

### **Project Title**

Reducing the Risk of Malnutrition Among Ischaemic Stroke Patients with Dysphagia

### **Project Lead and Members**

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Project members: Jenny Gan, Samantha Yeo, Maznah Marmin, Lim Ruey Jiun, Adj  
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### **Organisation(s) Involved**

Ng Teng Fong General Hospital

### **Healthcare Family Group Involved in this Project**

Medical, Nursing, Allied Health

### **Applicable Specialty or Discipline**

Nutrition & Dietetics

### **Project Period**

Start date: July 2019

Completed date: Jun 2020

### **Aims**

The Stroke Nutrition Team aims to double the percentage of ASU patients on TM diet referred to for DT management from 22% to 44% by June 2020 to reduce their risk of malnutrition.

### **Background**

See poster appended/ below

## **Methods**

See poster appended/ below

## **Results**

See poster appended/ below

## **Lessons Learnt**

Fundamentally, having the buy-in of relevant stakeholders will affect the participation, contribution and overall satisfaction and outcome. As a holistic and comprehensive approach, it is crucial to engage all stakeholders in the discussion to identify key issues, relevant processes and challenges to implement change. Similarly, continuous engagement is essential to ensure sustainability of the improvement and outcome.

## **Conclusion**

See poster appended/ below

## **Project Category**

Care Continuum, Inpatient Care

Care & Process Redesign, Quality Improvement, Clinical Practice Improvement

## **Keywords**

Stroke patients, Dysphagia, Textured Modified Diet, Malnutrition

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# REDUCING THE RISK OF MALNUTRITION AMONG ISCHAEMIC STROKE PATIENTS WITH DYSPHAGIA

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1. Dietetics and Nutrition  
2. Speech Therapy Department, Rehabilitation  
3. Nursing Clinical Services  
4. Medicine, Neurology

- SAFETY
- QUALITY
- PATIENT EXPERIENCE
- PRODUCTIVITY
- COST
- TEAMWORK
- COMMUNICATION

## Define Problem, Set Aim

### Opportunity for Improvement

Studies have shown that stroke patients with dysphagia requiring texture modified (TM) diets are 2.6 times more likely to be malnourished, which may lead to increased mortality, increased length of hospital stay, increased risks of complications, as well as lower quality of life<sup>1</sup>. Therefore, the ESPEN guideline recommends that all stroke patients on TM diets to receive dietetics intervention<sup>2</sup>. In NTFGH, all ischaemic stroke patients are admitted to the Acute Stroke Unit (ASU). Between April to June 2019, only 22% of ASU patients on TM diets were referred to dietitian (DT). Hence, the low percentage of patients referred to DT was identified as an area for improvement as evidenced by the meta-analysis<sup>1</sup>.

### Aim

The Stroke Nutrition Team aims to double the percentage of ASU patients on TM diet referred to for DT management from 22% to 44% by June 2020 to reduce their risk of malnutrition.

