

# EMR “ization” of standardized malnutrition screening and assessment in primary care across Ontario

Ontario Primary Health Care Action Group

Presenters:

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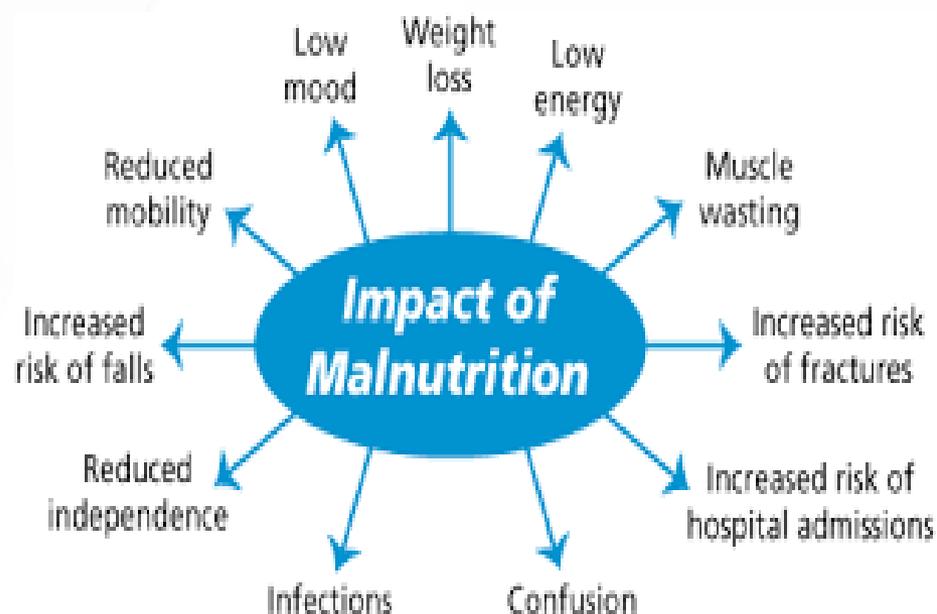
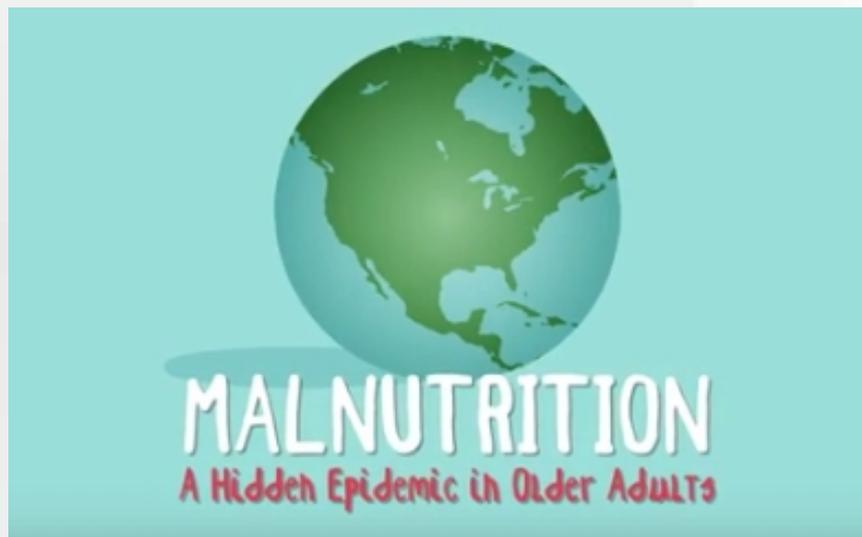
# Presenter Disclosure

- **Relationships with commercial interests:**
  - **Grants/Research Support:** None
  - **Speakers Bureau/Honoraria:** None
  - **Consulting Fees:** None
  - **Other:** None

# Disclosure of Commercial Support

- This program has NOT received any financial support
- This program has NOT received any in-kind support
- **Potential for conflict(s) of interest:**
  - None

