

Identification and Management of Malnutrition in the Hospitalised Adult and Paediatric Patients

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Purpose

The purpose of this document is to outline the guidelines on malnutrition screening in the inpatient setting within Te Whatu Ora Waitaha Canterbury Hospitals in, thereby ensuring appropriate identification, diagnosis and treatment of malnutrition.

Timely and appropriate identification, diagnosis and management of patients diagnosed with malnutrition or at risk of malnutrition (using the tools outlined in this document) will ensure that an effective care plan is put in place and monitored to improve patient outcomes. (1)

Background

Studies (2,3,4,5) including NZ data show that the prevalence of malnutrition is widespread in all health care settings and is largely unrecognised and under diagnosed resulting in a decline in nutritional status and adverse outcomes for the patient and results in increased costs (6).

Patients with malnutrition are known to have longer length of hospital stays, increased costs for their health care and poorer outcomes (4, 5). Malnutrition is associated with increased morbidity and mortality, falls and readmission to hospital. Malnutrition can complicate recovery from disease, trauma and surgery. The incidence of malnutrition in hospitals in Australasia has been found to be between 20-50% in adults depending on the patient group (2). The Australasian Nutrition Care Day Survey from 2010 showed the prevalence of malnutrition in hospitals was 32% and 41% of patients were at risk of malnutrition (3). The same study also showed that malnourished patients had a 5 day longer stay than well-nourished patients and a higher re-admission rate (3, 4,5). Early identification of patients at risk or with malnutrition is therefore essential to ensure that an effective care plan is put in place and monitored to improve outcomes (7).

Patients who initially screen as well-nourished or not at risk of malnutrition can experience a decline in nutritional status during their hospital stay, so rescreening for patients hospitalised for more than 5 days is essential (2).

Malnutrition can be found in patients across BMI categories including those who are overweight or obese, as well as those who are underweight. Being overweight or obese may mask the presence of nutritional deficiencies. The same malnutrition risks occur in patients of any BMI (8).

Objective

The aim of this policy is to ensure that all patients are screened for malnutrition risk when admitted to hospital and rescreened within regular intervals throughout their admission to ensure that malnutrition is diagnosed and treated within an appropriate time-frame. A secondary aim is to ensure that when diagnosing malnutrition, the criteria used within New Zealand is standardised.

In the adult population, the validated tool used at Te Whatu Ora Canterbury and West Coast is the Malnutrition Screening Tool (MST),

The Paediatric Nutrition Screening Tool (PNST) is used for this population group (9).

All screening should be completed within 24 hours of admission or at pre-admission. If the pre-admission screening has been undertaken prior to admission, it should be repeated on admission to capture changes to nutritional status (7). Screening should also be completed on transfer to another hospital.

Rescreening of all inpatients should occur every 5 in an acute hospital and 7 days in a non-acute setting as nutritional status has been shown to deteriorate during hospital stays.

Care needs to be taken to ensure that other concurrent medical and/or nutritional needs are identified and considered when planning the nutritional intervention e.g. renal disease.

Care should be taken with patients who are unsafe for transfer when weighing and the use of specialised equipment should be considered.

A multidisciplinary approach to the identification and treatment of malnutrition can improve patient outcome.

There are exceptions for malnutrition screening, these include neonates, women post-delivery, day procedure cases and those admitted under the South Island Eating Disorder Service patients. It may not be appropriate to screen some patient groups i.e. those at end of life.

All clinic staff should be aware of and understand the malnutrition policy. Where relevant, staff should be trained on procedures in the policy on a regular basis. This may include education of other allied health staff involved in MST screening, allied health and health care assistants as well as nursing and medical staff.

Definitions

Nutrition Screening: A process used to identify those who may be malnourished or at risk of malnutrition to determine if a comprehensive nutrition assessment and appropriate intervention is indicated (10).

Malnutrition, at risk of: A patient who has eaten little or nothing for more than 5 days and/or is likely to eat little or nothing for the next 5 days or longer, or has poor absorption capacity, high nutrient losses or increased needs due to catabolism (10).

Malnutrition: A state of nutrition in which a deficiency or excess of energy, protein and/or other nutrients causes measurable adverse effects on tissue/body form, composition function or clinical outcome. In the acute care setting and in this document, malnutrition will be considered as under-nutrition (7).

Malnutrition Action Plan: An algorithm that provides a treatment plan based on the score of the malnutrition screening tool utilised when a patient is identified as having malnutrition or at risk of malnutrition. This action can be undertaken by nursing, and where relevant include a referral to a dietitian.

Policy statement

Prevention

Wherever possible, prevention of malnutrition should be the goal for patients admitted to hospital or seen in outpatient or community settings, due to the potential adverse outcomes..

An institutional culture where nutrition is seen as a priority should be fostered.

Hospitals should have policies that facilitate universal screening for malnutrition, including re-screening for those patients who stay for longer than 5 days.

All clinicians should be educated on the importance of screening for malnutrition, and the risks around inadequate nutrition for the patient. This includes nursing and other MDT members who can create urgency around the need for screening.

The creation of nutrition champions is encouraged in wards or services.

Detection of the risk of Malnutrition

The Canterbury Hospitals must ensure an effective process is used to identify and monitor malnutrition and its outcomes. They should ensure that there is a framework in place to support malnutrition as a patient safety indicator i.e. there should be a governance process in place for malnutrition.

Screening

A malnutrition screening tool, which includes a weight check, must be completed and documented for all patients admitted to the inpatient setting within 24 hours of admission (6, 12). A positive screen should result in a full dietetic assessment for malnutrition.

Diagnosing of Malnutrition

Following receipt of the referral the dietitian completes a comprehensive nutrition assessment to determine the nutrition problem/s, aetiologies and presence of malnutrition.

A cluster of subjective and objective signs and symptoms gathered in the nutrition assessment process provide evidence that the nutrition problem exists, quantifies the problem and describes its severity. These are:

- Food and nutrition related history: energy and/ or protein intake less than requirements
- Anthropometry: unintentional weight loss, % weight loss, and BMI (NB malnutrition can occur at any BMI)
- Nutrition focused physical findings: muscle/fat loss
- Biochemical tests as appropriate

Subjective Global Assessment (SGA)

Subjective Global Assessment (SGA) is the gold standard assessment for diagnosing malnutrition (14) and should only be undertaken by clinicians who have been trained in performing the physical assessment.

The assessment includes taking a history of recent intake, weight change, gastrointestinal symptoms and a physical evaluation to determine nutrition status and rates the patient as well nourished (SGA A), mildly malnourished (SGA B) or severely malnourished (SGA C). SGA has been validated in a variety of patient populations including cancer, dialysis, surgical and intensive care (14, 15).

There are several different types of SGA used around the world. New Zealand dietitians have agreed to use the Patient Generated SGA (PG-SGA) (14) and Traditional SGA (13). The Traditional SGA is often preferred in the inpatient setting as the PG-SGA requires the patient to independently complete a section..

It is necessary to also consider whether there is a presence of cachexia, sarcopenia or frailty which can affect the nutrition intervention. These can be described as;

Cachexia –an underlying predisposing disorder (e.g. malignancy) with evidence of reduced muscle and fat mass, and no or limited improvement with optimal nutrient intake (17).

Sarcopenia – an underlying disorder (e.g. aging) with evidence of reduced muscle mass and strength, and no or limited improvement with optimal nutrition intake (17).

Frailty - the definition of frailty is evolving. The general perception is that frailty is a state of vulnerability and non-resilience with limited reserve capacity in major organ systems. The condition contains nutrition related components i.e. weight loss, fatigue, weakness, and is linked to sarcopenia. Many factors can contribute to this weight loss many of which are modifiable (17).

Following completion of the SGA or PG-SGA, a rating is made to determine the degree of malnutrition:

SGA-A - Well-nourished no decrease in food/nutrient intake, as defined by; < 5% weight loss, no/minimal symptoms affecting food intake, no deficit in function, no deficit in fat or muscle mass OR an individual with criteria for SGA B or C but with recent adequate food intake, non-fluid weight gain, significant recent improvement in symptoms allowing adequate oral intake, significant recent improvement in function and chronic deficit in fat and muscle mass but with recent clinical improvement in function.

SGA-B - Mildly/moderately malnourished definite decrease in food/nutrient intake, as defined by; 5% - 10% weight loss without stabilization or gain, mild/some symptoms affecting food intake, moderate functional deficit or recent deterioration, mild/moderate loss of fat and/or muscle mass OR an individual meeting criteria for SGA C but with improvement (but not adequate) of oral intake, recent stabilization of weight, decrease in symptoms affecting oral intake, and stabilization of functional status.