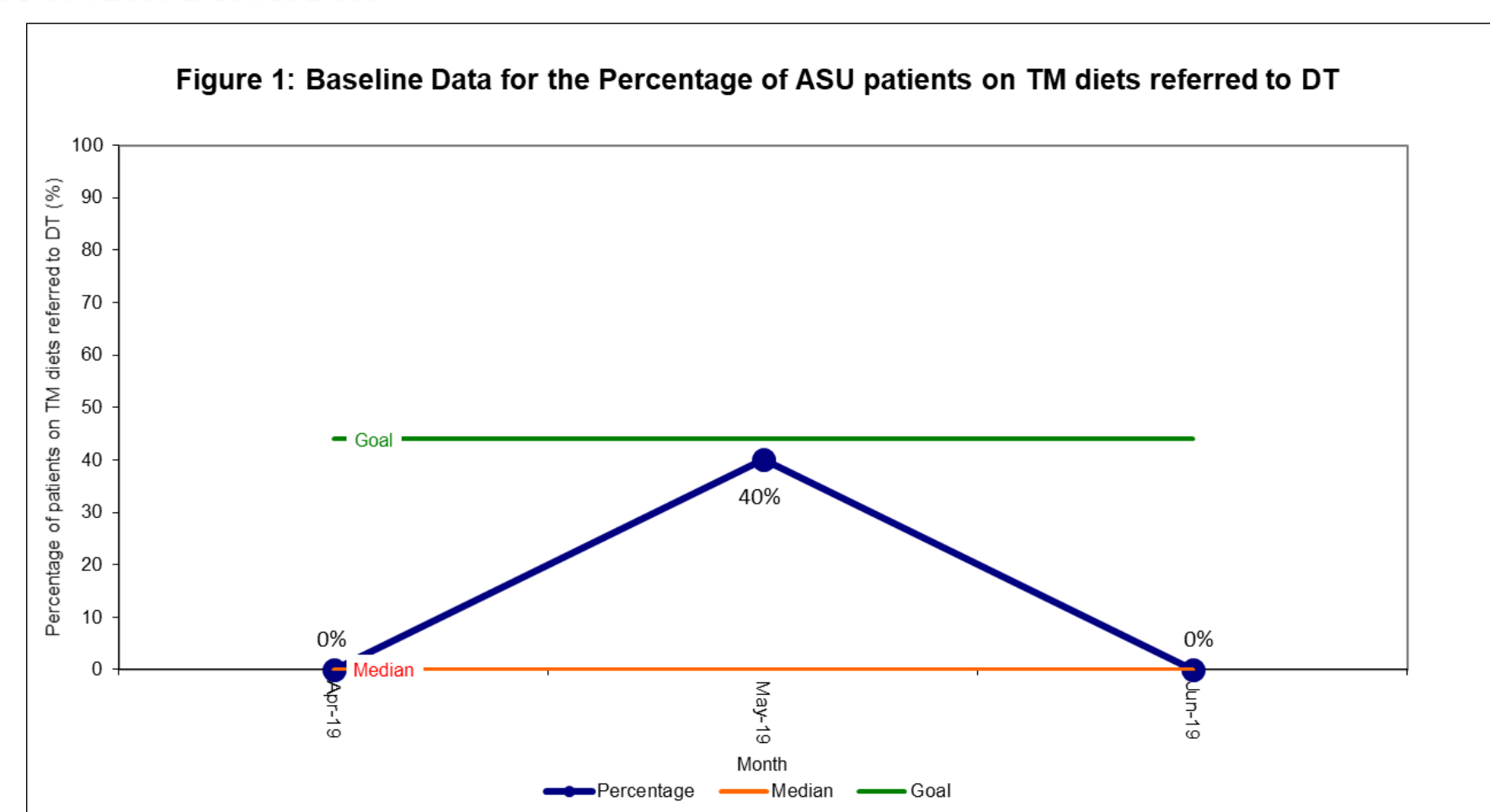
## Establish Measures

### Current Performance

Data in April to June 2019 (Figure 1) indicates that only 22% of ASU patients on TM diets were referred to DT. From the findings, DT referrals were primarily initiated due to:

