



An Roinn Sláinte
Department of Health

Nutrition screening and use of oral nutrition support for adults in the acute care setting

National Clinical Guideline No. 22

Summary 2020

This National Clinical Guideline has been developed by the 'Nutrition screening and use of oral nutrition support for adults in the acute care setting' Guideline Development Group (GDG).

Using this summary National Clinical Guideline

This summary should be read in conjunction with the full version NCEC NCG, the full version is available at: <https://www.gov.ie/en/collection/c9fa9a-national-clinical-guidelines/>. The complete list of references and appendices can be found in the full version. Only relevant appendices are in this summary. This summary NCG applies to all patients (≥ 16 years of age) admitted to an adult ward in the acute care setting in Ireland. The NCG does not cover:

- Provision of normal food and drink in hospitals, including ward environment issues and protected meal times.
- Disease-specific or area-specific nutrition screening for malnutrition risk, for example, intensive care units or liver units.
- Disease-specific or area-specific oral nutrition support, for example, intensive care units, liver units.
- Treatment of eating disorders.
- Treatment of inborn errors of metabolism.
- Treatment of obesity.
- Patients admitted to a children's ward/hospital (under 16 years of age).
- Specialised care specific to pregnancy.
- Nutrition screening or nutrition support in the community.
- Enteral tube feeding.
- Parenteral nutrition.
- Day patients, outpatients, or patients who are admitted as a day admission that are not expected to stay overnight.

This National Clinical Guideline is relevant to all frontline, management and food service/catering staff working in adult acute care settings in Ireland.

Disclaimer

NCEC National Clinical Guidelines do not replace professional judgment on particular cases, whereby the clinician or healthcare professional decides that individual guideline recommendations are not appropriate in the circumstances presented by an individual patient, or whereby an individual patient declines a recommendation as a course of action in their care or treatment plan. In these circumstances the decision not to follow a recommendation should be appropriately recorded in the patient's healthcare record.

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Published by:

The Department of Health, Block 1, Miesian Plaza, 50-58 Lower Baggot Street, Dublin 2, D02 XW14, Ireland.
Tel: +353 (1) 6354000 www.health.gov.ie ISSN 2009-6262.
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Citation text

Department of Health (2020). Nutrition screening and use of oral nutrition support for adults in the acute care setting. (NCEC National Clinical Guideline No. 22).

Available at: <http://health.gov.ie/en/collection/c9fa9a-national-clinical-guidelines/>

Membership of the Guideline Development Group (GDG)

The GDG was chaired by Professor John Reynolds, Consultant Surgeon, and by Dr Declan Byrne, Consultant Geriatrician. This National Clinical Guideline is supported by Irish Health Service Executive (HSE) Acute Operations and HSE Health and Wellbeing Division.

Membership nominations were sought from a variety of clinical and non-clinical backgrounds across Ireland, so as to be representative of all key stakeholders. Irish non-profit nutrition organisations were also represented on the GDG (Table 1). For GDG terms of reference – see Appendix 1.

The National Nutrition Policy and Clinical Guideline Joint Steering and Clinical Advisory Group (JSCAG) provided governance for the NCG development. See Appendix 2 for Membership of the JSCAG. Systematic reviews were carried out by the Health Research Board-Collaboration in Ireland for Clinical Effectiveness Reviews (HRB-CICER).

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1 National Clinical Guideline summary

See Appendix 7 for explanation of grading systems used.

1.1 Summary of recommendations: Nutrition screening for malnutrition risk

Nutrition screening for malnutrition risk: is a rapid, simple and general procedure used by nursing, medical or other staff, often at first contact with the patient, with the purpose of identifying those who are at risk of malnutrition, in order that clear guidelines for action can be implemented and to determine if a detailed nutrition assessment is needed.

Recommendation 1

Screening for malnutrition and the risk of malnutrition should be carried out by healthcare professionals or other healthcare workers with appropriate skills and training.

Grade of recommendation: D (GPP)

Good practice points for implementation

- 1.1 Training on screening for malnutrition risk should be provided for all nursing staff, nursing students and/or other healthcare workers, such as, healthcare assistants, who provide malnutrition screening for hospitalised adult inpatients.
- 1.2 Standardised training aligning to this guideline should be embedded into local training programmes, courses and procedures where possible.
- 1.3 Awareness of the risks and consequences of untreated malnutrition should form part of this training.
- 1.4 Training records should be kept for all staff that perform screening for risk of malnutrition and be available for purposes of internal and external audit. Consider maintaining these records on an Information Communications Technology (ICT) system, for example, Systems Analysis Programme (SAP).
- 1.5 Malnutrition awareness days should be run annually in hospitals.

The following are responsible for implementation of recommendation 1:

- Trained nurses are responsible for malnutrition screening. Healthcare assistants and nursing students with the appropriate knowledge and skills may also carry out malnutrition screening under nursing supervision.
- In-hospital education and training should involve dietitians to 'train the trainers', such as key nursing staff, nurse champions and nurse educators, who can then continue to train other nursing staff, healthcare assistants and student nurses.
- Hospital Nutrition and Hydration Steering Committees should organise annual malnutrition awareness days in collaboration with dietetic departments.
- Hospital staff trained in nutrition screening for malnutrition risk, are responsible for keeping personal training records in accordance with professional CPD practices. Records should also be kept by local hospitals, usually by CNMs and preferably on an ICT system.

Recommendation 2

All hospital inpatients on admission should be screened. Screening should be repeated weekly for inpatients.

Grade of recommendation: D (GPP)

Good practice points for implementation

- 2.1 All wards should have medically approved weighing equipment, that is, a stand-on scales, a chair scales and access to a hoist- or bed-weighing scales.
- 2.2 Each hospital should have access to bariatric weighing equipment and this should be readily available at the point of care when required.
- 2.3 All wards should have a stadiometer to measure height, and a measuring tape (for ulna length, knee height, or mid-upper arm circumference) for less mobile patients.
- 2.4 Patients should be weighed weekly with correctly calibrated weighing equipment.
- 2.5 Height should be measured initially for all patients on admission. In less mobile patients, surrogate techniques can be used to estimate height, or reported height can be used if known by patient or carer.
- 2.6 Screening for risk of malnutrition should take place on admission, or at least within 24 hours of admission.
- 2.7 Patients identified as at risk of malnutrition should be referred to the dietitian for nutrition assessment – see local referral criteria.
- 2.8 Patients identified as at risk of malnutrition should commence on the locally agreed nutrition care pathway without delay (same day).
- 2.9 Malnutrition screening rates should be monitored at local level, for example, 6 monthly, as a minimum and should be available for internal and external audit.
- 2.10 Consider audits of malnutrition risk prevalence at agreed intervals.

The following are responsible for implementation of recommendation 2:

- Hospital managers should ensure that appropriate equipment for malnutrition screening as advised by the Nutrition and Hydration Steering Committee is available on all wards and that access to bariatric equipment is available when needed.
- Ward Clinical Nurse Managers (CNMs) are responsible for general maintenance and correct storage of equipment needed for malnutrition screening, and for reporting damaged equipment that needs repair or replacement, per local hospital procedure.
- Calibration of weighing scales should take place yearly, or as per local service agreement/contract.
- Ward CNMs should check malnutrition screening rates and timeliness of screening (within 24 hours of admission), for example, monthly checks.
- Hospital Nutrition and Hydration Steering Committees should audit malnutrition screening rates. Results reporting and action taken should be in keeping with each hospital's overarching accountability mechanism and governance framework. This information should be made available to the local Quality and Safety Directorate to inform the national data as required.
- Hospital Nutrition and Hydration Steering Committees are responsible for local hospital audit of malnutrition risk prevalence rates. This information should be made available to the local Quality and Safety Directorate to inform the national data as required.

Recommendation 3

Use a validated screening tool, e.g. Malnutrition Screening Tool (MST) or Malnutrition Universal Screening Tool (MUST), to screen for malnutrition risk in all adults admitted to acute hospitals. If one of the validated tools from Table 2 is currently being used, there is no need to change practice.

Quality of evidence: Very Low

Strength of recommendation: Strong

Table 2. Malnutrition screening tools

MNA-SF	Mini Nutritional Assessment - Short Form (for older adults, e.g. >60 years)
MST	Malnutrition Screening Tool
MUST	Malnutrition Universal Screening Tool
NRS-2002	Nutrition Risk Score 2002

Good practice points for implementation

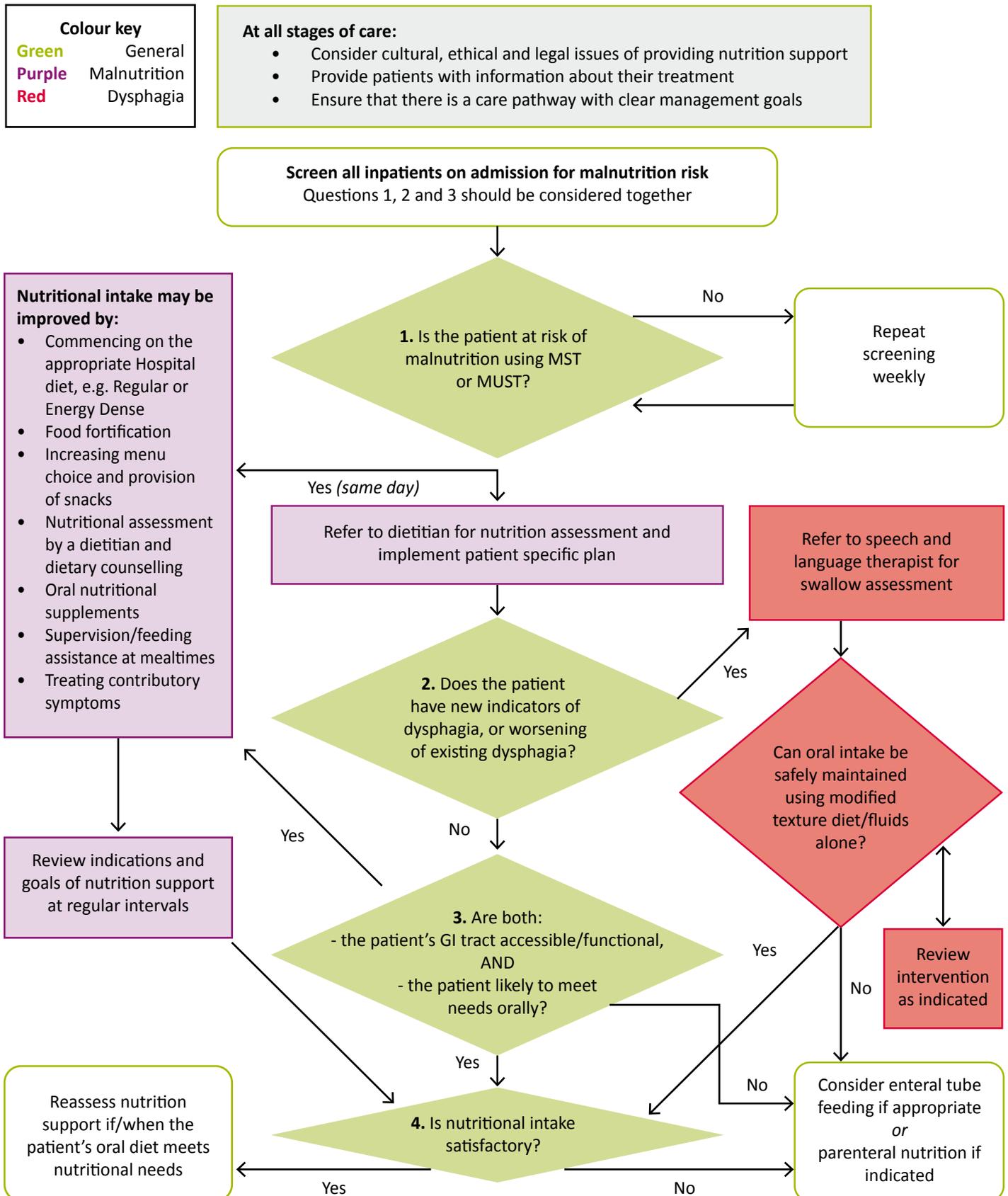
- 3.1 MST or MUST should be used for screening for risk of malnutrition in general medical and surgical patients, unless MNA-SF or NRS-2002 is already implemented.
- 3.2 Disease-specific, or area-specific malnutrition screening tools validated for use in specific patient populations, may replace the tools recommended above if clinically indicated.
- 3.3 The malnutrition screening tool chosen should have an associated explicit plan of action for patients who are identified as at malnutrition risk – see Figure 3 and Figure 4.
- 3.4 The malnutrition screening tool and result should be incorporated into standard processes, e.g. nursing admission forms, or electronic health records.
- 3.5 Fidelity to the malnutrition screening tool used should be measured locally and made available for internal and external audit.

