

#### CHI Learning & Development (CHILD) System

#### **Project Title**

Optimization of Nutrition for Surgical Head & Neck Cancer Patients

#### **Project Lead and Members**

Project lead: Teresa Ng Hui Xian

Project members:

- Agnes Chew Si Qi
- Dr Ernest Fu Weizhong
- Dr Lim Ming Yann
- Alynn Lim Meow Noi
- Nicole Ng Lan Shin

#### Organisation(s) Involved

Tan Tock Seng Hospital

#### Healthcare Family Group(s) Involved in this Project

Allied Health, Healthcare Administration

#### **Applicable Specialty or Discipline**

Ear, Nose & Throat (ENT), Nutrition

#### **Project Period**

Start date: 01 December 2018

Completed date: 30 June 2022



#### CHI Learning & Development (CHILD) System

#### **Aims**

To achieve 100% of ENT surgical head and neck cancer patients\* identified to be at nutritional risk at Clinic 1B will receive preoperative nutrition support within 1 week of referral in the next 6 months.

\* Inclusion of head and neck cancer surgeries with the exception of thyroids and parotid cancers due to low possibility of nutritional risk.

#### **Project Attachment**

See poster attached/below

#### Background

See poster attached/below

#### Methods

See poster attached/below

#### **Results**

See poster attached/below

#### Conclusion

See poster attached/below

#### **Additional Information**

Accorded the NHG Quality Day 2022 (Category D: Building Strong Partnerships in Improvement Work) Merit Award

#### **Project Category**

Care & Process Redesign

Value Based Care, Patient Reported Outcome Measures



#### CHI Learning & Development (CHILD) System

#### Keywords

Nutrition Support, Malnourished, Nutritional Risk

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

Name: Ms Teresa Ng Hui Xian

Email: teresa hx ng@ttsh.com.sg



## **Optimization of Nutrition** for Surgical Head & Neck Cancer Patients



<sup>1</sup>Teresa Ng, <sup>2</sup>Agnes Chew, <sup>2</sup>Alynn Lim, <sup>2</sup>Ernest Fu, <sup>2</sup>Lim Ming Yann, <sup>2</sup>Nicole Ng

Adding years of healthy life

<sup>1</sup>Department of Nutrition and Dietetics | <sup>2</sup>Department of Otorhinolaryngology (ENT)

## **Mission Statement**

To achieve 100% of ENT surgical head and neck cancer patients\* identified to be at nutritional risk at Clinic 1B will receive preoperative nutrition support within 1 week of referral in the next 6 months

\* Inclusion of head and neck cancer surgeries with the exception of thyroids and parotid cancers due to low possibility of nutritional risk.

Team Members									
	Name	Designation	Department						
Team Leader	Teresa Ng Hui Xian	Principal Dietitian	Nutrition and Dietetics						
Team	Agnes Chew Si Qi	Coordinator	ENT						
Members	Dr Ernest Fu Weizhong	Consultant	ENT						
	Dr Lim Ming Yann	Head of Department	ENT						
	Alynn Lim Meow Noi	Senior Nurse Manager	ENT						
	Nicole Ng Lan Shin	Assistant Nurse Clinician	ENT						
Sponsor	Dr Lim Yen Peng	Head of Department	Nutrition and Dietetics						
Mentor	Dr Martin Hng								

