Improving Hospital Outcomes and Efficiency: A Proven Evidence-Based Strategy

June 17 at 1:30 pm

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Judy Gibson, Marketplace Capabilities Group

Land Acknowledgment

We acknowledge that we are located on Treaty 6 Territory, home to many nations including the Cree, Saulteaux, Blackfoot, Sioux and Métis People

Disclosures

- Leah Gramlich: Speaker, Consultant, Research Support – Fresenius Kabi, Baxter, Takeda

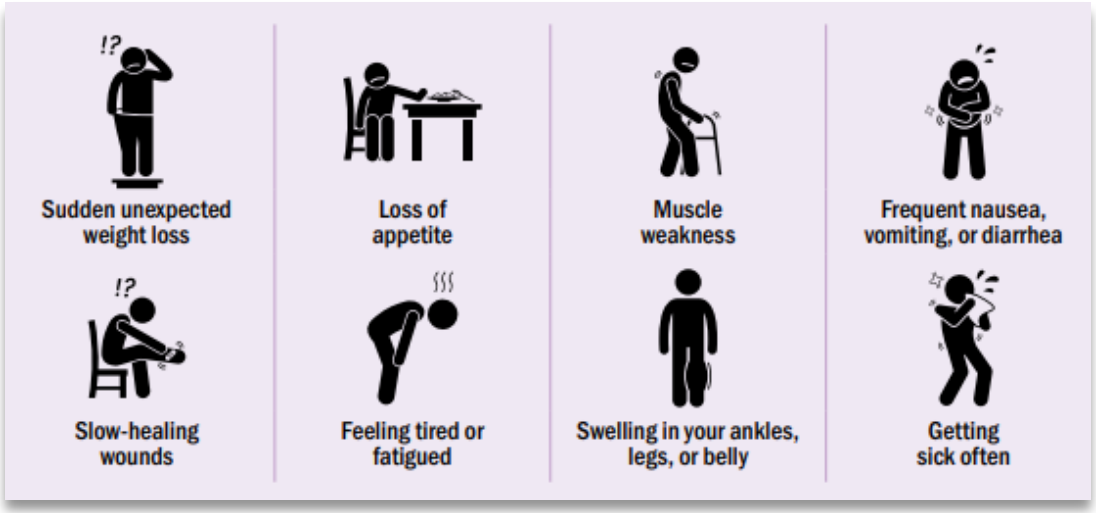
- Teresa O'Callaghan: None
- Judy Gibson: Abbott

This session is brought to you by the Canadian Malnutrition Task Force

What is Malnutrition?

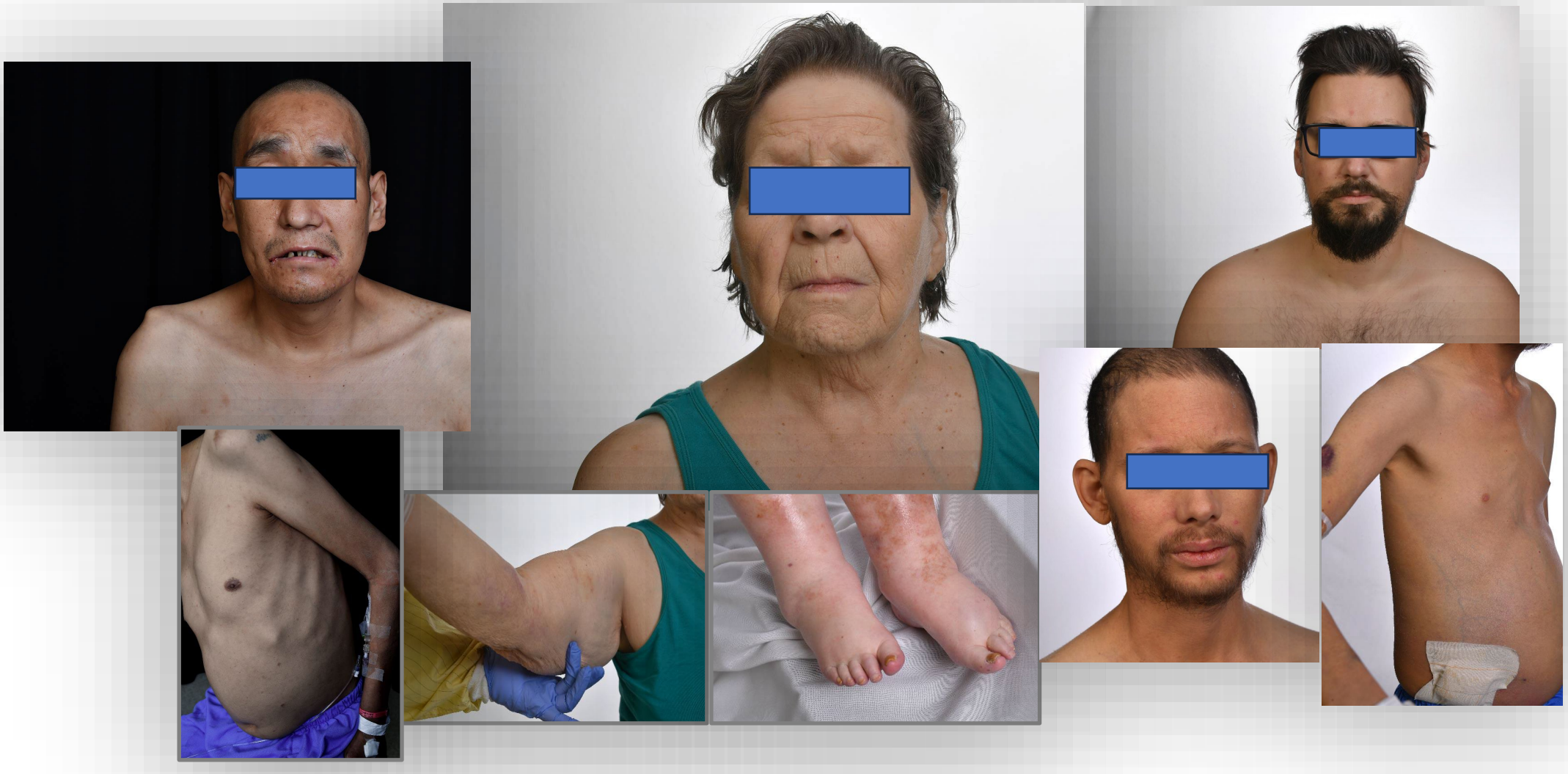
- Imbalance of nutrients resulting in functional decline.
  - Inadequate intake
  - Impaired nutrient absorption
  - Increased energy expenditure
- It's not always easy to see – but easy to screen* for.
- There are serious consequences for a patients and for health systems.