SGA-C - Severely malnourished severe deficit in food/nutrient intake, as defined as; > 10% weight loss which is on-going, significant symptoms affecting food/ nutrient intake, severe functional deficit OR recent significant deterioration obvious signs of fat and/or muscle loss.

Malnutrition in children:

Paediatric malnutrition is defined as an imbalance between nutrient requirement and intake, resulting in cumulative deficits of energy, protein, or micronutrients that may negatively affect growth, development, and other relevant outcomes (19). Individualised assessment of patients at risk of malnutrition is required to determine risk and therapy.

Documentation of the diagnosis of malnutrition:

The malnutrition diagnosis should be clearly documented in the patient notes using the Nutrition Care process and Terminology (20). The tool used to assess malnutrition should be clearly stated.

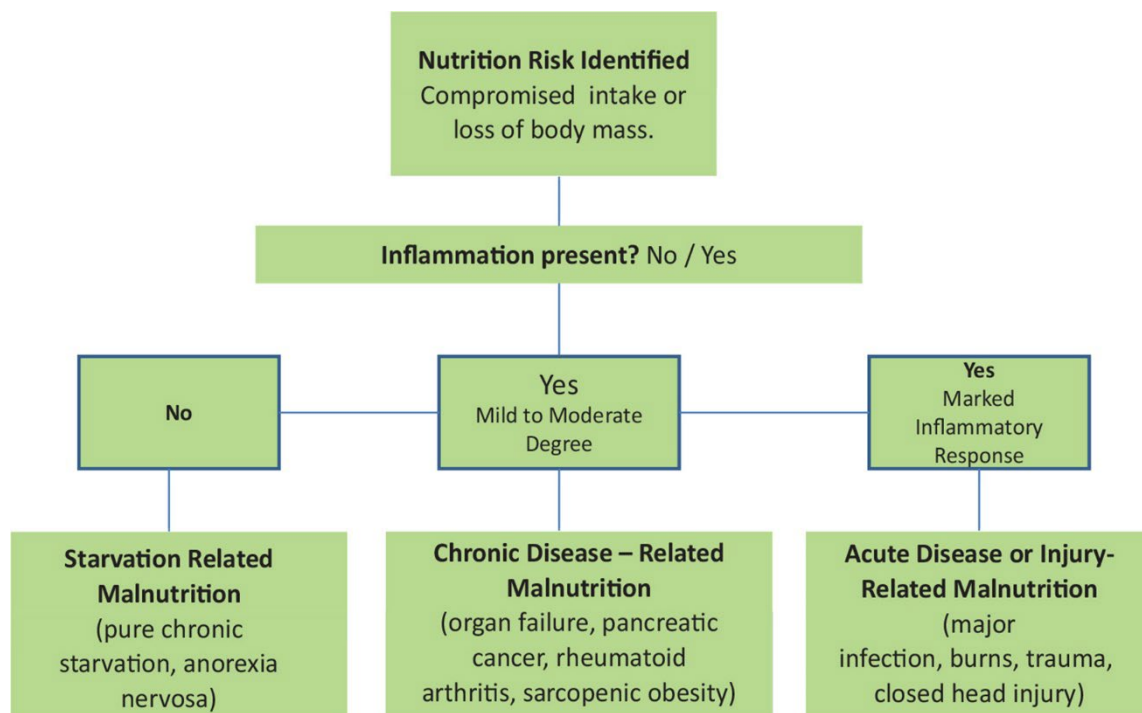
Identifying the severity of the malnutrition stating whether the patient is well nourished, mild/moderate or severely malnourished should be clearly documented.

Dietitians must use a malnutrition identifier in the clinical notes or select the malnutrition code on enotes (Cortex) which assists clinical staff and clinical coders to identify patients that have been identified as malnourished (13) using the agreed definitions.

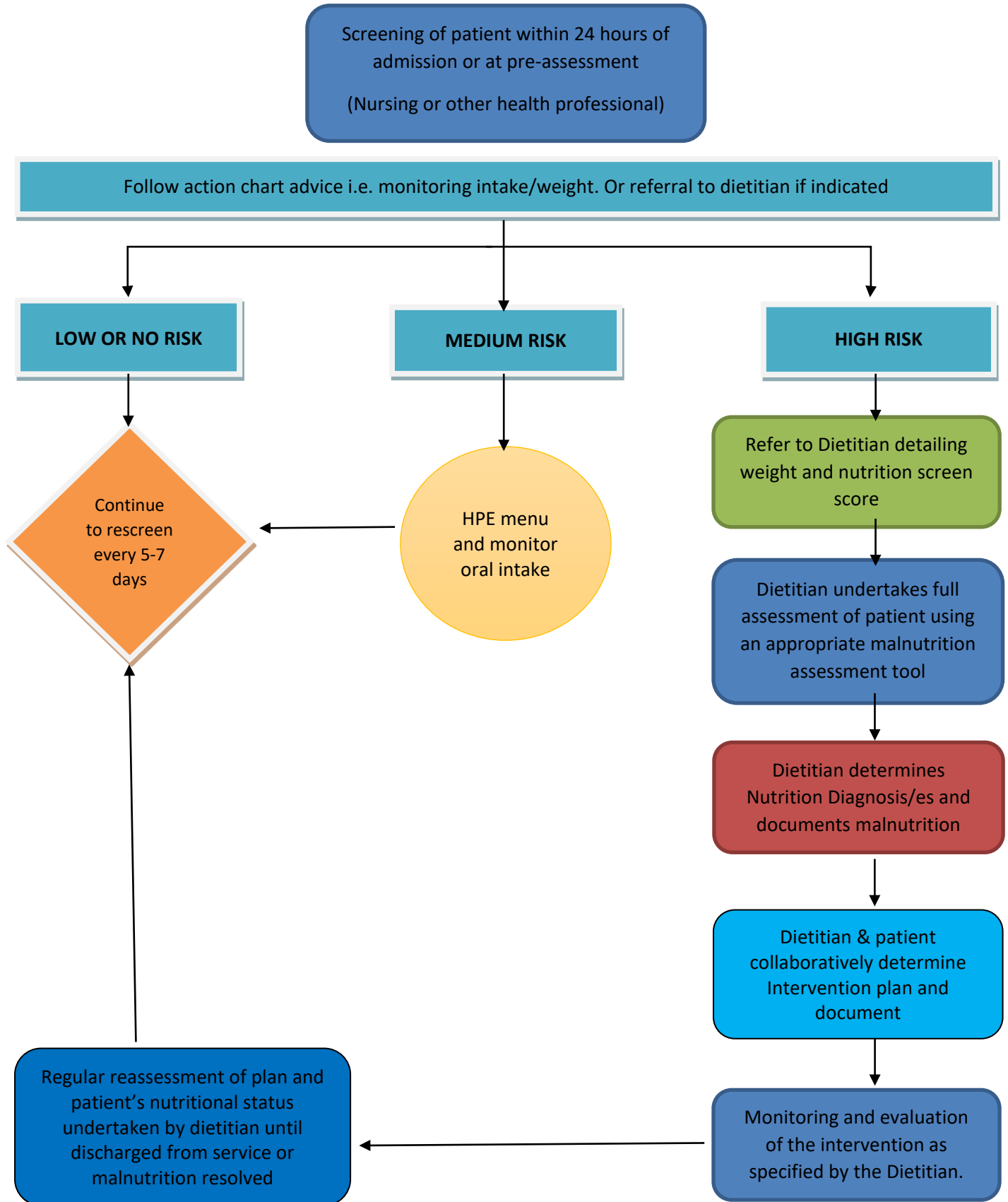
Generally, the clinical coders at Te Whatu Ora Waitaha use the generic code E46 - Unspecified protein-calorie malnutrition. Malnutrition not otherwise specified, or protein-energy imbalance not otherwise specified.

Examples of malnutrition PES statements

- Severe Malnutrition related to inadequate intake 2° to altered GI function (chronic pancreatitis) as evidenced by SGA rating C, inadequate energy intake < 40 % of requirements , intermittent nausea and abdominal pain, weight loss of 16% in 6 months , severe muscle and fat deficit
- Moderate malnutrition related to poor appetite and decreased ability to consume food 2° to late stage chronic kidney disease as evidenced by eating 50% of meals, weight loss 9 % over last 6 weeks, reduced upper body muscle, SGA rating B
- Malnutrition related to inadequate energy intake as evidenced by <50% intake of meals, significant weight loss of 10.9% in 6 months and muscle and fat loss, PG-SGA rating B 9



Algorithm of Process



Nutrition Intervention

Planning the nutrition intervention:

One or more specific nutrition interventions are selected by the dietitian following nutrition assessment to address the nutrition problem. The nutrition interventions are directed to the aetiology of the problem or may be addressing the signs and symptoms. First line treatment should be fortification of food, increased frequency of snacks, followed by addition of oral nutrition supplements (ONS). If this does not start to resolve the malnutrition or other nutrition diagnosis, then consideration should be given to enteral feeding. Parenteral Nutrition should only be considered where enteral feeding has failed or is clinically contraindicated i.e. severe malabsorption (6, 11).