# Malnutrition in older adults is happening in our community



# Why malnutrition screening and assessment?

- Malnutrition is often overlooked
- 34% Canadians over 65 years are at nutritional risk
- 47% of adults are malnourished on hospital admission
- Ontario PHCAG has made malnutrition screening for seniors in primary care settings a priority initiative



# Malnutrition in Seniors: An Urgent Condition

## Individual

- Falls risk
- Quality of Life



## Health Care System

- **\$2 Billion** of \$25 B
- **8% of hospital budgets**
- >45% of health care \$ CIHI

“Each malnourished patient costs our health care system about \$2000 more per hospital stay”

Canadian Malnutrition Task Force

# Despite the evidence...

A gap analysis among primary care Registered Dietitians have identified very low referrals in family practice for malnutrition nutrition counseling (code 263)

- 1 out of 3 seniors at nutritional risk (Statistics Canada)
- 1 out of 2 are going into hospital are malnourished (Canadian Malnutrition Task Force)
- Strong evidence showing benefits of nutrition support and team based care to improve outcomes



# Malnutrition Campaign

## PHCAG Malnutrition Toolkit

- ✓ Evidence/advocacy tools
- ✓ Screening tools
- ✓ Protocols
- ✓ Customized EMR outcome forms
- ✓ Schedule A examples



Primary Care Dietitians:  
Supporting Ontario's Vulnerable Patients

Malnutrition: Do You Have an Appetite to Help?



Nutrition Rx:



*"Let food be thy medicine & medicine be thy food"*  
~Hippocrates

-  Use valid screening tools and assessment methods to identify risk and diagnose malnutrition.
-  Refer to registered dietitians who are experts in medical nutrition therapy to treat and reverse malnutrition.
-  Coordinate care team approaches to keep patients well-nourished and in their homes.

Malnutrition is Preventable & Treatable!  
Together We Can Make A Difference!

 Dietitians of Canada  
Les Diététiciens du Canada

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[www.dietitians.ca](http://www.dietitians.ca)

# Training Sessions > 250 RDs + IHPs



## Training sessions

- PHCAG annual RD Research Days
- AFHTO RD ½ days
- Malnutrition Webinar

Tools, training, mentorship

Including SGA training

# DC-PHCAG Malnutrition Webinars

- Detecting and Correcting Malnutrition in Family Practice: a Collaborative Approach

<https://www.youtube.com/watch?v=6O6vyyFgYtY&feature=youtu>

- Malnutrition screening encounter assistant forms

<https://www.youtube.com/watch?v=19Ff2KiDtqY&feature=youtu>

# Spread > 83 FHTs Screening



- ✓ Dissemination in FHT/CHC/NPLC across Ontario
- ✓ Teams working together to identify signs of nutritional risk early to keep seniors well nourished and out of hospital
- ✓ Using validated screening tools/EMR
- ✓ IP Clinical Care Pathways
- ✓ Measuring outcomes

# Which Screening Tool To Use?



Seniors in the Community:  
Risk  
Evaluation for  
Eating and  
Nutrition

## What is SCREEN?



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

\* If the patient is unable to answer the questions, a knowledgeable informant can be used to obtain the information. If the patient is uncertain regarding weight loss, ask if clothing is now fitting more loosely.

#### Patients at nutrition risk need an assessment to confirm malnutrition

Nutrition screening using a valid tool can generate a significant volume of requests for nutrition evaluation. Subjective Global Assessment (SGA) is a simple and efficient first-line assessment of nutritional status that can be used following a positive screening and to help prioritize cases.

If a patient is malnourished (SGA B or C), an in-depth nutrition assessment, along with treatment, is required by a registered dietitian.

The Canadian Nutrition Screening Tool was rigorously validated and tested for reliability in Canadian hospitals. Non-expert raters completed the tool and it was compared to the SGA conducted by a dietitian or trained nutrition researcher.