The following are responsible for implementation of recommendation 3:

- Each Hospital Nutrition and Hydration Steering Committee should decide whether to use either MST or MUST across all hospital wards (one tool per hospital), in conjunction with Clinical Nurse Managers and the Dietitian Manager.
- The multidisciplinary team informed by clinical nutrition experts, such as dietitians, should decide if a disease-specific or area-specific malnutrition screening tool is more appropriate taking into consideration benefits and harms.
- CNMs should perform spot checks to ensure fidelity to the malnutrition screening tool used on the ward.
- Hospital Nutrition and Hydration Steering Committees should monitor fidelity to the screening tool hospital-wide, as part of the nutrition audit process.

Notes:

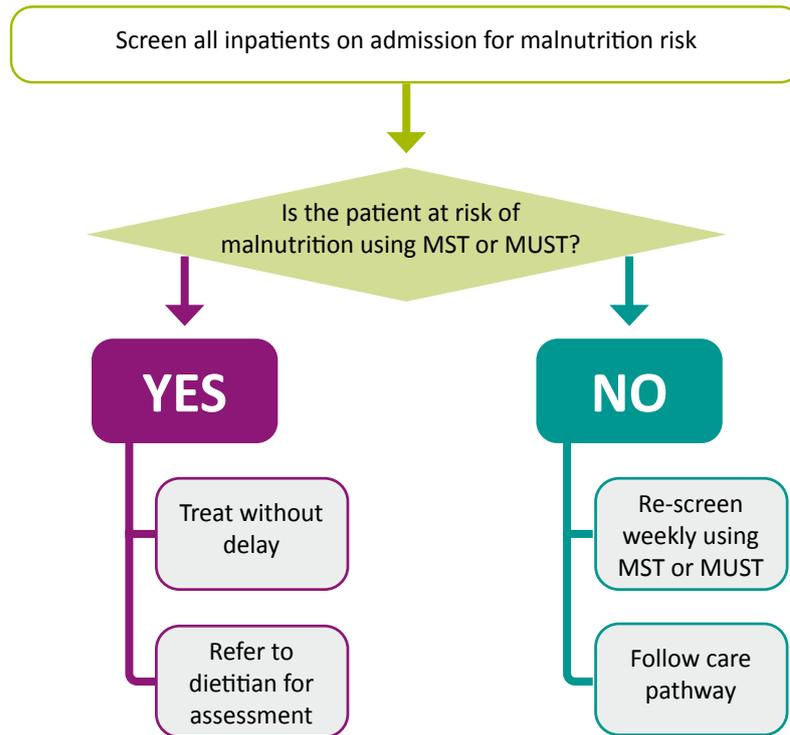
- i. See Appendix 7 for grading system used by NICE (7a) for Recommendations 1 and 2, and the GRADE approach (7b) used for Recommendation 3.
- ii. Fidelity in 3.5 is the degree to which the malnutrition screening tool is delivered exactly as set out and intended by those who developed it.



Notes:

- i. Refer to local referral criteria to the dietitian for MST and MUST.
- ii. Ask question 2 where patient has not already had a swallow assessment as part of treatment pathway.
- iii. For appropriate diet, see HSE Food Nutrition and Hydration Policy algorithm – Appendix 14.
- iv. See International Dysphagia Diet Standardisation Initiative (IDDSI) Framework – Appendix 15.

Figure 3. HSE Malnutrition Risk Management Pathway for Hospitalised Adults (adapted from NICE CG32)



Treatment Options *(alphabetical order)*

- Commencing on the appropriate hospital diet, e.g. Regular or Energy Dense
- Food fortification
- Increasing menu choice and provision of high energy snacks
- Oral nutritional supplements
- Supervision/feeding assistance at mealtimes
- Treating contributory symptoms

Key: MST - Malnutrition Screening Tool, MUST - Malnutrition Universal Screening Tool

Notes:

- i. Refer to local policy for treatment options
- ii. Refer to dietitian and treat on same day as screen.
- iii. Refer to local referral criteria to the dietitian for MST and MUST.

Figure 4. Inpatient malnutrition risk screening and treatment pathway

1.2 Summary of recommendations: Oral nutrition support

Oral nutrition support includes:

- Food fortification - food fortified with protein, carbohydrate and/or fat (with or without minerals or vitamins);
- The provision of oral nutritional supplements (ONS) (products used in oral nutrition support given with the aim to increase nutritional intake) as extra nutrition to regular meals;
- Changing meal patterns, the provision of additional snacks and/or the provision of dietary advice to patients on how to increase overall nutritional intake.

1.2.1 General Indications for oral nutrition support

Recommendation 4

Healthcare professionals should consider using oral, enteral or parenteral nutrition support, alone or in combination, for people who are either malnourished or at risk of malnutrition. Potential swallowing problems (dysphagia) should be taken into account.

Grade of recommendation: D (GPP)

Recommendation 5

Healthcare professionals should ensure that people having nutrition support, and their carers, are kept fully informed about their treatment. They should also have access to appropriate information and be given the opportunity to discuss diagnosis and treatment options.

Grade of recommendation: D (GPP)

Recommendation 6

Healthcare professionals should consider oral nutrition support to improve nutritional intake for people who can swallow safely and are malnourished or at risk of malnutrition.

Grade of recommendation: A

Recommendation 7

Healthcare professionals should ensure that the overall nutrient intake of oral nutrition support offered contains a balanced mixture of protein, energy, fibre, electrolytes, vitamins and minerals.

Grade of recommendation: D (GPP)

Recommendation 8

If there is concern about the adequacy of micronutrient intake, a complete oral multivitamin and mineral supplement providing standard requirements, should be considered by healthcare professionals with the relevant skills and training in nutrition support who are able to determine the nutritional adequacy of a patient's dietary intake.

Grade of recommendation: D (GPP)

Recommendation 9

The prescription should be reviewed according to the person's progress, and care should be taken when:

- using food fortification which tends to supplement energy and/or protein without adequate micronutrients and minerals
- using supplements that meet full energy and protein needs, as they may not provide adequate micronutrients and minerals.

Grade of recommendation: D (GPP)

Recommendation 10

Oral nutrition support should be stopped when the patient is established on adequate oral intake from normal food.

Grade of recommendation: D (GPP)

Good practice points for implementation of recommendations 4 to 10

- 4.1 Oral nutrition support should commence without delay in patients identified as at risk of malnutrition in accordance with the locally agreed nutrition care pathway, before nutrition assessment if necessary – see Figure 3 for care pathway and Figure 4 for treatment options.
- 4.2 Once a nutrition assessment is completed, the patient-specific nutrition care plan should be implemented.
- 4.3 Goals of the nutrition care plan should be re-evaluated based on monitoring a patient's clinical and nutritional progress.
- 4.4 A range of oral nutrition support options should be available in each hospital.
- 4.5 Local hospital guidelines on management of refeeding syndrome should be used in conjunction with the nutrition care pathways outlined in this guideline.
- 4.6 Local policy should be followed for management of patients with complex nutritional requirements, for example, requiring enteral tube feeding or parenteral nutrition in addition to oral nutrition support.
- 4.7 Supervision and assistance at mealtimes should be provided when required regardless of malnutrition risk.
- 5.1 A Food Nutrition and Hydration Information leaflet should be available to all admitted patients (see Appendix 10).
- 6.1 Oral nutritional supplements (ONS) should only be used in the context of evidence-based pathways, such as Figures 3 and 4.
- 6.2 Food intake records (semi-quantitative) should be commenced on patients identified as at risk of malnutrition while awaiting nutrition assessment, to monitor nutritional intake.
- 6.3 Designated healthcare professionals with the necessary knowledge and expertise should chart ONS on hospital wards to ensure patients are offered the correct types and volume of ONS in a timely manner.

- 8.1 Micronutrient supplementation, where indicated, should be in line with individual requirements, using the local hospital formulary, and taking into consideration possible interactions with other treatments, as well as the expected duration of therapy.
- 10.1 Reassessment by a dietitian is needed to determine if/when a patient's oral diet is meeting nutritional needs.
- 10.2 As outlined in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018) (Section 2.2, recommendation 38), the discharge plan/letter should include information on nutritional status, dietary requirements, requirement for oral nutritional supplements and/or thickening agents including type, amount and duration required post-discharge, and follow-up arrangements.
- 10.3 As outlined in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018) (Section 2.2, recommendation 39), a summary of the patient's nutritional status, including the most recent nutrition screening result and BMI (if appropriate), and individualised nutrition care plan (if appropriate) should be included in the medical discharge letter to the GP.

The following are responsible for implementation of recommendation 4 to 10:

- Medical, nursing and dietetic members of the multidisciplinary team are responsible for commencing oral nutrition support if indicated in accordance with the nutrition treatment care pathway.
- All multidisciplinary team members, particularly doctors, nurses and dietitians, are responsible for considering refeeding syndrome risk.
- The multidisciplinary team, particularly medical, nursing, dietetic, SLT (for patients with dysphagia) and pharmacy members, are responsible for monitoring patients on oral nutrition support.
- The nurse is responsible for completing food intake records, unless the patient is capable and willing to do this.
- The dietitian has the necessary knowledge and expertise to chart ONS on hospital wards, if charting is consistent with local policy and procedures under the governance of the Hospital's Drug and Therapeutics Committee.
- The dietitian has the necessary skills and training to assess adequacy of energy, protein and micronutrient intake in patients on, or being considered for, oral nutrition support, or for the discontinuation of support.
- When a general micronutrient supplement is indicated, the multidisciplinary team (medical doctor, pharmacist, dietitian, +/- SLT +/- specialist nurse) should consider the most appropriate product, dose, method of administration and duration of therapy.
- The dietitian is responsible for documenting nutrition assessment results and the resulting nutrition care plan in the medical chart or electronic health record.
- The nurse is responsible for documenting the nutrition plan in nursing notes.
- The ward Clinical Nurse Manager (CNM) is responsible for ensuring ward supplies of the Food Nutrition and Hydration Patient Information Leaflet.
- The ward CNM in collaboration with the dietitian and/or pharmacist is responsible for ensuring adequate ward supplies of oral nutritional supplements.

- Healthcare catering/food service staff in collaboration with dietetic staff are responsible for organising a menu that incorporates food fortification for patients if indicated.
- The discharging medical doctor is responsible for including nutritional data in the discharge letter to the GP, and for prescribing oral nutritional supplements on discharge prescription if required.
- The dietitian is responsible for recommending dietetic follow-up of nutritional care for patients who have been assessed and commenced on oral nutrition support.

1.2.2 Oral nutrition support in patients with dysphagia (swallowing impairment)

Recommendation 11

People who present with any obvious or less obvious indicators of dysphagia listed in Table 3 should be referred to healthcare professionals with relevant skills and training in the diagnosis, assessment and management of swallowing disorders.