The dietitian uses evidenced-based guidelines, institutional policies and procedures, care plans and other resources for recommended nutrition interventions to reach goals.

A nutrition prescription is determined which states the patient's recommended intake of energy, protein and other nutrients based on reference standards. Energy requirements should be determined by indirect calorimetry where available or calculated according to validated equations.

Goal setting establishes patient goals that are clear, measurable, achievable and defined.

It is desirable that goals are set collaboratively with the patient although this is not always possible.

Where the patient is at risk of Refeeding Syndrome, a syndrome of metabolic disturbances and fluid and electrolyte shifts that occur with the reinstatement of nutrition to patients who have had little or prolonged periods or who are severely malnourished, the plan should reflect this and be stated in the documentation, so it is clear to all professionals involved in the patients care.

Implementing the nutrition intervention:

This involves communicating a plan of action to all relevant parties: patient, nursing staff, medical staff, and other healthcare workers. All health care professionals involved should work to implement the plan of action and undertake any required monitoring. This may involve assistance with meals, trying to avoid unnecessary nil by mouth orders or shorten the time for these by ensuring procedures requiring nil by mouth are timely.

The dietitian carries out the plan, communicates the plan and continues data collection that is initiated with the nutrition assessment and revises nutrition intervention based on response of patient.

The Domains of nutrition intervention are:

1. **Food and Nutrient delivery:** Fortification of food, increase frequency of snacks, oral nutrition supplements (ONS), feeding assistance, enteral and parenteral nutrition
2. **Education** of patient and staff on aspects of food fortification, ONS, enteral / parenteral feeding.
3. **Counselling** of patient to acknowledge and foster responsibility of self-management.
4. **Co-ordination of Care:**
 - Referral / collaboration with other healthcare workers and providers – prior to discharge.
 - Discharge planning and transfer of nutrition care, including provision of a prescription for supplements or enteral feed where required, and clear documentation about the presence of malnutrition.

Reassessment should occur on a regular basis by monitoring the intervention and altering accordingly.

Roles and Responsibilities

Nursing Responsibilities:

- Complete malnutrition screen on all patients and record in the patient care plan. Complete screen using the most appropriate validated tool; MST and PNST in paediatrics (Appendix 1)
- Rescreen every 5 days or 7 days in non-acute setting during the hospital admission and document care plan. Weigh patients within 24 hours of admission (or as soon as possible in Mental Health) and then every 5-7 days minimum depending on the hospital setting thereafter, or as directed by dietitian/medical team.
- The screening tool may be completed in the pre-assessment area prior to admission to identify those patients at risk of malnutrition.
- There may be situations where the screening tool cannot be completed within the first 24 hours of admission due to a patient's condition; such as trauma or a low GCS or acute intervention has delayed screening. In these cases, the screening should be completed when appropriate to do so.
- Implement the appropriate nutrition treatment using the Malnutrition Action Plan (Appendix 1)
- If the patient is at moderate or high risk of malnutrition, taking into consideration other medical/nutrition needs, arrange the High Protein Energy (HPE) menu and monitor oral intake
- A referral to a dietitian should be made if malnutrition risk is high:
 - MST ≥ 3 in adult patients
 - PNST ≥ 2 in paediatrics
- Ensure that the appropriate diet code is entered on Floview or as per local hospital process
- Ensure that the nutrition intervention is received by the patient
- For patients at medium or high risk, document accurate food and fluid intake in the medical records or food chart.
- Document any nutrition concerns in the medical records. Communicate concerns to medical team and/or dietitian according to the Malnutrition Action Chart.
- Some of these tasks may be delegated to a health care assistant but remain the responsibility of the nurse to document and action.
- Ensure that patients are assisted in setting up for meals, opening packets and assisting with feeding where needed (as per restorative care).
- Attend training/education provided on malnutrition screening, monitoring and management. To be familiar with the hospital processes regarding meal delivery, special diet provision, how to obtain supplements and the dietitian referral criteria.

Medical staff responsibilities:

- Identify the presence of malnutrition or malnutrition risk in patients using current evidence-based guidelines. NB A low albumin is not an indicator of malnutrition.
- Identify patients at risk of refeeding syndrome and follow guidelines on [Hospital Health Pathways](#).
- Ensure that patients identified as being at risk of malnutrition are started on the appropriate intervention as per the Malnutrition Action chart or referred to the dietitian if referral criteria met. In Mental Health all patients at risk of Refeeding Syndrome should be referred to a dietitian.
- Document the presence of malnutrition, according to agreed definitions, in the medical notes/electronic record so that this is clear for the clinical coders (14).
- Document the diagnosis of malnutrition and the management plan within the discharge summary to ensure all professionals who are supporting the patient in the community including the GP are aware.
- Complete application for Special Authorities for Special Foods (e.g. Fortisip, Ensure etc) where patient meets PHARMAC criteria if a Dietitian is not involved with patient care or is a non-prescriber.

Dietitian responsibilities

- Assess referred adult patients (MST ≥ 3), or PNST ≥ 2 in paediatrics (Appendix 1).
- Complete Subjective Global Assessment (SGA) or Patient-Generated SGA (PG-SGA) and record in the initial assessment (Appendix 5).
- Implement and document a nutrition care plan following discussion with patient and/or carer, family, medical team or nursing staff.
- Monitor nutrition goals and follow up as required.
- Provide education to patients and/or carers/family to reverse malnutrition wherever possible.
- Document the nutrition diagnosis and extent of malnutrition, according to agreed definitions, in the medical notes to guide therapy
- Document the diagnosis of malnutrition and the extent clearly for the clinical coders
- Provide regular education to all staff, including nurse education programs and doctor's orientation on the identification and management of malnutrition.
- Provide regular education to key stakeholders, primarily the users of the tool to keep up with staffing turnover and help maintain competency.
- Make application for special authority for Special Foods when the patient meets PHARMAC criteria. (This is limited to designated dietitian prescribers).
- Ensure an appropriate nutrition care plan is in place on discharge including ongoing referral to other services as appropriate.

Allied Health Assistant (AHA) Responsibilities:

- Arrange discharge requirements e.g. nutrition supplements, Home Enteral Nutrition (HEN) equipment/consumables
- Provide non-complex standardised dietary instructions to patients, following delegation from a Dietitian, e.g. education and storage of special foods, education on meal preparation.
- Provide non-complex standardised dietary education to patients such as food safety, basic High Protein Energy and/or overcoming a poor appetite.
- Complete first line AHA assessment including recording of malnutrition diagnosis, initiating nutrition intervention for malnutrition, monitoring and review.
- Deliver supplements to discharging patients.

Interdisciplinary Team responsibilities:

- All members of the wider Interdisciplinary Team are aware of the risk of malnutrition and the need to take joint responsibility regarding the risk of malnutrition and ensure appropriate plans are in place.
- Appropriate and timely referrals to dietitians are actioned.
- Regular audits are undertaken to audit compliance of completing the screening tool and an appropriate action plan is in place.
- Monitoring of complications because of malnutrition is undertaken.

Outcomes and Monitoring:

The purpose of monitoring and evaluation is to determine and measure the amount of progress made for the nutrition intervention and whether the nutrition related goals / expected outcomes are being met.

Monitor progress, measure outcomes, evaluate outcomes against criteria to determine changes in specific indicators of nutrition care outcomes.

Patient related monitoring indicators include:

Food and Nutrient Intake:

- Percentage of meals eaten
- Oral nutrition supplements consumed
- Percentage of prescribed enteral / parenteral nutrition administered
- Protein and energy intake vs prescription
- Food access/ Food security: Can patient access food or fluids (hospital or community setting)

Anthropometric:

- Weight change

Biochemical:

- Electrolytes
 - Magnesium (considering re-feeding syndrome)
 - Phosphate (considering re-feeding syndrome)
- Liver function tests
- Albumin (NB albumin is not a standalone marker of nutrition status)
- Inflammatory markers i.e. CRP

Nutrition focused physical findings:

- Subcutaneous fat and muscle mass – SGA or PG-SGA rating
- Fluid accumulation / balance
- Gastrointestinal symptoms
- Other physical findings – hair, nails, tongue, skin, wound healing

Physical functioning:

- Hand grip strength
- Activity / exercise

Organisational quality measures as part of the malnutrition strategy include:

- Malnutrition screening audit and clinical coding audit to measure the number of patients diagnosed with malnutrition.
- Audit of patient's weight on admission and if weighed during stay and at discharge.
- To audit if appropriate menu was requested for the patient if identified as per flow chart.

