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Cognitive Rehabilitation: A Geek Way of Innovation
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Introduction
Patients and carers often reflect there is a lack of confidence upon discharge. Usually, patients need to wait for certain period before they can receive ambulatory rehabilitation service. Moreover, the burden of travel, limited frequency and intensity of therapy may also affect patient's willingness to participate in rehabilitation and ultimately the outcome. Overseas evidence indicates that through the use of tele-rehabilitation, a number of potential benefits can be achieved that include earlier and safer discharge; improving continuity of care; better accessibility to rehabilitation; enhancing service efficiency and facilitating rehabilitation in patient's own living environment. In collaboration with Central Committee (Rehabilitation) and Allied Health Grade, the Geek Team has undertaken the duty to develop a mobile module prototype for pilot purpose with aim to explore whether this novice tele-rehabilitation service model can improve patient care by using mobile technology.

Objectives
1. Under the Geek exploration model, to develop a prototype module for Cognitive Rehabilitation 2. To prove the concept that the use of mobile technology can facilitate the rehabilitation of cognitive impaired patients

Methodology
The Geek Team is constituted from colleagues of Information Technology and Health Informatics Division who are passionate about the opportunity to move HA ahead with new technology. In addition to normal duty, members who volunteered to take up the innovation project will be given one half day session per fortnight to develop the prototype. It is hoped that the prototype developed can be useful to business and can be considered for development in the future. Upon closely working with Clinical Psychology and Occupational Therapy colleagues, the requirements for the tele-rehabilitation module on cognitive training is consolidated which included: 1. Build a reminder system so that therapist can prescribe schedule of cognitive training and other daily activities to patient 2. Able to send reminder to patient's cell phone 3.

Create a rehabilitation app with training games 4. Capture training result for therapist's review

<u>Result</u>
The project was initiated in November 2016, the construction of prototype was completed in April 2017 and the prototype put to pilot in May 2017. The prototype included the following features: 1. A patient-based e-Reminder Management System (Cognitive Rehabilitation Mobile Application Management Solution, CRMS) was built and installed in therapist's desktop 2. Push notification was included to remind patient to perform training 3. 2N-Back cognitive training game including Pictures, Locations and Numbers was created 4. Training results including compliance, response time and accuracy were stored in patient's cell phone and able to be viewed by therapist upon follow up. To summarize, the team has worked seamlessly with different stakeholders to create this prototype. Evaluation result revealed that the cognitive rehabilitation module was highly welcomed by therapists and patients and this model can be of high potential benefits for future rehabilitation activities. It was our hope that the prototype can shed light on the how tele-rehabilitation can help our patients. Nevertheless, the Geek Team is dedicated to harness new technology; to innovate and to improve effectiveness and efficiency of service in HA.