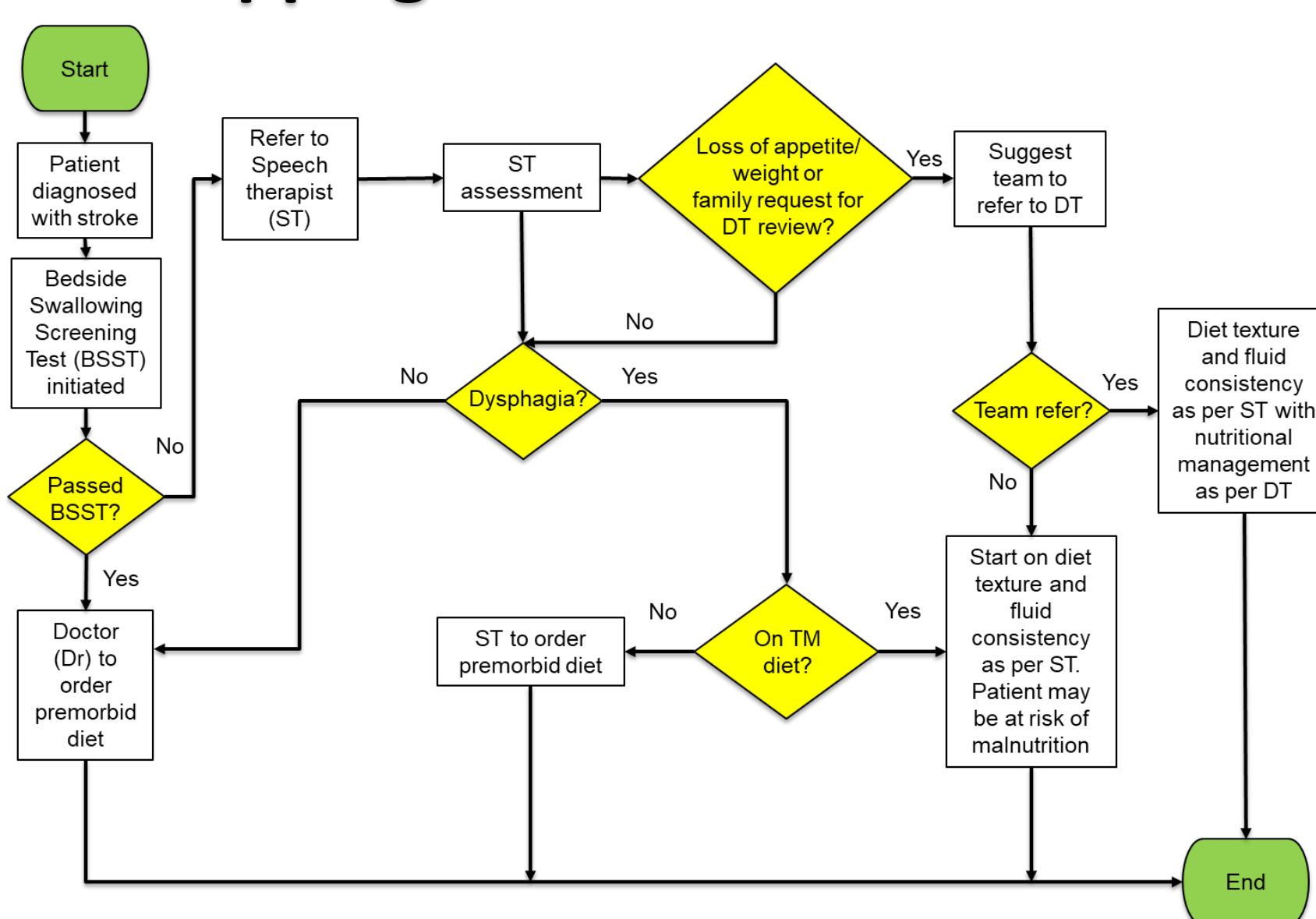
- Medical team querying if patients are malnourished
- Poorly controlled chronic diseases

The 3-month data showed 0% of referrals were made to DT upon initiation of TM diets for ASU patients, to prevent malnutrition.



## Analyse Problem

### Current Process Mapping



### Root Cause Analysis

Root Cause	Number of Votes	Percentage (%)	Cumulative Percentage (%)
A	9	45	45
B	6	30	75
C	4	20	95
D	1	5	100

