

Implementation of Canadian Nutrition Screening Tool in Plastic Surgery Clinics

Karen Chung, David Wallace, Sultan Al-Shaqsi, Pierre Lapaine,
Whitney Quong, Moaath Saggaf
Supervisor: Dr. Karen Cross

Background

- Many referrals to hospital based plastic surgeons involve complex wounds.
- It is key to identify and treat malnourished patients in order to:
 - Prevent surgical complications.
 - Optimize wound healing.

Background

OPEN



VIEWPOINTS

Plastic Surgery Patients Are Malnourished: Utilizing the Canadian Malnutrition Screening Tool

Janelle Yu, BSc,* Paul J. Hunter, BSc,* Julie A. Perry, PhD,* Karen M. Cross, MD, PhD, FRCSC*†

Background *

- Consistent with general in-patient Canadian hospital population,
 - 25% of all studied subjects within one surgeon's clinic at St Michael's Hospital were found to be at nutritional risk by the CNST.
- This study strongly suggests that **1:4 plastic surgery patients are at risk for malnourishment.**

Background

- The Canadian Nutritional Screening Tool (CNST):
 - Rapid nutrition screening tool.
 - Aid in the identification of patients who are currently malnourished or who are at risk of becoming malnourished.
 - Composed of two questions.

Background

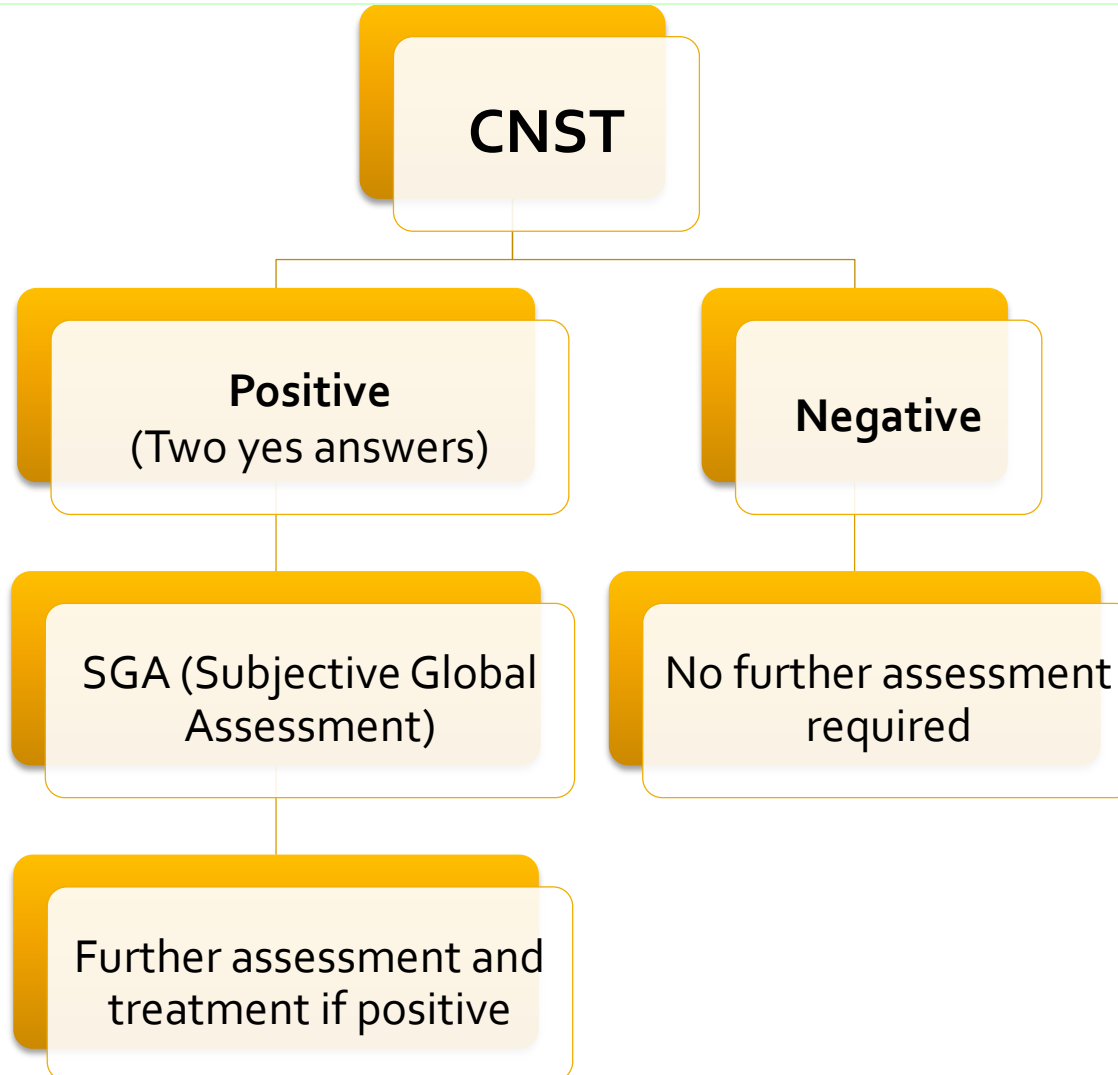
CANADIAN NUTRITION SCREENING TOOL (CNST)

