

## Identification and Management of Malnutrition in the Canterbury District Health Board Hospitalised Patients

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## Opening Statement on Purpose of Document

Patients with malnutrition are known to have longer length of hospital stays, increased costs for their care and poorer outcomes. Malnutrition is associated with increased morbidity and mortality, falls and readmission to hospitals. 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 (1) and 6-14% in children (2). The Australasian Nutrition Care Day Survey from 2010 showed the prevalence of malnutrition in hospitals was 32% and 41% patients were at risk of malnutrition (3). Early identification of patients at risk or with malnutrition (both adults and children) is therefore essential to ensure that an effective care plan is put in place and monitored to improve outcomes (2, 4).

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 1 week is important (1,2). Results of the Nutrition Care Day Survey from 2010 conducted across Australasia showed that on average 32% of patients were malnourished, had a 5 day longer stay than well-nourished patients and a higher readmission rate (5, 6).

## Related Documents

- Nutrition screening tool/s
- ICD 10 Codes
- Related Nutritional Standards of Care or Evidenced-based guidelines
- Referral criteria to Dietitians
- International Dietetics and Nutrition Terminology
- Other associated guidelines: ERAS guidelines, Food and Hydration Policy guidelines

## Policy

A malnutrition screen must be completed and documented for all patients admitted to the inpatient setting within 24 hours of admission (7). Exceptions are neonates, children, women pre and post-delivery and those patients having day procedures. In some situations the screening tool may be completed in the pre-assessment area prior to admission to identify those patients most at risk.

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A validated nutrition screening tool/s should be used for appropriate patient groups i.e. based on age and care setting (1, 8).

Malnutrition Screening Tool (MST) is the screening tool used in Christchurch, PMH, Ashburton, Burwood and West Coast hospitals. Mental health use MUST (Malnutrition Universal Screening Tool) for screening. All Staff have clearly delineated responsibilities to ensure the patient receives the appropriate Nutrition Support to meet their identified needs.

If the patient screens as being 'at risk of malnutrition', referrals to a dietitian must occur according to the DHB referral guidelines/malnutrition action chart.

All clinical staff should be oriented to the policy, and as relevant trained on procedures in the Policy document, on a regular basis. This may include education of other allied health staff involved in MST screening, health care assistants as well as nursing and medical staff.

Nutrition screens are best if simple and can be completed by either the patient/caregiver or staff.

## Scope

All clinical and food service staff working in inpatient areas and the pre-assessment setting.

This standard relates to patients in both physical and mental health settings.

## Risks and precautions

Studies, 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. Malnutrition is associated with adverse clinical outcomes, increased length of stay and increased cost.

Malnutrition can be found in patients who are overweight or obese, not just those who are underweight. Being overweight or obese may mask the presence of nutritional deficiencies and should be identified, as the same malnutrition risks can occur in any BMI (4).

Risks may be minimised by:

- Routine screening in the acute setting. This can improve the identification of both malnutrition and malnutrition risk and allow for appropriate nutritional care planning. The tool in use at Canterbury and West Coast DHB is MST (OR MUST for

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Mental Health Services), a screening tool validated for use in adults (2).

- A multidisciplinary approach to the identification and treatment of malnutrition can improve patient outcome.
- Exceptions for screening are neonates, women post-delivery, and those having day procedures. There are currently no validated tools for use in screening for infants or women who have short hospital stays on average post-delivery. Malnutrition can however be diagnosed in the paediatric population by an appropriately trained professional and for that reason it is recommended that all infants, children and teenagers are weighed on admission and for those under the age of 2 years, have their length and head circumference measured.
- CDHB Paediatric wards will use a paediatric specific screening tool to be implemented in 2014. "Strong Kids" is the tool that is being implemented into the Paediatric wards.
- 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 change of nutritional status (4). Screening should also be completed on transfer to another hospital for example from CHCH to PMH, Burwood, Ashburton or Greymouth Hospital.
- Rescreening of all inpatients should occur weekly 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.