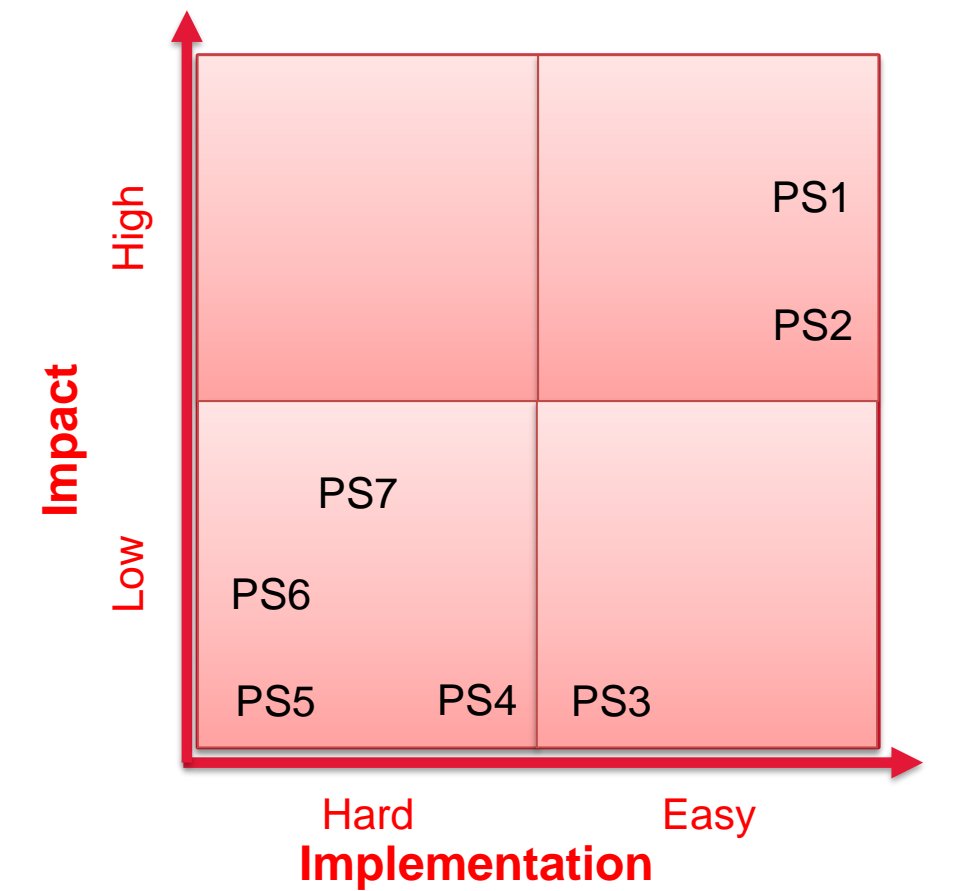
### References

- Chen N, Li Y, Fang J, Lu Q, He L. Risk factors for malnutrition in stroke patients: A meta-analysis. *Clin Nutr*. 2019; 38(1), pp.127-135
- Burgos R, Breton J, Cereda E, Desport J, Dziewas R, Genton L, et al. ESPEN guideline clinical nutrition in neurology. *Clin Nutr* 2018; 37(1), pp. 354-396