Name:	Age:	Weight:	Room:

Identify patients who are at risk for malnutrition

Ask the patient the following questions*	Date:		Date:	
	Admission		Rescreening	
	Yes	No	Yes	No
Have you lost weight in the past 6 months WITHOUT TRYING to lose this weight? <small>If the patient reports a weight loss but gained it back, consider it as NO weight loss.</small>				
Have you been eating less than usual FOR MORE THAN A WEEK?				
Two "YES" answers indicate nutrition risk[†]				

Background



OBJECTIVES

- 1) To implement the CNST within all plastic surgery clinics at SMH and the Mississauga Plastic Surgery Clinics, and Sunnybrook
- 2) To evaluate the rate of successful implementation of the CNST into these clinics

What was done:

- Submission and approval at SMH REB
- Interested staff participants at other sites

Concerns

- Patient recruitment and timing
- Dealing with REBs at different sites and limited time
 - Sunnybrook: TASHN BoR application
 - Mississauga Plastic Surgery Clinic – ?Separate Research Board

New Objectives

- 1) To assess interest in implementing CNST into our clinic
- 2) To identify barriers and possible solutions

Methodology

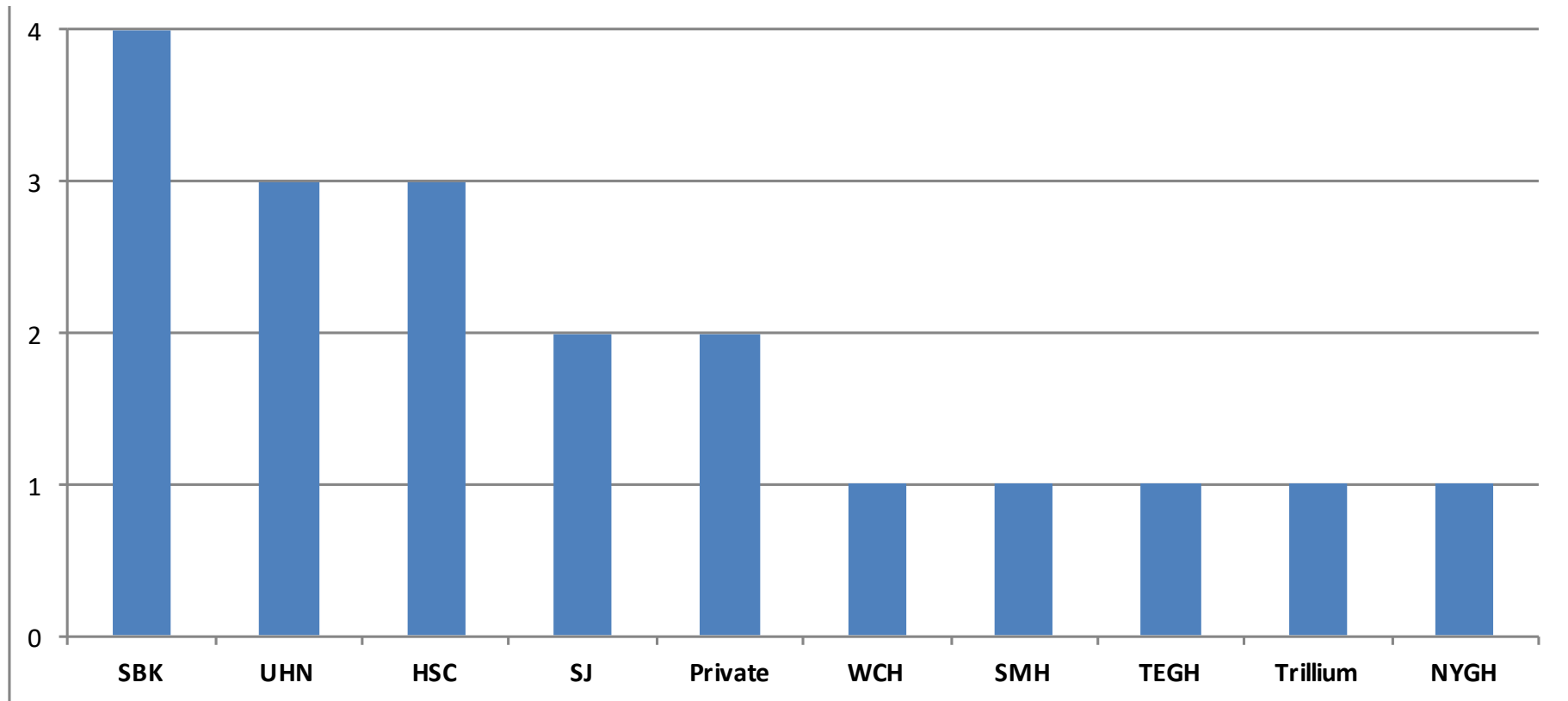
- Online survey was designed.
- Three Email cycles were sent to 48 Plastic Surgeons.
 - Information about the tool.
 - Rationale and impact.
- 19 surgeons responded (rate: 40%).
- Simple descriptive statistics were applied.

Methodology

Surgeons were asked the following:

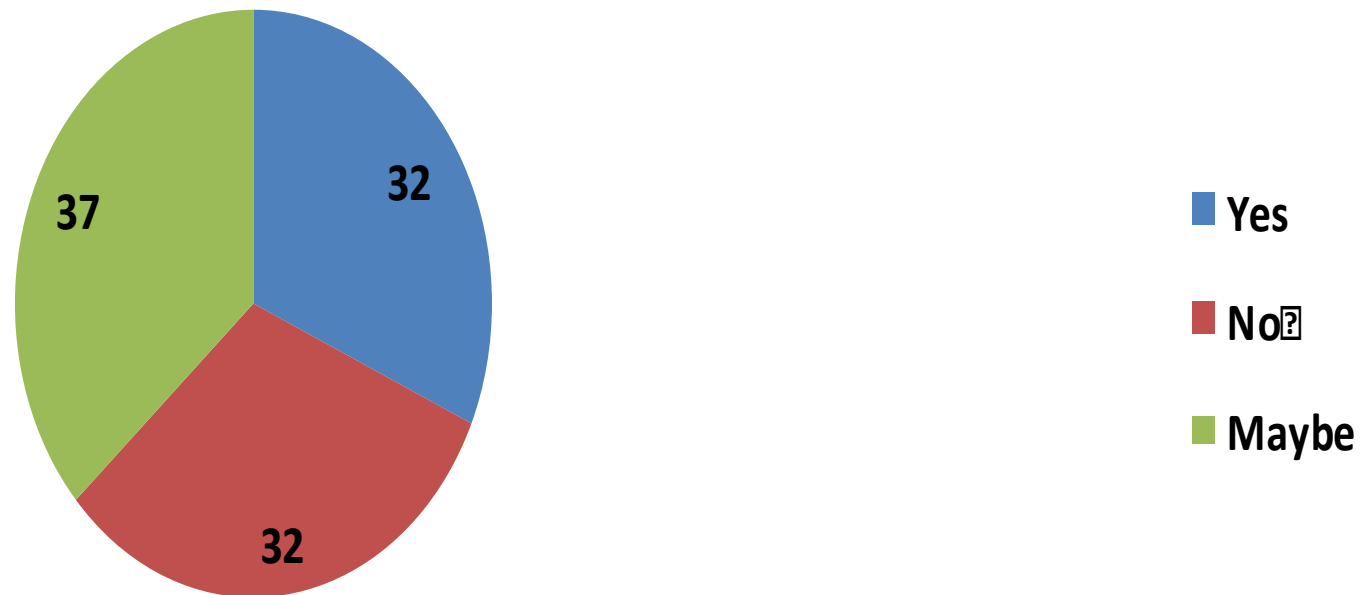
- 1) Would you be interested in implementing CNST
- 2) What barriers would there be in implementing this tool within your clinic?
- 3) What would be needed to overcome these barriers?

