

Project Title

OneNUHS mobile application - a Digital Front Door to NUHS Service Transformation

Organisation(s) Involved

National University Health System, Integrated Health Information Systems

Healthcare Family Group(s) Involved in this Project

Healthcare Administration

Applicable Specialty or Discipline

Information Technology

Aims

- Learn how OneNUHS mobile app incorporates clinical care plan functions and patient support capabilities to better engage patients and simplify care
- Find out how the team exceeded the delivery of two Minimum Viable Products (MVP) from conceptualization to delivery in 12 months
- Hear how the first public healthcare cluster implementation of Teleconsult in a mobile app improves both patient and provider experience

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Additional Information

This article was first published in HealthTech Connect by IHiS

Project Category

Technology, Mobile Health

Care & Process Redesign, Value Based Care

Keywords

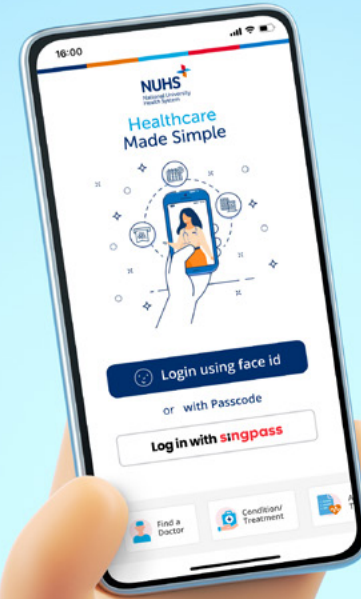
OneNUHS Mobile App, Integration of Intelligent Services, Teleconsultation, Value Based Care, Patient Reported Experience Measures, Digital APPs, Telehealth, Chat Bots, Product Development, Minimal Viable Product

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OneNUHS mobile application – a “DIGITAL FRONT DOOR” to NUHS’ SERVICE TRANSFORMATION



In today’s digital economy, compounded by Singapore’s space and manpower challenges, the traditional physical counter for service delivery needs to evolve. The process is cumbersome and reactive to changes in demand, resulting in choke points during peak periods.

When the National University Health System (NUHS) decided to transform its delivery system to enhance patient’s experience, it chose to adopt a mobile first strategy – to allow NUHS to better engage patients through the use of a mobile app and simplify care by empowering them to manage and influence their health outcomes.

At a Glance



Learn how **OneNUHS mobile app** incorporates clinical care plan functions and patient support capabilities to better engage patients and simplify care.



Hear how the **first public healthcare cluster implementation of Teleconsult in a mobile app** improves both patient and provider experience.



Access health information and services across NUHS institutions.



Find out how the team exceeded the **delivery of two Minimum Viable Products (MVP) from conceptualisation to delivery in 12 months.**



OneNUHS app has been **downloaded >176,000 times**, and has **surpassed 6,485 daily active users (as at end-Sept 2021)**, with positive feedback from users.

NUHS partnered IHIS to create this “digital front door” to address patients’ pain points, leveraging IHIS’ experience in digitalising patient experience via HealthHub, the national platform offering citizens a convenient and secured way to access a suite of digital health services and personalised health content. The collaboration helped NUHS to break new ground with their digital app to transform the way their patients engage with them, it also provided learning opportunities for IHIS’ HealthHub team to enhance and deliver better user experiences in HealthHub and other clusters’ apps.

Thanks to the close teamwork, **it took only 12 months to conceptualise and develop the first two versions of the OneNUHS app** that were launched in December 2020 and April 2021 respectively, based on an agreed roadmap.

With MVP2, users can view and make payment for outstanding bills with OneNUHS app and enable caregiver consent to access

functions of the app on behalf of their dependents. Thanks to the support of IHIS’ HealthHub team which provided domain expertise for the introduction of HealthHub Standard pages and Caregiver Access, the delivery of these features was expedited.

In the latest MVP3 released in August 2021, teleconsultation, and the ability to view COVID-19 records were added, together with a host of enhancements to existing features. The end-to-end teleconsultation patient journey is in the App, including viewing a teleconsult appointment, receiving reminders, viewing the patient queue, ordering medications for home delivery, requesting an MC and making payment. The inclusion of a Video Conference Platform (VCP) makes managing teleconsults much easier for support staff by automatically scheduling Zoom sessions and sending reminders. Both patients and providers gave good reviews of the first 50 teleconsults and provided valuable feedback to improve functionality in future releases.

These achievements were made possible because:

- NUHS and IHIS counted on the **strong support from the senior management of both organisations and close engagement of stakeholders/users**. Senior leaders at NUHS and IHIS met on a weekly basis to provide hands-on guidance to the project team. Senior management was also actively consulted for advice in joint monthly meetings.

- **A collaborative effort.** IHIS delivery team adopted the Agile methodology and the guiding principles of MVP – Methodology, Values-driven mindset and Product oriented design in developing OneNUHS App. The teams worked closely to leverage existing technology built within HealthHub and extended its functionalities to OneNUHS App at speed while minimising rework. Both the NUHS and IHIS teams worked closely to plan out feature roadmap and progress through two-week based sprint cycles. The IHIS team also provided regular updates to and sought timely feedback from NUHS leadership on the work-in-progress deliverables, so that the teams could continue to refine the deliverables in next sprint cycle.



The Making of OneNUHS App

“Our partnership with NUHS is a fruitful one,” said Jackling Yeo, IHIS’ Assistant Director, Digital & Integration Services, Digital Services and Solutions. “Our teams worked closely to translate NUHS’ patient care protocol into OneNUHS app to transform their service delivery. By tapping on our experience in the development of HealthHub and SingHealth’s Health Buddy, we were able to leapfrog the development process and explore new capabilities faster for NUHS, including the integration of intelligent capabilities (Chatbot) developed by the NUHS GCTO office.”