## Equipment

- Patient Assessment, Medical Application Portal (access to electronic patient records), Malnutrition Action Flow Chart
- Scales, seat and standing types. In wards where patients are unable to stand on scales, seat scales are recommended.
- Hoists and training of use of hoists for non-ambulatory patients
- Food charts
- Weight charts
- Stadiometers

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- Hand Dynamometer
- Dietitian (Allied Health) Referral Form

## Definitions

### Malnutrition

A state of nutrition in which a deficiency or excess of energy, protein and/or other nutrients cause measurable adverse effects on tissue/body form, composition, function or clinical outcome. In the acute care setting, malnutrition will be considered as under-nutrition (9).

Examples of validated definitions are:

1. The NICE Guideline definitions of malnutrition are as follows:
  - BMI < 18.5
  - Unintentional weight loss of > 10% in the last 3-6 months (NB patient may still be obese)
  - BMI < 20 and unintentional weight loss > 5% in last 3-6 months
2. ICD-10 definitions of malnutrition are:
  - Unspecified severe protein-energy malnutrition (E43) – severe loss of weight or lack of weight gain in children that is at least 3 standard deviations below the mean value for the reference population or in adults a BMI <18.5 kg/m<sup>2</sup> or unintentional weight of >10% with suboptimal intake resulting in severe loss of subcutaneous fat and /or severe muscle wasting
  - Moderate protein-energy malnutrition (E44.0)- in children weight loss or lack of weight gain leading to an observed weight that is two or more but less than 3 standard deviations below the mean value for the reference population, or in adults a BMI <18.5kg/m<sup>2</sup> or unintentional loss of weight (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 children weight loss or lack of weight gain leading to an observed weight that is one or more but less than two standard deviations below the mean value for the reference population, and in adult a BMI of < 18.5kg/m<sup>2</sup> or unintentional loss of weight (5-9%) with evidence of suboptimal intake resulting in mild loss of subcutaneous fat and/or mild muscle wasting.

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**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 18.5-23 and Maori/Pacific is 20.5-27.5 (10)

3. The Academy of Nutrition and Dietetics and ASPEN 2012 definition of adult malnutrition:

- Starvation- related malnutrition (pure chronic starvation, anorexia)
- Chronic disease-related malnutrition where a medical condition imposes a sustained mild/moderate degree of inflammation(organ failure, pancreatic cancer, rheumatoid arthritis, sarcopenic obesity)
- Acute Disease or injury-related malnutrition with marked inflammatory response (major infection, burns, trauma, closed head injury)

Need to determine if inflammation is present, and then determine if 2 or more of the following characteristics are present to diagnose malnutrition (11, 3):

1. Insufficient energy intake
2. Weight loss
3. Loss of muscle mass
4. Loss of subcutaneous fat
5. Localised or generalised fluid accumulation that may sometimes mask weight loss
6. Diminished functional status as measured by handgrip strength

The severity of malnutrition can then be established by further dietetic assessment using the above factors.

4. Definition of malnutrition in children (13, 14):

- Weight for height should be used to compare the child's weight with the average weight for children of the same height i.e. actual weight/weight for height at the 50th centile. Weight for height can be expressed as a percentage of expected weight or as a 'z' score.
- Normal weight for height % = 90-110%, mild malnutrition as 80-90%, moderate malnutrition as 70-80% and severe malnutrition as <70%.

**The Canterbury and West Coast DHB will use the NICE guidelines for the definition of Malnutrition for adult patients.**

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**The clinical coders will code malnutrition using the ICD - 10 definitions and Dietitians can specify if the Malnutrition is severe if appropriate.**

**Paediatric patients will use the term faltering growth to define malnutrition in children and the severity will be determined by the deviation from their growth centiles.**

### **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 (12).

### **Nutrition Screening**

A simple procedure used by nursing, medical or other staff such as assistants on admission to detect those who have a significant nutritional problem or significant risk of such problems, in order to initiate and implement nutrition therapy.