## **Evidence for a Problem Worth Solving**

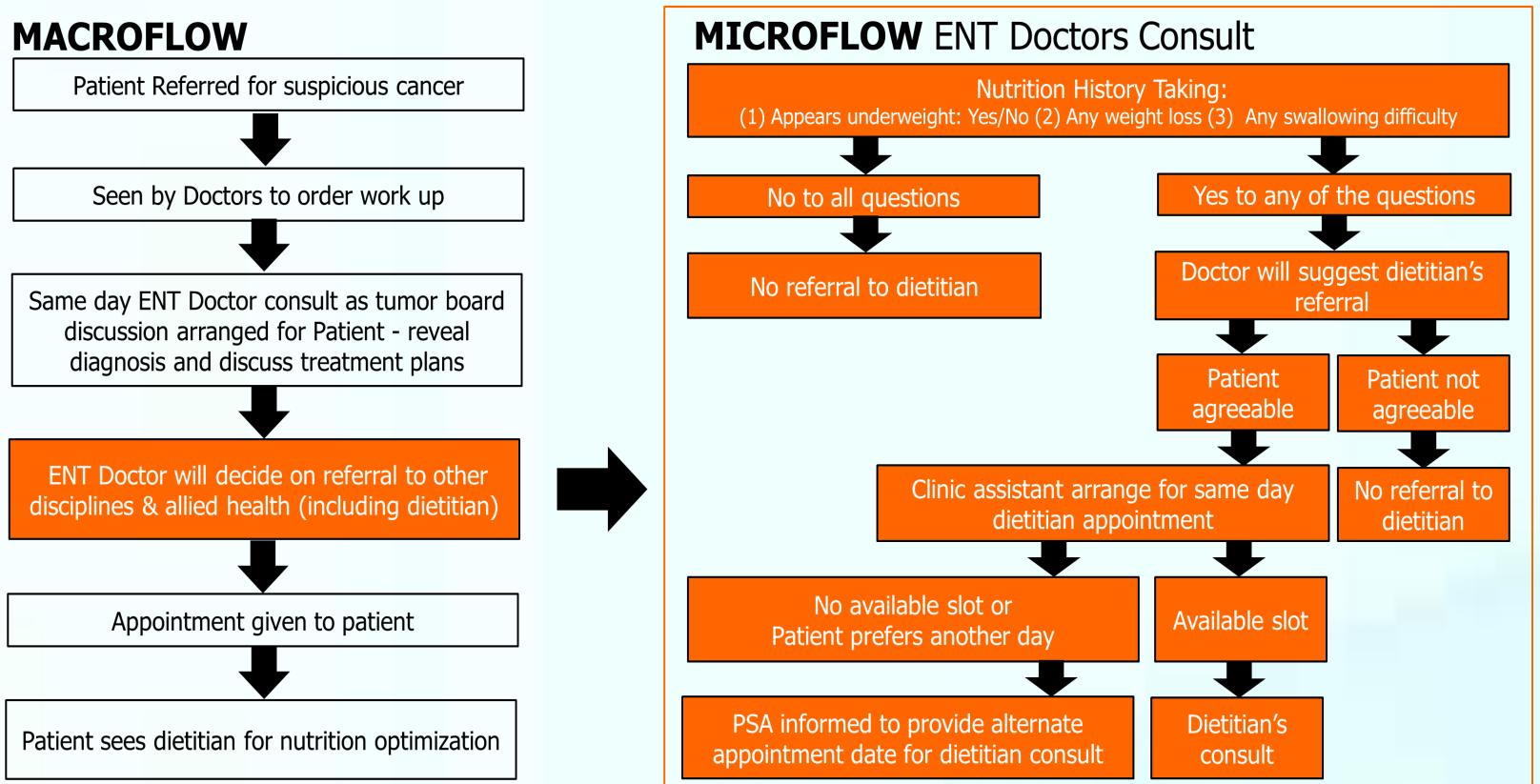
International guidelines (ESPEN 2017, COSA 2016, UK Multidisciplinary HNN cancer guidelines 2016) recommend that all head and neck cancer (HNN) patients:

- 1. Be nutritionally screened using a validated screening tool at diagnosis and then repeated at intervals through each stage of treatment.
- 2. Surgical HNN patients who are malnourished or at nutritional risk should receive nutrition therapy pre and post surgery
- 3. Enhance Recovery After Surgery (ERAS 2016) will also require nutrition screening for all HNN patients undergoing major surgery, TTSH is the ERAS center of excellence in Singapore

## **Current Performance of a Process**

- 2014 data shows at least 50% of the surgical HNN patients were malnourished
- 33% of the patients who were only provided post-op nutrition support were at nutritional risk/malnourished and should be referred for pre-op nutrition support
- No routine nutrition screening protocol in place