Adherence to policies on nutritional screening/assessment by:

- Undertaking audits and linked assessments because of this
- Reporting of incidence of malnutrition and risk of this
- Documentation of the care plan to address malnutrition and clear communication on discharge to relevant parties involved in the patients' care in the community
- Evidence of repeated screening for inpatients.
- Adherence to policies on individual nutritional care pathways for those at risk by reports demonstration monitoring of food/nutrient intake, ongoing assessment of body weight and BMI, use and cost of nutritionals and enteral and parenteral nutrition.
- Communication of the nutritional information across care boundaries i.e. discharge summaries and referrals to others by including the nutrition screening score and BMI.

- Documented links with the Food Service and clarity of Food Services role in the management of malnutrition risk. Regular liaison between clinical dietitians and food service dietitians.
- Patient satisfaction forms regarding food quality that feed into patient quality reports.
- Feedback that relate to food/meal provision.
- Appropriate use of tools involved in malnutrition by ensuring that staffs receive regular education i.e. how to complete screening, role in management of malnutrition, use of nutrition assessment tools by dietitians, height/weight charts for paediatrics.
- Presence of nutrition information sheets that are appropriate to patient groups.
- Menu capacity – the food and beverages provided will be sufficient to meet the nutritional requirements of different age groups and special diets. Specifications are set to specify these requirements.

A minimum standard suggested for monitoring is:

- Was a nutrition screen undertaken for each patient?
- Was the patient weighed at and/or during admission?
- Was the process of the Malnutrition Action Flow Chart followed?
- Was an appropriate referral made to a dietitian?
- If the screen was not undertaken, is there evidence this affected the patient's outcome?

Presence of Food and Nutrition Policies:

- Food and Hydration policy
- Malnutrition Policy to ensure screening, diagnosis and intervention

Governance:

- Nutrition or Malnutrition action group presence

Adherence to Malnutrition Screening and Assessment Process:

- Audits of adherence to the Malnutrition Policy
 - completion of initial screen within 24 hours of admission
 - repeat screens (every 5 days in acute and 7 days in non-acute settings)
 - documented weight checks
 - Completed nutrition assessment within 48 hours of MST \geq 3 for adults (Priority 2)

Reporting of incidence of malnutrition:

- Reports from Clinical Coders re coding of malnutrition (NB increased reporting expected capturing malnutrition rather than increased incidence) (Appendix 2).

Dietitian Documentation:

- Patient documentation reflects appropriate malnutrition diagnosis
- Nutrition interventions reflect goal for improvement of malnutrition status
- Transfer of care is reflected in documentation when patients are discharged from hospital or transferred to other health care facilities.

Education and Resources

Dietitians play a key role in educating and supporting staff in the screening, identification and management of malnutrition (6).

The Malnutrition in Hospitals RGCL006 HealthLearn course is for all clinicians involved in screening and identifying malnutrition risk. All nurses should receive generic malnutrition orientation including the Healthlearn course. Charge nurse managers and nurse educators should ensure that all new graduates and new to area nurses receive information and education to enable and empower them to be confident in nutrition screening, dietitian referral criteria, and how they can initiate care according to a Malnutrition Action Plan (7).

All medical staff should receive education around identifying, supporting and monitoring people either at risk of or with malnutrition.

Education should be given to other allied health professionals, health care assistants, pre-admission staff and food service personnel involved with patient meal service at the ward level.

Education for relevant clinical staff should at a minimum include where to find scales, how to use, how to use stadiometers, how to access food and fluids through hospital food service systems, and how to complete a food and fluid record chart accurately. Education should also occur on using clinical judgement when referring to a dietitian and consideration should be given to confounding variables such as oedema masking true weight change.

Clinical coders may need education on the definitions of nutrition used by Canterbury to enable appropriate coding around malnutrition given potential revenue generation. ICD 10 codes should be used to define the severity of malnutrition, so data comparison can potentially occur across sites nationally. (20).

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Appendices

APPENDIX 1: Malnutrition Screening Tools and Action Plan

APPENDIX 2: Malnutrition definitions used for Clinical Coding

APPENDIX 3: Information for estimating height (Demispan and Ulna Length)

APPENDIX 4: Information on the use of Hand Dynamometers

APPENDIX 5: Subjective Global Assessment Forms

Appendix 1: Malnutrition Screening Tool (MST) and Action plan , Paediatric Nutrition Screening Tool (PNST)

Christchurch Health Campus

Malnutrition Screening Tool (MST)

Step 1: Weigh patient **Step 2:** Complete screen **Step 3:** Action plan

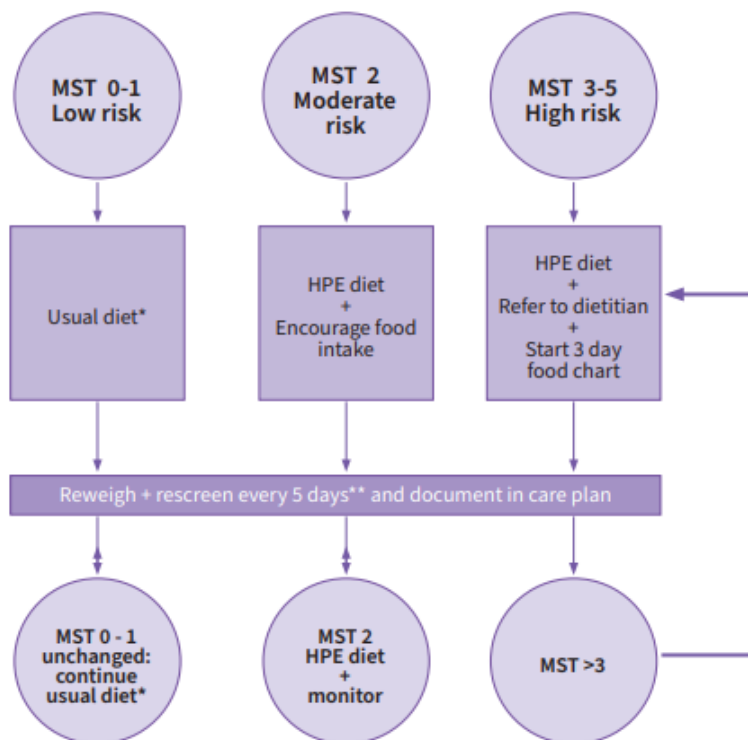
Patient has lost weight in the last 3 months without trying:

If *no* - score 0 If *unsure* - score 2 If *yes* - how much weight have they lost (in kg)?

0.5 - 5 kg **score 1** 5 - 10 kg **score 2** >10 kg - 15 kg **score 3** >15kg **score 4**

Patient has been eating poorly because of poor appetite? If *no* - **score 0** If *yes* - **score 1**

Total Malnutrition Risk Score: _____



*Includes special or modified texture diets ** If in a non-acute setting rescreen every 7 days

Ref: 2407654

Authoriser: Director of Nursing and Nutrition and Dietetics Christchurch Campus

September 2020

Ref: 2407654

Burwood Campus Ref: 2409188

(Attach Label here)

NAME: _____ NHI: _____

GENDER: ____ DOB: _____ AGE: ____ WARD: _____

Older Persons Health &
Rehabilitation

Nutrition Screening Referral HPE-OPH

NUTRITION SCREENING REFERRAL HPE

Primary Diagnosis: _____		Admission Weight: _____		
Malnutrition Screening Tool (MST)		Date: _____	Date: _____	Date: _____
1. Has patient lost weight in the last 3 months without trying?	No	0	Weight: _____	Weight: _____
	Not Sure	2	.....	.....
	Yes; how much:			
	- 1-5 kg	1	.....	.....
	- 6-10 kg	2	.....	.....
	- 11-15 kg	3	.....	.....
	- ≥15 kg	4	.....	.....
2. Has patient been eating poorly because of a decreased appetite?	No	0	.....	.....
	Yes	1	.....	.....
Total Score				

Patients are to be rescreened every 7 days.