Warning Signs



Consequences

Source: https://www.nutritioncare.org/uploadedFiles/Documents/Malnutrition/MAW_2021/Consumer-Info-Sheet-Geriatrics-8.5.21.pdf -



Incidence in Hospital

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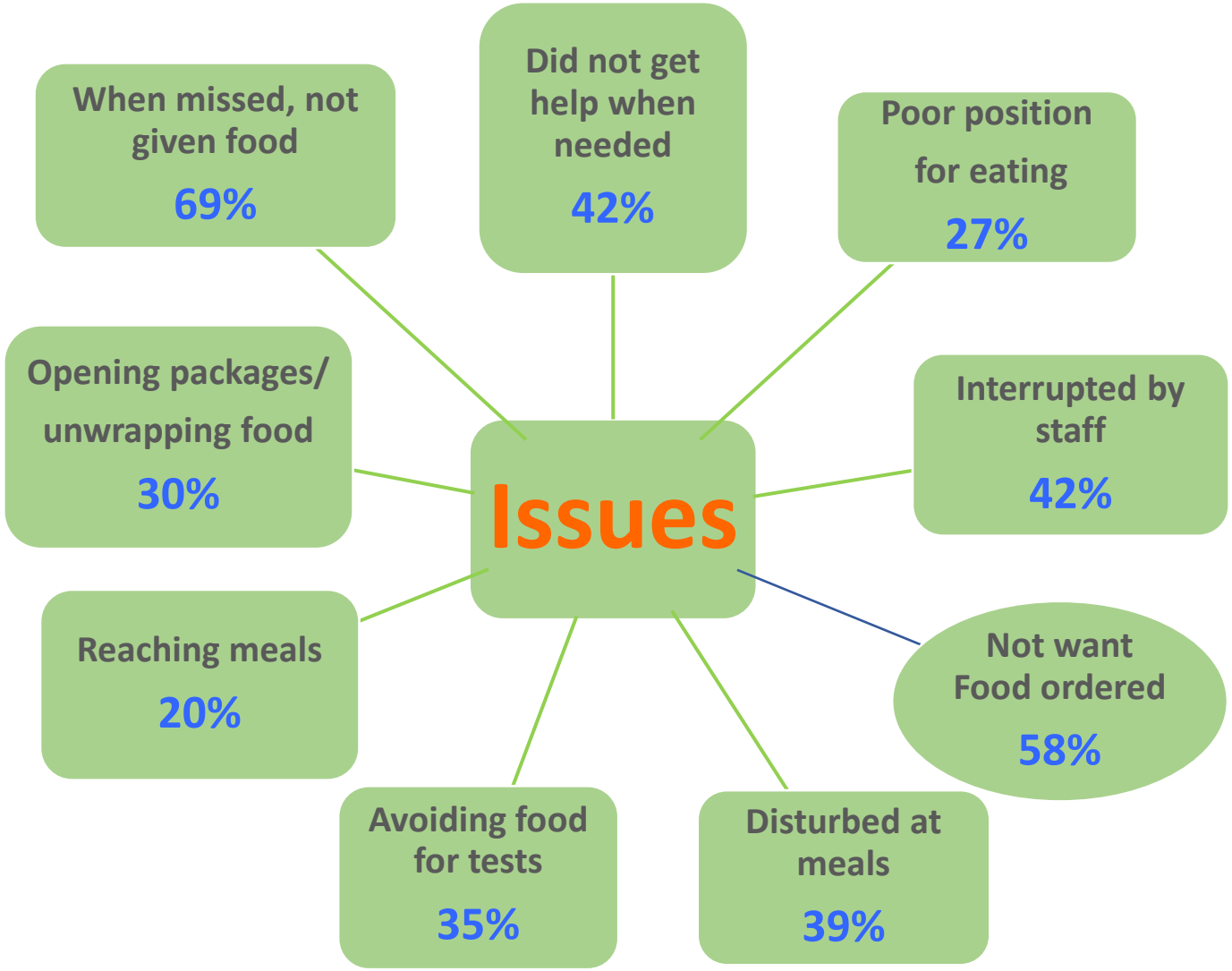
On admission to hospital:

Up to 1 in 2 adult patients admitted to hospital is malnourished

Up to 1 in 3 pediatric patients admitted to a tertiary hospital is malnourished

Allard et al JPEN 2016; Belanger et al J Pediatric 2019; Carter et al Can J Diet Pract Res 2019

In Hospital Food Intake Barriers



Keller et al., JHND 2015

Poor Food Intake

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Poor food intake is a reality

Allard et al., 2016; Belanger 2019; Ramage-Morin et al Stats Canada Health Reports 2013

Malnutrition is Costly

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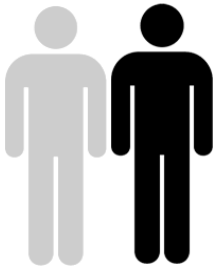


Up to **1 OUT OF 2** Canadians admitted to hospital is malnourished[1]

Hospital consequences

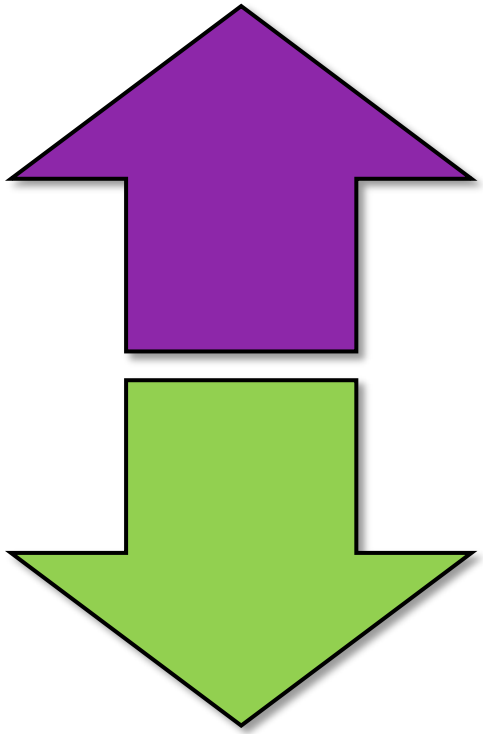
- **3** days longer stay in hospital[2]
- **$2K** Average additional cost/patient[2]
- **x8** more likely to die[3]
- **x2** more likely to be readmitted[4]

$2 billion/year is the estimated cost of malnutrition

1. Allard JP et al JPEN 2015; 2. Curtis LJ et al. Clin Nutr 2016; 3. Fleder S et al. Nutrition 2015; 4. Lim SL et al. Clin Nutr 2012

Impact

Malnutrition Negatively Affects Patients' Safety and Hospital Performance Indicators



-Risk of infection and pressure ulcers[1]

-Institution resource utilization and costs

- Patient flow[2] and hospital access

- Patient satisfaction[3]

1. Lim SL et al. Clin Nutr 2012. 2. Keller H et al J Hum Nutr Diet. 2013. 3. Keller HH et al. J Hum Nutr Diet. 2015

THE SOLUTION
Malnutrition can be treated

What works?