### Mini Nutritional Assessment

## MNA<sup>®</sup>



Last name:	First name:
Sex:	Date:
Age:	Weight, kg:
	Height, cm:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

Screening	
<b>A</b> Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties? 0 = severe decrease in food intake 1 = moderate decrease in food intake 2 = no decrease in food intake	<input type="checkbox"/>
<b>B</b> Weight loss during the last 3 months: 0 = weight loss greater than 3 kg (6.6 lbs) 1 = does not know 2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs) 3 = no weight loss	<input type="checkbox"/>
<b>C</b> Mobility 0 = bed or chair bound 1 = able to get out of bed / chair but does not go out 2 = goes out	<input type="checkbox"/>
<b>D</b> Has suffered psychological stress or acute disease in the past 3 months? 0 = yes 2 = no	<input type="checkbox"/>
<b>E</b> Neuropsychological problems 0 = severe dementia or depression 1 = mild dementia 2 = no psychological problems	<input type="checkbox"/>
<b>F1</b> Body Mass Index (BMI) [weight in kg / (height in m) <sup>2</sup> ] 0 = BMI less than 19 1 = BMI 19 to less than 21 2 = BMI 21 to less than 23 3 = BMI 23 or greater	<input type="checkbox"/>
IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2. DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.	
<b>F2</b> Calf circumference (CC) in cm 0 = CC less than 31 3 = CC 31 or greater	<input type="checkbox"/>
<b>Screening score</b> (max. 14 points)	<input type="checkbox"/>
<b>12-14 points:</b> Normal nutritional status <b>8-11 points:</b> At risk of malnutrition <b>0-7 points:</b> Malnourished	

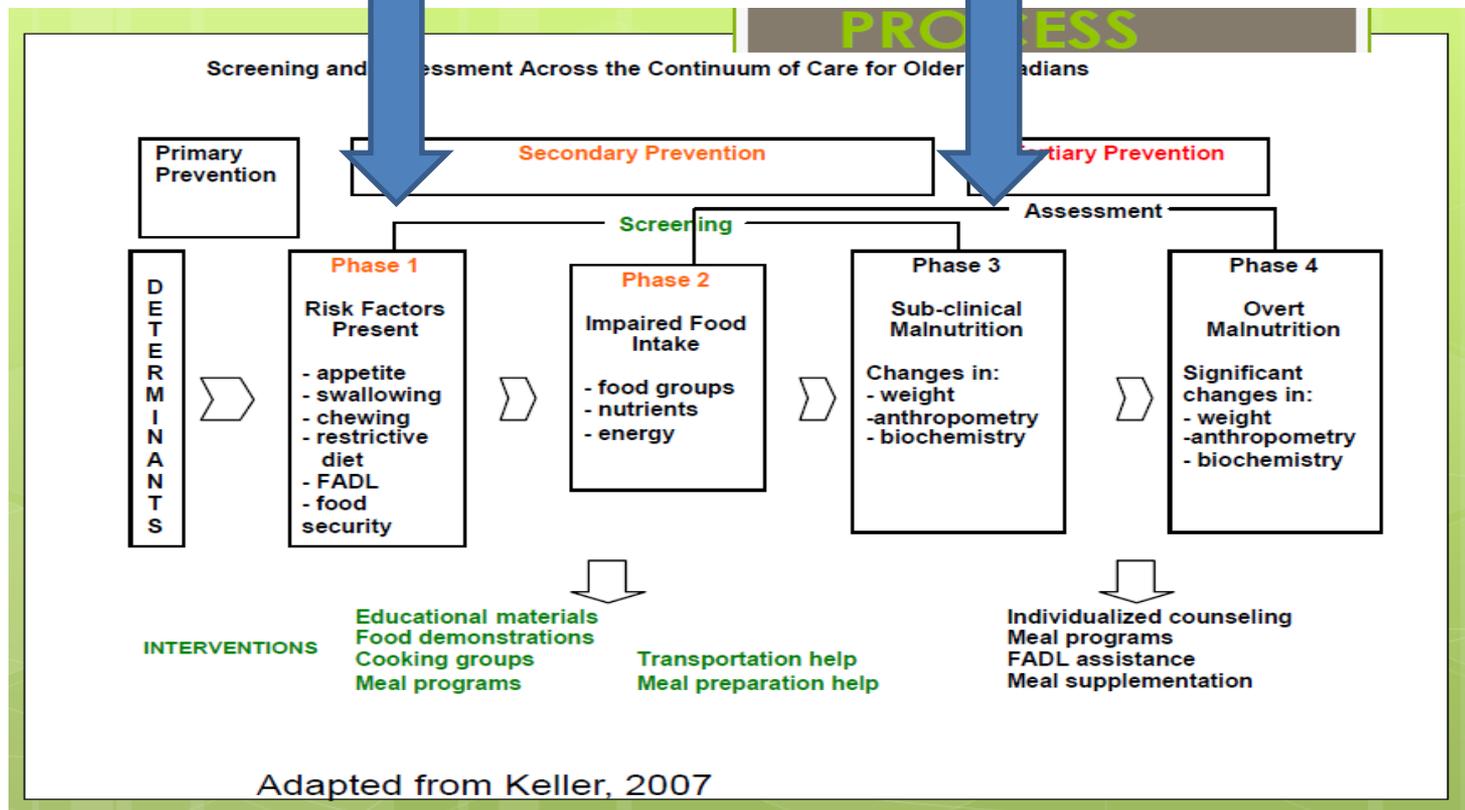
Ref: Velaz E, Velaz H, Abellan G, et al. Overview of the MNA® - its History and Challenges. J Nutr Health Aging 2006; 10:456-465.  
 Rubenstein L, Hester J, Sava A, Gulgo Y, Velaz E. Consensus for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF). J Geriatr 2001; 56A: 368-377.  
 Gulgo Y. The Mini-Nutritional Assessment (MNA)® Review of the Literature - What does it tell us? J Nutr Health Aging 2006; 10:466-487.  
 Oster M, Bauer J, Pirttinen C, et al. Validation of the Mini Nutritional Assessment Short-Form (MNA-SF): A practical tool for identification of nutritional status. J Nutr Health Aging 2006; 10:762-768.  
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 © Nestlé, 1994. Revision 2006. NEST000 12069 104M  
 For more information: [www.mna-elderly.com](http://www.mna-elderly.com)