### **Patient Care plan**

The screening tool MST (or MUST in Mental Health) should be completed for all patients at pre-assessment, or on admission to the ward and then weekly. The nutrition risk score and patient weight should be documented in the patient care plan.

### **Malnutrition Action Flow Chart**

A flow chart that provides a nutritional treatment plan based on the score of the malnutrition screening tool to be utilised when a patient is identified as having malnutrition or at risk of malnutrition. See appendix 2.

### **Subjective Global Assessment (SGA)**

A validated nutrition assessment tool that looks at a patient's physical and functional status as well as fat and muscle stores and makes a judgement as to whether a patient is well nourished, at risk of malnutrition or is severely malnourished. Assessment follows on from identification of risk of malnutrition and is undertaken by a dietitian trained in SGA.

## **Responsibilities and process**

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### **DHB responsibilities**

To ensure an effective process is used to identify and monitor malnutrition and its outcomes, DHBs should ensure that there is framework in place to support malnutrition as a patient safety indicator.

### **Nursing responsibilities**

- Screen all adult patients on admission (see exceptions) using the MST (or MUST in Mental Health) screening tool in the nursing assessment documents and record results in the patient care plan and when to rescreen. (Weigh patients weekly (or more frequently if clinically indicated) and rescreen weekly.
- Implement the appropriate nutrition treatment using the Malnutrition Action Flow Chart or refer to the dietitian if the patient meets the referral criteria (taking into consideration other medical/nutrition needs). For low and moderate risk patients, implement the appropriate nutrition treatment using the Malnutrition Action Flow Chart. If the patient meets the referral criteria for medium and high risk, (taking into consideration other medical/nutrition needs), arrange HPE diet and refer to a dietitian in the first instance.
- Communicate malnutrition risk to the multidisciplinary team and record the score in the patient care plan
- Ensure that the appropriate diet code is ordered following the malnutrition flow chart for your hospital.
- Ensure that nutrition intervention, if required, is received by the patient and recorded on the food chart
- Document accurate food and fluid intake in the medical records or food chart as appropriate.
- Document any nutrition concerns in the medical records. Communicate concerns to medical team and/or dietitian according the Malnutrition Action Flow Chart.
- Some of these tasks may be delegated to a health care assistant but remain the responsibility of the nurse to document and action
- Attends training/education provided on nutrition screening and monitoring and be familiar with DHB processes regarding meal delivery, special diet provision, how to obtain nutritional supplements, and dietitian referral criteria

### **Medical staff responsibilities**

- Identify the presence of malnutrition or malnutrition risk in patients using current evidence-based guidelines and document in the patient's record.

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- Identify patients at risk of refeeding syndrome and follow guidelines in the CDHB Blue book.
- Ensure that patients identified as being at nutritional risk are started on the appropriate intervention as per the Malnutrition Action Flow Chart or referred to the dietitian if they meet the ward referral criteria.
- Document the presence of malnutrition, according to agreed definitions, in the medical notes/electronic record so that this is clear for the clinical coders (11).
- Document the risk of malnutrition clearly within the discharge summary to ensure all professionals who are supporting the patient in the community including the GP are aware.
- Application for special authorities for Special Purpose Foods where patient meets PHARMAC criteria if dietitian involved is unable to do this.