Grade of recommendation: D (GPP)

Table 3. Indicators of dysphagia

Obvious indicators of dysphagia	Less obvious indicators of dysphagia
<ul style="list-style-type: none"> - Difficult, painful chewing or swallowing - Regurgitation of undigested food - Difficulty controlling food or liquid in the mouth - Drooling - Hoarse voice - Coughing or choking before, during or after swallowing - Globus sensation - Nasal regurgitation - Feeling of obstruction - Unintentional weight loss - for example, in people with dementia 	<ul style="list-style-type: none"> - Change in respiration pattern - Unexplained temperature spikes - Wet voice quality - Tongue fasciculation (may be indicative of motor neurone disease) - Xerostomia - Heartburn - Change in eating habits - for example, eating slowly or avoiding social occasions - Frequent throat clearing - Recurrent chest infections - Atypical chest pain

Recommendation 12

Healthcare professionals should recognise that people with acute and chronic neurological conditions and those who have undergone surgery or radiotherapy to the upper aero-digestive tract are at high risk of developing dysphagia.

Grade of recommendation: D (GPP)

Recommendation 13

When managing people with dysphagia, healthcare professionals with relevant skills and training in the diagnosis, assessment and management of swallowing disorders should consider:

- the risks and benefits of modified oral nutrition support and/or enteral tube feeding
- the factors listed in Table 4.

Grade of recommendation: D (GPP)

Table 4. Factors to be considered before modification of nutrition support and hydration in people with dysphagia

<ul style="list-style-type: none"> - Recurrent chest infections - Mobility - Dependency on others for assistance to eat - Perceived palatability and appearance of food or drink - Level of alertness - Compromised physiology 	<ul style="list-style-type: none"> - Poor oral hygiene - Compromised medical status - Metabolic and nutritional requirements - Vulnerability (for example, immunocompromised) - Comorbidities - Prognosis
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Recommendation 14

People with dysphagia should have a drug review to ascertain if the current drug formulation, route and timing of administration remains appropriate and is without contraindications for the feeding regimen or swallowing process.

Grade of recommendation: D (GPP)

Recommendation 15

Healthcare professionals with relevant skills and training in the diagnosis, assessment and management of swallowing disorders should regularly monitor and reassess people with dysphagia who are having modified food and liquid until they are clinically stable.

Grade of recommendation: D (GPP)

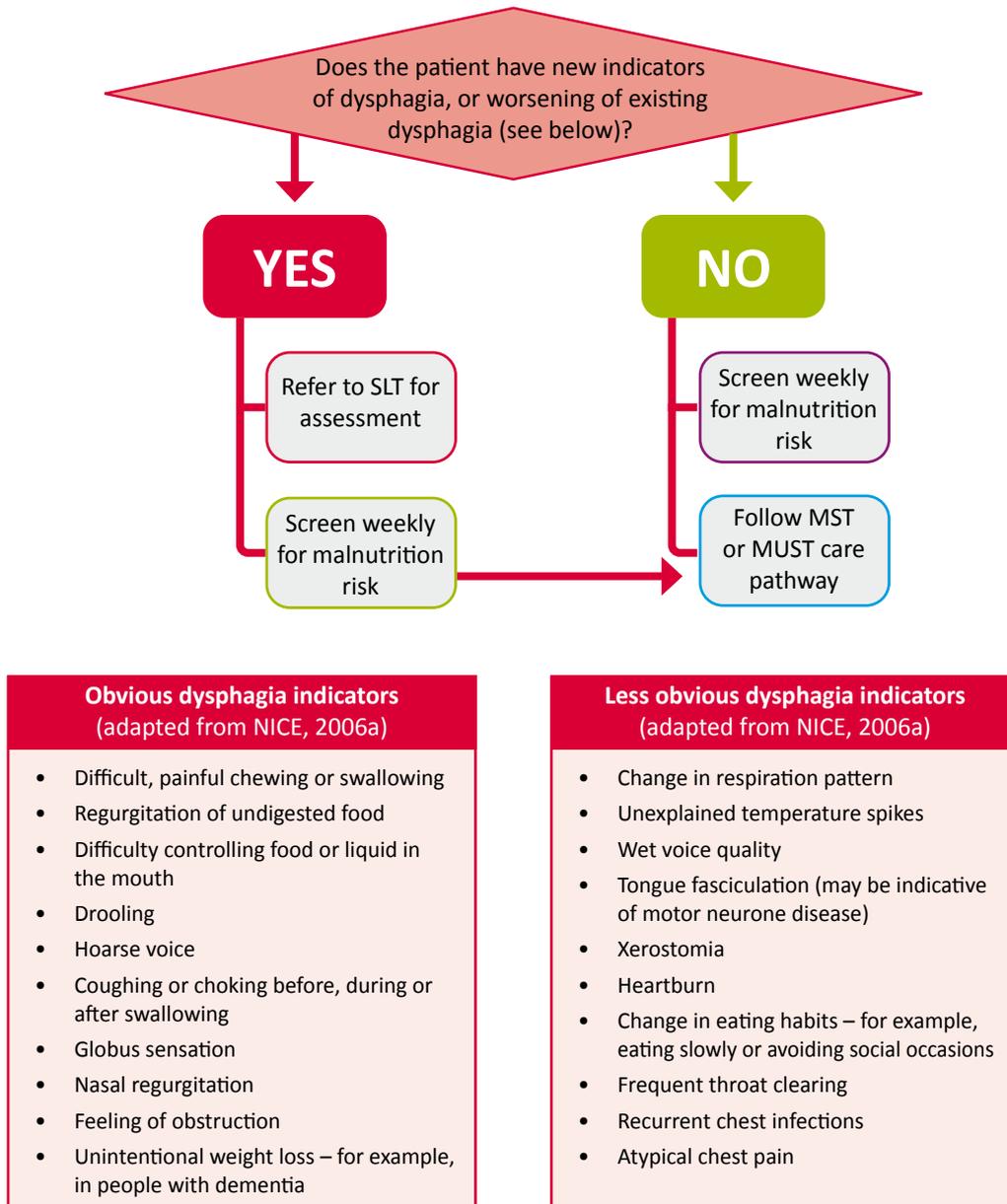
Good practice points for implementation of recommendations 11 to 15

- 11.1 Patients with new or worsening indicators for oropharyngeal dysphagia should be referred to a speech and language therapist (SLT) for assessment.
- 11.2 Patients with new indicators for dysphagia who are identified to be at risk of malnutrition should be referred to a dietitian for nutrition assessment.
- 11.3 Oral nutritional supplements prescribed must be in line with current recommendations for safe swallowing.
- 14.1 Patients with new indicators for dysphagia should be referred to a clinical pharmacist for a regular review of their medication until they are clinically stable.

- 15.1 Medical staff, nursing staff, SLTs, dietitians, healthcare assistants, food service/catering managers, chefs and food service support staff should ensure that appropriate modified texture diets and oral nutrition support are provided to patients with dysphagia identified as at risk of malnutrition, using effective communication channels and referral pathways (see Figure 5 for sample malnutrition risk and dysphagia pathway). See Section 5 of the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).
- 15.2 Texture modified diets should be prepared according to the relevant standard (Section 5.2) in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).

The following are responsible for implementation of recommendation 11 to 15:

- Speech and language therapists have the relevant skills and training to diagnose, assess and manage patients with swallowing disorders.
- Gastroenterologists are responsible for assessment, diagnosis and management of oesophageal dysphagia.
- The medical team in liaison with a clinical pharmacist is responsible for ascertaining if the current drug formulation, route and timing of administration are appropriate.
- Pharmacists have the relevant knowledge and expertise to advise on drug formulation, route and timing of administration.
- SLTs should reassess patients with new indicators for dysphagia or worsening of existing dysphagia until clinically stable.
- CNMs and nurses ensure that patients on modified texture diets receive the correct meal and fluid consistency.
- Food service/catering departments, in liaison with dietetic and SLT departments, should ensure texture modified diets provided comply with the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).



Key: SLT: Speech and Language Therapist; MST: Malnutrition Screening Tool; MUST: Malnutrition Universal Screening Tool.

Figure 5. Inpatient malnutrition risk and dysphagia pathway

1.2.3 Oral nutrition support in surgical patients

Recommendation 16

Peri-operative oral nutrition support should be considered for surgical patients who can swallow safely and are malnourished.

Grade of recommendation: B

Recommendation 17

Healthcare professionals should consider giving post-abdominal surgery patients who can swallow safely, and in whom there are no specific concerns about gut function or integrity, some oral intake within 24 hours of surgery. The patient should be monitored carefully for any signs of nausea or vomiting.

Grade of recommendation: A

Good practice points for implementation of recommendations 16 to 17

- 16.1 An evidence-based fasting policy/procedure/protocol/guideline (PPPG) should be available in all hospitals.
- 16.2 Fasting for tests, therapies and procedures should be kept to a minimum, as specified in Section 2, recommendation 26, of the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).
- 16.3 Consider use of oral pre-operative carbohydrate treatment pre-surgery if implementing an Enhanced Recovery After Surgery (ERAS) programme, as specified in Section 2, recommendation 27, of the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).
- 17.1 Audit of fasting times and procedures should be considered at ward and hospital levels.
- 17.2 Patients with expected or unexpected delays in returning to oral diet, for example, for five days or more, should be referred to the dietitian for nutrition assessment and possible alternative route of nutrition support until established on oral diet.

Notes:

- i. See Appendix 7(a) for NICE grading systems used for Recommendations 4 to 17.
- ii. 'Prescription' in Recommendation 9 refers to food fortifying agents and oral nutritional supplements.
- iii. The term 'normal food' in Recommendation 10 refers to 'oral diet' i.e. regular hospital or therapeutic diet (meals and snacks); if dysphagia is present – see recommendations 11 to 15.
- iv. All recommendations other than Recommendation 3 are adapted from NICE Clinical Guideline 32 (2006a). Wording has been changed in six of the original NICE recommendations, as follows:
 - Recommendation 1 – addition of 'or other healthcare workers'.
 - Recommendation 4 – addition of the word 'dysphagia'.
 - Recommendation 8 – addition of 'standard requirements' in place of 'the reference nutrient intake for all vitamins and trace elements'.
 - Recommendation 9 – removed the words 'feed' and 'when only used in a supplementary role'.
 - Recommendation 13 (Table 4) - added 'Prognosis'.
 - Recommendation 15 – addition of the word 'clinically'.
- v. Good practice points for implementation 10.2, 10.3, 15.1, 15.2, 16.2 and 16.3 are aligned with, or refer to, the Food Nutrition and Hydration Policy (HSE, 2018b). These will be updated if any changes are made to the original policy.

Reference list is available in the full guideline document.

The following are responsible for implementation of recommendation 16 to 17:

- Nutrition and Hydration Steering Committees are responsible for developing a fasting Policies/ Procedures/Protocols/Guidelines (PPPG) for each hospital with input from the relevant key stakeholders.
- The multidisciplinary team is responsible for implementing agreed fasting PPPG within the particular patient populations under their care.
- The multidisciplinary team is responsible for implementing ERAS protocols if used in a hospital.
- The CNM or Clinical Nurse Specialist in liaison with the dietitian and/or pharmacist ensures an adequate ward supply of oral pre-operative carbohydrate supplements, if used in the context of an ERAS programme.
- Surgical teams or ward nurses, depending on local referral pathways, are responsible for referring patients to the dietitian, if there is a delay in returning to PO diet, for example, for five days or more.

1.3 Proposed education and training framework

See full guideline for more information.

