

## St. Andrew's Community Hospital

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### A. Introduction/Background

- St. Andrew's Community Hospital (SACH) is a service under the St. Andrew's Mission Hospital group. In addition to inpatient rehabilitation, subacute and palliative care, SACH also operates home care and home palliative care, centre-based day and rehabilitative care, and outpatient and migrant worker clinics.
- Dysphagia affects a significant portion of the adult population. Elderly patients with repeated choking episodes are at a higher risk of mortality due to the possibility of aspiration and severe airway obstruction (Cichero, Heaton & Bassett, 2009).
- Modifying food textures without sacrificing quality is a common challenge, which often relies on the Speech Therapists (STs) as the 'experts' to help with food modifications and basic Caregiver Training (CGT) on texture-modified food.
- In 2022, the Ministry of Health introduced the International Dysphagia Diet Standardisation Initiative (IDDSI) to standardise dysphagia diet and fluid terminology, and rolled out the EatSafe training framework.
- Nurses and healthcare assistants (HCA) must be skilled in food modification to ensure the safety of patients with dysphagia while preserving food choices. Although all nurses and HCAs completed the MOH EatSafe training, they struggled to apply theoretical knowledge in practice. As a result, frequent consultations with Speech Therapists for diet modifications resulted in approximately \$900 in wasted manpower over a month.

### B. Goal/Objective

**Primary SMART Goal:** To improve ward staff members' knowledge of IDDSI diet levels through hands-on learning resources in the inpatient rehab ward setting within 3 months.

#### Secondary SMART Goals:

- Ward staff to be able to troubleshoot IDDSI problems on the ward independent of the Speech Therapist (ST) in the inpatient rehab ward setting within 3 months.
- Ward staff to feel more confident in handling IDDSI related diet problems or questions on the ward in the inpatient rehab ward setting within 3 months.

### C. Problem Analysis

Through qualitative surveys with ward staff who had undergone IDDSI training, the team identified the main root causes:

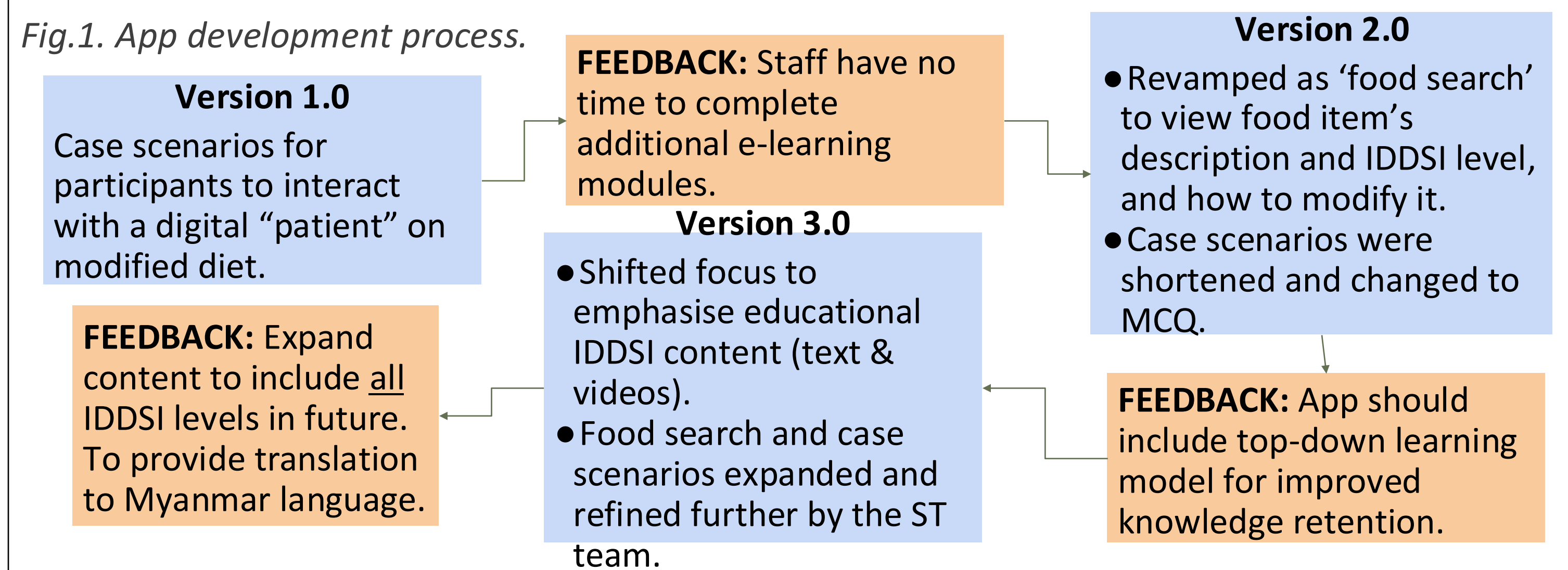
- Knowledge retention:** Lack of knowledge retained after the e-learning and Basic Workshops. Foreign staff were also unfamiliar with local foods, making it more difficult for them to understand.
- Limited time:** Staff lacked the time to self-study to refresh their knowledge.
- Limited resources:** Hard-copy resources were inconvenient and too static, while videos found on YouTube were not accurate.

### D. Implementation Plan

In collaboration with a medical tech company, Med2Lab, the team created an app, *MakanSafe*, which included educational content on IDDSI testing methods and consistencies, a food search engine, and interactive case scenarios.

