

## **Project Title**

Prethickened beverages for patients with dysphagia

## **Project Lead and Members**

Project lead: Zenne Tng Kuan Chen Principal Speech Therapist

Project members:

- Teo Wei Shan, Senior Speech Therapist
- Ng Seok Kheng, Principal Speech Therapist

## **Organisation(s) Involved**

Tan Tock Seng Hospital

## **Project Period**

Start date: Oct 2018

Completed date: Sept 2019

## **Aims**

To develop a solution to improve the taste of thickened fluids and increase patients' accessibility to thickened fluids in the hope of increasing oral fluid intake in patients during their hospital stay

## **Background**

See attached

## **Methods**

See attached

## **Results**

See attached

## Lessons Learnt

1. Team work is crucial for the implementation of change to succeed. Having like-minded team members are essential for effecting a change and in this case, the nursing team played a huge role in allowing the change to happen.
2. Having appropriate outcome measures are key to studying the impact of change

## Conclusion

- Usage of pre-thickened beverage improves nurses' efficiency in hospitals and potentially nursing home settings.
- Ease of dispensing pre-thickened fluids provides an opportunity for further job re-design so other healthcare workers e.g. healthcare assistants can be tasked to dispense thickened fluids to patients such that nurses can then attend to more value-added nursing duties.
- Commercialisation of the product ensures easy and convenient access to thickened fluids in the community, increasing patients' compliance to consume thickened fluids. These products are now made available in TTSH Retail Pharmacy. Moving forward, the team plans to have these products readily available in vending machines and coffee shops.
- Allow patients with dysphagia to feel included into the society by having pre-thickened fluids from a bottle without the need to manually prepare thickened fluids in the community.

## Project Category

Care Redesign

## Keywords

Care Redesign, Safe Care, Patient Safety, Quality of Care, Allied Health, Nursing, Tan Tock Seng Hospital, Dysphagia, Oral Fluid Intake, Pre-Thickened Beverages

**Name and Email of Project Contact Person(s)**

Name: Zenne Tng Kuan Chen

Email: [kuan\\_chen\\_tng@ttsh.com.sg](mailto:kuan_chen_tng@ttsh.com.sg)



Tan Tock Seng  
HOSPITAL  
National Healthcare Group

# Prethickened beverages for patients with dysphagia

Teo W. S., Ng S. K. & Tng Z. K. C.

Speech Therapy Department, Tan Tock Seng Hospital, Singapore

## Introduction

Dysphagia (swallowing difficulty) could result from diseases such as stroke, mouth or throat cancer, neurological disorders and dementia, amongst others. The diet and fluids of this group of patients may require modifications so as to manage aspiration risk. In Singapore, the different consistencies of fluids prepared for patients with dysphagia is commonly nectar-thick or honey-thick.

Literature has revealed that patients with dysphagia are frequently dehydrated. Cichero (2013) shared that this is likely due to various factors such as volume of thickened fluids consumed, thirst quenching ability, flavour of thickened fluids and insufficient access to thickened fluids. Whelan (2001) further reinforced that one of the contributor to lack of oral intake of fluids is patients' dependency on nurses to provide thickened fluids.

The development of locally-flavoured pre-thickened beverages (PB) aims to target the two most significant gaps, namely the insufficient access to thickened fluids as well as the lack of flavours of thickened fluids. Thus increasing fluid intake for patient to improve hydration level and their quality of life.