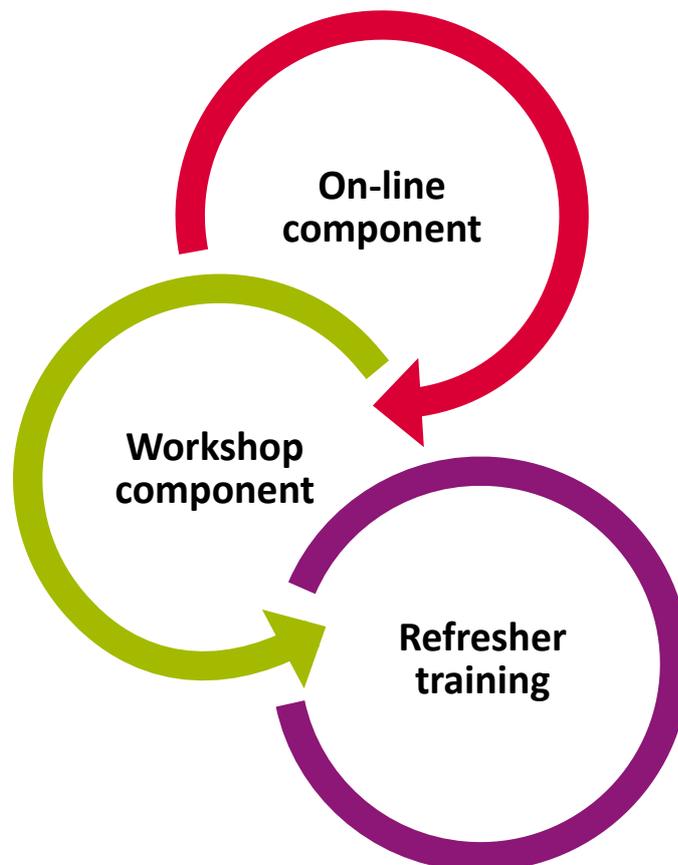


Figure 6. Proposed framework for education and training

2

Development of the National Clinical Guideline

See Appendix 17 for glossary of terms and abbreviations.

2.1 Background

Malnutrition has been consistently found to increase mortality and morbidity in all care settings and in all age groups (see Section 3.0 for definition criteria and categorisation of malnutrition). The mean prevalence of malnutrition risk in patients on admission to Irish hospitals is 30% (Russell and Elia, 2011; Russell and Elia, 2012). Prevalence is based on two major studies conducted in 27 Irish hospitals in 2010 (Russell and Elia, 2011) and 2011 (Russell and Elia, 2012), in which approximately 30% (32.8% of 1601 patients in 2010; 28.2% in 1100 patients in 2011) of patients screened using the Malnutrition Universal Screening Tool (MUST) had a positive risk score for malnutrition, with 74% in the high risk category. Malnutrition risk was common in all age groups and diagnostic categories with no significant difference between men and women when adjusted for age. However, risk increased with age, and prevalence was higher in those with gastrointestinal disease (48%), respiratory disease (38%) and neurological disease (32%). It was also higher in patients with cancer than those without (44% versus 34%) and in those admitted from nursing homes rather than from their own homes (54% versus 30%), (Russell and Elia, 2011).

Since these patients spend an estimated 30% longer in hospital (Elia and Russell, 2009) compared with patients not at risk, they account for an estimated 36% of bed days each year, which would be the expected prevalence at ward level (Rice and Normand, 2012). It can be concluded, therefore, that malnutrition is a prevalent problem in Ireland that affects at least 1 in 3 patients in acute care settings, requiring some form of nutrition support.

In comparison with Europe, in which malnutrition is estimated to affect approximately 5% of the adult population at any point in time (Ljungqvist and de Man, 2012), the total number of adults affected in the Republic of Ireland is estimated to be around 3% of the total population, that is, 140,000 adults with 52% over 65 years of age (Rice and Normand, 2012). The lower prevalence is due to demographic differences in the proportion of the population over 65 years of age and not to better management. In a recent international systematic review, Crichton et al (2019) showed that older people receiving homecare services in the community had the highest prevalence of malnutrition (as determined by Mini Nutritional Assessment, Patient-Generated Subjective Global Assessment or Subjective Global Assessment) at 14.6%.

A recent European systematic review in older adults (Leij-Halfwerk et al., 2019) demonstrated a 28% pooled prevalence rate of high malnutrition risk across all countries using a variety of malnutrition screening tools for the hospital setting. Prevalence rates in Irish hospitals are similar to other countries in Europe in which nutrition screening programmes are not routinely implemented, but higher than in countries such as the Netherlands, which have achieved impressive reductions in malnutrition since introducing a national programme in 2007.

Whilst the majority of patients at risk of malnutrition are based in community, the concentration of patients likely to require nutrition support is greatest in acute care settings due to the close relationship between chronic and acute inflammatory disease and poor nutritional status and/or conditions that preclude normal eating. Inadequate dietary intake is frequently seen in hospitalised adults and is strongly associated with poor patient outcomes. 'Nutrition Day' is an international, standardised one-day multinational cross-sectional audit of hospitalised adults with a one-month follow-up that includes food intake data. Results over a 9 year period showed that the majority of the 91,245 adult patients (53.3%)

surveyed, ate one half or less of their main meal, with 5.8% eating nothing at all (although diet was allowed) (Schindler et al., 2016). Although Irish data was not included in this audit, Western Europe had the highest patient representation (32% of all patients).

2.2 Clinical and financial impact of malnutrition

2.2.1 Summary of clinical impact of malnutrition

Malnutrition, particularly in the face of inflammation, adversely affects every system in the body and is associated with impaired cognitive function, muscle function, cardiovascular function, renal function, respiratory function, gastrointestinal function, thermoregulation, immune function, wound healing and quality of life (van Bokhorst-de van der Schueren et al., 2011; Norman et al., 2008). It is also important to note that irrespective of underlying nutritional status, inadequate recent dietary intake has been shown to affect metabolic, psychological and physical function (in the presence or absence of disease, and in surgical patients) and to reduce collagen deposition, with implications for effective wound healing and recovery. A summary of the key physical and psychosocial effects of undernutrition is presented in Table 5 below.

Table 5. Key physical and psychosocial effects of malnutrition (adapted from Elia and Russell, 2009)

Malnutrition effects	Physical and psychosocial impact
Impaired immune response	Impaired ability to fight infection.
Reduced muscle strength and fatigue	Inactivity and reduced ability to work, shop, cook and self-care. Poor muscle function may result in falls, and poor respiratory muscle function may result in poor cough pressure - delaying expectoration and recovery from chest infection.
Inactivity	In bed-bound patients this may result in pressure ulcers and venous blood clots.
Impaired temperature regulation	Hypothermia (low body temperature).
Impaired wound healing	Increased wound-related complications, such as infections and poor healing fractures.
Impaired ability to regulate salt and fluid	Predisposes to over-hydration or dehydration.
Impaired psycho-social function	Apathy, depression, introversion, self-neglect, hypochondria*, loss of libido and deterioration in social interactions.

Footnote:

*Hypochondria - excessive and undue worry about having a serious illness when this illness is not present.

One of the known risks associated with treating malnutrition is the development of *refeeding syndrome*. Patients can develop fluid and electrolyte disorders, especially hypophosphatemia, along with neurological, pulmonary, cardiac and neuromuscular complications. In one major acute teaching hospital in Dublin, a high risk of refeeding syndrome was demonstrated in 20-22% of consecutive non-elective admissions from the Hospital's Emergency Department, over two separate study periods (Boland et al., 2013).

Malnutrition risk (using MUST) has been shown to double the risk of mortality in hospital patients and to triple mortality in older patients in hospital (Stratton et al., 2006). The findings from a large multicentre study showed that patients with malnutrition risk (using other screening tools for identifying malnutrition risk) had a twelvefold increase in hospital mortality (Sorensen et al., 2008), whereas a prospective cohort study of newly admitted adult patients (18–74 years of age) to an acute tertiary hospital (Lim et al., 2012) found that the mortality rate was significantly higher in those assessed to be malnourished, at 1 year (34.0% versus 4.1%), 2 years (42.6% versus 6.7%) and 3 years (48.5% versus 9.9%); $p < 0.001$ for all. Malnutrition was a significant predictor of mortality (adjusted hazard ratio [HR] of 4.4 [95% CI 3.3–6.0], $p < 0.001$).

Results from a large, international, multicentre study looking at malnutrition risk in 5051 patients in 26 hospitals across 12 countries (Sorensen et al., 2008), demonstrated that hospital patients identified to be at risk of malnutrition experience significantly increased complication rates compared with well-nourished patients (30.6% versus 11.3%, $p < 0.001$). This is consistent with findings of studies to evaluate the impact of malnutrition on specific complications, such as pressure ulcers (Tappenden et al., 2013).

Similarly, the rate of healthcare-associated infections (HCAI) has consistently been found to be more than three times greater among malnourished versus non-malnourished patients (Fry et al., 2010; Schneider et al., 2004, Sorensen et al., 2008). Fry et al (2010) found undernutrition to be an independent risk factor for HCAI (odds ratio [OR] 3.0) in a retrospective analysis of over 900,000 patient records, alongside odds ratios for pressure ulcer, Methicillin-resistant Staphylococcus aureus (MRSA) and catheter-associated urinary tract infection of 3.8, 2.9 and 5.1, respectively. A recent single-centre cross-sectional Irish study (Fitzpatrick et al., 2019) demonstrated that patients with HCAI were more likely to be at high risk of malnutrition (MUST ≥ 2) (OR 4.3, $p < 0.001$, CI 1.7 to 11.2). A higher MUST score was a significant predictor of a patient having HCAI.

Treatment effectiveness has also been shown to be adversely affected by malnutrition. Malnourished patients receiving chemotherapy have more pronounced treatment-related side-effects (Aaldriks et al., 2013). Significant muscle loss during chemotherapy was prognostic of poor survival in a recent Irish study (Daly et al., 2018). It is estimated that 10% to 20% of cancer deaths can be attributed to malnutrition rather than to the underlying malignancy (Pressoir et al., 2010; Wie at al., 2010). Malnutrition is associated with loss of weight and muscle, reduced immune competence and more infections, psychosocial stress, lower quality of life, and greater risk of mortality in cancer patients (Arends et al., 2017). Older individuals with malnutrition are also more likely to experience poor quality of life (Kvamme et al., 2011; Rasheed and Woods, 2013).

2.2.2 Summary of financial impact of malnutrition

In both prospective and large scale retrospective studies across a range of hospital inpatients in different countries, malnourished patients (with a variety of conditions) have been consistently found to use significantly more healthcare resources than well-nourished patients in terms of increases in length of hospital stay; increases in readmission rates and delays in returning home/need for institutional care (Lim et al., 2011; Marco et al., 2011; Melchior et al., 2012; Pirlich et al., 2006; Schindler et al., 2010).

It is estimated that the annual public healthcare cost of disease-related malnutrition in Ireland is €1.42 billion euro, or more than 10% of the total annual healthcare budget (Rice and Normand, 2012). On a European scale, this cost rises to €170 billion euro (Ljungqvist and de Man, 2012). The majority of these costs are due to significantly increased healthcare utilisation by malnourished compared with non-malnourished patients, with acute care costs accounting for over 60% of the total and nursing home care another 25% to 30%, the remainder relating to primary care costs (around 8% to 10%) and nutritional interventions between 2% and 4%. It is estimated that malnourished patients (those with risk score according to MUST criteria) account for 1.1 million inpatient bed days, of which 251,000 are the additional bed days resulting from longer length of hospital stay (Rice and Normand, 2012).

