Optimization of Nutrition for Surgical Head & Neck Cancer Patients

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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 Members	Agnes Chew Si Qi	Coordinator	ENT
	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

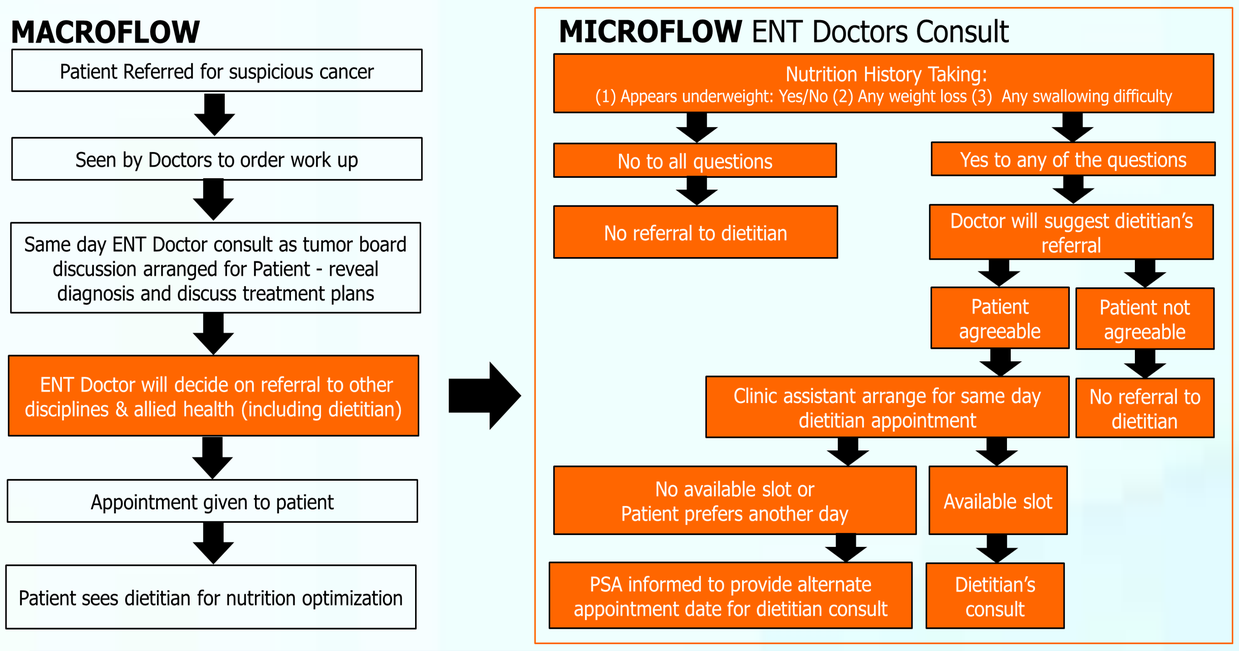
International guidelines (ESPEN 2017, COSA 2016, UK Multidisciplinary HNN cancer guidelines 2016) recommend that all head and neck cancer (HNN) patients:

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

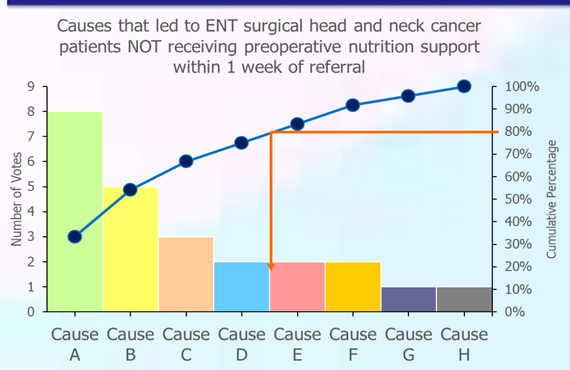
Current Performance of a Process

- 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



Pareto Chart



Cause A	No Nutrition Risk Identification Protocol
Cause B	Only Doctors can assess nutrition risk
Cause C	Nutrition risk only assessed on day of diagnosis
Cause D	Lack of Nutrition Education of Healthcare Team
Cause E	High number of appointments to schedule
Cause F	No protocol of coordination of appointments
Cause G	ENT dietitian slots only reserved for pre-booked patients
Cause H	Patient's lack of family support