Other Nutrition Risks		
<input type="checkbox"/> Enteral Feeding: NGT, PEG etc	<input type="checkbox"/> Wounds: Non-healing/ chronic	<input type="checkbox"/> Poor Oral Intake (≥3 days)
<input type="checkbox"/> Diabetes: recently started on insulin, or newly diagnosed	<input type="checkbox"/> Pressure Injury: Stage 3 or 4 (in conjunction with Purpose T)	<input type="checkbox"/> Texture modified diet (poor oral intake)
<input type="checkbox"/> Diabetes: poor control	<input type="checkbox"/> New Stoma/High output	<input type="checkbox"/> Multiple Allergies/ Food Intolerances
<input type="checkbox"/> Other:		
Note: Overweight / obese patients can develop protein depletion / malnourishment.		

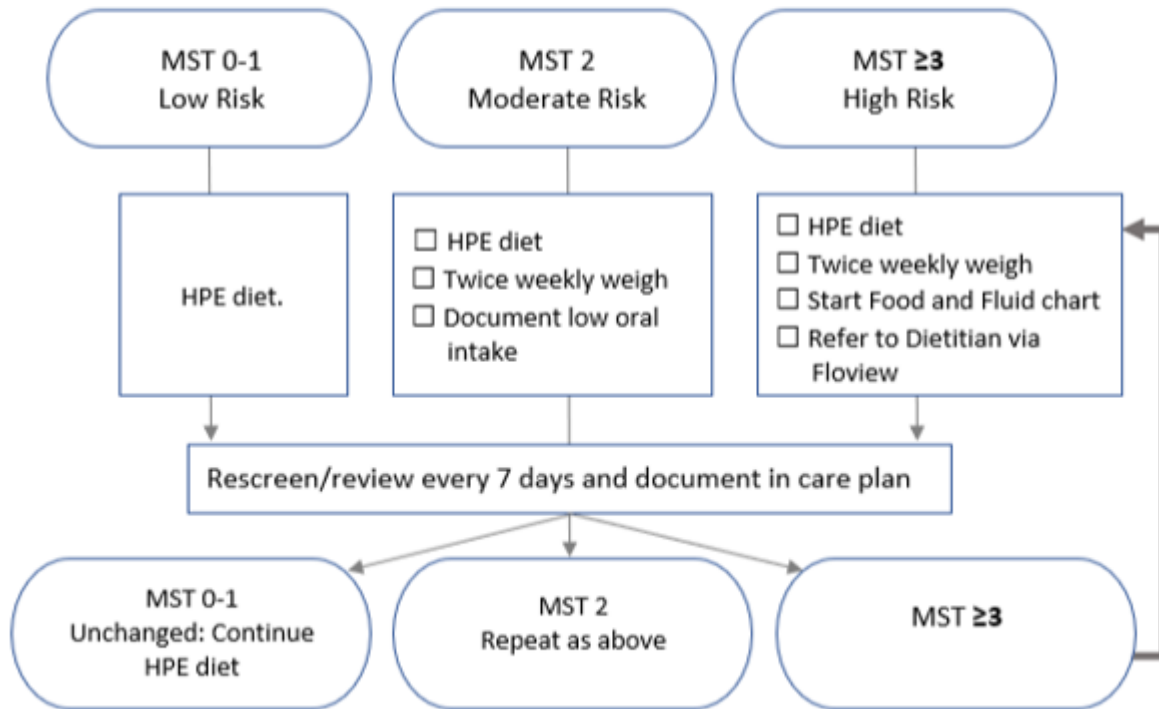
Action
Please refer to Malnutrition Action flowchart on back of page.
Refer to Dietitian via Floview if MST total is 3 or greater, and/or other nutrition risks identified

Name: _____ Signature: _____ Designation: _____ Date: _____

Owner: Dietitian, Burwood Dietitians
Authoriser: Clinical Manager, Nutrition & Dietetics Burwood Hospital
Ref: 2409188

Policy Library version is authoritative
Issue date: May 2022
Page 1 of 2

Malnutrition Action Flowchart-HPE



Burwood Campus Ref: 2409188

Paediatric Nutrition Screening Tool (PNST)



Dietetics and Food Services

Paediatric Nutrition Screening Tool

The Paediatric Nutrition Screening Tool (PNST) is the first nutrition screening tool for paediatric inpatients which is quick, simple and effective. The PNST has been validated for use for in paediatric inpatients in tertiary and regional hospitals.

Date completed: day - month - year -

Hospital No:

Surname:

Forename(s):

Sex: Male Female

DOB: day - month - year -

Nutrition screening questions

- 1 Has the child unintentionally lost weight lately? Yes No
- 2 Has the child had poor weight gain over the last few months? Yes No
- 3 Has the child been eating/feeding less in the last few weeks? Yes No
- 4 Is the child obviously underweight? Yes No

If 'yes' to two or more of the above:

- refer the child for further nutrition assessment (see contact details)
- check if child is known to a dietitian
- measure weight and length/height
- commence food and fluid intake record.

Contact details

Division / service name:

Hospital / health facility:

Phone: Email:

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For copyright permissions beyond the scope of this licence contact: Dr Melinda White, Children's Health Queensland Hospital and Health Service, email Melinda.White@health.qld.gov.au, phone 61 7 3068 5970.



Produced by
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 Queensland Children's Hospital
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e LCCH-DIET@health.qld.gov.au
 w www.childrens.health.qld.gov.au



Appendix 2: Malnutrition Definitions used for Clinical Coding

ICD-10 definitions of malnutrition relating to adults are (21):

- Unspecified severe protein-energy malnutrition (E43) – in adults a BMI <18.5 kg/m² or unintentional weight of >10% with suboptimal intake resulting in severe loss of subcutaneous fat and /or severe muscle wasting. Starvation oedema.
- Moderate protein-energy malnutrition (E44.0) - in adults a BMI <18.5kg/m² or unintentional loss of weight of 5-9% with evidence of suboptimal intake, resulting in moderate loss of subcutaneous fat and/or moderate muscle wasting.
- Mild protein-energy malnutrition (E44.1) - in adults a BMI of < 18.5kg/m² or unintentional loss of weight of 5-9% with evidence of suboptimal intake, resulting in mild loss of subcutaneous fat and/or mild muscle wasting.
- E46 - Unspecified protein-calorie malnutrition. Malnutrition not otherwise specified or protein-energy imbalance not otherwise specified. (This is the most common malnutrition code used by coders)
- NB: BMI should consider the ethnicity of the patient and appropriate cut-offs used for patients of Asian or Maori/Pacific origin i.e. a normal BMI for those of Asian ethnicity is 18.5-23kg/m² and Maori/Pacific is 20.5-27.5kg/m² (9).

Appendix 3: Information for estimating height e.g. ulna length, demispan

This information can be used when unable to undertake a height for a patient i.e. those who cannot stand. Two methods for determining are either using the ulna length or the demispan length to make an approximation of height. Height may be needed for calculation of Body Mass Index.

Demispan length:

Used when height is not able to be undertaken to estimate patient height.

Men: Height (cm) = 57.8 + (1.40 x demi-span in cm)

Women: Height (cm) = 60.1 + (1.35 x demi-span in cm)

Ulna length:

Alternative measurements: instructions and tables

If height cannot be obtained, use length of forearm (ulna) to calculate height using tables below. (See The 'MUST' Explanatory Booklet for details of other alternative measurements (knee height and demispan) that can also be used to estimate height).

Estimating height from ulna length

Measure between the point of the elbow (olecranon process) and the midpoint of the prominent bone of the wrist (styloid process) (left side if possible).

Height (m)	men (<65 years)	1.94	1.93	1.91	1.89	1.87	1.85	1.84	1.82	1.80	1.78	1.76	1.75	1.73	1.71
	men (≥65 years)	1.87	1.86	1.84	1.82	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.67
Ulna length (cm)		32.0	31.5	31.0	30.5	30.0	29.5	29.0	28.5	28.0	27.5	27.0	26.5	26.0	25.5
Height (m)	Women (<65 years)	1.84	1.83	1.81	1.80	1.79	1.77	1.76	1.75	1.73	1.72	1.70	1.69	1.68	1.66
	Women (≥65 years)	1.84	1.83	1.81	1.79	1.78	1.76	1.75	1.73	1.71	1.70	1.68	1.66	1.65	1.63
Height (m)	men (<65 years)	1.69	1.67	1.66	1.64	1.62	1.60	1.58	1.57	1.55	1.53	1.51	1.49	1.48	1.46
	men (≥65 years)	1.65	1.63	1.62	1.60	1.59	1.57	1.56	1.54	1.52	1.51	1.49	1.48	1.46	1.45
Ulna length (cm)		25.0	24.5	24.0	23.5	23.0	22.5	22.0	21.5	21.0	20.5	20.0	19.5	19.0	18.5
Height (m)	Women (<65 years)	1.65	1.63	1.62	1.61	1.59	1.58	1.56	1.55	1.54	1.52	1.51	1.50	1.48	1.47
	Women (≥65 years)	1.61	1.60	1.58	1.56	1.55	1.53	1.52	1.50	1.48	1.47	1.45	1.44	1.42	1.40

Estimating BMI category from mid upper arm circumference (MUAC)

The subject's left arm should be bent at the elbow at a 90 degree angle, with the upper arm held parallel to the side of the body. Measure the distance between the bony protrusion on the shoulder (acromion) and the point of the elbow (olecranon process). Mark the mid-point.