2.2.3 Financial impact of interventions to prevent/treat malnutrition

Whereas malnutrition has been established as a serious and costly problem for patients and the healthcare system, screening and appropriate intervention has been shown to be cost-effective and associated with cost savings (National Institute for Health and Care Excellence (NICE), 2006a). NICE Clinical Guideline (CG) 32 (2006a) concludes that improving systematic screening, assessment and treatment of malnutrition would result in better nourished patients and this would lead to reduced complications, admissions and length of stay. NICE subsequently conducted a budget impact analysis of implementing NICE CG32, updated in 2012 (NICE, 2012). They calculated the potential savings (based on a 10% reduction in malnutrition in hospital) at £71,000 per 100,000 patients, highlighting that the benefits achieved by earlier detection and treatment of patients with oral nutritional supplements (ONS) or other forms of nutrition support, would more than pay for the costs of implementing screening throughout the healthcare system, the increased number of dietetic assessments and nutrition support. A more detailed assessment conducted by the National Institute for Health Research (NIHR) has confirmed the findings of the NICE report, but has identified greater potential for savings, exceeding £170,000 per 100,000 population (Elia, 2015).

A systematic review of the cost effectiveness of using standard ONS in the hospital setting found a mean net cost saving of 12.2% when patients receiving ONS were compared to those receiving routine care (Elia et al., 2016). In 2015, NICE ranked the implementation of its CG32 (NICE, 2006a) as the third greatest potential means of achieving net cost savings for the National Health Service (NHS) in the United Kingdom, having reviewed 400 of its clinical guidelines, technological assessments and quality standards, of which just 39 were cost saving. The potential for savings in the Irish healthcare system are equally substantial.

The full implementation of this guideline produces a potential significant net cost saving. Refer to Annex 3 for Budget Impact Analysis details.

2.3 Rationale for this National Clinical Guideline

Nutrition and hydration in the acute hospital setting has been recognised as an important barometer of the quality and safety of services. Recent Health Service Executive's (HSE) National Service Plans considered nutrition and hydration as a key priority with a number of work-streams being delivered across several HSE divisions. This included a key action to develop a Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b) - recently published. As part of this work the 'Food and Nutritional Care in Hospitals, Guidelines for preventing Under-Nutrition in Acute Hospital' (Department of Health (DOH), 2009) was highlighted as requiring review and following discussion with the Department of Health, Chief Medical Officer's office, a recommendation was made that this could be considered as an opportunity to develop a National Clinical Guideline. The current National Clinical Guideline (henceforth known as NCG in this document) was developed in alignment with the HSE's Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals.

A key recommendation in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b) is that screening for malnutrition and risk of malnutrition using a validated tool should be implemented for each patient on admission. This is consistent with Health Information and Quality Authority (HIQA) report on the review of nutrition and hydration care in public acute hospitals (HIQA, 2016). HIQA assessed public acute hospitals against the National Standards for Safer Better Healthcare (HIQA, 2012) to determine if they were adequately assessing, managing and evaluating the nutrition and hydration needs of patients. HIQA reported that 21% of hospitals did not screen for malnutrition risk at all. A key recommendation from this report is that all patients admitted to hospital should be screened for risk of malnutrition. HIQA advocates a nutrition screening programme which facilitates appropriate nutrition assessment and treatment of patients identified as at risk of malnutrition, supported by nutrition education and training for healthcare staff.

Multiple international evidence-based guidelines and standards from Europe (NICE, 2006a; Gomes et al., 2017; Kondrup et al., 2003b; Volkert et al., 2019; Weimann et al., 2017), Australia (Dietitians Association of Australia (DAA), 2009), America (Mueller et al., 2011; Ukleja, 2018), and elsewhere, support the need to screen for malnutrition followed by an appropriate care pathway to ensure early intervention.

Prevention of malnutrition by establishing risk as early as possible is essential to prevent the adverse consequences and reduce costs. Given that malnutrition is prevalent, associated with significant adverse events, relatively easy and quick to identify and treat by those with adequate training in methods of nutrition support, failure to establish systems for its detection and appropriate treatment with nutrition support place service users at increased avoidable risk. If patients are not screened for risk of malnutrition, then they are not being identified and malnutrition prevention and treatment strategies cannot be implemented in a timely fashion. If left untreated, approximately two-thirds of patients with risk of malnutrition will experience a further decline in their nutritional status during their inpatient stay (Braunschweig et al., 2000). Furthermore, unless systems are in place in hospitals to detect and treat patients at risk, nutritional status will continue to be adversely affected by underlying disease, inflammation, medical treatments, associated gastrointestinal symptoms and fasting for procedures and surgery (Stratton and Elia, 2011).

There is also potential for inappropriate or incorrect use of nutrition support by staff that lack the necessary training to ensure safe, effective nutritional care of patients. Providing nutrition support to those who are not at risk is wasteful of resources and may be detrimental to the individual. This guideline provides guidance on indications, as well as a framework for safe and effective delivery of oral nutrition support to those who need it. The use of guidelines per se in clinical practice is known to be associated with improved outcomes for patients (Heyland et al., 2010; Martin et al., 2004).

The need for a national clinical guideline to ensure a standardised approach to the prevention, identification and treatment of malnutrition risk is clear to underpin the HSE's service plan priorities and to ensure compliance with the National Standards for Safer Better Healthcare (HIQA, 2012). This is also consistent with the Healthy Ireland Framework which espouses to improve the health and wellbeing of the nation through real and measurable change (DOH, 2013).

2.4 Aim and objectives

2.4.1 Overall aim

The ultimate aim of this clinical guideline is to improve patient health outcomes and experience during hospitalisation, by standardising practice and to improve decision-making on preventing, identifying and treating malnutrition risk. This can be achieved through:

- The early identification of malnutrition risk in hospitalised adult patients through nutrition screening for risk of malnutrition.
- The provision of timely and appropriate oral nutrition support to those patients who are malnourished or identified as at risk of malnutrition.

Other forms of nutrition support, that is, enteral tube feeding and parental nutrition, are not considered in this document. A standardised approach to nutrition screening and nutrition support provision is advocated (NICE, 2006a). The implementation of this NCG should promote a more streamlined and systematic approach to the identification of malnutrition risk and the appropriate use of oral nutrition support in Irish hospitals.

Project objectives:

- To develop a National Clinical Guideline (NCG) on 'Nutrition screening and the use of oral nutrition support for adults in the acute care setting' through the NCEC process. The NCG is to be developed by adapting an existing clinical guideline (using the formal ADAPTE process), combined with de novo development using a systematic review process.
- To align with the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b).

2.5 Guideline scope

This guideline is aimed at all frontline, management and food service/catering staff involved in the provision of care to adult patients in the acute care setting. It applies to adult patients admitted to a hospital ward and does not specifically cover practices in emergency departments.

This guideline covers:

- Malnutrition definition.
- Nutrition screening for malnutrition risk from point of admission to ward.
- Oral nutrition support.
- Considerations for oral nutrition support in dysphagia.

This guideline does not cover:

- Provision of normal food and drink in hospitals, including ward environment issues and protected meal times.
- Disease-specific or area-specific nutrition screening for malnutrition risk, for example, intensive care units or liver units.
- Disease-specific or area-specific oral nutrition support, for example, intensive care units, liver units.
- Treatment of eating disorders.

- Treatment of inborn errors of metabolism.
- Treatment of obesity.
- Patients admitted to a children's ward/hospital (under 16 years of age).
- Specialised care specific to pregnancy.
- Nutrition screening or nutrition support in the community.
- Enteral tube feeding.
- Parenteral nutrition.
- Day patients, outpatients, or patients who are admitted as a day admission that are not expected to stay overnight.

2.6 Conflict of interest statement

An NCEC declaration of interest form was signed by all GDG members initially and then yearly as per NCEC guidance (NCEC, 2016). Minor conflicts of interest were identified and were deemed by both Chairs not to be significant for the current guideline development.

2.7 Sources of funding

The Health Service Executive (HSE) funded the following:

- License fee to adapt NICE CG32: Nutrition Support in Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition (NICE, 2006a).
- Project Dietitian to be released from clinical work to co-ordinate NCG development.

The HRB Collaboration in Ireland for Clinical Effectiveness Reviews (CICER) conducted one full systematic review and one update of evidence tables from NICE CG32. This support was funded by the Department of Health.

2.8 Guideline methodology

General overview

This guideline is a combination of the formal adaptation of an existing guideline using the ADAPTE tool, and de novo guideline development using the NCEC guideline development process. The ADAPTE tool was developed by the ADAPTE Collaboration (2009), an international collaboration of researchers, guideline developers, and guideline implementers. Adaptation is the systematic approach for considering the use and/or modifying a guideline produced in one cultural and organisational setting for application in a different context (DOH, 2019). De novo guideline development involves using primary research and can be used to develop new recommendations within a clinical guideline (DOH, 2019).

This guideline followed the methodology in line with NCEC requirements. See full guideline for more detailed information.

2.9 Consultation summary

An advanced draft of the NCG was sent to key stakeholders for a three-week consultation period in March 2019. The GDG agreed to align with the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b) regarding key stakeholders identified for consultation (see Appendix 8). A similar feedback form was developed, and a similar process was followed. Forms and documents were emailed to all key stakeholders and external reviewers. See report in Appendix 8.

2.10 External review

Based on knowledge and expertise of the GDG, four international experts were nominated to review the draft guideline. Nominees were purposefully selected from different countries, different professional backgrounds and with particular interests and experience relevant to the current guideline. These included an expert from the United Kingdom who was involved with NICE CG32 (2006a), an expert from ESPEN (European Society for Clinical Nutrition and Metabolism) who is involved with the Life-Long-Learning Programme in Clinical Nutrition and Metabolism (see Section 3.3), an expert from the Netherlands who is involved with Malnutrition in the Elderly Knowledge Hub (see logic model in Appendix 9) and an expert from Australia who is involved with the Nutrition Care Process (see Section 3.0). All four nominees were approached, two of whom were available during March 2019 – Professor Marian de van der Schueren (the Netherlands), and Dr. Angela Vivanti (Australia) – see Appendix 2. These reviewers are respected authorities and widely published in the field of nutrition. Both have a particular interest in the prevention, identification and treatment of malnutrition risk and related research, education and practice.

2.11 Implementation

The implementation plan is designed as a framework to guide actions required to promote effective implementation of recommendations made in this NCG on nutrition screening for risk of malnutrition and effective use of oral nutrition support for adult patients in acute hospitals. Funding for guideline implementation is subject to service planning and estimates process.

The logic model and implementation plan for this NCG are presented in Appendix 9. Healthcare staff roles and responsibilities to support this plan are outlined in Appendix 9. A list of tools to support implementation is available in Appendix 10.

2.12 Monitoring and audit

The overall objective of this NCG is to improve patient care. Clinical audit is used to describe a process of assessing clinical practice against standards (HSE, 2013). In this case the NCG is the standard and is closely aligned with the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals (HSE, 2018b), see Policy toolkit (see Appendix 10 for web link). Audit criteria are aligned with the NCG implementation plan and logic model (see Appendix 9).

National and local audit criteria are specified in Appendix 11. Audit criteria are a mixture of structure criteria (what is needed), process criteria (what is done) and outcome criteria (what is expected to happen as a result). Key Performance Indicators (KPIs) for national consideration are outlined. Essential and desirable audit criteria as agreed by the GDG are highlighted for inclusion in local audit mechanisms.

2.13 Plan to update this National Clinical Guideline

The guideline will be updated three years from publication as per the process recommended by NCEC (DOH, 2019). A subgroup of the GDG will reconvene to assist in this update under the governance of the Chief Clinical Officer. If there is a major change in evidence, or if the Food Nutrition and Hydration Policy (HSE, 2018b) is updated requiring changes in recommendations, prior to the planned review of this NCG, a rapid update may be conducted as per NCEC procedures.

3 Appendices

Only appendices 7, 9 10 and 11 are presented here as they are key to interpretation of the recommendations in this summary guideline.