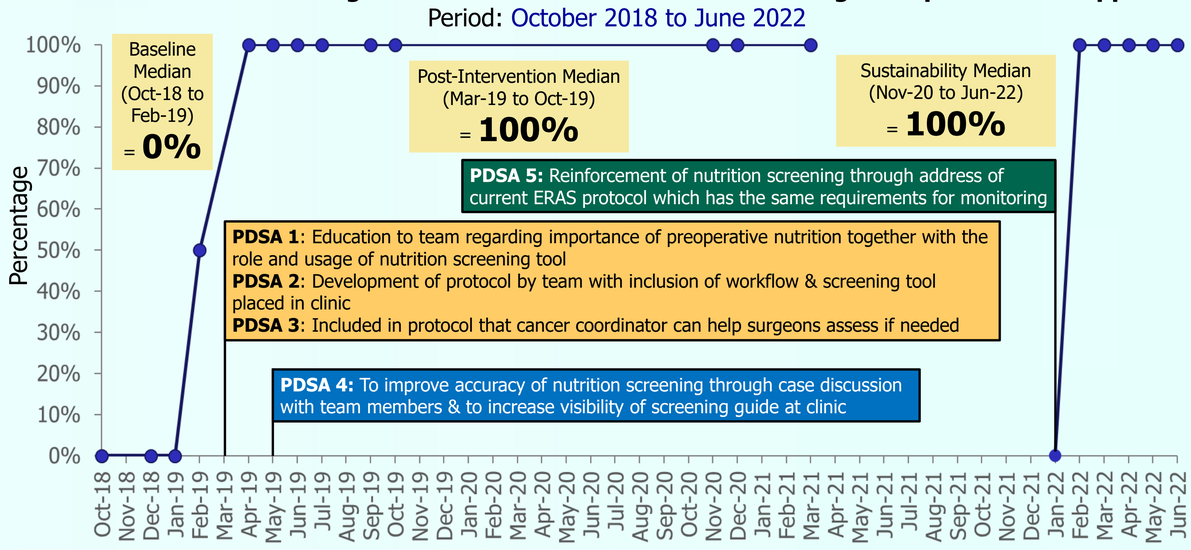
Implementation

Root Cause	Intervention	Implementation Date
Cause D: 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	**PDSA 3**: 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

Period: October 2018 to June 2022



	Oct-18	Dec-18	Jan-19	Feb-19	Apr-19	May-19	Jun-19	Jul-19	Sep-19	Oct-19	Nov-20	Dec-20	Mar-21	Jan-22	Mar-22	Apr-22	May-22	Jun-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

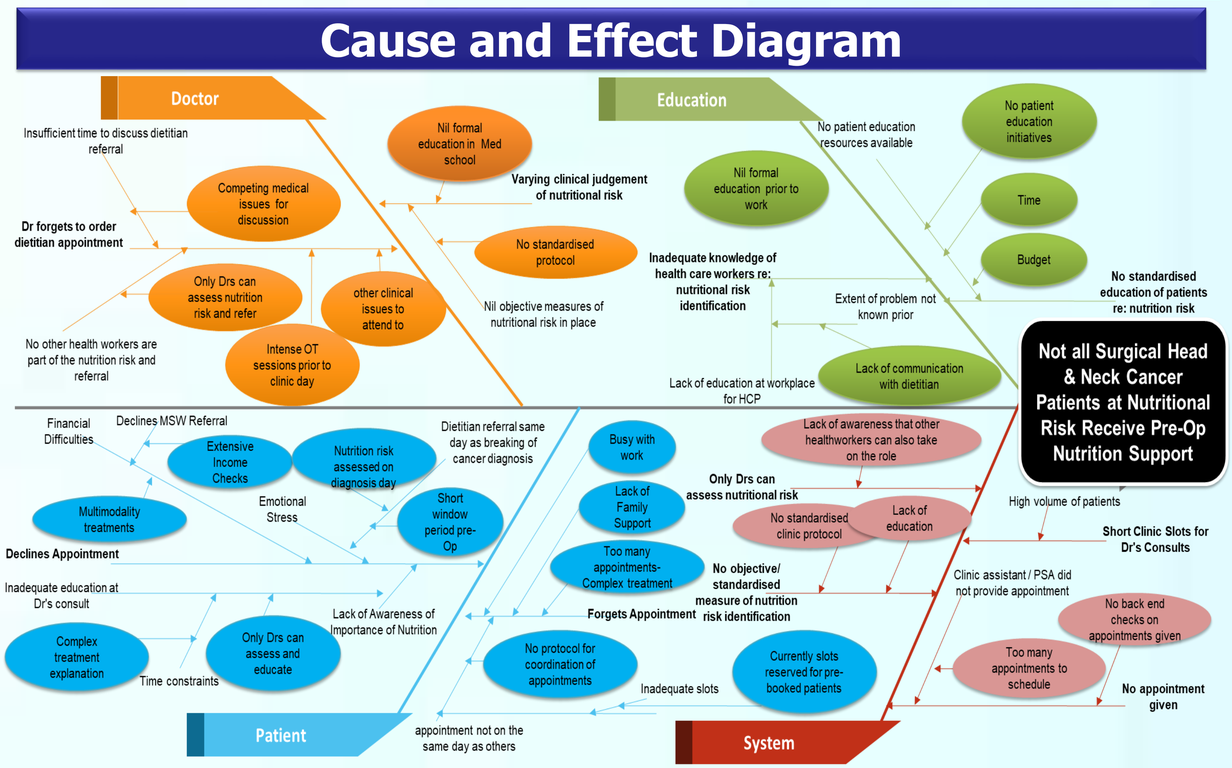
Cost Savings

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

Cause and Effect Diagram



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