Ask the subject to let arm hang loose and measure around the upper arm at the mid-point, making sure that the tape measure is snug but not tight.

If MUAC is <23.5 cm, BMI is likely to be <20 kg/m².
If MUAC is >32.0 cm, BMI is likely to be >30 kg/m².

The use of MUAC provides a general indication of BMI and is not designed to generate an actual score for use with 'MUST'. For further information on use of MUAC please refer to The 'MUST' Explanatory Booklet.

© BAPEN

Appendix 4: Use of Hand Dynamometer to measure Hand Grip Strength:


The purpose of this test is to measure the maximum hand grip strength. Handgrip strength can show whether a person has lost functional status or improved over time (17). Results can vary depending on the protocol used so it is important to compare results to the norms derived using the same technique. The hand dynamometer is adjusted to fit the hand of the patient. The same setting should be used when re-setting. As results can vary depending on which hand used, the tests should be conducted on the same side, usually the dominant side. Several attempts should be undertaken to get a maximum score. Refer to manufacturer's instructions re use. Results are expected to vary between males and females as well as with age. The patient should squeeze the dynamometer with maximum effort for about 5 seconds, with the arm at right angles. Allow 15 seconds between attempts.

Ensure that between using with another patient the machine is cleaned with alcohol swabs.

Record the data in kg, and whether weak, normal or strong. Normative data should be provided with each machine.

Otherwise suggested cut-off points for are <20kg for women and < 30kg in men.

Appendix 5 – Te Whatu Ora Auckland SGAs and PG-SGAs (with permission)



Te Whatu Ora
Health New Zealand
Te Toka Tumai Auckland

Subjective Global Assessment

MUST ATTACH PATIENT LABEL HERE

SURNAME: _____ NHI: _____

FIRST NAMES: _____ DOB: _____

Please ensure you attach the correct visit patient label

Date: _____

MEDICAL HISTORY	
<input type="checkbox"/> Patient consents to Assessment <input type="checkbox"/> Yes <input type="checkbox"/> No	
NUTRIENT INTAKE	
1. <input type="checkbox"/> No change; adequate	
2. Inadequate; duration of inadequate intake: _____	
<input type="checkbox"/> Suboptimal solid diet <input type="checkbox"/> Full fluids or only oral nutrition supplements <input type="checkbox"/> Minimal intake, clear fluids or starvation	
3. Nutrient intake in past 2 weeks*	
<input type="checkbox"/> Adequate: _____ <input type="checkbox"/> Improved but not adequate: _____ <input type="checkbox"/> No improvement or inadequate: _____	
WEIGHT	
Usual weight:	
Current weight:	
1. Non fluid weight change past 6 months Weight loss (kg): _____	
<input type="checkbox"/> <5% loss or weight stability <input type="checkbox"/> 5-10% loss without stabilisation or increase <input type="checkbox"/> >10% loss and ongoing	
If above not known, has there been a subjective loss of weight during the past six months?	
<input type="checkbox"/> None or mild <input type="checkbox"/> Moderate <input type="checkbox"/> Severe	
2. Weight change past 2 weeks* Amount (if known): _____	
<input type="checkbox"/> Increased <input type="checkbox"/> No change <input type="checkbox"/> Decreased	
SYMPTOMS (Experiencing symptoms affecting oral intake)	
1. <input type="checkbox"/> Pain on eating <input type="checkbox"/> Anorexia <input type="checkbox"/> Vomiting <input type="checkbox"/> Nausea <input type="checkbox"/> Dysphagia <input type="checkbox"/> Diarrhoea	
<input type="checkbox"/> Dental problems <input type="checkbox"/> Feels full quickly <input type="checkbox"/> Constipation	
2. <input type="checkbox"/> None <input type="checkbox"/> Intermittent / mild / few <input type="checkbox"/> Constant / severe / multiple	
3. Symptoms in the past 2 weeks*	
<input type="checkbox"/> Resolution of symptoms <input type="checkbox"/> Improving <input type="checkbox"/> No change or worsened	
FUNCTIONAL CAPACITY (Fatigue and progressive loss of function)	
1. <input type="checkbox"/> No dysfunction	
2. Reduced capacity; duration of change: _____	
<input type="checkbox"/> Difficulty with ambulation / normal activities <input type="checkbox"/> Bed / chair-ridden	
3. Functional Capacity in the past 2 weeks*	
<input type="checkbox"/> Improved <input type="checkbox"/> No change <input type="checkbox"/> Decrease	
METABOLIC REQUIREMENT	
High metabolic requirement <input type="checkbox"/> No <input type="checkbox"/> Yes	
PHYSICAL EXAMINATION	
Loss of body fat	<input type="checkbox"/> No <input type="checkbox"/> Mild / Moderate <input type="checkbox"/> Severe
Loss of muscle mass	<input type="checkbox"/> No <input type="checkbox"/> Mild / Moderate <input type="checkbox"/> Severe
Presence of oedema / ascites	<input type="checkbox"/> No <input type="checkbox"/> Mild / Moderate <input type="checkbox"/> Severe
SGA RATING	
<input type="checkbox"/> A Well nourished <input type="checkbox"/> B Mildly / moderately malnourished <input type="checkbox"/> C Severely malnourished	
Normal Some progressive nutritional loss Evidence of wasting and progressive symptoms	
CONTRIBUTING FACTOR	
<input type="checkbox"/> CACHEXIA* – (fat and muscle wasting due to disease and inflammation)	
<input type="checkbox"/> SARCOPIENIA* – (reduced muscle mass and strength)	
* See page 2 SGA rating for more detailed description	

PAGE 1
09/17

Dietitian Name: _____ Dietitian Signature: _____ Mobile: _____

CR3081

SUBJECTIVE GLOBAL ASSESSMENT CR3081

Te Whatu Ora
Health New Zealand
Te Taka Tūmāi Auckland

Subjective Global Assessment

MUST ATTACH PATIENT LABEL HERE

SURNAME: _____ NHI: _____

FIRST NAMES: _____ DOB: _____

Please ensure you attach the correct visit patient label

Guidance For Body Composition

SUBCUTANEOUS FAT			
Physical examination	Normal	Mild / Moderate	Severe
Under the eyes	Slightly bulging area	Somewhat hollow look. Slightly dark circles	Hollowed look, depression, dark circles
Triceps	Large space between fingers	Some depth to fat tissue but not ample. Loose fitting skin	Very little space between fingers or fingers touch
Ribs, lower back, sides of trunk	Chest is full; ribs do not show. Slight to no protrusion of the iliac crest	Ribs obvious but indentations are not marked. Iliac crest somewhat prominent	Indentation between ribs very obvious, iliac crest very prominent
MUSCLE WASTING			
Physical examination	Normal	Mild / Moderate	Severe
Temple	Well-defined muscle	Slight depression	Hollowing, depression
Clavicle	Not visible in males; may be visible but not prominent in females	Some protrusion; may not be all the way along	Protruding / prominent bone
Shoulder	Rounded	No square look; acromion process may protrude slightly	Square look; bones prominent
Scapula / ribs	Bones not prominent; no significant depressions	Mild depressions or bone may show slightly; not all areas	Bones prominent; significant depressions
Quadriceps	Well defined	Depression / atrophy medially	Prominent knee. Severe depression medially
Interosseous muscle between thumb and forefinger (back of hand)**	Muscle protrudes; could be flat in females	Slightly depressed	Flat or depressed area
FLUID RETENTION			
Physical examination	Normal	Mild / Moderate	Severe
Oedema	None	Pitting oedema of extremities / pitting to knees, possible sacral oedema if bedridden	Pitting beyond knees, sacral oedema if bedridden, may also have generalized oedema
Ascites	Absent	Present (may only be present on imaging)	

A - Well-nourished no decrease in food / nutrient intake; <5% weight loss; no / minimal symptoms affecting food intake; no deficit in function; no deficit in fat or muscle mass OR* an individual with criteria for SGA B or C but with recent adequate food intake; non fluid weight gain; significant recent improvement in symptoms allowing adequate oral intake; significant recent improvement in function and chronic deficit in fat and muscle mass but with recent clinical improvement in function.