Distribution of Response by Hospital Site



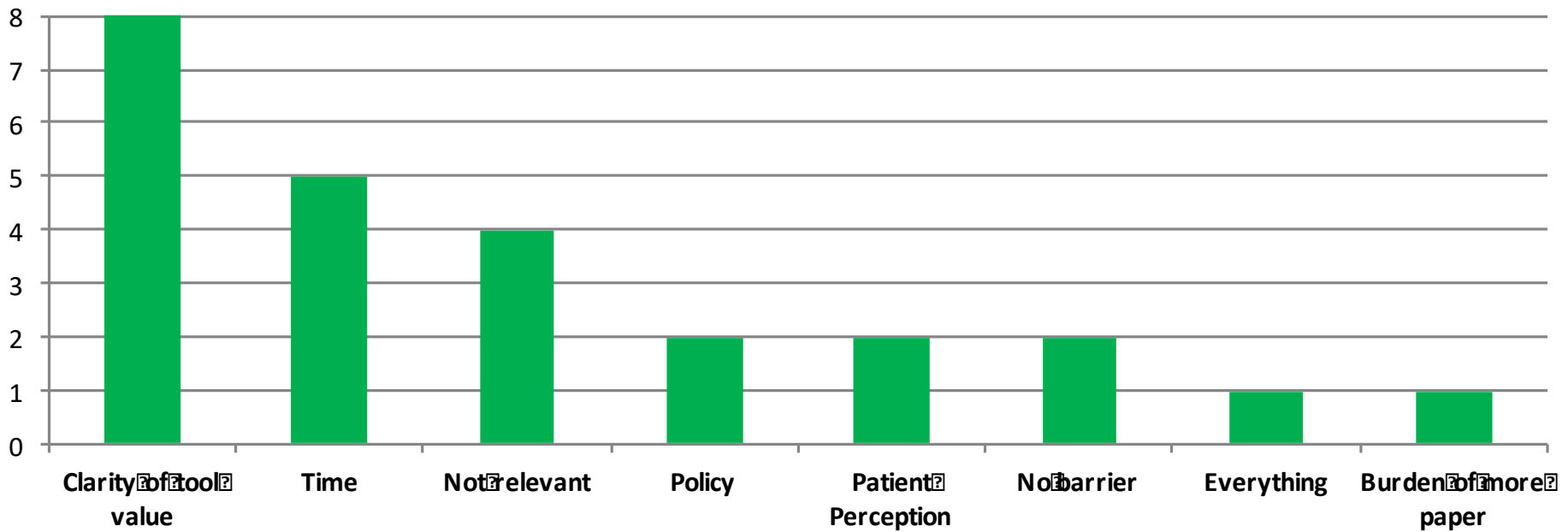
Results

Proportion of staff that would implement the CNST



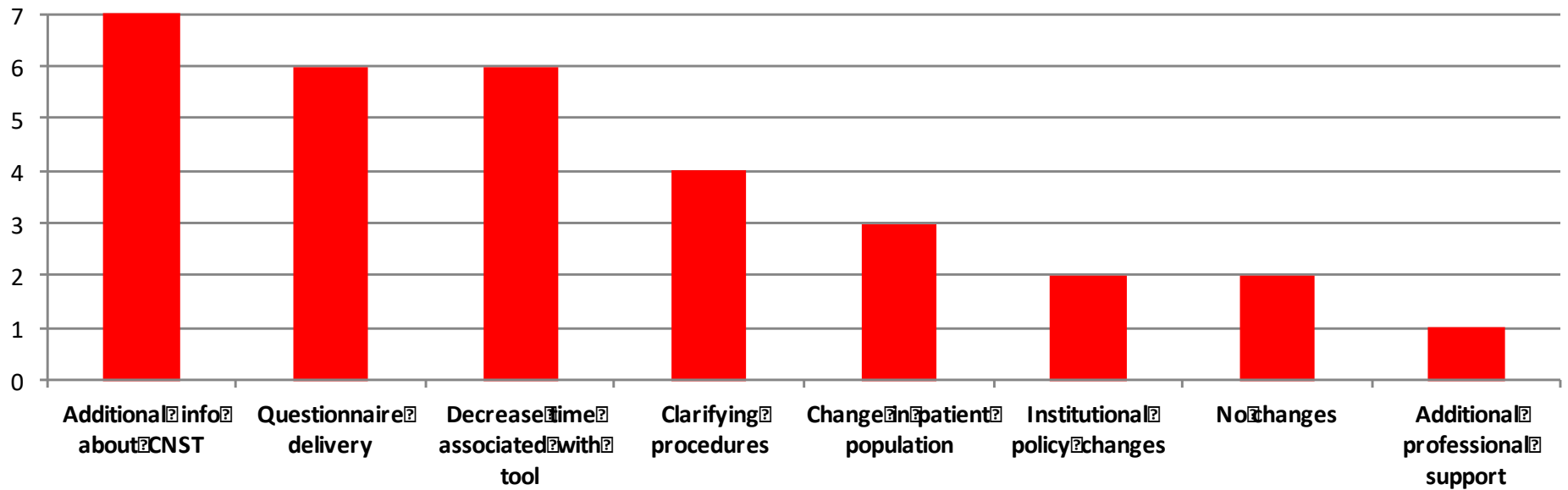
Results

Barriers to Implementation of CNST



Results

Suggestions for Implementation of CNST



Conclusion:

- **69%** of the participating Plastic Surgeons across the GTA are potentially interested in implementing the CNST to their practice.
- Interpreting the results of the CNST and time constraints were the most common barriers cited by the Surgeons.
- Lack of staff support was not identified as a potential barrier for implantation.