# When to Screen?

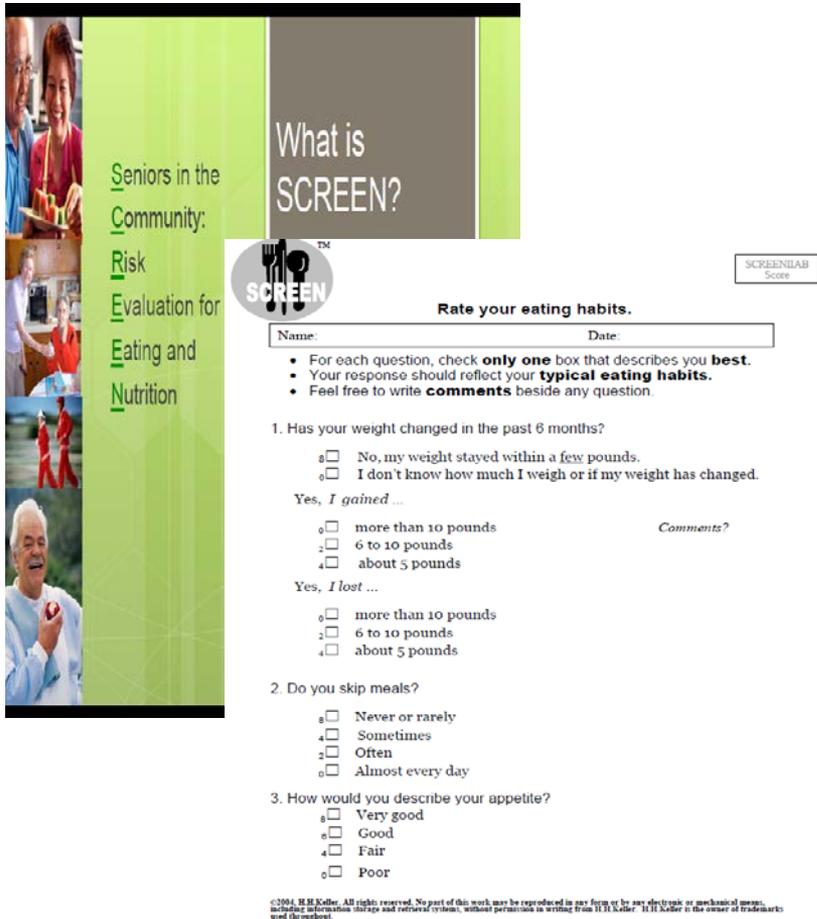
Depends on your goals, population, evidence...early detection or treatment?