Refer to the full guideline report for the remaining appendices:

1, 2, 3, 4, 5, 6, 8, 12-17

Appendix 7: Evidence grading systems used in this NCG

Grading system used by NICE for Clinical Guideline 32

The grading system used by NICE was maintained in those recommendations that were adapted from NICE CG32. A limitation to using a classification system that is based only on the level of evidence, such as this one, is that it does not consider the importance of the recommendation in changing practice and improving patient care (NICE, 2006a). This grading system is used for Recommendations 1 and 2, and 4 to 17, inclusive.

Table 17. Level of evidence and grade of recommendation used by NICE (NICE, 2006a)

Level of evidence	Type of evidence used by NICE Clinical Guideline 32
1++	High-quality meta-analysis, systematic reviews
1+	Well-conducted meta-analysis, systematic reviews of RCTs, or RCTs with a low risk of bias
1-	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2++	High-quality systematic reviews of case-control or cohort studies High-quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal
2+	Well-conducted case-control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal
2-	Case-control or cohort studies with a high risk of confounding bias, or chance and a significant risk that the relationship is not causal
3	Non-analytic studies (for example, case reports, case series)
4	Expert opinion

Grade of recommendations	Evidence
A	<ul style="list-style-type: none"> • At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population, or • A systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results • Evidence drawn from a NICE technology appraisal
B	<ul style="list-style-type: none"> • A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results, or • Extrapolated evidence from studies rated as 1++ or 1+

C	<ul style="list-style-type: none"> • A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results, or • Extrapolated evidence from studies rated as mmas 2++
D	<ul style="list-style-type: none"> • Evidence level 3 or 4, or • Extrapolated evidence from studies rated mmas 2+, or • Formal consensus
D (GPP)	A good practice point (GPP) is a recommendation for best practice based on the experience of the GDG

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The GRADE (Grading of Recommendations Assessment, Development and Evaluation) approach

- GRADE categorises the certainty in evidence as high, moderate, low or very low (see Table 18).
- GRADE categorises the strength of evidence as either strong, or weak/conditional. This reflects the extent to which a guideline panel is confident that desirable effects of an intervention outweigh undesirable effects, or vice versa, across the range of patients for whom the recommendation is intended.
- The GRADE approach is used for Recommendation 3.

Table 18. Quality of evidence using GRADE approach (*adapted from ‘A manual for guideline developers’, Department of Health, 2019*)

Quality level	Definition
High	The GDG is very confident that the true effect lies close to that of the estimate of the effect.
Moderate	The GDG is moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	The GDG confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low	The GDG has very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Appendix 9: Implementation plan and logic model

Strategic aim

The overarching objective of this implementation plan is to provide a framework for the identification of malnutrition risk and its management through effective use of oral nutrition support interventions for adult inpatients in the acute care setting. The logic model demonstrates the context for the plan, the inputs, activities and outcomes associated with implementing nutrition screening for malnutrition risk and appropriate use of oral nutrition support in the acute care setting.

Facilitators and barriers

To inform the implementation plan the GDG contacted seven international experts with experience in implementing organisational, regional or national screening programmes for risk of malnutrition. Experts from Australia, the Netherlands, New Zealand, Northern Ireland, and the United Kingdom were approached for feedback. Feedback on facilitators and barriers to implementation was requested. These are reported below (see Table 20), as factors that promote implementation and are organised into four main areas.

Table 20. Expert feedback on factors that promote implementation of screening for risk of malnutrition

Implementation influences	Factors that promote implementation
Screening tool characteristics	<ul style="list-style-type: none"> • The ease with which a NST can be applied. • A shorter time to perform and record screening for malnutrition risk. • Involving hospital staff in addition to nurses and doctors, to assist in the screening for malnutrition risk process. • Using on-line tools to aid calculations may facilitate implementation. • Improving compliance in completing documentation by involving staff responsible for using the NST in the design of a recording template. • Using a similar tool nationally, or internationally, to facilitate research and evaluation, and the sharing of experience. • Choosing an evidence-based tool that is valid and reliable with a clear care pathway. • Devising care pathways that recommend nutritional intervention(s) without delay while awaiting nutrition assessment. • Choosing an NST that has accessible and easy supporting documentation and education tools already available. • Choosing an NST with a scoring system that allows for prioritisation. • Choosing an NST that crosses all healthcare settings.
Outer setting	<ul style="list-style-type: none"> • Making screening for malnutrition risk on admission mandatory through national government action. • Supporting screening for malnutrition risk through regional or national policy. • Monitoring screening for malnutrition risk through inspections by acute care regulating or accreditation bodies. • Developing national key performance indicators (KPIs) to facilitate compliance and reporting of screening for malnutrition risk.

	<ul style="list-style-type: none"> • Coding for malnutrition (e.g. monthly) by hospitals. • Identifying national implementation leads - medical, nursing and dietetic. • Initiating national malnutrition risk prevalence audits and malnutrition-awareness days. • Developing a national communications plan for dissemination, implementation and audit of malnutrition screening practices. • Developing national training and education resources to support screening for malnutrition risk and associated care pathways.
Inner setting	<ul style="list-style-type: none"> • Embedding screening into nursing admission processes. • Providing local in-hospital training and education to support screening for malnutrition risk and associated care pathways. • Using quality improvement methodology, e.g. Plan Do Study Act (PDSA) cycles of change. • Auditing malnutrition risk prevalence to promote implementation readiness. • Developing a local implementation plan and audit system. • Outlining a local communications plan on dissemination, implementation and audit of malnutrition screening practices. • Organising automatic e-referral to the dietitian through the electronic health record system, for patients identified as at risk of malnutrition.
Characteristics of individuals	<ul style="list-style-type: none"> • Identifying individual staff members on each ward to act as ward champions for screening for malnutrition risk and related issues. • Identifying an organisational implementation lead. • Increasing awareness of malnutrition risks among healthcare staff and clarity on roles and responsibilities in managing nutritional care. • Empowering healthcare staff, particularly nursing staff, to take ownership of their role in the nutrition care pathway.

This feedback was used by the GDG when developing this guideline and the associated implementation plan, for example:

- Two screening tools that are evidence-based, and cross healthcare settings are recommended in this guideline.
- Screening tools recommended are quick and easy to use and both use a clear scoring system to help prioritisation. A link to the toolkit supporting one of the tools is provided in Appendix 10.
- Three pathways to aid implementation (Figures 3, 4 and 5) at local hospital level are provided.
- A national education and training framework is provided. This empowers nurses to take on the screening process through a 'train-the-trainers' approach.
- Increasing awareness through, for example, annual malnutrition awareness days is included in the implementation plan.
- A link to a quality improvement tool which uses PDSA cycles is included in Appendix 10.
- Sharing of staff experiences with examples of good practice is recommended in the implementation plan.

- Roles and responsibilities are included in this implementation appendix.
- A communications and dissemination plan is provided.
- A local audit overview with essential and desirable audit criteria is provided in Appendix 11, and forms part of the implementation plan. A self-assessment tool is provided to facilitate this (see Appendix 10 for list of tools).
- National KPIs are outlined in Appendix 11.

The implementation plan

The implementation plan included here aligns recommendations with actions required to achieve their implementation and assigns responsibilities for actions within a specified timeframe. Expected outcomes and how these can be verified are outlined. A dissemination and communication plan is provided.

Roles and responsibilities

Implementation responsibilities must be seen in the context of the overall roles and responsibilities of each profession and healthcare worker. Specific roles and responsibilities are already outlined in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospital (FNHP) (2018b) for:

- Hospital Chief Executive Officer/
General Manager
- Food Service Staff (Ward Catering Staff)
- Chef
- Multidisciplinary Team
- Kitchen Attendant
- Doctor
- Dietitian Manager
- Clinical Nurse Manager
- Dietitian
- Registered Nurse
- Speech and Language Therapist (SLT)
- Healthcare Assistant
- Occupational Therapist
- Food Service/ Catering Manager
- All clinical staff

Roles and responsibilities listed in the FNHP (HSE, 2018b) were not amended by the GDG, with the exception of SLT. In the context of this NCG, SLT GDG members amended their role to include managing patients with dysphagia identified with malnutrition or at risk of malnutrition. This is consistent with recommendations in the NCG and supplements the responsibilities outlined in the FNHP (HSE, 2018b).

Responsibilities include:

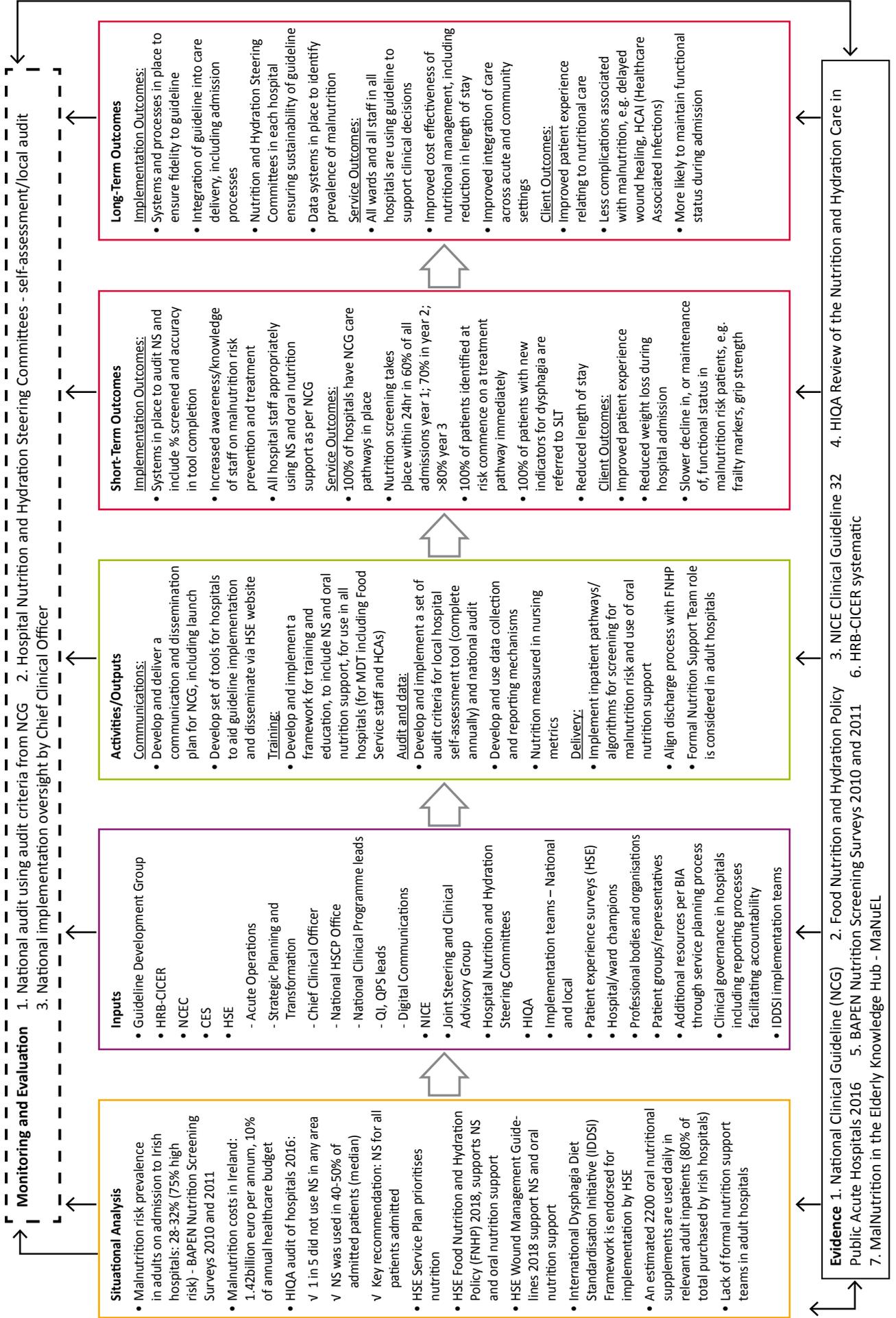
- SLTs are responsible for assessment and management of patients identified with Feeding, Eating, Drinking and Swallowing (FEDS) difficulties. This involves investigation of causes of FEDS and their impact on nutrition.
- SLTs have a role in the treatment of patients with dysphagia who are malnourished, or at risk of malnutrition. Intervention may include:
 - o objective assessment of swallow physiology (e.g. videofluoroscopy, FEES)
 - o provision of restorative swallowing rehabilitation
 - o recommendations for appropriate food and fluid consistencies
 - o advice in relation to safe swallowing guidelines
 - o provision of appropriate equipment for feeding/drinking, and
 - o education of patient, family and staff.