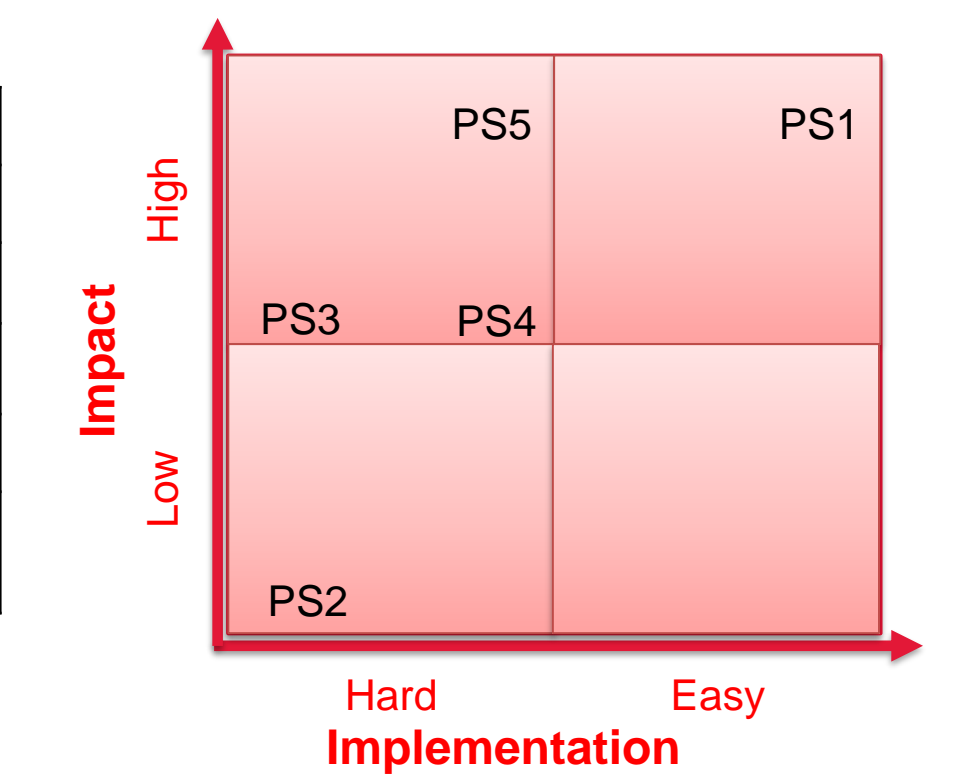
## Select Changes

### Possible Solutions

Root Cause A	Potential Solutions
Lack of awareness that stroke patients on TM diets are at risk of malnutrition	PS1 Conduct talk to stroke team to increase awareness
	PS2 Organise a session with higher management to address the issue
	PS3 Send informative email blast to all staff
	PS4 Have a booth during DT day to increase staff and public awareness
	PS5 Put up relevant poster in the wards
	PS6 Do an educational video for display on television screens in hospital
	PS7 Set up a booth during stroke day to increase staff and public awareness



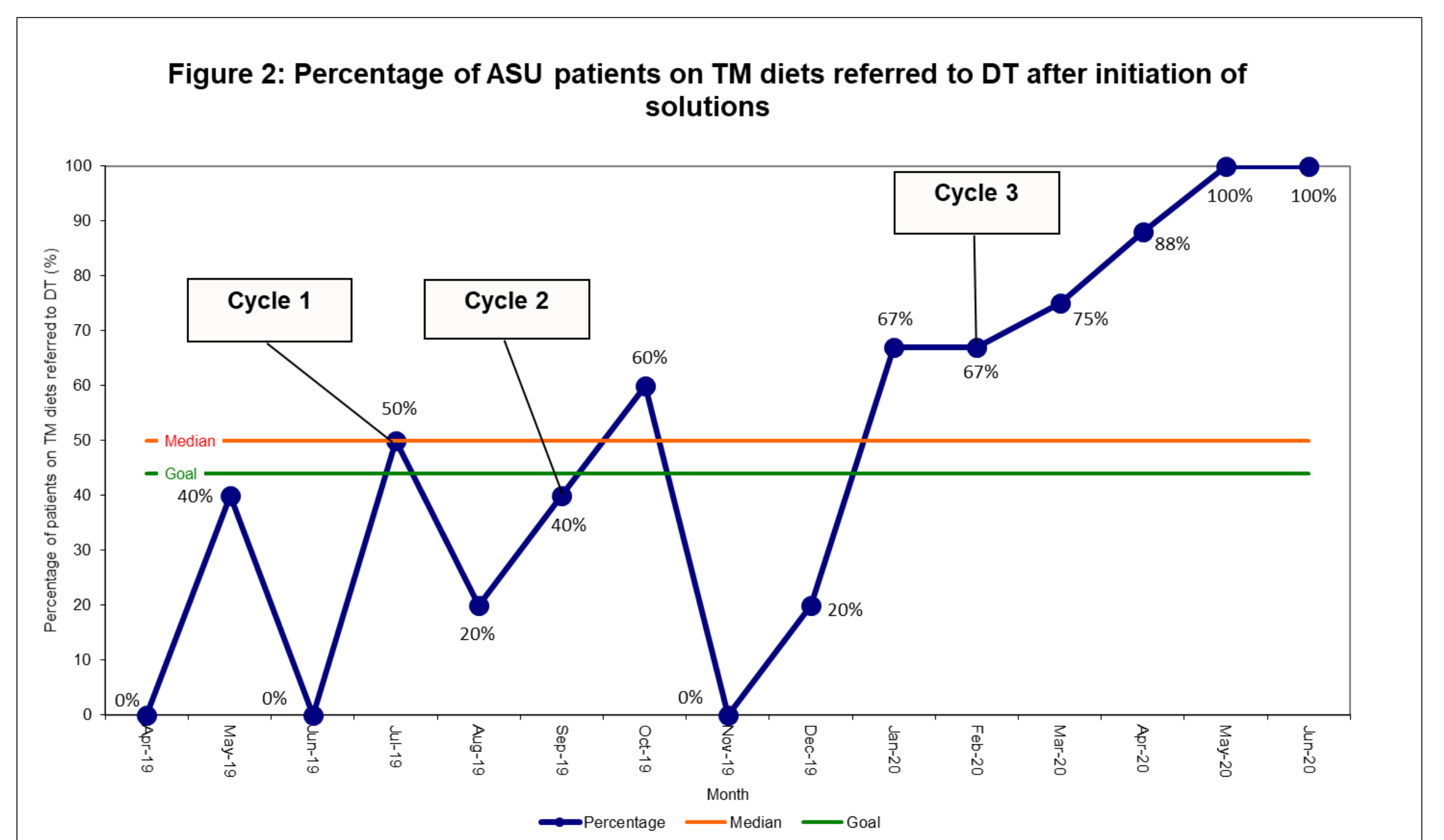
Root Cause B	Potential Solutions
ST is unable to directly refer stroke patients on TM diets to DT due to current workflow	PS1 ST to directly refer all stroke patients on TM diets to DT
	PS2 All stroke patients on TM diets to have blanket referrals to DT
	PS3 Have a hospital wide protocol to refer all stroke patients on TM diets to DT
	PS4 ST to TigerText Dr to refer stroke patients on TM diets to DT
	PS5 ST to TigerText ANC to order referral to DT