SCREEN 11 upstream

MNA-SF + CNST downstream



# SCREEN II



Seniors in the Community:  
Risk Evaluation for Eating and Nutrition

## What is SCREEN?

SCREEN™

SCREENLAB Score

### Rate your eating habits.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

- For each question, check **only one** box that describes you **best**.
- Your response should reflect your **typical eating habits**.
- Feel free to write **comments** beside any question.

1. Has your weight changed in the past 6 months?

No, my weight stayed within a few pounds.  
 I don't know how much I weigh or if my weight has changed.

Yes, I gained ...

more than 10 pounds  
 6 to 10 pounds  
 about 5 pounds

Comments?

Yes, I lost ...

more than 10 pounds  
 6 to 10 pounds  
 about 5 pounds

2. Do you skip meals?

Never or rarely  
 Sometimes  
 Often  
 Almost every day

3. How would you describe your appetite?

Very good  
 Good  
 Fair  
 Poor

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8 item tool including questions about:

- Appetite
- Frequency of eating
- Motivation to cook
- Ability to shop and prepare food
- Weight changes
- Isolation and loneliness
- Chewing and swallowing
- Digestion
- Food restrictions due to health conditions

# Suggested Nutrition Screening Protocol for Seniors using SCREEN II AB

SCREEN II AB completed in waiting room by patient/caregiver and handed into reception for RD to score OR completed during individual RD visit or during group education or other clinic eg. DM, INR, memory

**Score >38- LOW NUTRITIONAL RISK**  
no further assessment needed, provide resources – Healthy Eating for Older Adults , give links to eatrightontario and cookspiration tools

**Score <38, HIGH NUTRITIONAL RISK**  
recommend referral to RD, patient called and booked for RD visit within 1 -2 weeks for further nutrition assessment including SGA

Visit #1 RD office/home visit – Normal practice (wt, BMI, nutn assessment )+ assess SGA , Medi diet score

SGA=A well nourished  
Provide nutrition resources /links to tools, no further RD support needed, message/update team

SGA B or C, nutrition care plan developed, goals set, f/u appt booked with 1-2 weeks (in office or home)

Review with memory clinic team/Assess need for support from other members MD, NP, OT/PT, RPH, mental health, SN

Visit #2 F/U with RD to review care plan, update, check wt

30-60 days later  
Check falls, hospitalizations, transitions to LTC with team

Visit #3 RD 30 days later to reassess, nutn goals, SGA, Medi diet score, wt, BMI

# PHCAG Malnutrition Demonstration Project

4-site demonstration project screening vulnerable seniors (recently discharged + seniors with cognitive issues/memory clinics)

- City of Lakes FHT (Sudbury)
- Upper Grand FHT (Wellington County)
- NOTL FHT (Niagara)
- Hamilton FHT (Hamilton)

# EMR Tools to Capture Outcomes

PHCAG EMR Leads [Amy Waugh + Denis Tsang](#)



# Why it needs to be embedded in the EMR?

- Enable interprofessional team approach
- Standardize and guide clinical workflow to identify high risk patient populations and provide seamless access to nutrition interventions
- Collect outcome data - ongoing monitoring , evaluation of service quality and effectiveness
- Use data to support decision making in upcoming provincial quality improvement projects

# What has been done?

- EMR (PSS) standardized template
  - Screening
  - Assessment
  - Charting

# When to screen and assess?

## Screening:

- Within 7 days after discharging from hospital
- Upon enrolment into a memory clinic program
- Senior population at risk for malnutrition (>75 yrs)

## Assessment:

- Positive screen - suggestions for next steps
  - SGA/Nutritional assessment
  - Intervention
  - F/U every 3-4 weeks, repeat SGA
  - Assess falls/hospital re-admission etc.