- SLTs liaise closely with team members including dietitians, food service/catering and nursing staff in acute hospitals re: modified consistency diet and fluids and safe swallowing strategies for the patient during mealtimes.
- SLTs contribute to multidisciplinary team decision making on provision of supplemental or alternative non-oral nutrition and hydration if required for the patient. This might include progression from non-oral nutrition and hydration back to some or full oral nutrition in a safe way, if appropriate for the patient.
- SLTs liaise closely with the medical team for the management of patients who are 'risk feeding' (that is, at risk of aspiration when eating and drinking orally, but oral intake has been deemed the most appropriate management pathway for the patient).

The GDG recognises that the Hospital Pharmacist also has an important role in oral nutrition support, especially with regard to patients with dysphagia or swallowing difficulties, and with regard to the sourcing and supply of specialised oral nutritional supplements.

The vital role of the Hospital Nutrition and Steering Committee in implementation is acknowledged by the GDG and features strongly in the following implementation plan. The Committee's membership, roles and responsibilities are outlined in the Food Nutrition and Hydration Policy for Adult Patients in Acute Hospital (FNHP) (2018b).

Logic Model for National Clinical Guideline: Nutrition screening (NS) and use of oral nutrition support for adults in acute care setting



Implementation plan

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
Screening for risk of malnutrition: 1 + 2 + 3	<p>Enabler</p> <p>Malnutrition awareness has improved.</p>	<p>Develop a high level communications strategy designed to ensure that all staff and patients are aware of the risks of malnutrition and the importance of early detection and treatment.</p> <p>Develop a communication plan aimed at raising / maintaining a high level of awareness of malnutrition risks, including as a minimum:</p> <ul style="list-style-type: none"> • Annual malnutrition awareness days targeted at both patients and staff. • Reporting system in place to report % of patients at malnutrition risk to Hospital Management annually. <p>Implement communications strategy to maintain high levels of engagement and feedback, e.g.:</p> <ul style="list-style-type: none"> • Perform patient satisfaction surveys – utilise existing surveys. • Put in place a staff feedback mechanism. • Share positive staff and patient stories. • Share learning across hospitals and support champions. • Contribute to the Food Nutrition and Hydration Information leaflet nutrition for hospital inpatients. 	<p>Guideline Development Group, HSE Communications,</p> <p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Nutrition and Hydration Steering Committees.</p> <p>Nutrition and Hydration Steering Committees.</p> <p>Hospital Staff. HSE Communications. Guideline Development Group in co-operation with the Food Nutrition and Hydration Policy development group.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>Outcome</p> <ul style="list-style-type: none"> • Communications strategy re malnutrition risk screening and treatment in place in all local hospitals. • Improved malnutrition awareness among staff and patients. • System in place to share implementation experiences and learning between sites. <p>Verification</p> <ul style="list-style-type: none"> • Self-assessment by local Hospital Nutrition and Hydration Steering Committees in year 2. • Patient satisfaction survey results reported in year 2. • HSE communications mechanism. • Food Nutrition and Hydration Information leaflet is available for all hospital inpatients.

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
	<p>Enabler</p> <p>Hospital Nutrition Steering Committees provide a hospital-level infrastructure to oversee implementation of malnutrition screening and include MDT representatives.</p>	<p>Provide strong leadership on the local implementation of National Clinical Guideline and put in place mechanisms to ensure implementation, to include as a minimum:</p> <ul style="list-style-type: none"> • Develop inpatient pathway for screening for malnutrition risk. • Provide guidance on screening tool fidelity - 'core' aspects that cannot be changed, care pathway aspects that are flexible to individual service contexts • Adapt and implement inpatient pathway for screening for malnutrition risk. 	<p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Guideline Development Group.</p> <p>Guideline Development Group.</p> <p>Hospital Nutrition and Hydration Steering Committees.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>			<p>Outcome</p> <ul style="list-style-type: none"> • Pathway for nutrition screening available to and used in all hospitals. • Core components of screening tool available to and used in all hospitals. <p>Verification</p> <p>Self-assessment by Hospital Nutrition and Hydration Steering Committees reported in year 2.</p>
	<p>Enablers</p> <ul style="list-style-type: none"> • Screening for risk of malnutrition is already recommended by HSE in Food Nutrition and Hydration Policy for Adult Patients in Acute Hospitals. • HIQA 'Review of nutrition and hydration care in public acute hospitals' captured baseline data on nutrition screening and recording of nutritional parameters (e.g. weight, and height). 	<p>Ensure systems are in place to monitor and improve screening rates for malnutrition risk and to ensure that treatment is commenced immediately. Systems to include at a minimum:</p> <ul style="list-style-type: none"> • Perform screening for malnutrition risk on admission. • Assess ward screening rate weekly. • Report % screened for malnutrition risk hospital wide on a 6 monthly basis. • Assess and report fidelity to tool and treatment plan at individual ward and Hospital level on a yearly basis at least. <p>Compare screening rates with recommendations from National Clinical Guideline years 1, 2 and 3 post-implementation.</p> <p>Agree process for national audit of screening programme implementation.</p>	<p>Hospital Nutrition and Hydration Steering Committees</p> <p>Ward Nurse +/- assistance from HCA.</p> <p>Ward CNM.</p> <p>Nurse Managers and ward CNMs.</p> <p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Hospital Nutrition and Hydration Steering Committees.</p> <p>HSE National implementation oversight by Chief Clinical Officer - to include audit of malnutrition screening rates.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>		<p>Outcome</p> <ul style="list-style-type: none"> • All hospitals commence nutrition screening for admitted patients on admission and weekly thereafter. • Screening rates are established and reported to Hospital Management 6 monthly. <p>Verification</p> <ul style="list-style-type: none"> • Fidelity to screening tool and treatment pathway assessed annually by Local Hospital Nutrition and Hydration Steering Committees for Hospital level. • HSE Chief Clinical Officer to oversee implementation – with KPI development on malnutrition risk screening. 	

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
	<p>Prevention and treatment of malnutrition education:</p> <ul style="list-style-type: none"> • Enabler: undergraduate education for dietetic and nursing staff. • Barrier: not on medical undergraduate curriculum – but post-graduate opportunities. • Barrier: Deficit in education programmes for Food Service/ Catering staff – local hospital dependent. • Barrier: no standardised education and training framework for prevention and treatment of malnutrition in acute care. 	<p>Develop a national standardised education and training framework for acute care setting to support this guideline. To target MDT and Food Service Staff.</p> <p>Education programme to include at a minimum (NICE 2006a):</p> <ul style="list-style-type: none"> • nutritional needs and indications for nutrition support • options for nutrition support (oral, enteral and parenteral) • ethical and legal concepts • potential risks and benefits of oral nutrition support • when and where to seek expert advice on screening and appropriate use of oral nutrition support. 	<p>Guideline Development Group to develop proposed framework.</p>	✓			<p>Outcome</p> <ul style="list-style-type: none"> • Improved knowledge and competencies for nursing staff, healthcare assistants, and food service/catering staff on malnutrition prevention and treatment. <p>Verification</p> <ul style="list-style-type: none"> • Self-assessment by local Hospital Nutrition and Hydration Steering Committees annually. • Nursing staff +/- Healthcare Assistant staff training records available for audit.
		<p>Framework to include on-site hospital training to support National Clinical Guideline implementation for Nursing staff +/- Healthcare Assistants on use of the malnutrition screening tool.</p> <p>Include existing training resources, such as:</p> <ul style="list-style-type: none"> • MUST tool on www.hse.ie/eng/staff/pdrs/online-services/musttool.pdf, • HSE LanD e-learning module on MUST for staff on www.hse.ie. <p>Develop strategies for incentivising improvements (e.g. local nutrition awards).</p>	<p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Hospital Dietetic Departments.</p> <p>Nurse Educators trained in use of malnutrition screening tool.</p> <p>Nurses who completed a 'train the trainers' programme.</p> <p>Hospital Nutrition and Hydration Steering Committees.</p>	✓		✓	<p>Outcome</p> <ul style="list-style-type: none"> • Resources are secured for implementation at local hospital and Hospital Group level. <p>Verification</p> <ul style="list-style-type: none"> • Inclusion in service plan • Reporting by local Hospital management and Hospital Group management.
	<p>Barrier: Potential impact on resource requirements as outlined in BIA, e.g. for nursing and dietetic staff.</p>	<p>Assess and address resource implications for screening and treatment of malnutrition risk.</p> <p>Local Hospital management and Hospital Group management to include financial resource requirements as part of the annual estimates process / service plan.</p>	<p>Local Hospital Managers.</p> <p>Hospital Group Managers.</p>	✓	✓	✓	<p>Outcome</p> <ul style="list-style-type: none"> • Resources are secured for implementation at local hospital and Hospital Group level. <p>Verification</p> <ul style="list-style-type: none"> • Inclusion in service plan • Reporting by local Hospital management and Hospital Group management.

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
Oral nutrition support - general indications 4 to 10	<p>Enabler Hospital Nutrition and Hydration Steering Committees exist and include MDT representatives.</p>	<p>Provide strong leadership on the local implementation of National Clinical Guideline recommendations, which includes:</p> <ul style="list-style-type: none"> Develop an inpatient care pathway for use of oral nutrition support. Implement inpatient pathway for use of oral nutrition support. 	<p>Nutrition and Hydration Steering Committees. Clinical MDTs. Dietetic Departments.</p> <p>Guideline Development Group. Nutrition and Hydration Steering Committees. Clinical MDTs. Dietetic Departments.</p>	<p>✓</p> <p>✓</p> <p>✓</p>			<p>Outcomes Inpatient pathway for malnutrition screening and use of oral nutrition support is available to all Hospital staff.</p> <p>Verification Self-assessment by local Hospital Nutrition and Hydration Steering Committees annually.</p>
	<p>Enabler Local hospital and HSE resources exist to support use of oral nutrition support.</p>	<p>Hospital staff to utilise existing resources, which include:</p> <ul style="list-style-type: none"> Local hospital resources such as patient information leaflets on oral nutrition support. HSE resources already available at www.hse/nutrition-support Food Nutrition and Hydration Information leaflet for hospital inpatients Food Nutrition and Hydration Policy toolkit https://www.hse.ie/eng/about/who/acute-hospitals-division/food-nutrition-and-hydration-policy-for-adult-patients/ 	<p>Hospital Dietetic Departments.</p> <p>Clinical Nurse Managers to ensure adequate ward supplies of Food Nutrition and Hydration Information leaflet.</p>	<p>✓</p> <p>✓</p>			<p>Outcomes</p> <ul style="list-style-type: none"> Diet sheets and patient information leaflets available as per local practice. Nutrition resources available on HSE website. Food Nutrition and Hydration Information leaflet available on all hospital wards. <p>Verification Dietetic Departments. HSE website with supporting tools available to hospital staff.</p>
	<p>Barrier Potential impact on resource requirements as outlined in BIA, e.g. for nursing and dietetic staff.</p>	<p>Hospital staff to utilise existing implementation tools developed for the 'HSE Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospitals' to identify and develop strategies for reducing hospital food waste.</p> <p>Assess and address catering resource implications for use of oral nutrition support. Local Hospital management and Hospital Group management to include financial resource requirements as part of the annual estimates process.</p>	<p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Local Hospital Managers. Hospital Group Managers.</p>	<p>✓</p> <p>✓</p>			<p>Outcome</p> <ul style="list-style-type: none"> Reduction in food waste. Better value for money for hospital catering with high nutritional value. <p>Verification</p> <ul style="list-style-type: none"> Inclusion in local Hospital and Hospital Group service plans, where required. Hospital food service staff training records available for audit. Hospital Nutrition and Hydration Steering Committee minutes concerning discussions on impact on food service/catering department.