- **Change in thinking:** Food is Medicine, not a budget item;
  NUTRITION IS THERAPY

- **Systematic screening and early diagnosis** for malnutrition
  (like systematic screening for fall risk and pressure injuries)

- **Standardized language**

- **Embedding tools** and processes into multidisciplinary team-work

In Hospital

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Multiple studies have shown that nutrition interventions in hospital can make a difference in outcomes

EFFORT Trial 2019

Kaegel-Braun 2021

NOURISH study 2019

Gomez 2019

KANEKO 2021 to name a few…..

Interventions

- Dietitian protein and calorie goals vs. standard diet
- Dietary advice
- Oral nutrition supplements
- Enteral/parenteral nutrition
- Early feeding

Deutz et al. Clin. Nutr. 2016; Kaegl-Braun et al. JAMA 2021; Schuetz P et al. Lancet 2019; Gomez et al JAMA Network Open 2019; KANEKO et al Am J Cardiol 2021

EFFORT Trial

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Effect of early nutritional support on Frailty, Functional Outcomes and Recovery of malnourished medical inpatients

Pragmatic, unblinded, multicenter RCT
n = 2088 medical inpatients at nutritional risk

Intervention: protocol-guided **individualised nutrition** support to reach protein and caloric goals (defined by dietitians)

Control: standard hospital food (no dietary consultation)

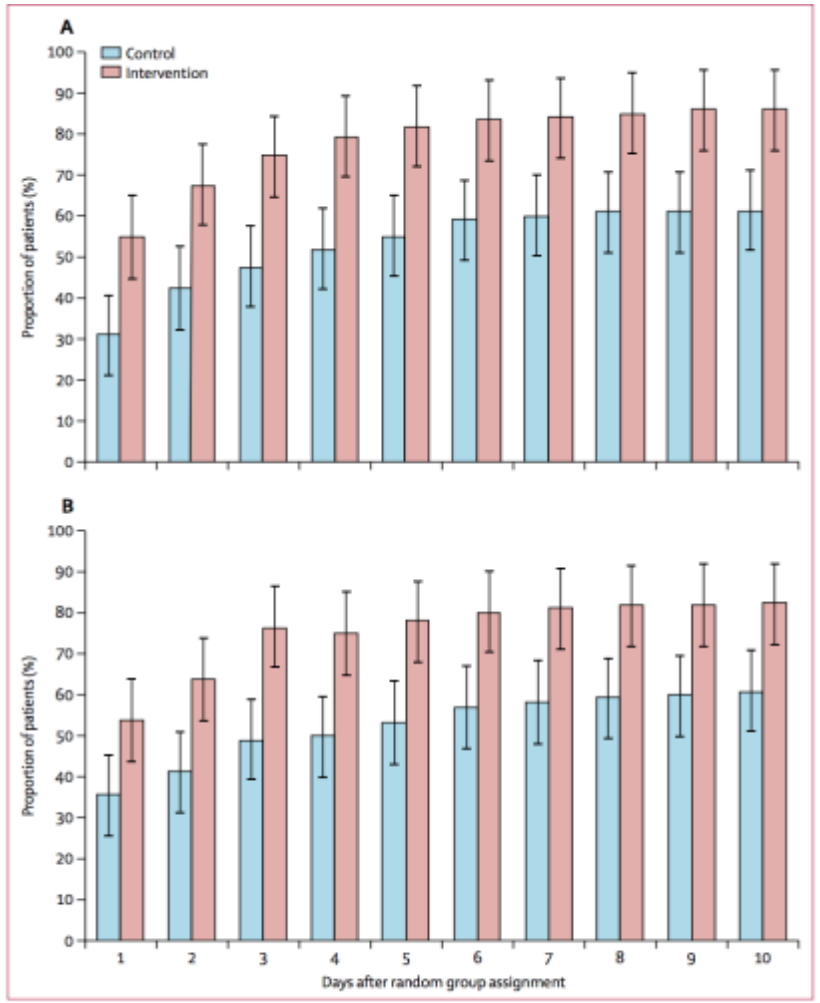

Figure 3: Proportion of patients reaching caloric (A) and protein (B) requirements during the first 10 days after random group assignment

Schuetz P et al. Lancet 2019

EFFORT Trial

More control patients:

- had an adverse outcome with in 30 days of admission
- died within 30 days of admission

No differences in side effects due to nutritional support

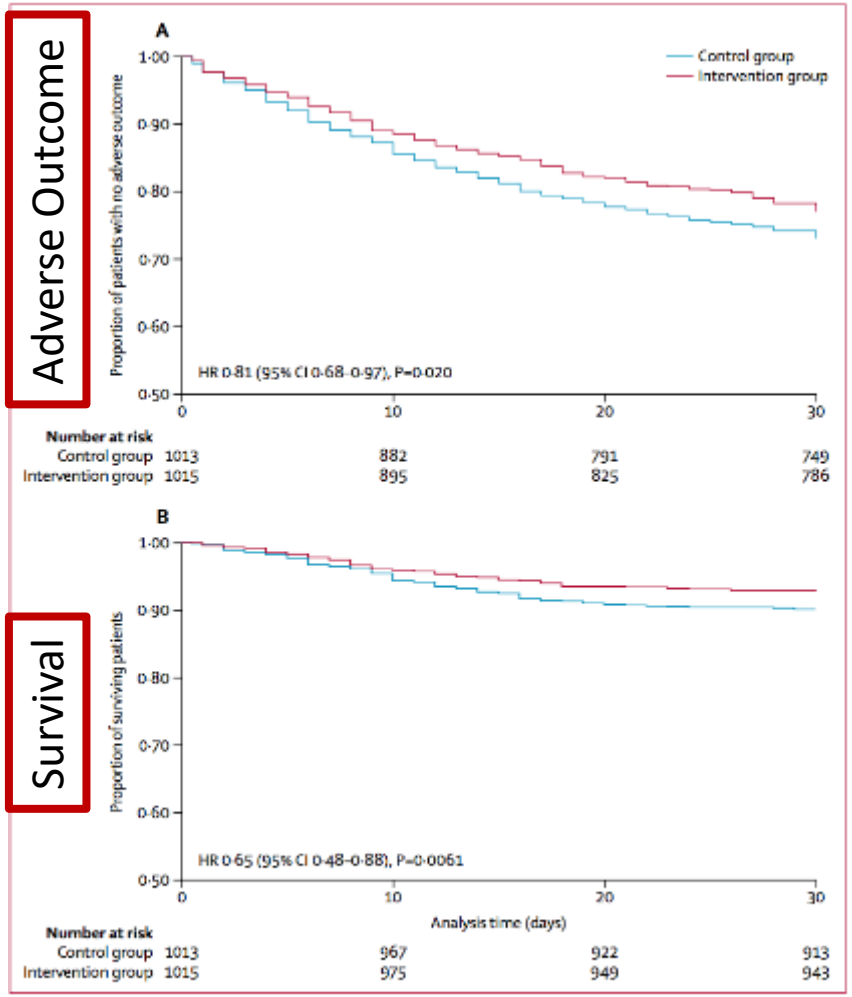

Figure 4: **Kaplan-Meier estimates of the cumulative incidence of the primary endpoint and all-cause mortality**
(A) Time to the first event of the composite primary endpoint (log-rank p value=0·035). (B) Time to death (log-rank p value=0·031).