B - Mildly / moderately malnourished definite decrease in food / nutrient intake; 5%-10% weight loss without stabilisation or gain; mild / some symptoms affecting food intake; moderate functional deficit or recent deterioration; mild / moderate loss of fat and / or muscle mass OR* an individual meeting criteria for SGA C but with improvement (but not adequate) of oral intake, recent stabilisation of weight, decrease in symptoms affecting oral intake and stabilisation of functional status.

C - Severely malnourished severe deficit in food / nutrient intake; >10% weight loss which is ongoing; significant symptoms affecting food / nutrient intake; severe functional deficit OR* recent significant deterioration, obvious signs of fat and / or muscle loss.

Cachexia - if there is an underlying predisposing disorder (e.g. malignancy) and there is evidence of reduced muscle and fat and no limited improvement with optimal nutrient intake, this is consistent with cachexia.

Sarcopenia - if there is an underlying disorder (e.g. aging) and there is evidence of reduced muscle and strength and no limited improvement with optimal nutrient intake.

**In the elderly prominent tendons and hollowing are the result of aging and may not reflect malnutrition
Source: Canadian Malnutrition Task Force 2017

MUST ATTACH PATIENT LABEL HERE

SURNAME: _____ NHI: _____
FIRST NAMES: _____ DOB: _____

Please ensure you attach the correct visit patient label

Te Whatu Ora
Health New Zealand
Te Toka Tūmahi Auckland

PAGE 1
09/17

Patient Generated Subjective Global Assessment (PG SGA)

History: Boxes 1-4 are designed to be completed by the patient
[Boxes 1-4 are referred to as the PG-SGA Short Form (SF)]

<p>1. WEIGHT:</p> <p><i>(See Worksheet 1)</i> In summary of my current and recent weight: I currently weigh about _____ kg I am about _____ cm tall</p> <p>One month ago I weigh about _____ kg Six months ago I weighed about _____ kg</p> <p>During the past two weeks my weight has:</p> <p><input type="checkbox"/> decreased (1) <input type="checkbox"/> not changed (0) <input type="checkbox"/> increased (0) Box 1 <input type="checkbox"/></p>	<p>2. FOOD INTAKE:</p> <p>As compared to my normal intake, I would rate my food intake during the past month as:</p> <p><input type="checkbox"/> unchanged (0) <input type="checkbox"/> more than usual (0) <input type="checkbox"/> less than usual (1)</p> <p>I am now taking:</p> <p><input type="checkbox"/> normal food but less than normal amount (1) <input type="checkbox"/> only nutritional supplements (3) <input type="checkbox"/> little solid food (2) <input type="checkbox"/> very little of anything (4) <input type="checkbox"/> only liquids (3) <input type="checkbox"/> only tube feedings or only nutrition by vein (0)</p> <p style="text-align: right;">Box 2 <input type="checkbox"/></p>
<p>3. SYMPTOMS:</p> <p>I have had the following problems that have kept me from eating enough during the past two weeks (check all that apply):</p> <p><input type="checkbox"/> no problems eating (0) <input type="checkbox"/> no appetite, just did not feel like eating (3) <input type="checkbox"/> vomiting (3) <input type="checkbox"/> nausea (1) <input type="checkbox"/> diarrhea (3) <input type="checkbox"/> constipation (1) <input type="checkbox"/> dry mouth (1) <input type="checkbox"/> mouth sores (2) <input type="checkbox"/> smells bother me (1) <input type="checkbox"/> things taste funny or have no taste (1) <input type="checkbox"/> feel full quickly (1) <input type="checkbox"/> problems swallowing (2) <input type="checkbox"/> fatigue (1) <input type="checkbox"/> pain; where? (3) _____ <input type="checkbox"/> other (1)** _____ Box 3 <input type="checkbox"/></p> <p><small>**Examples: depression, money, or dental problems</small></p>	<p>4. ACTIVITIES AND FUNCTION:</p> <p>Over the past month, I would generally rate my activity as:</p> <p><input type="checkbox"/> normal with no limitations (0) <input type="checkbox"/> not my normal self, but able to be up and about with fairly normal activities (1) <input type="checkbox"/> not feeling up to most things, but in bed or chair less than half the day (2) <input type="checkbox"/> able to do little activity and spend most of the day in bed or chair (3) <input type="checkbox"/> pretty much bed ridden, rarely out of bed (3)</p> <p style="text-align: right;">Box 4 <input type="checkbox"/></p>

The remainder of this form is to be completed by your doctor, nurse, dietitian, or therapist. Thank you.
©FD Ottery 2005, 2006, 2015 v3.22.15 email: faithottervmdohd@aol.com or info@nt-global.org

CR3080

PATIENT GENERATED SUBJECTIVE GLOBAL ASSESSMENT (PG SGA)

Additive Score of Boxes 1-4 **A**

MUST ATTACH PATIENT LABEL HERE

SURNAME: _____ NHI: _____
FIRST NAMES: _____ DOB: _____

Please ensure you attach the correct visit patient label

Te Whatu Ora
Health New Zealand
Te Toka Tūmahi Auckland

PAGE 2
CR3080

Patient Generated Subjective Global Assessment (PG SGA)

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email: faithottervmdohd@aol.com or info@nt-global.org