### **Dietitians responsibilities**

- Assess referred patients (who met the referral criteria for high risk) in line with the appropriate standard of care. If the MST score indicates the patient is likely to have malnutrition, undertake Subjective Global Assessment (SGA) or/and full assessment using the 2012 ASPEN guidelines and record this.
- Implement and document a nutrition care plan following discussion with patient and/or carer, family or nursing staff (if patient too unwell).
- Monitor goals and reassess as required.
- Provide education to patients and carers as required to reverse malnutrition wherever possible.
- Document the presence and extent of malnutrition, according to agreed definitions, in the medical notes so this is clear for the clinical coders using the green malnutrition stickers for adult patients and faltering growth for paediatric patients.
- Ongoing and regular education to all staff including nursing education programs, new house surgeons/registrar on the identification and management of malnutrition.
- Regular education to key stakeholders, primarily the users of the tool to keep up with staffing turnover.
- Application for special authorities for Special Purpose Foods where the patient meets Pharmac's criteria. (This is limited to dietitians with prescribing endorsement).
- Ensuring an appropriate nutrition care plan is in place on discharge including referral to other services as appropriate.

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- Referral on discharge for appropriate follow-up including ensuring that there is clear documentation communicated regarding presence of or risk of malnutrition.

### **Multidisciplinary team responsibilities**

- All members of the wider multidisciplinary team are aware of the risk of malnutrition and the need to take responsibility regarding the risk of malnutrition and ensure appropriate plans are in place.
- Regular audit to check compliance of completing the MST and whether appropriate action plan is undertaken.
- Monitoring of complications as a result of malnutrition is undertaken.
- Appropriate and timely referrals to dietitians are made.

### **Education and Resources**

Generic packages for education should be developed and put into place for all clinicians involved in screening and identifying malnutrition risk. This includes generic orientation for nursing. 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 Flow Chart (this will vary according to the screening tool used) (9).

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, and pre-assessment staff and food service personnel involved with patient meal service at the ward level.

Education for relevant clinical staff should include where to find scales, how to use, how to use Stadiometers, how to access food and fluids through hospital food service systems, how to complete a food and fluid record chart accurately.

Clinical coders may need education on the definitions of malnutrition used by the DHB to enable appropriate coding around malnutrition given potential revenue generation.

### **Outcomes and Monitoring**

- The following are potential quality indicators that can be used to monitor the quality of nutritional care.

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- Presence of published policies relating to nutrition care within the DHB i.e. Screening, assessment and care pathways.
- Presence of a nutrition steering committee, nutrition support team and clinical dietetic involvement in the acute care setting, a nutrition MDT for mental health facilities, and demonstration of discussion of nutritional issues within MDTs for long-term conditions, paediatrics, the elderly, those with cancer should be considered depending on the services provided by individual DHBs.
- Adherence to policies on nutritional screening/assessment by:
  - Undertaking audits and linked assessments as a result 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 provider and clarity of Food Services role in the management of malnutrition risk.
- Patient satisfaction forms regarding food quality that feed into the nutrition steering committee.
- Complaints that relate to food.
- 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?

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- Was an appropriate referral made to a dietitian?
- If the screen was not undertaken, is there evidence this affected the patients outcome?

## Measurement/Evaluation

Malnutrition screening audit and clinical coding audit to measure the number of patients diagnosed with malnutrition.

## References

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## Appendix 1:

MST screening tool to be used in CHCH, PMH, Burwood, Ashburton and West Coast Hospitals.

Mental health to use MUST screening tool.

### Malnutrition Screening Tool (MST)

Please weigh the patient.

Weight:

*Please circle the appropriate score.*

1. Has the patient lost weight in the last 6 months without trying?

- No Score 0 (go to Q. 2)
- Unsure (ask if clothes are looser) Score 2 (go to Q. 2)
- Yes –how much (kg)?
  - 1-5 Score 1}
  - 6-10 Score 2} go to Q.2)
  - 11-15kg Score 3}
  - >15kg Score 4}

2. Has the patient been eating poorly because of decreased appetite?

- No Score 0
- Yes Score 1

Add Score from question 1 and 2 together: Total score:

Record patients risk score on care plan.

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## Appendix 2:

Malnutrition Action Flow chart CDHB version.

### **MALNUTRITION ACTION FLOW CHART**

What is your patients Nutrition Risk score?