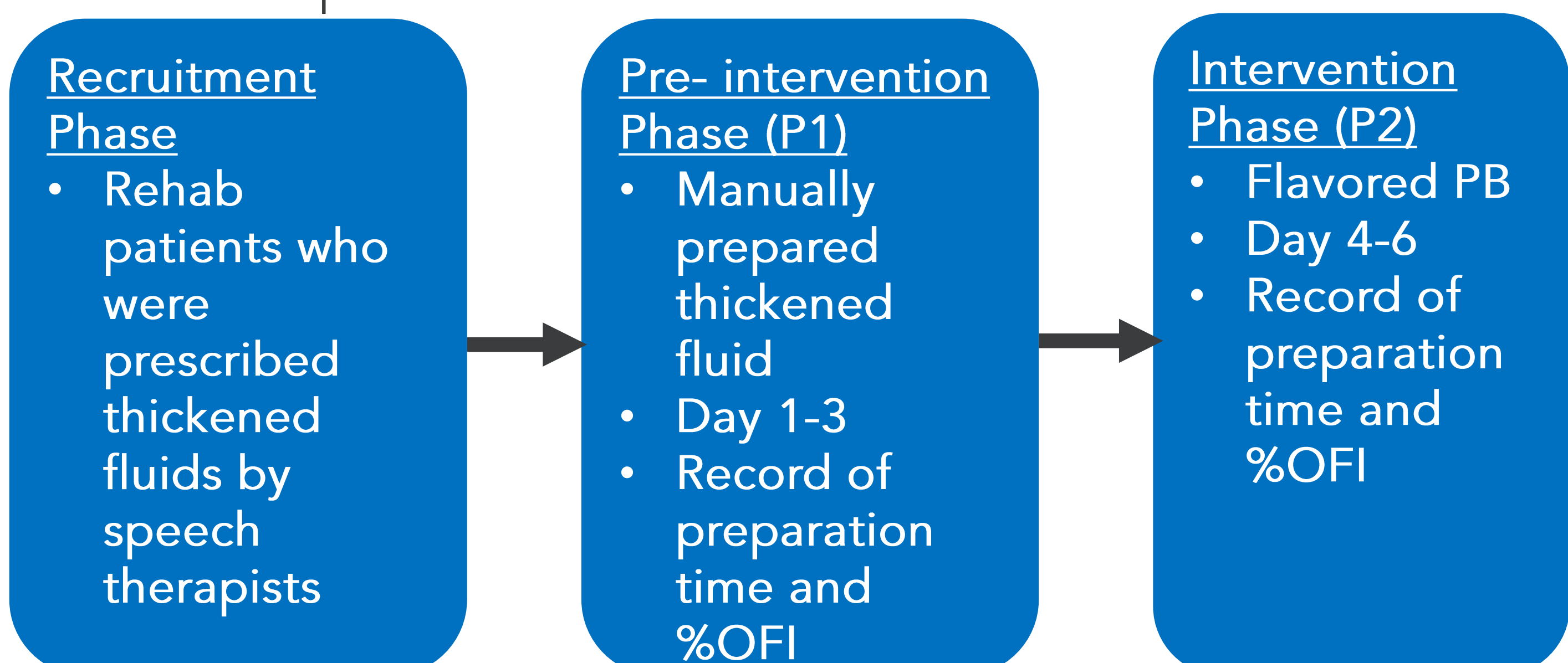
Figure 1: Locally-favored PB Honey thick (left) and Nectar thick (right)



Figure 2: All locally-favored PB

## Methodology

Patients' oral fluid intake was tracked for 3 consecutive days during tea-break, one point at pre-intervention phase (P1) where nurses manually prepared the thickened fluids and another, during intervention phase (P2) where locally-flavored PB was used. The tracked amount of oral fluid intake was expressed as a percentage of total oral fluid intake (%OFI) and analyzed with simple t-test. Preparation time (sec) and accuracy of consistencies prepared by nurses were recorded. Qualitative feedback regarding accessibility, preparation ease, and palatability of fluids were also collected from patients after the intervention period.