Schuetz P et al. Lancet 2019

Integrated Nutrition Pathway for Acute Care

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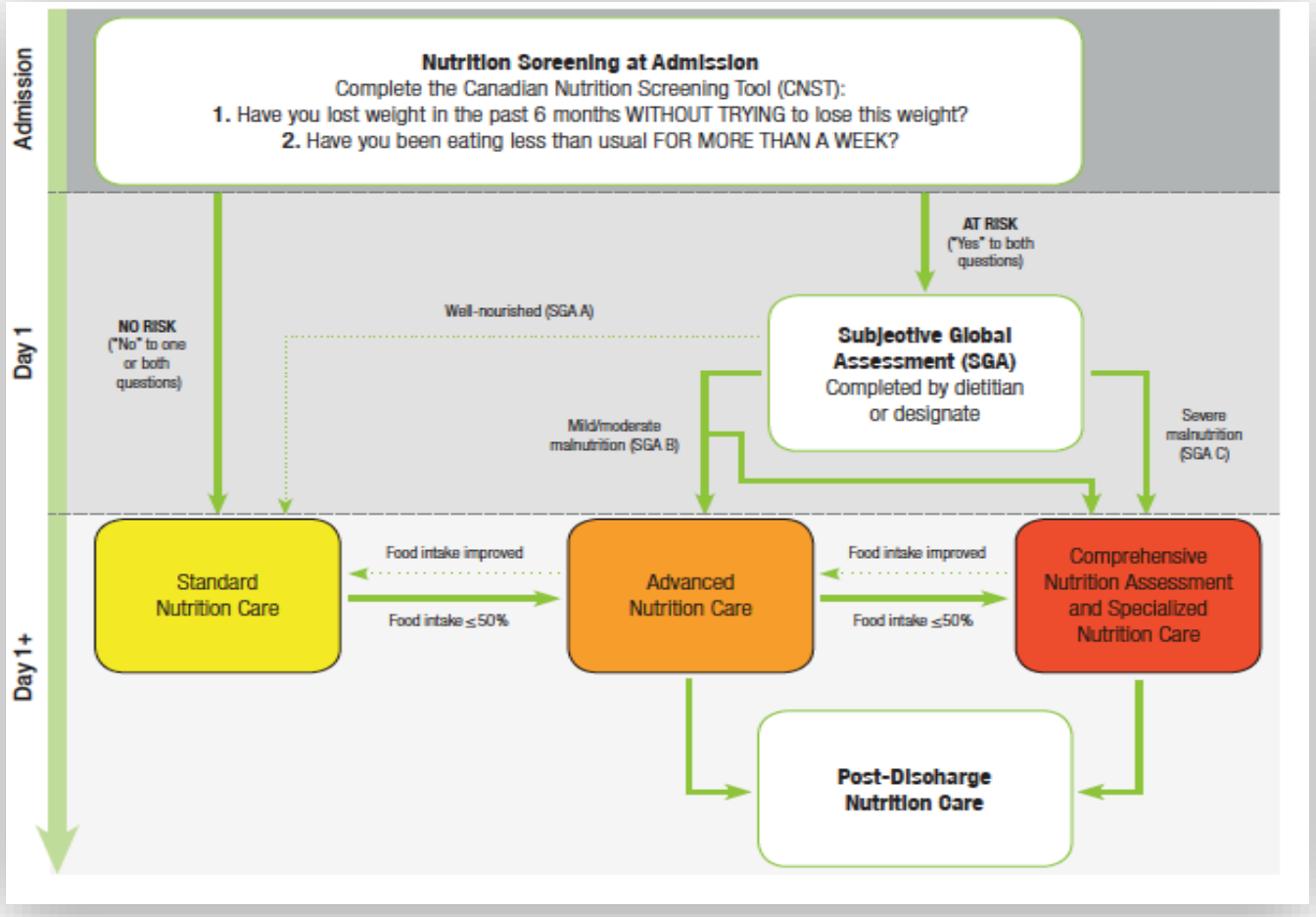
An evidence-based algorithm for the detection, treatment and monitoring of malnutrition amongst acute care medical and surgical patients

https://nutritioncareincanada.ca/resources-and-tools/hospital-care-inpac/inpac

P-INPAC, Pediatric Integrated Nutrition Pathway for Acute Care also exists



Keller et al., 2015; Keller et al., 2018

In hospital INPAC implementation

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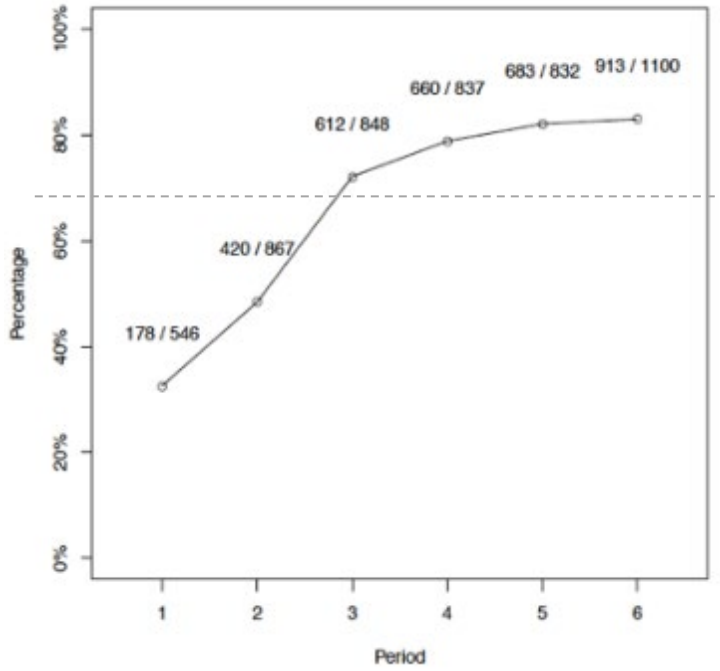
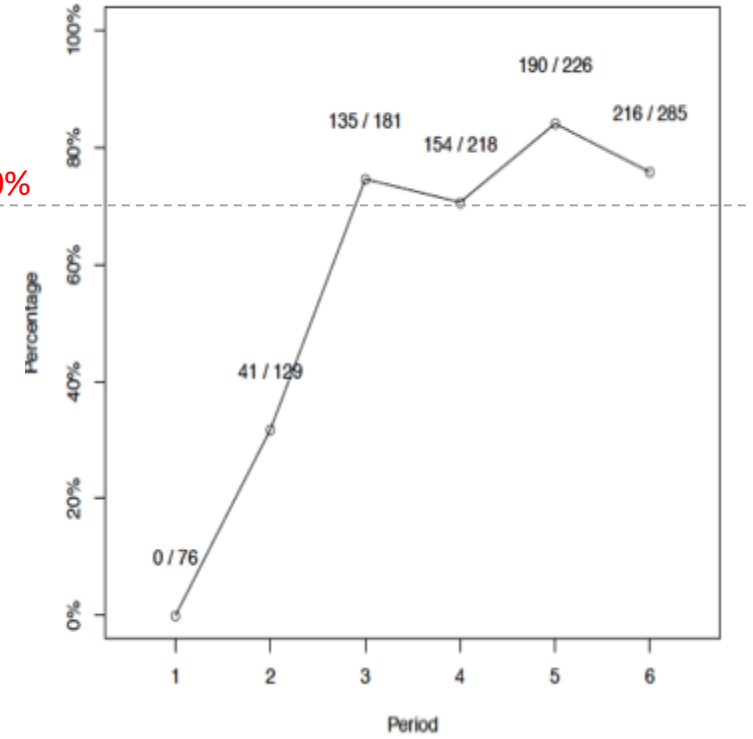
Resulted in improvements in:

Nutrition Screening at admission



Malnutrition Diagnosis (SGA)



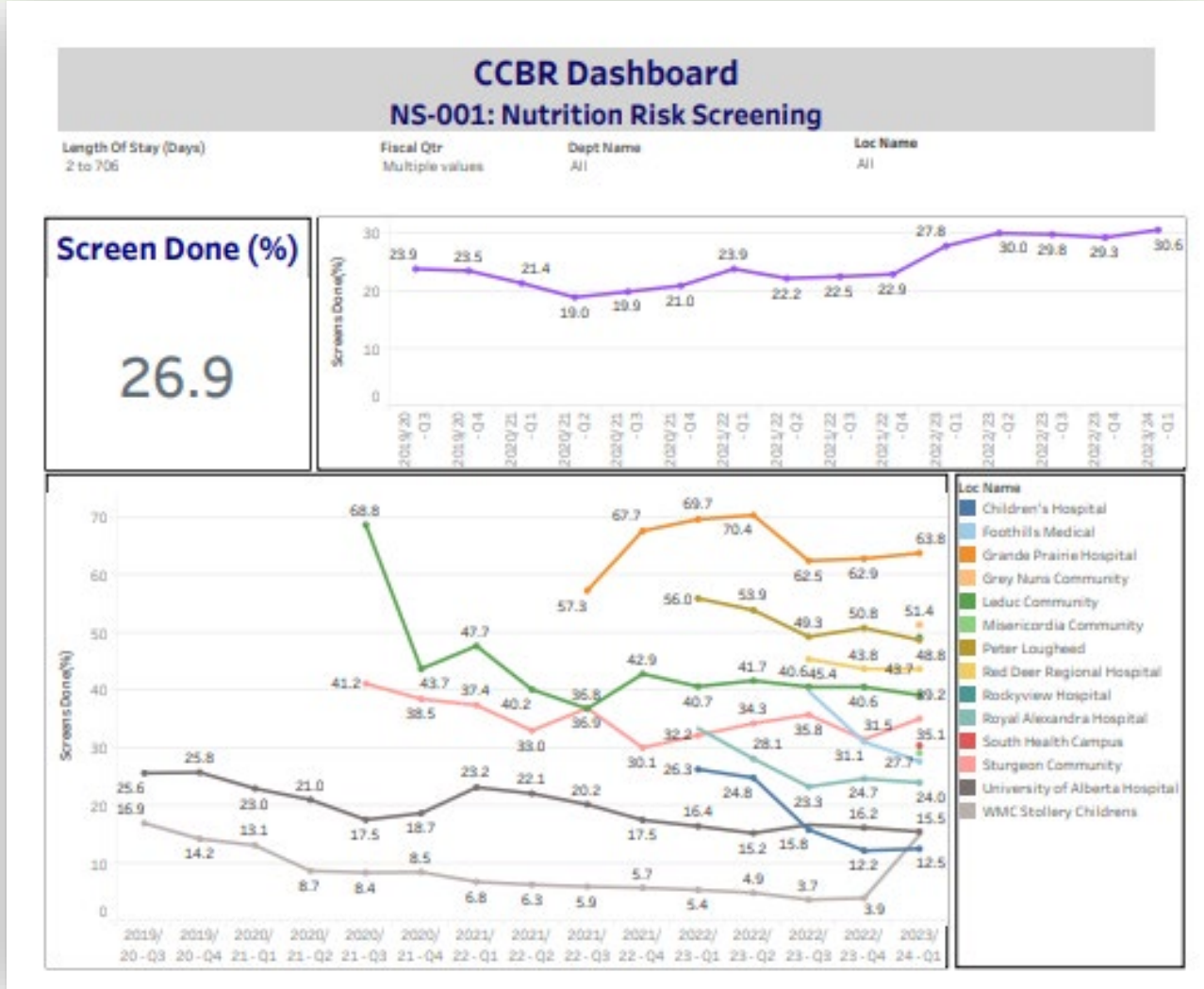
Outcome: Length of Stay (days)		
Site	Baseline	Follow-Up
A	9	6
B	12	8
C	7	5.5
D	8	9
E	11	9

*70% of patients audited was used as the threshold to demonstrate that a practice was successfully implemented and sustained

SGA = Subjective Global Assessment

Keller et al., 2019

When a standardized approach with buy-in from all levels is not achieved…



Hospital Nutrition Program achieved **significant reductions** in readmissions and length of stay[1]

Advocate Health Care

REDUCTION IN READMISSIONS AND LENGTH OF STAY

	Pre-QIP	QIP-Basic	QIP-Enhanced
	Readmission Rate: 22%; Length of Stay: 7.2 days	Reduction in Readmission Rate: 25.8%; Reduction in Length of Stay: 25% (1.8 days)	Reduction in Readmission Rate: 29.4%; Reduction in Length of Stay: 26.4% (1.9 days)
SCREENING	Non-validated screening tool	Validated (MST) screening tool integrated into EMR	Validated (MST) screening tool integrated into EMR
INTERVENTION	No early intervention	ONS intervention within 24-48 hours	ONS intervention within 24 hours
EDUCATION	No formalized nutrition discharge education	No formalized nutrition discharge education	Formalized nutrition discharge education with coupons
POST-DISCHARGE	Follow up post-discharge phone calls	Follow up post-discharge phone calls	Follow up post-discharge phone calls with added questions about ONS adherence

QIP- Quality Improvement Program
MST- Malnutrition Screening Tool
EMR- Electronic Medical Record

1. Sriram K, et al. JPEN J Parenter Enteral Nutr. 2017;41(3):384-91.
2. Sulo S, et al. Am Health Drug Benefits. 2017;10(5):262-270. Study funded by Abbott.

