test was used to determine if the improvement was statically significant.

Reduced Patient Journey
Patients under the improved patient journey experienced a shorter patient journey as compared to the control group. The average patient journey reduced by 38.3 minutes from 118.8 minutes (control) to 80.5 minutes (improved journey). There was significant improvements (*T-Value = 8.22852, P Value = <0.0001*).

Reduced Total Waiting time
Patients under the improved patient journey spent a reduced total time waiting as compared to the control group. The average waiting time reduced by 35.2 minutes from 89.8 minutes (control) to 54.6 minutes (improved journey). There was significant improvements (*T-Value =7.81377, P Value = <0.0001*).

Patient Reported Outcomes
Patients with the improved patient journey were polled for their feedback and positive patient reported outcomes was received.

Better Patient Experience
Patients shared that they felt that their total clinic journey was significantly shorter, and this led to a better patient experience.

Better Understanding of Upcoming Appointment
Patients shared that when staff explain about the audiometry test for their upcoming appointments, they have a better understanding and more accurate expectations for the follow up visit. This has also allowed them to feel more responsible and have a bigger participation in their care continuity.

Improved Patient Satisfaction
With a shorter waiting time and better awareness of their care plans, patients shared about improved satisfaction in the service provided by SGH SOC.

Staff Reported Outcomes
Reduced Errors and More Confidence
With the automation of directing patients to on arrival audiometry, errors in directing patients in 1Queue have reduced from average 10 per week to 1.5 per week. This reduction in errors has enabled room assistants to be more confident and develop trust in the systems they use. As a result, clinic staff have shared that there is improved job satisfaction and morale in the clinic.

CONCLUSION

With the implementation of automation and process improvements through elimination of non-value adding processes, ENT-HNS follow up patients with on arrival audiometry experienced a reduction in length of total patient journey and total waiting time. These improvements have let to better patient experience and improved patient satisfaction. Staff satisfaction and morale has also increased due to these improvements. These improvements were achieved through a better understanding of patient journey and enabling of existing system capabilities. While the improvements have been significant, the team is encouraged to continuously improve patient journeys where possible.