# Who conducts screening and assessment?

**Screening:** → Needs to be Inter-Disciplinary

- GP
- NP
- RN
- RPh
- RPN
- RSW

**Assessment:** → RD

# How to Screen and Assess?

Encounter assistants (PSS) were created to include:

- 3 validated instruments for screening (CNST, MNA-SF, SCREEN II-AB)
- Positive screenings are referred to RD for further assessment (SGA)

Assessment Components:

- Level of malnutrition
- Nutrition diagnosis
- Mediterranean diet score
- Hand-grip strength
- Biochemical tests
- Internal/external referrals

# Screenshots

- EMR standardized screening template
- EMR standardized assessment template
- EMR standardized charting template

PS Suite® EMR



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**Clinical Interaction Demographics**

Clinician: Denis Tsang

Patient's Age: 67

Patient's Gender: M

**CNST** Initial Screening Re-Screening**Initial Screening**

Date of Initial Screening: May 8, 2017

 Have you lost weight in the past 6 months WITHOUT TRYING to lose this weight?

\*If the patient reports a weight loss but gained it back, consider it as NO weight loss.

 Have you been eating less than usual FOR MORE THAN A WEEK?**Score of Initial CNST: 0.0**

Score = 2 (At Nutrition Risk - Refer to RD)

Score = 1 (Not At Nutrition Risk - Re-Screen in 1 month)

Score = 0 (Not At Nutrition Risk - No action required)

[View CNST Questionnaire](#) Refer to RD Re-Screening Required (in 1 month)**Clinical Note** Refusal for RD Referral**Reason for Screening** Recent Hospitalization

Date of Discharge: May 5, 2017

 Memory Clinic Identified by EMR QuerySpecify:  OtherSpecify:  Referral from MD/IHP**Screening Tools** CNST (Post-Discharge) MNA-SF (Memory Clinic) SCREEN II**Personal Message** Send Yourself a Message as a Reminder

May 8, 2017

Malnutrition Screening (v.7 - Dec 2016)

DHT

**Clinical Interaction Demographics**

Clinician: Denis Tsang

Patient's Age: 67

Patient's Gender: M

**Reason for Screening**

Recent Hospitalizati...

Date of Discharge: mmm d, yyyy

Memory Clinic

Identified by EMR Query

Specify:

Other

Specify:

Referral from MD/IHP

**Screening Tools**

CNST (Post-Discharge)

MNA-SF (Memory Clinic)

SCREEN II

**MNA-SF**

[Insert MNA - SF Form](#)

Score:

Score < 12 (At Risk of Malnutrition - Refer to RD)

Refer to RD

**Clinical Note**

Refusal for RD Referral

**Personal Message**

Send Yourself a Message as a Reminder



May 8, 2017

Malnutrition Screening (v.7 - Dec 2016)

DHT

**Clinical Interaction Demographics**

Clinician: Denis Tsang

Patient's Age: 67

Patient's Gender: M

**Reason for Screening**

Recent Hospitalization

Date of Discharge: mmm d, yyyy

Memory Clinic

Identified by EMR Query

Specify:

Other

Specify:

Referral from MD/IHP

**Screening Tools**

CNST (Post-Discharge)

MNA-SF (Memory Clinic)

SCREEN II

**SCREEN II**

[Insert SCREEN II - AB Questionnaire](#)

Score:

Score < 38 (At Nutrition Risk - Refer to RD)

Refer to RD





Last name:  First name:   
 Sex:  Age:  Weight, kg:  Height, cm:  Date:

Complete the screen by filling in the boxes with the appropriate numbers. Total the numbers for the final screening score.