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## Malnutrition Screening Tool

**Malnutrition Screening Tool (MST)**

Patient has lost weight in the last 3 months without trying

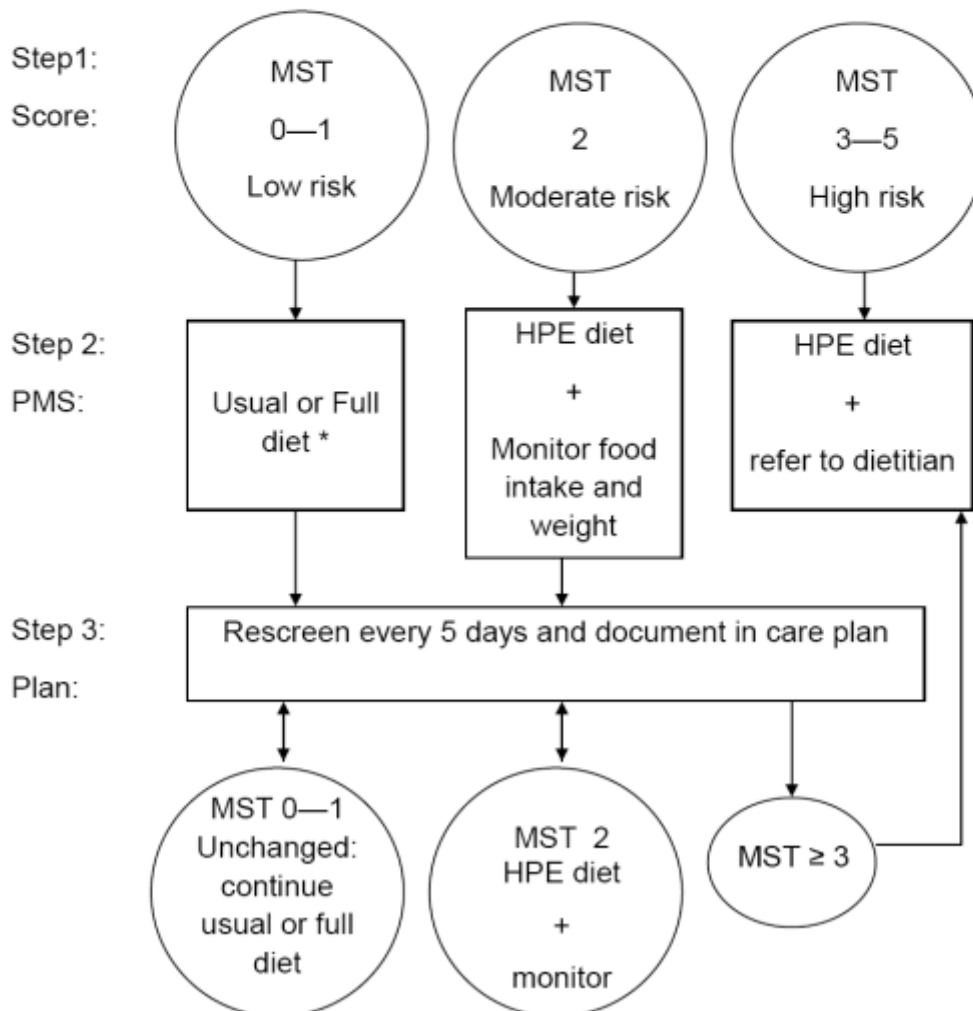
If **no** score 0    If **unsure** score 2    If **yes**, how much weight have they lost (in kg)?

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

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

**Malnutrition Risk Score:** \_\_\_\_\_

Action plan to be documented in care plan



\* Includes special or modified texture diets

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### Appendix 3:

Monitoring and compliance tools that could be completed by nursing and nutrition service staff.

- To audit compliance with the malnutrition screening of all patients on admission and if appropriate dietitian referral was completed.
- Audit of patients 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.
- To monitor the number of patients defined with malnutrition and compare if staff identified and recorded this in patient record.
- To set up a dashboard for patients with malnutrition and other outcomes such as length of stay.

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