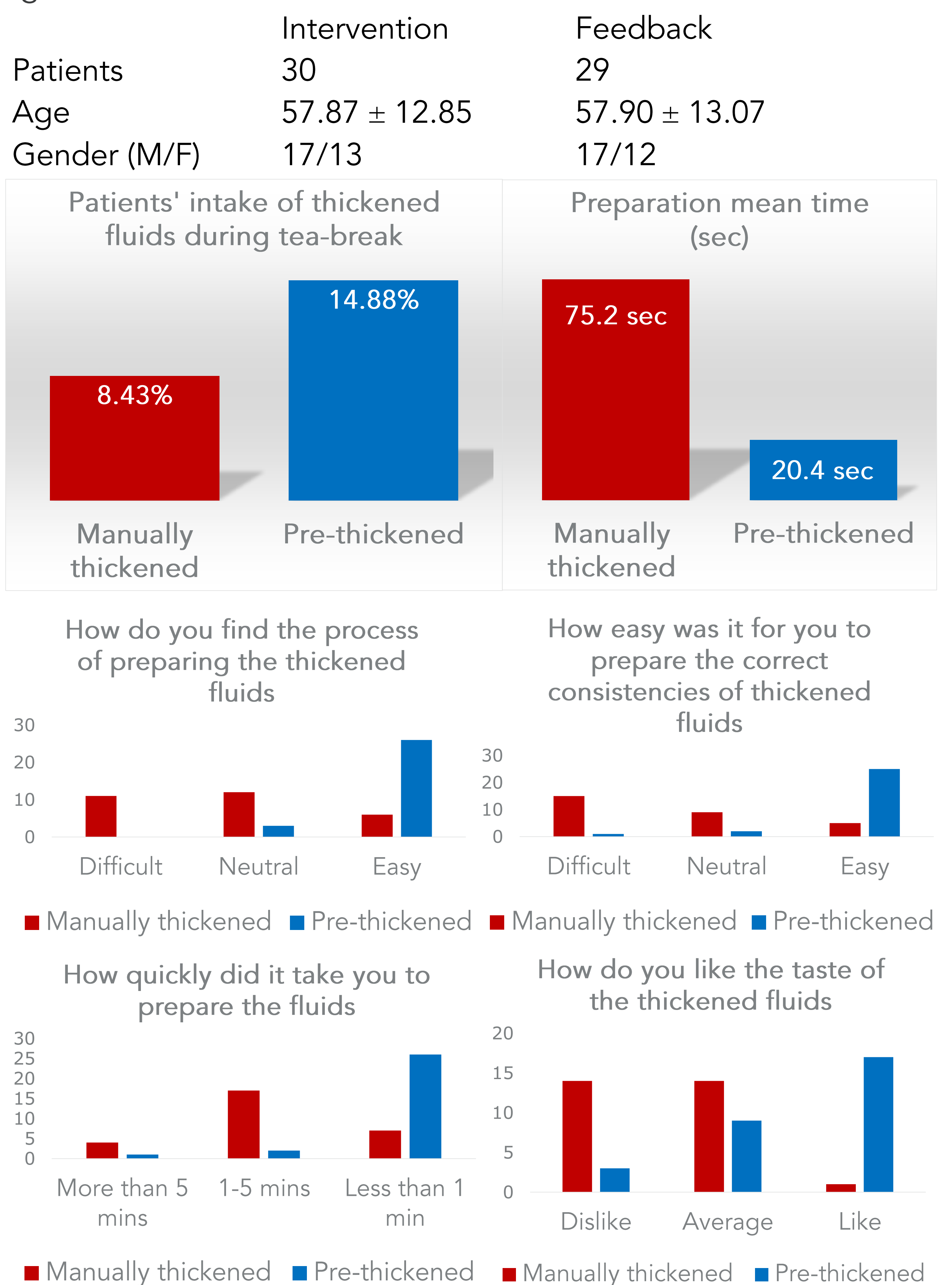


### Reference

- Cichero, JAY. (2013) Thickening agents used for dysphagia management: effect on bioavailability of water, medication and feedings of satiety. Nutrition Journal 12(54)
- Whelan, K. (2001) Inadequate fluid intakes in dysphagic acute stroke. Clinical Nutrition 20(5), 423-4283.

## Results

Patient %OFI (n=30) increases from a mean intake of 8.43% (P1) to 14.88% (P2) (t[29] = 6, p<0.05). There was also a significant decrease in nurses fluid preparation time (n=5) with mean value of 75.2 sec (P1) to 20.4 sec (P2) (t[4]=6.6, p<0.05). At P2, all fluid consistency was accurate with less than 1-minute preparation time whereas at P1, inaccurate consistencies were prepared and more time was required. Feedback received are highly positive towards PB and most patient like the taste of the PB that was given to them.



## Results

The use of PB leads to increase in patients' oral fluid intake hence improving hydration level. It also provides greater ease and halved the preparation time. This potential standard practice can minimize errors and maximize efficiency where caregivers can focus on other major duties. With its ease of preparation and dispensing, further cost saving can be achieved through organizational job re-design. The team is working towards listing these PB as commercial products to increase accessibility in the community via vending machines and supermarkets.