Cost Savings of Nutrition Intervention

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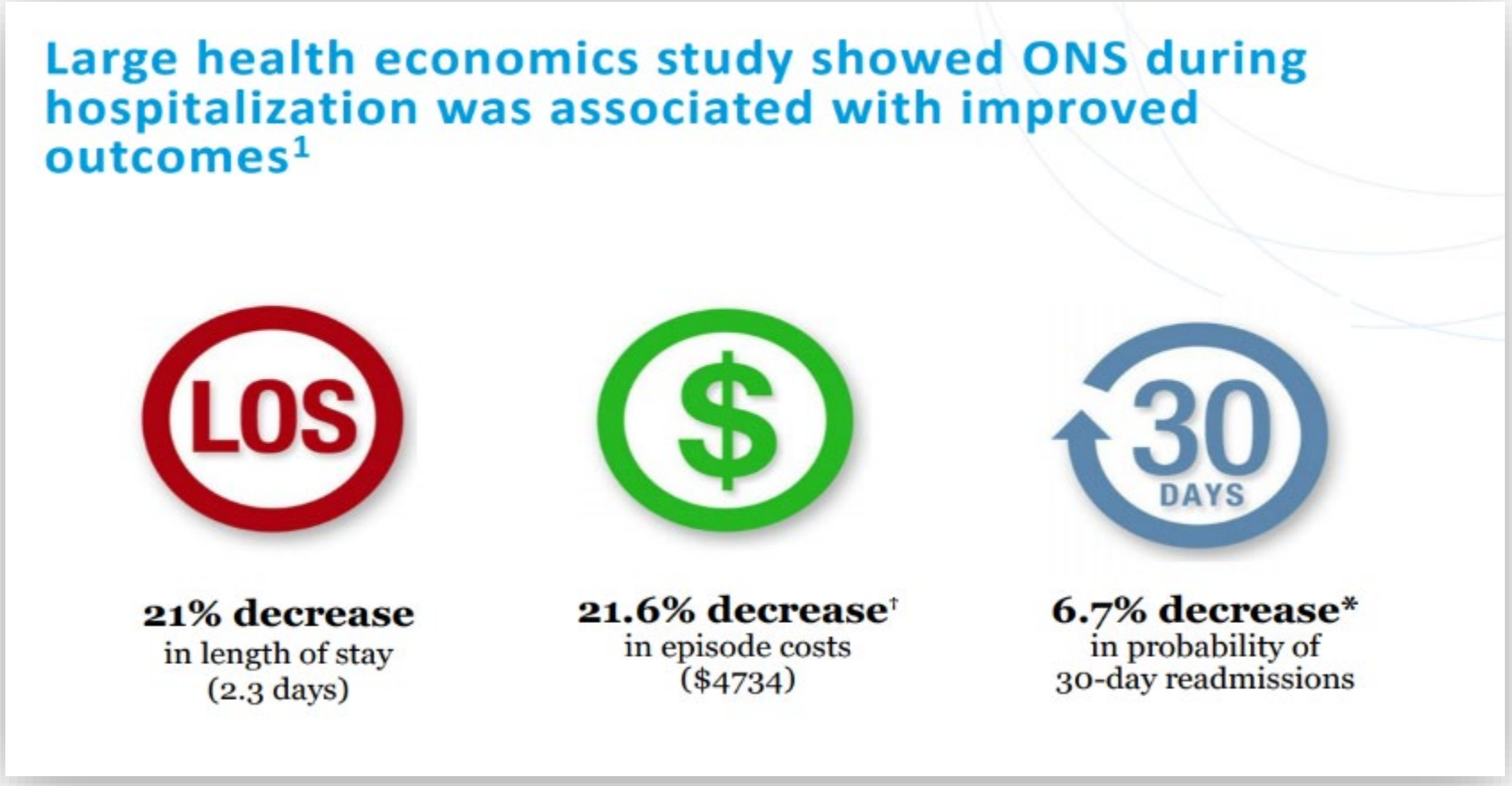


1. Monetary figure based on USD and inflation adjusted

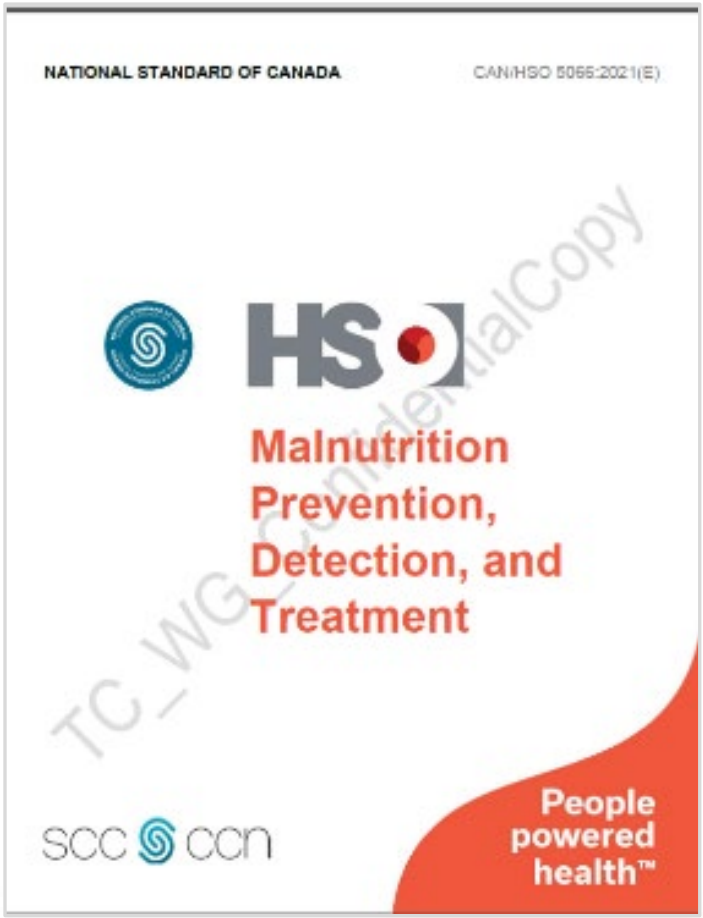
** readmission defined as return to study hospital for any diagnosis. Data measured delayed readmission and does not include patients not readmitted due to recovery or death*

