

Author and Co-Authors

Kathryn Ng<sup>1</sup> (Author), Margaret Tang<sup>2</sup>, Kemas Muhamad Zulhaimi Bin K A<sup>3</sup>, Joyce Quek<sup>1</sup>, Wang Khong Hai<sup>2</sup>, Stephen Wong<sup>3</sup>, Michael Choo<sup>1</sup>, Danny Han<sup>1</sup>, Benedict Tan<sup>2</sup>, James Toi<sup>3</sup>

Institutions: <sup>1</sup> Singapore Health Services (SingHealth), <sup>2</sup> Integrated Health Information Systems (IHIS), <sup>3</sup> Singapore General Hospital (SGH)

## Introduction

### Objectives & Goals

The Appointment Access Task Force (AATF) was formed in September 2013 to enable all stakeholders to access, review and change appointments across SingHealth Institutions. The aim was to create a seamless experience for patients and a user-friendly system for staff.

To support this, the Appointment Access Digitization Workgroup (AADW), led by the SingHealth Group Chief Information Officer and SGH Chief Operating Officer (Ambulatory), was formed to design and implement an enhanced patient centric online and mobile appointment system. The workgroup comprised Operational representatives from all SingHealth institutions.

### PROBLEM: How to Improve Patient's Access to Care?

#### No Holistic View for Patients With Multiple Appointments

Patients had to view their appointment at each institution separately. This was inefficient when coordinating multiple appointments across our institutions.

#### High Volume of Calls due to System Constraints

System was configured where patients could only search appointments within a 30 day range; which were usually fully booked. As a result, patients had to contact the Call Centre for a scheduled date.

#### Cumbersome Access and User Interface

Patients had to navigate through 8 web pages/ clicks to access the appointment system. Then, after reaching the appointment page, it usually prompted them to call because slots were not available.

## Methodology

Patient feedback and process mapping were conducted. The team benchmarked various industries' popular online booking systems, then remodeled and simplified the SingHealth system to global best practices from other industries, rather than healthcare alone.

### Introduced Cross-Institutional Access for Continuity of Care

All appointments across SingHealth & EHA were made accessible in one collective view, and arranged by order of appointment dates, rather than by institution. Patient safety prompts were built-in to ensure patients have enough medication till their next appointment and check for lab tests or investigation.

### Enhanced System Efficiency With Longer Search Date Options

The system extended the search and display of available appointments slots to 13 months. Patients can now schedule their appointments effectively, without having to contact the Call Centre.

### User-friendly Navigation; Fast Access to Functionality

Reformatted homepage of all institution websites with consistent placement of 'Make/Change Appointment' button, to improve visibility. Appointment webpages were re-designed to cater for patient's primary needs: change/ cancel appointments or request for a new appointment.

### All Appointments on Mobile

The team revised the SMS appointment reminder prompt to include a link to the Health Buddy mobile app for patients with smartphones to check appointments on-the-go.

MR JONATHAN TAN CHING NAM. Appt reminder from SGH: 01-AUG-2014 11:40 at Clinic G, Blk 3 Level 1.  
::NEW:: To change your appt, pls use [Health Buddy](#) app or [e-appointment](#).  
Or Call [63214377](tel:63214377).  
To Cancel your appt, Press X

## Results

The revamped SingHealth & EHA appointment system was collectively discussed and successfully implemented within 4 months in April 2014.

### Consolidated View, Access All Appointments Across 2 Healthcare Clusters at a Glance

The SingHealth Appointment System, and extended to EHA, is now able to provide patients and care givers a single online platform to view, change or cancel appointments across 7 SingHealth Institutions and EHA in one page.

The benefits:

- Convenient access channel for patients who otherwise have to wait on the line for our Call Centre staff to service their enquiries/ needs.
- 'Put Power' in the patients' hands to manage their appointment scheduling directly, 24/7, 365 days a year.

### Ease of Use

- Simplified user interface and navigation process 'from 8 clicks to 2', providing faster access to appointment booking system.
- Improved visibility of online system on each Institution website, with instant 'one click' access.

### High Usage on Online and Mobile Platforms – Right on Track Immediate Higher Utilization Rates Achieved:

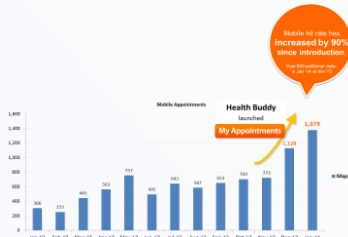
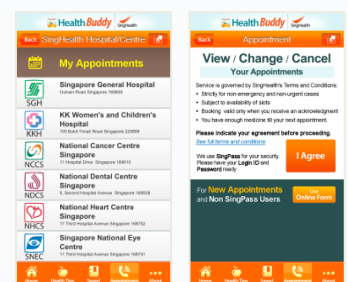
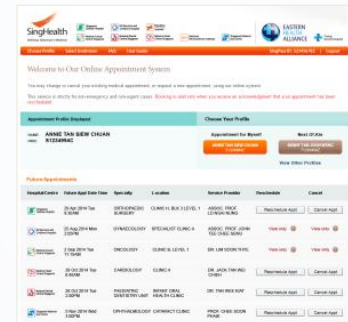
- Mobile appointment access hit rates increased by 90%, within first 2 months of launch.
- Online appointment views increased by an average of 45%, with higher visibility on institution's websites in the first month of launch.

### Happy Customers – Patients & Care Givers

Improved satisfaction for patients and care givers, saving their time and cost.

### Institution Efficiency

Helped to improve efficiency at our Call Centres.



## Conclusion

With the project success and positive results, there is continued effort to increase the SingHealth online and mobile appointment systems adoption through:

- Creating awareness through various communication and publicity platforms
- Continuous monitoring of patients' and care givers' feedback for further improvements
- Adopting relevant technology in a user-friendly interface for further enhancements.

### The Future of e-Appointment System

The team is committed to progressively make the online and mobile appointment systems the 'Channel of Choice' for patients who wish to change their appointments, particularly the web savvy generation of patients and care givers. This spells efficiency for both the patients, and the institutions.

### Lesson Learnt

Healthcare services should be centred around the patient and not by institutions to facilitate his/ her seamless experience across different healthcare institutions.