## Test & Implement Changes

### Solution Implementation

CYCLE	PLAN	DO	STUDY	ACT
1	<b>Awareness talk to stroke team</b> DT to give a talk to highlight that stroke patients on TM diets are at risk of malnutrition.	Talk conducted during stroke meeting in July 2019.	Percentage of patients referred to DT increased in July 2019 (50%). However, the result fell back down to below baseline in August 2019 (20%).	Currently, only the medical team can refer to DT. However, the medical team rotates frequently and not all of them may be present during the talk.
2	<b>Change the existing referral workflow</b> Besides Doctors, Speech Therapists (STs) can also refer stroke patients on TM diets to DT - as approved by Neurology Consultant.	DT discussed and provided a talk to STs in August 2019 to initiate the new workflow.	Percentage of patients referred to DT on increasing trend in September 2019 (40%) and October 2019 (60%). However, results were not sustainable and fell back to below baseline in November 2019 (0%) and December 2019 (20%).	STs may have forgotten to do the referral due to: • Human error, and • Covering STs are unfamiliar with the new workflow.
3	<b>i) Regular reminders to STs</b> Monthly reminder to STs to refer all stroke patients on TM diets to DT. <b>ii) Catch-up referral</b> Neurology Ward ST to initiate referral to DT when such patients are handed over to them by their covering STs (if not already referred).	ST rollcall leads provided reminders via: • Email blast and/or • Verbally on the 1st rollcall of every month, starting from February 2020	Percentage of patients referred to DT was on an increasing trend from February 2020 (67%) to May 2020 (100%). The result maintained at 100% in June 2020.	Regular reminders are essential and will be continued. Results will be shared with relevant stakeholders.



## Spread Changes, Learning Points

### Strategies to Spread Change After Implementation

Results will be shared with the stroke team, which includes those looking after non-ASU stroke patients for continued engagement. From there on, the team intends to implement similar solutions for non-ASU stroke patients (i.e. haemorrhagic). The aim of extending the improvement initiative beyond ASU stroke patients is to reduce the risk of malnutrition in the general stroke patient population.

### Key Learnings

Fundamentally, having the buy-in of relevant stakeholders will affect the participation, contribution and overall satisfaction and outcome. As a holistic and comprehensive approach, it is crucial to engage all stakeholders in the discussion to identify key issues, relevant processes and challenges to implement change. Similarly, continuous engagement is essential to ensure sustainability of the improvement and outcome.