Additive Score of Boxes 1-4 (See Page 1) **A**

<p>WORKSHEET 1 - SCORING WEIGHT LOSS</p> <p>To determine score, use 1-month weight data if available. Use 6-month data only if there is no 1-month weight data. Use points below to score weight change and add one extra point if patient has lost weight during the past 2 weeks. Enter total point score in Box 1 of PG-SGA.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Weight loss in 1 month</th> <th>Points</th> <th>Weight loss in 6 months</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>10% or greater</td> <td>4</td> <td>20% or greater</td> <td>4</td> </tr> <tr> <td>5 - 9.9%</td> <td>3</td> <td>10 - 19.9%</td> <td>3</td> </tr> <tr> <td>3 - 4.9%</td> <td>2</td> <td>6 - 9.9%</td> <td>2</td> </tr> <tr> <td>2 - 2.9%</td> <td>1</td> <td>2 - 5.9%</td> <td>1</td> </tr> <tr> <td>0 - 1.9%</td> <td>0</td> <td>0 - 1.9%</td> <td>0</td> </tr> </tbody> </table> <p style="text-align: right;">Numerical score from Worksheet 1 <input type="checkbox"/></p>	Weight loss in 1 month	Points	Weight loss in 6 months	Points	10% or greater	4	20% or greater	4	5 - 9.9%	3	10 - 19.9%	3	3 - 4.9%	2	6 - 9.9%	2	2 - 2.9%	1	2 - 5.9%	1	0 - 1.9%	0	0 - 1.9%	0	<p>WORKSHEET 2 - DISEASE AND ITS RELATION TO NUTRITIONAL REQUIREMENTS:</p> <p>Score is derived by adding 1 point for each of the following conditions:</p> <p><input type="checkbox"/> Cancer <input type="checkbox"/> Presence of decubitus, open wound or fistula <input type="checkbox"/> AIDS <input type="checkbox"/> Presence of trauma <input type="checkbox"/> Pulmonary or cardiac cachexia <input type="checkbox"/> Age greater than 65 <input type="checkbox"/> Chronic renal insufficiency</p> <p>Other relevant diagnoses (specify) _____</p> <p>Primary disease staging (circle if known or appropriate) I II III IV Other _____ Box B <input type="checkbox"/></p>																																				
Weight loss in 1 month	Points	Weight loss in 6 months	Points																																																										
10% or greater	4	20% or greater	4																																																										
5 - 9.9%	3	10 - 19.9%	3																																																										
3 - 4.9%	2	6 - 9.9%	2																																																										
2 - 2.9%	1	2 - 5.9%	1																																																										
0 - 1.9%	0	0 - 1.9%	0																																																										
<p>WORKSHEET 3 - METABOLIC DEMAND</p> <p>Score for metabolic stress is determined by a number of variables known to increase protein and calorie needs. Note: Score fever intensity or duration, whichever is greater. The score is additive so that a patient who has a fever of 38.8°C (3 points) for < 72 hrs (1 Point) and who is on 10 mg of prednisone chronically (2 Points) would have an additive score for this section of 5 points.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Stress</th> <th>None (0)</th> <th>Low (1)</th> <th>Moderate (2)</th> <th>High (3)</th> </tr> </thead> <tbody> <tr> <td>Fever</td> <td>No fever</td> <td>> 37.2 and < 38.3°C</td> <td>> 38.3 and < 38.8°C</td> <td>≥ 38.8°C</td> </tr> <tr> <td>Fever duration</td> <td>No fever</td> <td>< 72 Hours</td> <td>72 Hours</td> <td>> 72 Hours</td> </tr> <tr> <td>Corticosteroids</td> <td>No Corticosteroids</td> <td>Low dose (<10 mg prednisone equivalents/day)</td> <td>Moderate dose (>10 and < 30 mg prednisone equivalents/day)</td> <td>High dose (> 30 mg prednisone equivalents/day)</td> </tr> </tbody> </table> <p style="text-align: right;">Numerical score from Worksheet 3 <input type="checkbox"/> C</p>	Stress	None (0)	Low (1)	Moderate (2)	High (3)	Fever	No fever	> 37.2 and < 38.3°C	> 38.3 and < 38.8°C	≥ 38.8°C	Fever duration	No fever	< 72 Hours	72 Hours	> 72 Hours	Corticosteroids	No Corticosteroids	Low dose (<10 mg prednisone equivalents/day)	Moderate dose (>10 and < 30 mg prednisone equivalents/day)	High dose (> 30 mg prednisone equivalents/day)	<p>WORKSHEET 4 - PHYSICAL EXAM</p> <p>Exam includes a subjective evaluation of 3 aspects of body composition: fat, muscle, and fluid. Since this is subjective, each aspect of the exam is rated for degree. Muscle deficit/loss impacts point score more than fat deficit/loss. Definition of categories: 0 = no abnormality, 1+ = mild, 2+ = moderate, 3+ = severe. Rating in these categories is not additive but are used to clinically assess the degree of deficit (or presence of excess fluid).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Muscle Status</th> <th>Points</th> <th>Fat Status</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>temples (temporalis muscle)</td> <td>0 1+ 2+ 3+</td> <td>orbital fat pads</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>clavicles (pectoralis and deltoids)</td> <td>0 1+ 2+ 3+</td> <td>triceps skin fold</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>shoulders (deltoids)</td> <td>0 1+ 2+ 3+</td> <td>fat overlying lower ribs</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>interosseous muscles</td> <td>0 1+ 2+ 3+</td> <td>Global fat deficit rating</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>scapula (latissimus dorsi, trapezius, deltoids)</td> <td>0 1+ 2+ 3+</td> <td>Fluid status</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>thigh (quadriceps)</td> <td>0 1+ 2+ 3+</td> <td>ankle edema</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>calf (gastrocnemius)</td> <td>0 1+ 2+ 3+</td> <td>sacral edema</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td>Global muscle status rating</td> <td>0 1+ 2+ 3+</td> <td>ascites</td> <td>0 1+ 2+ 3+</td> </tr> <tr> <td></td> <td></td> <td>Global fluid status rating</td> <td>0 1+ 2+ 3+</td> </tr> </tbody> </table> <p>Point score for the physical exam is determined by the overall subjective rating of the total body deficit.</p> <p>No deficit Score = 0 points Moderate deficit Score = 2 points Mild deficit Score = 1 point Severe deficit Score = 3 points</p> <p>Again, muscle deficit/loss takes precedence over fat loss or fluid excess.</p> <p style="text-align: right;">Clinician Signature _____ RD RN PA MD DO Numerical Score for Worksheet 4 <input type="checkbox"/> D</p> <p style="text-align: right;">Total PG-SGA Score (Total numerical score of A+B+C+D) _____ Other _____ Date _____ Global PG-SGA Category Rating (Stage A, Stage B or Stage C) <input type="checkbox"/></p>	Muscle Status	Points	Fat Status	Points	temples (temporalis muscle)	0 1+ 2+ 3+	orbital fat pads	0 1+ 2+ 3+	clavicles (pectoralis and deltoids)	0 1+ 2+ 3+	triceps skin fold	0 1+ 2+ 3+	shoulders (deltoids)	0 1+ 2+ 3+	fat overlying lower ribs	0 1+ 2+ 3+	interosseous muscles	0 1+ 2+ 3+	Global fat deficit rating	0 1+ 2+ 3+	scapula (latissimus dorsi, trapezius, deltoids)	0 1+ 2+ 3+	Fluid status	0 1+ 2+ 3+	thigh (quadriceps)	0 1+ 2+ 3+	ankle edema	0 1+ 2+ 3+	calf (gastrocnemius)	0 1+ 2+ 3+	sacral edema	0 1+ 2+ 3+	Global muscle status rating	0 1+ 2+ 3+	ascites	0 1+ 2+ 3+			Global fluid status rating	0 1+ 2+ 3+
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<p>WORKSHEET 5 - PG-SGA GLOBAL ASSESSMENT CATEGORIES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Category</th> <th>Stage A</th> <th>Stage B</th> <th>Stage C</th> </tr> </thead> <tbody> <tr> <td>Weight</td> <td>Well-nourished</td> <td>Moderate/suspected malnutrition</td> <td>Severely malnourished</td> </tr> <tr> <td>Nutrient intake</td> <td>No weight loss OR recent non-fluid wt gain</td> <td>< 5% loss in 1 month (< 10% in 6 months) OR Progressive weight loss</td> <td>> 5% loss in 1 month (>10% in 6 months) OR Progressive weight loss</td> </tr> <tr> <td>Nutrition impact</td> <td>No deficit OR Significant recent improvement</td> <td>Definite decrease in intake</td> <td>Severe deficit in intake</td> </tr> <tr> <td>Symptoms (NIS)</td> <td>None</td> <td>Presence of NIS (Box 3 of PG-SGA)</td> <td>Presence of NIS (Box 3 of PG-SGA)</td> </tr> <tr> <td>Functioning</td> <td>OR Significant recent improvement allowing adequate intake</td> <td>Moderate functional deficit OR Recent deterioration</td> <td>Severe functional deficit OR Recent significant deterioration</td> </tr> <tr> <td>Physical Exam</td> <td>No deficit OR Significant recent improvement</td> <td>Evidence of mild to moderate loss of muscle mass &/ or muscle tone on palpation &/ or loss of SQ fat</td> <td>Obvious signs of malnutrition (e.g., severe loss muscle, fat, possible oedema)</td> </tr> </tbody> </table>		Category	Stage A	Stage B	Stage C	Weight	Well-nourished	Moderate/suspected malnutrition	Severely malnourished	Nutrient intake	No weight loss OR recent non-fluid wt gain	< 5% loss in 1 month (< 10% in 6 months) OR Progressive weight loss	> 5% loss in 1 month (>10% in 6 months) OR Progressive weight loss	Nutrition impact	No deficit OR Significant recent improvement	Definite decrease in intake	Severe deficit in intake	Symptoms (NIS)	None	Presence of NIS (Box 3 of PG-SGA)	Presence of NIS (Box 3 of PG-SGA)	Functioning	OR Significant recent improvement allowing adequate intake	Moderate functional deficit OR Recent deterioration	Severe functional deficit OR Recent significant deterioration	Physical Exam	No deficit OR Significant recent improvement	Evidence of mild to moderate loss of muscle mass &/ or muscle tone on palpation &/ or loss of SQ fat	Obvious signs of malnutrition (e.g., severe loss muscle, fat, possible oedema)																																
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NUTRITIONAL TRIAGE RECOMMENDATIONS: Additive score is used to define specific nutritional interventions including patient and family education, symptom management including pharmacologic intervention, and appropriate nutrient intervention (food, nutritional supplements, enteral, or parenteral triage). First line nutrition intervention includes optimal symptom management. Triage based on PG-SGA point score.

0-1 No intervention required at this time. Re-assessment on routine and regular basis during treatment.

2-3 Patient & family education by dietitian, nurse, or other clinician with pharmacologic intervention as indicated by symptom survey (Box 3) and lab values as appropriate.

4-8 Requires intervention by dietitian, in conjunction with nurse or physician as indicated by symptoms (Box 3).

-> 9 Indicates a critical need for improved symptom management and/or nutrient intervention options.

Triage based on PG-SGA point score:

- 0-1** No intervention required at this time. Re-assessment on routine and on a regular basis during treatment.
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- 4-8** Requires intervention by dietitian, in conjunction with nurse or physician, as indicated by symptoms (Box 3).
- 9≥** Indicates a critical need for improved symptom management and/or nutrient intervention options.

Associated documents

- ICD 10 Codes (Appendix 2).
- Referral criteria to Dietitians (see hospital health pathways).
- Nutrition Care Process Terminology (NCPT) and definitions of malnutrition in adults (access through DNZ portal for the latest definitions).
- Other associated guidelines e.g. ERAS guidelines, Food and Hydration Policy Guideline.