Future Directions

- Next Steps:
 - Effective education about CNST implementation and algorithm for positive test results.
 - Included in referral process?
- Other points:
 - Validated in children, in hand surgery? Pediatric surgeons and hand surgeons would like to see this validated within their field

Acknowledgments

- Julie Perry

SGA

SUBJECTIVE GLOBAL ASSESSMENT FORM

MEDICAL HISTORY

Patient name:	Date:

NUTRIENT INTAKE

1. No change; adequate
2. Inadequate; duration of inadequate intake _____
 - Suboptimal solid diet
 - Full fluids or only oral nutrition supplements
 - Minimal intake, clear fluids or starvation
3. **Nutrient Intake in past 2 weeks***
 - Adequate _____
 - Improved but not adequate _____
 - No improvement or inadequate _____

WEIGHT

Usual weight _____

Current weight _____

1. Non-fluid weight change during the past 6 months
Weight loss (kg) _____
 - <5% loss or weight stability
 - 5–10% loss without stabilization or increase
 - >10% loss and ongoing

If above not known, has there been a subjective loss of weight during the past 6 months?

- None or mild
 - Moderate
 - Severe
2. Weight change in the past 2 weeks*
Amount (if known) _____
 - Increased
 - No change
 - Decreased

SYMPTOMS (Experiencing symptoms affecting oral intake)

1. Pain on eating Diarrhea
 - Anorexia Dental problems
 - Vomiting Feels full quickly
 - Nausea Constipation
 - Dysphagia

2. None
 - Intermittent/mild/few
 - Constant/severe/multiple
3. Symptoms in the past 2 weeks*
 - Resolution of symptoms
 - Improving
 - No change or worsened

FUNCTIONAL CAPACITY

(Fatigue and progressive loss of function)

1. No dysfunction
2. Reduced capacity; duration of change _____
 - Difficulty with ambulation/normal activities
 - Bed/chair-ridden
3. Functional Capacity in the past 2 weeks*
 - Improved
 - No change
 - Decrease

METABOLIC REQUIREMENT

High metabolic requirement No Yes

* See SGA Rating for more description.

* See SGA Rating for more description.

[Eur J Clin Nutr](#). 2015 May;69(5):558-64. doi: 10.1038/ejcn.2014.270. Epub 2014 Dec 17.

Validity and reliability of the new Canadian Nutrition Screening Tool in the 'real-world' hospital setting.

[Laporte M](#)¹, [Keller HH](#)², [Payette H](#)³, [Allard JP](#)⁴, [Duerksen DR](#)⁵, [Bernier P](#)⁶, [Jeejeebhoy K](#)⁷, [Gramlich L](#)⁸, [Davidson B](#)⁹, [Vesnaver E](#)¹⁰, [Teterina A](#)⁴.

⊕ Author information

Abstract

BACKGROUND/OBJECTIVES: Nutrition screening should be initiated on hospital admission by non-dietitians. This research aimed to validate and assess the reliability of the Canadian Nutrition Screening Tool (CNST) in the 'real-world' hospital setting.

SUBJECTS/METHODS: Adult patients were admitted to surgical and medical wards only (no palliative patients). Study 1--Nutrition Care in Canadian Hospitals (n=1014): development of the CNST (3 items: weight loss, decrease food intake, body mass index (BMI)) and exploratory assessment of its criterion and predictive validity. Study 2--Inter-rater reliability and criterion validity assessment of the tool completed by untrained nursing personnel or diet technician (DT) (n=150). Subjective Global Assessment performed by site coordinators was used as a gold standard for comparison.

RESULTS: Study 1: The CNST completed by site coordinators showed good sensitivity (91.7%) and specificity (74.8%). Study 2: In the subsample of untrained personnel (160 nurses; one DT), tool's reliability was excellent (Kappa=0.88), sensitivity was good (>90%) but specificity was low (47.8%). However, using a two-item ('yes' on both weight change and food intake) version of the tool improved the specificity (85.9%). BMI was thus removed to promote feasibility. The final two-item tool (study 1 sample) has a good predictive validity: length of stay (P<0.001), 30-day readmission (P=0.02; X(2) 5.92) and mortality (P<0.001).

CONCLUSIONS: The simple and reliable CNST shows good sensitivity and specificity and significantly predicts adverse outcomes. Completion by several untrained nursing personnel confirms its utility in the nursing admission assessment.

Commentary