## Screening

**A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?**

- 0 = severe decrease in food intake  
 1 = moderate decrease in food intake  
 2 = no decrease in food intake

**B Weight loss during the last 3 months**

- 0 = weight loss greater than 3 kg (6.6 lbs)  
 1 = does not know  
 2 = weight loss between 1 and 3 kg (2.2 and 6.6 lbs)  
 3 = no weight loss

**C Mobility**

- 0 = bed or chair bound  
 1 = able to get out of bed / chair but does not go out  
 2 = goes out

**D Has suffered psychological stress or acute disease in the past 3 months?**

- 0 = yes  2 = no

**E Neuropsychological problems**

- 0 = severe dementia or depression  
 1 = mild dementia  
 2 = no psychological problems

**F1 Body Mass Index (BMI) (weight in kg) / (height in m)<sup>2</sup> never d**

- 0 = BMI less than 19  
 1 = BMI 19 to less than 21  
 2 = BMI 21 to less than 23  
 3 = BMI 23 or greater

\* IF BMI IS NOT AVAILABLE, REPLACE QUESTION F1 WITH QUESTION F2.  
 DO NOT ANSWER QUESTION F2 IF QUESTION F1 IS ALREADY COMPLETED.

**F2 Calf circumference (CC) in cm**

- 0 = CC less than 31  
 3 = CC 31 or greater

## Screening score

(max. 14 points)

- 12-14 points:**  Normal nutritional status  
**8-11 points:**  At risk of malnutrition  
**0-7 points:**  Malnourished

## Rate your eating habits.

Name:  Date:

- For each question, check **only one** box that describes you **best**.
- Your response should reflect your **typical eating habits**.
- Feel free to write **comments** beside any question.

## 1. Has your weight changed in the past 6 months?

- 8  No, my weight stayed within a few pounds.  
 0  I don't know how much I weigh or if my weight has changed.

Yes, I gained ...

- 0  more than 10 pounds  
 2  6 to 10 pounds  
 4  about 5 pounds

Comments?

Yes, I lost ...

- 0  more than 10 pounds  
 2  6 to 10 pounds  
 4  about 5 pounds

## 2. Do you skip meals?

- 8  Never or rarely  
 4  Sometimes  
 2  Often  
 0  Almost every day

May 8, 2017

Malnutrition Screening (v.7 - Dec 2016)

DHT

### Clinical Interaction Demographics

Clinician: Denis Tsang

Patient's Age: 67

Patient's Gender: M

### Reason for Screening

Recent Hospitalizati...

Date of Discharge:

Memory Clinic

Identified by EMR Query

Specify:

Other

Specify:

Referral from MD/IHP

### Screening Tools

CNST (Post-Discharge)

MNA-SF (Memory Clinic)

SCREEN II

### MNA-SF

[Insert MNA - SF Form](#)

Score:

Score < 12 (At Risk of Malnutritio

Refer to RD

### Clinical Note

Refusal for RD Referral

**Send Message**

Subject: Make Referral  
To: DHT

ted. At Nutrition Risk. Assessment required.

### Personal Message

[Send Yourself a Message as a Reminder](#)

May 8, 2017

Malnut

### Clinical Interaction Demograph

Clinician: Denis Tsang

Patient's Age: 67

Patient's Gender: M

Memory Clinic

Identified by EMR Query

Specify:

Other

Specify:

Referral from MD/IHP

### Screening Tools

CNST (Post-Discharge)

MNA-SF (Memory Clinic)

SCREEN II

### SCREEN II

[Insert SCREEN II - AB Questionnaire](#)

Score:

Score < 38 (At Nutrition Risk - Refer to RD)

Refer to RD

**Clinical Interaction Demographics**

Appointment Date:

Registered Dietitian:

Assessment (Complete SGA Form)

Visit #:

[Insert SGA Form](#) 

Patient's Age:

Patient's Gender:

**Wait Time (to be completed for initial assessment ONLY)**

# of Calendar Days between Referral Date and 1st RD Appointment Date

- Same Day
- Next Day
- 2-7 Days
- 8-14 Days
- 15-21 Days
- >21 Days

**Hand Grip Strength (in kilogram)**

At Initial Assessment (Pre)