Philipson T et al Am J Manag Care 2013

National Standard

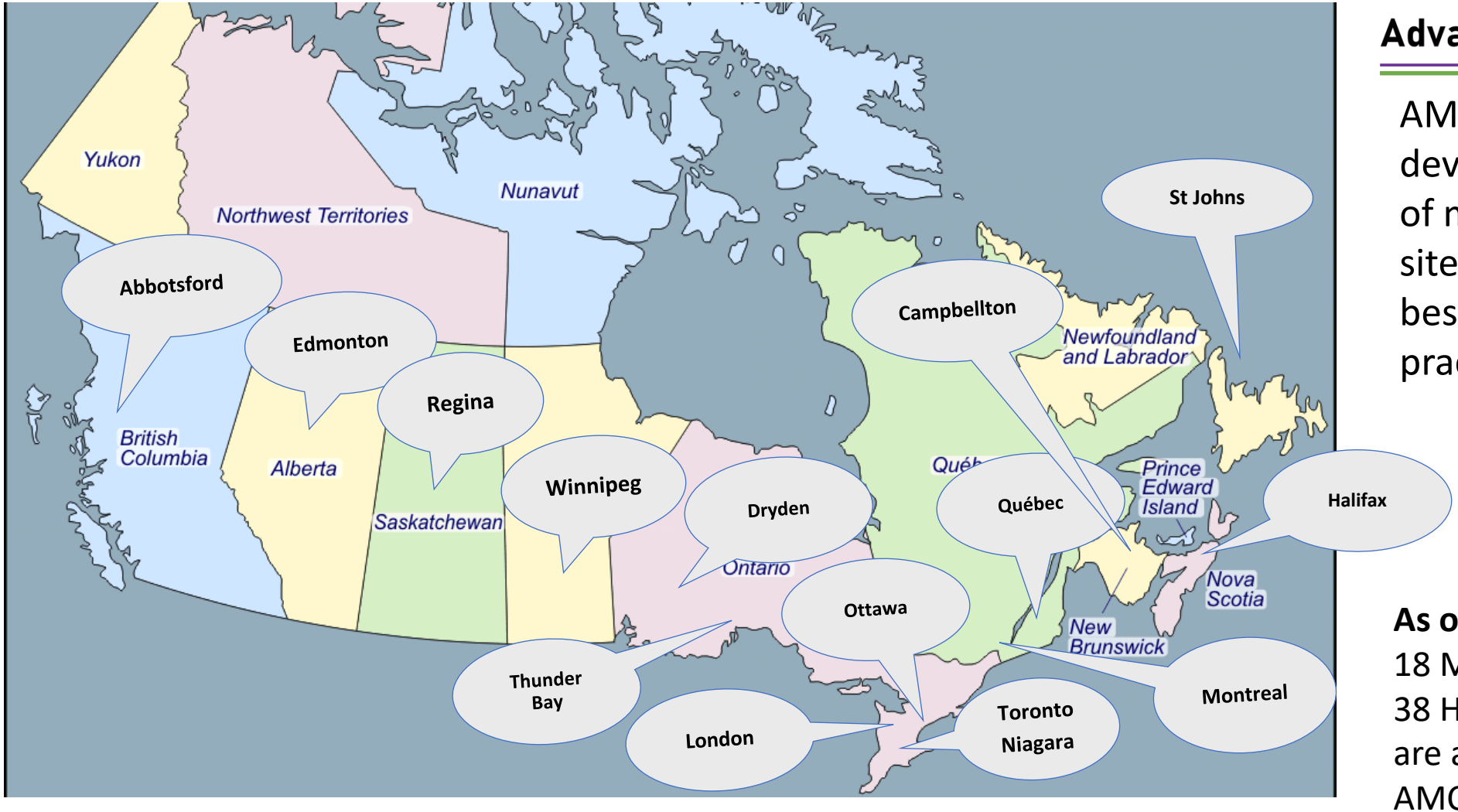
Malnutrition Prevention, Detection and Treatment Standard (CAN/HSO 5066:2021)

- A National Standard of Canada, recognized by the Standards Council of Canada (SCC)
- Provides acute care organizations with the best practices to address malnutrition in adults and children
- Created in collaboration with CMTF
- Available through each hospital's accreditation team



https://healthstandards.org/standard/malnutrition-prevention-detection-and-treatment

Implementation of Best Practices



Advancing Malnutrition Care

AMC is assisting with the development and training of mentors and hospital site champions, to adopt best nutrition care practices

As of Sept 2023
18 Mentors
38 Hospital Champions
are actively participating in AMC

Fraser Health serves

1 in 3 British Columbians

Information shown is based on approximate 2023 data

161 medical residents and **14,200+** clinical students trained

103,584 surgeries performed

735,103 emergency room visits treated

$6.5B+ in multi-year capital projects underway

94,757 language interpretations eased communication for patients and families

48,556 staff, medical staff and volunteers cared for people

3.4M+ home support hours dedicated to people we serve

7 Urgent and Primary Care Centres and 7 Primary Care Networks in place

B.C.'s **first** virtual psychiatry unit opened

B.C.'s **first** digital health care navigator established

$5.37B* annual budget managed

693.6 tCO2e of projected carbon emissions reduced in 2023

= 212 passenger vehicles' emissions

$2.42B* goods and services purchased in B.C.

14,241 Indigenous health liaison appointments

36.9% waste diversion achieved for the region

190,104 square metres of LEED Gold-certified facility space operated

= 27 soccer fields

81 long-term care communities supported seniors

351,356 childhood vaccine doses administered

38% of babies born in B.C.

* 2022-2023 fiscal year.

What we have heard from other health leaders

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What is the Excellence We Are Trying to Achieve?

Optimized acute healing experience for our patients

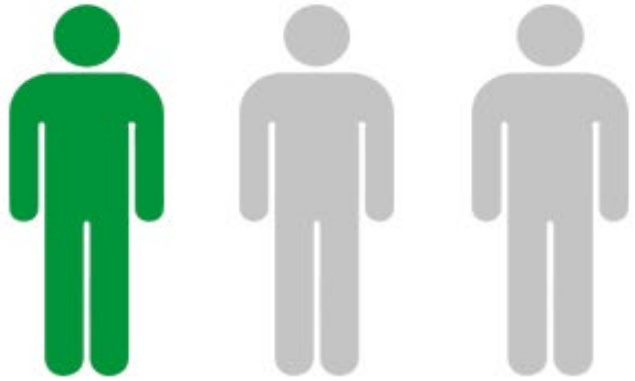
- Improved/maintained function to support patients living at home
- Patient ownership and involvement in their recovery and discharge planning processes
- Visible team communication and collaboration – and the right team!
- Decreased hospital congestion, emergency overcrowding, and increased inpatient capacity by reducing unnecessary length of stay

Improved provider experience and ability to create change

Poor food intake early during hospital stay predicts **prolonged LOS**

31.4%
of patients
ate < 50%
of their meals

Week 1 of hospitalization (n=931)



LOS: Length of stay
P < 0.001

Allard JP et al.. *JPEN* 2016:40(4):487-97.

ONE DAY COUNTS!

Journey Towards Safe & Optimal Care Transitions

Oral Nutrition Supplement (ONS) Standard

Using "Food as Medicine" to promote faster recovery

Early Mobilization Progression Standard

Build strength to promote recovery starting on day 1 and maintain function after transition from the hospital

Criteria-Led Discharge (CLD) Standard

Shared knowledge and communication of criteria needed for safe and timely discharge

Patient-Oriented Discharge Summary Standard

Relevant and actionable information to build patient confidence to manage care after transition from the hospital

Some Facts:

50% of hospitalized patients over 60 are malnourished.

95% of hospitalization time is spent immobile by older adults.