# **Flow Chart of Process**



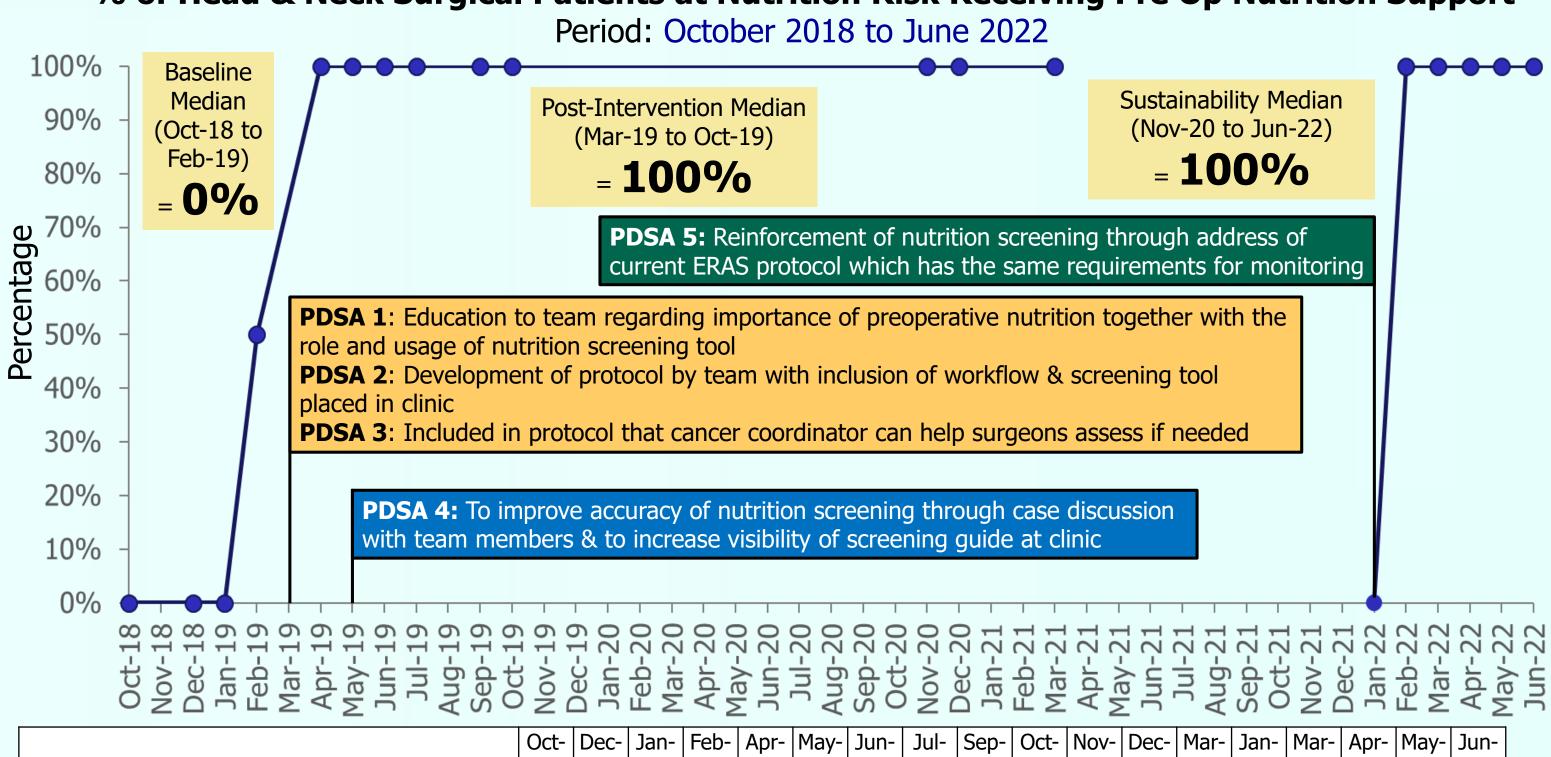
#### **Cause and Effect Diagram** Doctor No patient education Insufficient time to discuss dietitian education in Med Nil formal Varying clinical judgemen Competing medical education prior to of nutritional risk issues for discussion Dr forgets to order nadequate knowledge o Only Drs can nutritional risk other clinical education of patients assess nutrition Extent of problem not identification Nil objective measures of issues to risk and refer known prior nutritional risk in place attend to No other health workers are Not all Surgical Head part of the nutrition risk and sessions prior to Lack of communication & Neck Cancer Lack of education at workplace with dietitian **Patients at Nutritiona** Declines MSW Referral Risk Receive Pre-Op Financial Dietitian referral same Difficulties Busy with day as breaking o **Nutrition Support** cancer diagnosis assessed on Only Drs can assess nutritional risk Emotional High volume of patients Lack of window education period pre-**Short Clinic Slots for** Dr's Consults Clinic assistant / PSA did Inadequate education at not provide appointment measure of nutrition Dr's consult No back end Lack of Awareness of Forgets Appointment risk identification Only Drs can Too many assess and appointments to educate reserved for pre Inadequate slots booked patients No appointment System same day as others