Left:

Right:

N/A

At Follow-Up Assessment (Post)

Left:

Right:

N/A

Gender:

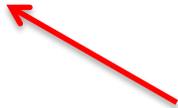
**Mediterranean Diet Assessment**

At Initial Assessment (Pre)

Score:

At Follow-Up Assessment (Post)

Score:

[Insert Mediterranean Diet Score Questionnaire](#) 

**Weight Status/Change**

Baseline Weight:

Date of Baseline Weight:

Today's Weight:

[View Trend of Weight Change](#) 

% of Weight Change (1 week):

% of Weight Change (1 month):

% of Weight Change (6 month):

Latest BMI:

Latest Ht:

**Labs**Albumin: Hemoglobin: Hematocrit: Ferritin: B12: Supplement(s): **Labs Date****Adverse Events** ER VisitDate of ER Visit:  HospitalizationDate of Admission: Date of Discharge:  It is a re-admission within 30 days? Falls Incident (supported by objective data)Date:  Falls Incident (self-reported)Date: **Diagnosis**

SGA Rating (Pre)

 A (Well-Nourished; Normal) B (Mildly/Moderately Malnourished; Some Progressive Nutritio... C (Severely Malnourished; Evidence of Wasting and Progressive Symptoms)**Diagnosis**

SGA Rating (Post)

 A (Well-Nourished; Normal) B (Mildly/Moderately Malnourished; Some Progressive Nutritional Loss) C (Severely Malnourished; Evidence of Wasting and Progressive Symptoms)**Assessment Summary****Nutrition Diagnosis** Inadequate Protein Intake Inadequate Energy Intake Inadequate Fiber Intake Inadequate Vitamin IntakeSpecify:  Inadequate Mineral IntakeSpecify:  Poor Nutrition Quality of Life OthersSpecify: **Care Plan****Internal Referral** GP Medical Specialist NP RN RPN RPh RSW PT OT SLP System Navigator**External Referral** CCAC/LHIN Health Link Hospital-Based Program Community-Based Program**Personal Message** Send Yourself a Message as a Reminder

## Diagnosis

SGA Rating (Pre)

A (Well-Nourished; Normal)

B (Mildly/Moderately Malnourished; Some Progressive Nutritional Loss)

C (Severely Malnourished; Evidence of Wasting and Progressive Symptoms)

**C (Severely Malnourished; Evidence of Wasting and Progressive Symptoms)**

# 4

## CLAIMS SUBMISSION

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	WSIB Claim.....	6
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	Patient Information.....	7
	Coding Requirements.....	8
	Cut-Off Date for Claims Submission.....	8
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## Diagnosis (Starts with “M”) – Description(s) – Code

Macrognathism.....	524
Malabsorption Syndrome.....	579
Malaria.....	136
<b>Malnutrition, Unspecified.....</b>	<b>263</b>
Malocclusion.....	524

October 2015

4 - 54

Version 2.0

# Results

Standardized EMR templates with validated screening and assessment instruments embedded have

- Enhanced the integrity of clinical data
- Simplified the process of data collection in daily charting
- Facilitated the process of data analysis in outcome measurement

Training events held at

- PHCAG RD Research Day
- AFHTO conference and webinars
- AFHTO IHP Community of Practice

Recommended process and outcome indicators have been shared with Quality Improvement and Decision Support Specialist (QIDSS) network to

- Facilitate adoption
- Spread in provincial QI projects

# Results

	CNST	SCREEN II - AB	MNA-SF
Screening	11	76	29
Positive Screen	5 (45.5%)	58 (76.3%)	5 (17.2%)



SGA	23 (33.8%)		
Rating	A	B	C
	7 (30.4%)	15 (65.2%)	1 (4.3%)

# Take Home Message

This customized EMR tool helps to:

- Identify vulnerable populations in family practice
- Standardize interdisciplinary malnutrition screening and assessment
- Capture outcome data in daily documentation



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