- App development process took approximately 12 months with a development and feedback cycle from different levels of staff, including nurses, STs, and doctors. See Fig.1.
- All inpatient nurses and healthcare assistants downloaded the app to their phones, and were encouraged to use the app for approximately 10 minutes a day.
- Successfully implemented for all inpatient nurses and HCAs, ensuring widespread adoption

Fig.1. App development process.



### E. Benefits/Results

- Improved results on the knowledge quiz (n=204).
  - Improved mean total score (from 7.82 to 9.60). See Fig.2.
  - Paired *t*-test showed statistically significant improvement for six out of 10 questions and the total score ( $p < 0.05$ ).
- Fewer unnecessary referrals to ST – decreased by 70% (from 20 to 6), with savings of S\$530/month.
- A 5-question survey found that nurses considered the educational content ( $M = 4.15$ ,  $SD = 0.704$ ) and the food search function ( $M = 4.13$ ,  $SD = 0.706$ ) of the app to be useful.

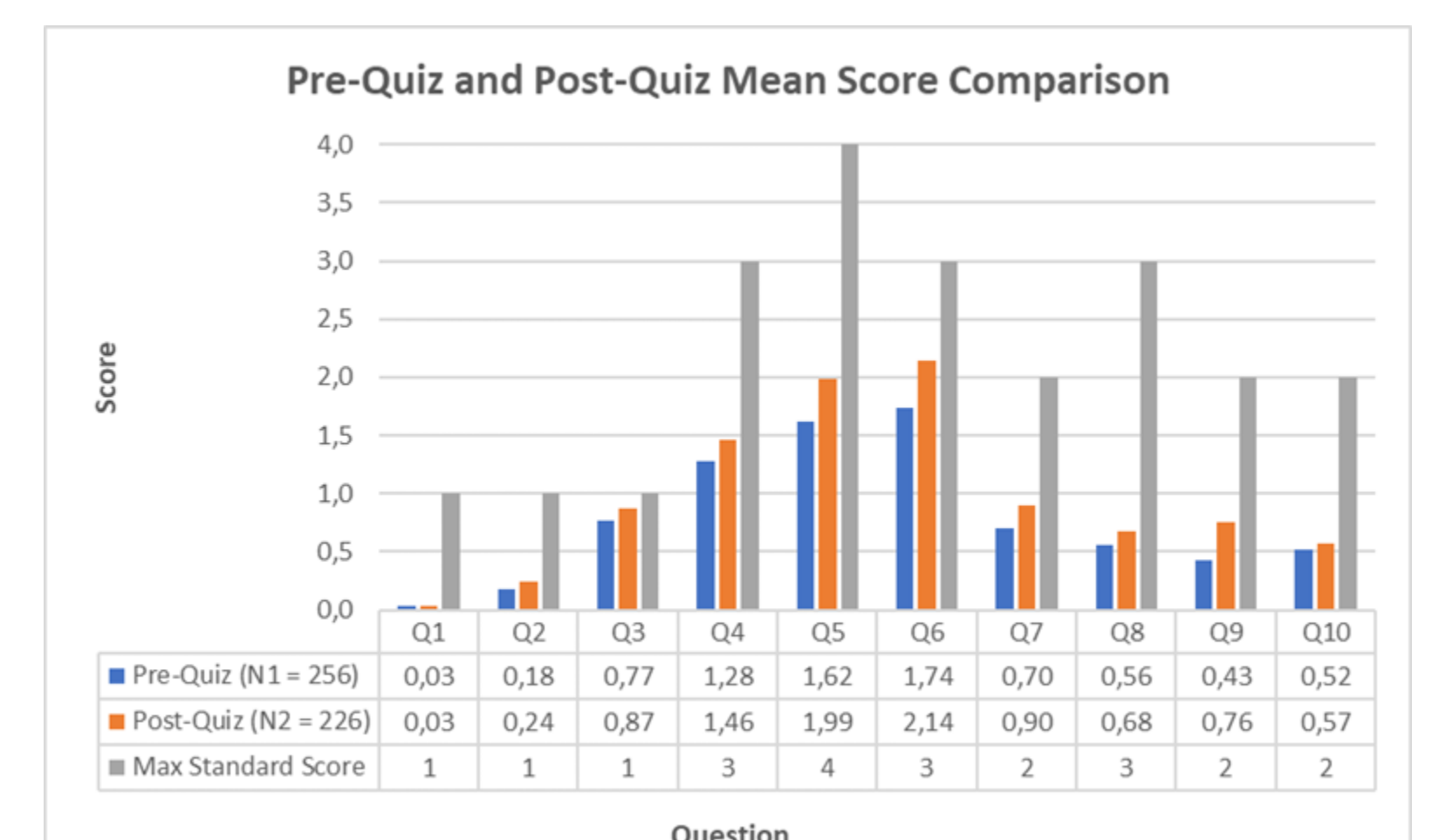


Fig.2. Comparison of mean scores on Pre and Post Quiz by question demonstrated improvement in nine out of 10 questions.

### F. Sustainability & Reflections

- Mobile learning has proven to be a sustainable tool for continuous education, bridging the gap between theory and practice. On-the-go access reduces cognitive load, promoting knowledge reinforcement over time, and eliminates the stress of needing to recall information from a workshop months ago.
- Future enhancements will focus on:
  - Expanding accessibility to those with minimal knowledge of texture-modified diets to increase impact.
  - Offering multilingual support to improve inclusivity and sustainability for a diverse user base.
  - Achieving an efficient app download process to enhance scalability and reduce reliance on project team support.