#### **Pareto Chart** Causes that led to ENT surgical head and neck cancer Cause A No Nutrition Risk Identification Protocol patients NOT receiving preoperative nutrition support Cause B Only Doctors can assess nutrition risk within 1 week of referral Nutrition risk only assessed on day of Cause C diagnosis Lack of Nutrition Education of Healthcare Cause D Cause E High number of appointments to schedule No protocol of coordination of appointments ENT dietitian slots only reserved for pre-Cause G booked patients Patient's lack of family support

Implementation								
Root Cause	Intervention	Implementation Date						
<b>Cause D</b> : Lack of Nutrition Education of the Healthcare Team	PDSA 1: Education to team regarding importance of preoperative nutrition together with the role and usage of nutrition screening tool	8 March 2019						
Cause A: No Nutrition Risk Identification Protocol	PDSA 2: Development of protocol by team with inclusion of workflow & screening tool placed in clinic	11 March 2019						
Cause B: Only Doctors can assess nutritional risk	<b>PDSA 3:</b> Included in protocol that cancer coordinator can help surgeons assess if needed	11 March 2019						

### Results

% of Head & Neck Surgical Patients at Nutrition Risk Receiving Pre Op Nutrition Support



	Oct-	Dec-	Jan-	Feb-	Apr-	May-	Jun-	Jul-	Sep-	Oct-	Nov-	Dec-	Mar-	Jan-	Mar-	Apr-	May-	Jun-
	18	18	19	19	19	19	19	19	19	19	20	20	21	22	22	22	22	22
No. of at risk patients receiving pre-op nutrition support	0	0	0	1	1	3	3	1	1	1	2	2	2	0	1	2	2	1
Total No. of patients identified to be at risk	4	2	1	2	1	3	3	1	1	1	2	2	2	1	1	2	2	1
					_													

## **Note**: Months with no at-risk patients are excluded from the runchart

## **Cost Savings**

- 1. Data on head and neck cancer surgical patients shows longer length of stay (LOS) of 4 days when comparing malnourished and well nourished patients
- 2. Local data (TTSH Geriatric Medicine Patients) median LOS was 3 days longer when comparing malnourished and well nourished patients
- 3. Potential cost savings through reduction of LOS is \$1,114 per inpatient day stay

## **Problems Encountered**

- 1. Compliance to protocol depended heavily on the presence of cancer coordinator
- 2. Accuracy of different components of nutrition screening tool needs further clarification and education
- 3. Surgeons' rooms are far apart in clinic which is time consuming for Cancer Coordinator to shuttle to provide reminders for nutrition screening
- 4. COVID 19 pandemic resulted in the need for further reinforcements for compliance as surgery frequency was low during the height of the pandemic and post TTSH outbreak since May 2021

Strategies to Sustain								
Plans to cover cancer coordinator's absence	In the absence of cancer coordinator (e.g. on leave) for dietitian to help identify cases and support reminders to PSAs of their role to remind the surgeons to carry out nutrition screening							
Reduce distance between surgeons' rooms	Clinic manager arranged the shift of resources to allow 4 surgeons to have clinic rooms side by side							
Education for surgeons returning to/joining HNN Service	Dietitian to support nutrition screening education to HNN surgeon returning from HMDP or new surgeons joining the service							
Draw relevance to ERAS Protocol + ERAS monitoring	Use of ERAS protocol requirements and data monitoring for reinforcement to team on the need and importance of nutrition screening							