1 in 11 patients are readmitted within a month of leaving the hospital.

fraserhealth

Oral Nutrition Supplement (ONS) Standard

1 out of 5 patients are readmitted within 30 days of discharge[5]

45% of patients are malnourished at hospital admission[1†]

75 % of malnourished patients are missed in referral processes[2]

Only **11%** of patients are seen by an RD in the community[4]

20 % of patients deteriorate during their hospital stay[3]

Each malnourished patient costs

~$2,000

more per hospital stay[6]
(LOS 3 days longer)

➢ **$2 billion* total annual costs**

Target Population

- Medicine patients age 60 and older

Exclusions:

- Patients with dysphagia
- Admission order is NPO or "Clear Fluid Diet"
- Renal failure with hyperkalemia

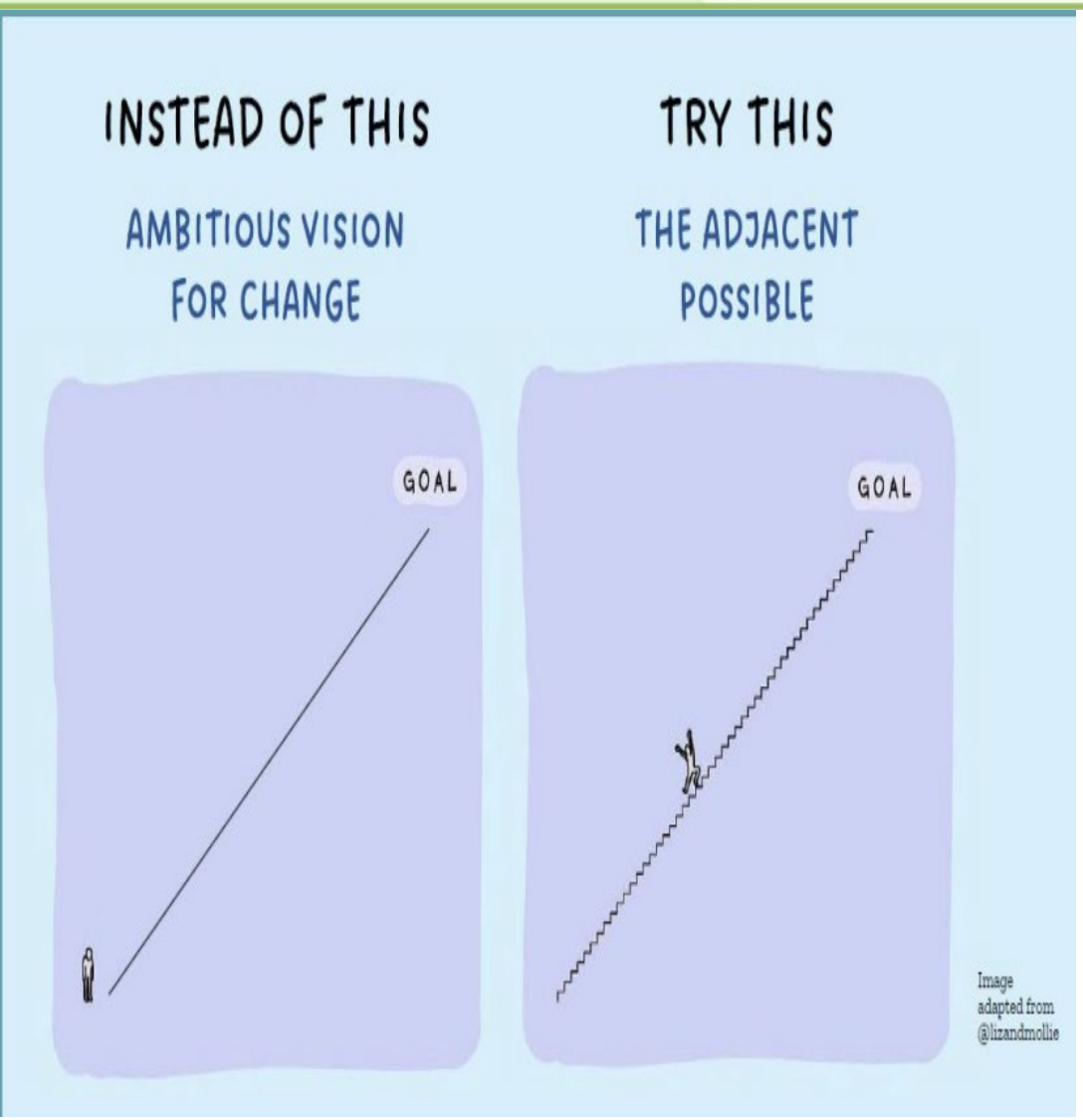
Oral Nutrition Supplement (ONS) Standard

Process:

1) **Starting on Day 1 of the admission,** provide ONS to eligible patients.
   - Ensure patient education is provided on purpose and goals
2) Provide ONS to patients twice a day for the **first 3 days**
3) **After 3 days, perform malnutrition screen** (included in the Patient Screening Questionnaire- 48/6) and refer to a registered dietitian if further nutritional support is required
4) Document ONS administration on patient whiteboard

Notes:

- Ensure plus is gluten free, kosher and suitable for patients with lactose intolerance (low lactose)
- A specific diabetic nutritional supplement is not required for patients with diabetes in the short term
- A renal nutritional supplement (e.g. Novasource Renal, Nepro) is required only for renal patients with hyperkalemia



We have SMART Plans

SPECIFIC	MEASURABLE	ACHIEVABLE	RELEVANT	TIME-BASED
Well-defined change ideas with clear criteria, processes, roles, and guidelines	Every idea has 1 to 4 key outcomes that teams can use to track and measure progress	Realistic, actionable, achievable solutions that are easy to explain and implement	Change ideas focus on "what matters" to patients and providers and are proven to decrease LOS	Timed application with support for ensuring completion of actions within the target completion dates

ONS Taste Testing

- Simultaneous Implementation
- 90 inpatient medicine units & Emergency Departments
- 60+ admitted via Emergency Departments
- Regional plan – Local Implementation
- Executive Endorsement
- Sustainment

We asked….

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How can CMTF get the "right information" into the "right hands"?

And we heard…

- Nutrition-based **data** should be **"front and centre"**
- Express data in the context of **"the known."** *For example*: how does Malnutrition impact LOS or ALC? What are the associated costs?
- Add value by connecting malnutrition to known quality/safety indicators. *For example:* How does Malnutrition impact falls or wound care? What are the associated costs?

We asked….

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What are the barriers to action? Why are leaders not aware of Malnutrition?

And we heard…

- Nutrition-based data **does not often "bubble up" to the corporate reporting/scorecard**
- **Most organizations** do not connect nutrition-based (or Malnutrition-based) data to Length of Stay, ALC, etc.
- Many organizations **outsource food services** – difficult to make changes to contracts

We asked….

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With whom should CMTF connect?

And we heard…

- **Utilize community-based organizations** who serve populations at risk of malnourishment
  - **Community-based organizations** e.g. Faith-based groups and community service agencies

- **Hospital-based**
  - **Leverage hospital-based quality and risk resources** to formalize risk profiling and screening
  - **Engage with hospital-based** Patient and Family Advisory Councils to connect Malnutrition to the patient experience

Group Discussion

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1. Identify organizational priorities that Nutrition Therapy can help solve and mechanisms to align Nutrition Therapy with these priorities
2. Discuss potential barriers to implementing Nutrition Therapy and opportunities to overcome these in your organization
3. Discuss recommendations to raise awareness