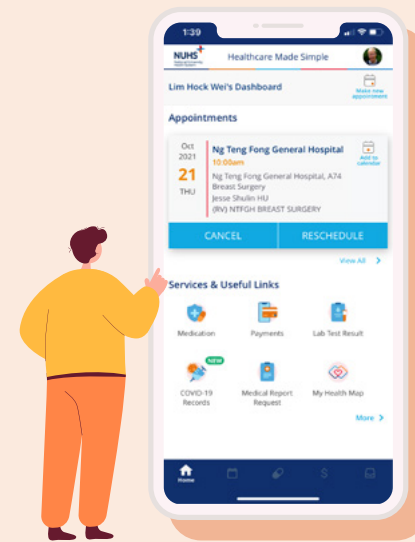
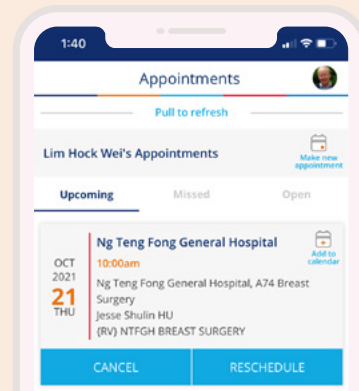
“As the national service provider for the key healthcare electronic medical records and source system, IHIS also provided value-add and scalability with advice on IT security and seamless interface with source systems and the national-wide healthcare ecosystem of services.”

Jackling Yeo, IHIS’ Assistant Director,
Digital & Integration Services,
Digital Services and Solutions

About OneNUHS App

OneNUHS App users will be able to access health information and services across the following NUHS institutions:

- National University Hospital
- Ng Teng Fong General Hospital
- Alexandra Hospital
- Jurong Community Hospital
- National University Polyclinics
- National University Heart Centre, Singapore
- National University Cancer Institute, Singapore
- National University Centre for Oral Health, Singapore
- Jurong Medical Centre



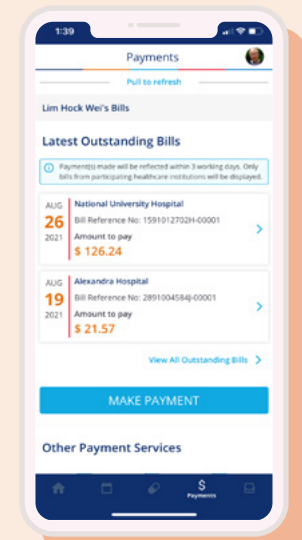
Patients are able to:

Unique Features:

- Access the app with biometric data such as fingerprint and facial recognition
- Obtain recommendations on health screenings and vaccinations based on their demographics and health status through the NUHS MyHealthMap programme
- Interact with the chatbot on clinic operating hours and other commonly asked questions
- Teleconsultation Patient Journey within the app (to be progressively rolled out to all NUHS institutions)

Others:

- Link to 'MyInfo' in Singpass for convenient set up of 'My Profile'
- Pre-fill appointment and medication request forms with their contact details once 'My Profile' has been set up
- Manage their appointments and receive notifications for appointments
- Register on the go and check their queue status
- Request for medication refills or top-ups
- Request, purchase and download their medical reports directly
- View and make payment for outstanding bills
- View health records such as lab test results, immunisation and prescription records
- Enable caregiver consent to access functions of the app



OneNUHS App tailored to NUHS users' needs

So what is the difference between the national healthcare app HealthHub and the OneNUHS mobile app?

"Imagine HealthHub as a large shopping mall with access to a wide range of health content and e-services in a secured and safe environment," explained Low Jinrui, Senior Manager, NUHS Group Service Transformation. "HealthHub provides a convenient option giving you access to medical services across all public hospitals and clinics in Singapore. Cluster apps like the OneNUHS app are like specialty boutiques filled with curated content for target users who are NUHS patients and also residents in the western region. OneNUHS app offers greater convenience for NUHS-cluster users as its offerings are tailored to our users' needs and requirements."

Accolades

According to Similarweb, the OneNUHS App was among the top four most popular healthcare and fitness app in Singapore, after HealthHub which topped the list (as at 3 Sep 2021), with a rating of 4.5 out of 5 on both Apple Apps and Google Play Store.

Since its soft launch, OneNUHS App has been **downloaded >176,000 times**, and has **surpassed 6,485 daily active users** (as at end-Sept 2021), with positive feedback from users. The most popular features are:
(1) managing appointments,
(2) payment and
(3) request for medication.



>176,000

Unique downloads
since 15 Dec 2020



6,485

Average Daily Active Users
(Number of unique users each day)

Users feedback:

"App is simple and good."

"I never heard of the app until 10 minutes ago when I searched for the pharmacy phone number on the Internet. Now I have made a medical refill application. Well Done."

"It's more convenient than a physical piece of paper, especially if I have multiple appointments on the same day."

"I like OneNUHS App ... easy to use and GUI is simple and nice ... I can even check my test results."

Future of OneNUHS App

"We are delighted with the speed at which we launched our OneNUHS App and the positive feedback received," said Clara Sin, Chief Operating Officer, NUHS Service Transformation. "This would not have been possible without the tireless commitment of every single member of the NUHS and IHiS teams to the NUHS Service Transformation journey. We are excited with the possibilities that the app offers for us to transform care delivery and reach out to patients and residents in the west."

Peter Forbes, NUHS Chief Digital Officer, added that "Together, we will continue to listen to our users, adapt and adjust our features to deliver value. For example, we have piloted teleconsultation at Alexandra Hospital, and users can look forward to progressive rollout to other NUHS institutions in the next phases of our app. This will reduce physical trips to the hospital. Our commitment is to make OneNUHS App the best patient care app in Singapore."