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
		<p>Monitor impact on food service/ catering time and receive feedback from food service staff to assess if there are any increases in resource requirements as a result of guideline implementation.</p> <p>Provide on-site hospital training to support National Clinical Guideline implementation for food service staff on food fortification and modified texture diets.</p>	<p>Food Service/Catering Managers. Hospital Managers.</p> <p>Dietetic Departments Speech and language Therapy Departments</p>	✓	✓		
Oral nutrition support in patients with dysphagia 11-15	<p>Barrier Resources – Speech and Language Therapist (SLT) staffing – not yet clear what impact this will have until implementation.</p>	<ul style="list-style-type: none"> Monitor impact to assess if there are any increases in resource requirements as a result of guideline implementation – using statistical activity and service impact as assessed by SLT Managers. Assess and address SLT resource implications for use of oral nutrition support. Local Hospital management and Hospital Group management to include financial resource requirements as part of the annual estimates process. 	<p>Local Hospitals/Hospital Group Managers. SLT Managers.</p>	✓			<p>Outcome</p> <ul style="list-style-type: none"> Guideline is feasible and does not over-burden SLT resources. <p>Verification</p> <ul style="list-style-type: none"> SLT Managers. Inclusion in local Hospital and Hospital Group service plans, where required.
	<p>Barrier Resources – dysphagia related equipment – not yet clear what impact the guideline will have on this until implementation.</p>	<p>Provide list of necessary basic equipment that should be available in acute hospitals.</p> <p>Impact to be monitored to see if there are any increases in dysphagia equipment requirements as a result of guideline implementation.</p>	<p>Guideline Development Group.</p> <p>Hospital Nutrition and Hydration Steering Committees. SLT Managers.</p>	✓	✓		<p>Outcome Necessary dysphagia-related equipment in place across hospitals</p> <p>Verification</p> <ul style="list-style-type: none"> Local Hospital Nutrition and Hydration Steering Committees. SLT Managers.
	<p>Barrier Access to more specialised equipment, e.g. FEES, VFU – not yet clear what impact guideline will have on this until implementation.</p>	<p>SLT Managers and Hospital Managers to decide on how this equipment can be accessed for patients when required.</p> <p>Impact to be monitored to see if there are any increases in resource requirements as a result of guideline implementation.</p>	<p>SLT Managers, Hospital Managers and Hospital Group Managers.</p> <p>SLT Managers. Hospital Nutrition and Hydration Steering Committees.</p>	✓	✓		<p>Outcome</p> <ul style="list-style-type: none"> Access to specialised equipment in place across hospitals <p>Verification</p> <ul style="list-style-type: none"> Hospital Nutrition and Hydration Steering Committees to report on impact in year 2.

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
<p>Oral nutrition support in surgical patients: 16 + 17</p>	<p>Enabler Fasting policies already exist in some hospitals.</p>	<ul style="list-style-type: none"> Develop fasting policy or implement existing fasting policy and audit implementation in all hospitals. Monitor implementation to ensure fasting times for tests, therapies and procedures do not regularly exceed those specified in the policy. 	<p>Local Hospital Nutrition and Hydration Steering Committees. Medical/Surgical Teams. Ward nursing staff.</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>Outcome Local fasting policies available and in use in all hospitals.</p> <p>Verification</p> <ul style="list-style-type: none"> Hospital Nutrition and Hydration Steering Committees monitor compliance with fasting policy. MDT ward round/ clinical handover notes.
<p>Discharge process</p>	<p>Enabler Discharge recommendations are already provided in the HSE Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospitals.</p>	<p>Align guideline with discharge recommendations from the HSE Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospitals 2018.</p> <p>Update discharge plan to include information on the following:</p> <ul style="list-style-type: none"> Nutritional status Dietary requirements Assistance with feeding Requirements for oral nutrition supplements including type, amount and duration required for post discharge. Arrangements for follow-up. <p>Ensure medical discharge letter for GP includes:</p> <ul style="list-style-type: none"> Summary of the patient's nutritional status – including malnutrition screening results or BMI (if appropriate) Individualised nutrition care plan (if appropriate). <p>Audit discharge plans and discharge letters as part of local hospital self-assessment.</p>	<p>Guideline Development Group</p> <p>Discharging doctor. Discharging nurse. Hospital dietitian if patient is under the care of a dietitian.</p> <p>Hospital Nutrition and Hydration Steering Committees. Discharging doctor.</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p>Outcome</p> <ul style="list-style-type: none"> Nutritional information is included in discharge planning and this is reflected in discharge letter. Improved integration of care across acute and community settings. <p>Verification Self-assessment by Hospital Nutrition and Hydration Steering Committees annually.</p>

Guideline recommendation or number(s)	Implementations enablers/ barriers/gaps	Action/intervention/task to implement recommendation	Lead responsibility for delivery of the action	Timeframe for completion			Expected outcome and verification
				Year 1	Year 2	Year 3	
All	<p>Enabler Monitoring and evaluation processes already exist.</p>	<p>Develop a monitoring and evaluation plan to assess implementation, service and client outcomes of guideline.</p> <p>Develop audit criteria.</p> <p>Conduct local audits.</p> <p>Conduct national audit.</p>	<p>Hospital Nutrition and Hydration Steering Committees.</p> <p>Guideline Development Group.</p> <p>Hospital Nutrition and Hydration Steering Committees.</p> <p>HSE National oversight by Chief Clinical Officer – with KPI development on malnutrition risk screening.</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p> <p>✓</p>	<p>Outcome</p> <ul style="list-style-type: none"> Self-assessment tool is available to and in use in all hospitals. Audit criteria are available to and in use in all hospitals. <p>Verification</p> <ul style="list-style-type: none"> Self assessment by Hospital Nutrition and Hydration Steering Committees annually. National KPI audit results.

Implementation of overall guideline

Implementation team:

- Local governance and implementation lie with local Hospital Nutrition and Hydration Steering Committees.
- The national oversight of this guideline sits with the Chief Clinical Officer (CCO).
- National KPI development for screening for risk of malnutrition will enhance implementation of this NCG.

From the National Food, Nutrition and Hydration Policy (Part B):

5.4.1.2 The governance structure for the Nutrition and Hydration Steering Committee should be established at individual hospital level with a direct reporting structure within the Hospitals' Quality, Safety and Risk Programme/Committee to ensure the following:

- Clear ownership and accountability for nutritional care at a corporate level.
- Leadership to support delivery of patient nutritional care having regard to the strategic priorities for the hospital.
- Performance with delivery of nutritional care is effectively managed.
- A multidisciplinary approach which values delivery of high-quality nutritional care.

5.4.1.3 The role of the committee is to:

- Direct and support a comprehensive programme of nutrition and hydration care across all services in the hospital.
- Ensure that all patients admitted to hospital receive high-quality nutrition and hydration care.

5.4.1.6 Operational recommendations: To ensure that a nutrition and hydration committee is functioning effectively, it is recommended that:

- Committees should meet at least 4 times annually.
- The chair of the committee should rotate at least every 2 years.
- The chair should provide an annual report for the hospital board of management summarising key achievements and other service improvements.

Appendix V Membership of a Nutrition and Hydration Steering Committee: a Consultant, Catering/Catering Support Services, Dietitians, Nursing, Occupational Therapy, Patient Representative/Patient Voice, Pharmacy, Quality and Patient Safety, Senior Management, Speech and Language Therapy.

Dissemination and communication plan:

- Tools: see next section.
- Key stakeholders to receive draft guideline for feedback, followed by final guideline.
- Communicate with professional organisations, service users and colleges to ensure awareness.
- Submit article(s) to Health Matters on malnutrition prevention and treatment.
- Empower local Hospital Nutrition Steering Committees to disseminate guidelines in their respective hospitals.
- Launch guidelines.
- Develop and promote staff and patient stories, e.g. using video clips/ HSELandD articles/other.
- Develop repository of positive patient and staff stories available in central location, e.g. HSE nutrition hub.
- Patient information leaflet that includes nutrition screening available in all hospitals.
- Incorporate guideline into existing hospital resources.
- Network with HSE Communications teams and structures.

Implementation tools: (see Appendix 10)

- Pathways supporting this guideline, that is, NCG Figures 3, 4 and 5 - available for download and print at: <https://health.gov.ie/national-patient-safety-office/ncec/national-clinical-guidelines/>
- Patient information leaflet which includes questions pertinent to this NCG – see Appendix 10.
- Self-assessment tool (for local hospitals) with key audit criteria accessible at: <https://health.gov.ie/national-patient-safety-office/ncec/national-clinical-guidelines/>
- List of necessary basic equipment for malnutrition screening and oral nutrition support in patients with dysphagia – see Table 23 in Appendix 11.
- Suite of QI tools for structured approach to screening introduction www.hse.ie/eng/staff/pcrs/online-services/musttool.pdf
- Suite of oral nutrition support tools on www.hse.ie/nutritionssupports
- MUST tool and toolkit developed by BAPEN and accessible at: www.hse.ie/eng/staff/pcrs/online-services/musttool.pdf
- HSELandD e-learning module on MUST for staff on www.hse.ie

Appendix 10: Supporting tools

Tools to support implementation of the NCG

- Pathways supporting this guideline, that is, NCG Figures 3, 4 and 5 - available for download and print at: <https://health.gov.ie/national-patient-safety-office/ncec/national-clinical-guidelines/>.
- Four 'Food Nutrition and Hydration Patient Information Leaflets' are available, depending on food production methods used in a hospital. All four leaflets include information on screening for malnutrition risk and the importance of nutrition for hospitalised patients. The four versions are accessible through the toolkit below. An example of the leaflet is accessible at: <https://www.hse.ie/eng/about/who/acute-hospitals-division/food-nutrition-and-hydration-policy-for-adult-patients/patient-leaflet-hospital-food-cook-fresh>
- Sample self-assessment tool for local audit with key audit criteria is accessible at: <https://health.gov.ie/national-patient-safety-office/ncec/national-clinical-guidelines/>
- A detailed toolkit developed for the Food Nutrition and Hydration Policy for adult patients in the acute care setting are relevant to this NCG and are accessible at: <https://www.hse.ie/eng/about/who/acute-hospitals-division/food-nutrition-and-hydration-policy-for-adult-patients/>
- Malnutrition Universal Screening Tool (MUST) toolkit developed by BAPEN is accessible at: www.hse.ie/eng/staff/pcrs/online-services/musttool.pdf. This includes the MUST tool, a BMI scoring chart, a weight loss scoring chart, and an alternative measurements section with accompanying tables.
- Suite of QI tools for structured approach to malnutrition screening tool introduction included in the MUST tool document is accessible at: www.hse.ie/eng/staff/pcrs/online-services/musttool.pdf
- A suite of oral nutrition support tools and pathways developed for primary care relevant to this guideline is accessible at www.hse.ie/nutritionsupports. This includes 'Making the most of every bite' diet sheet and cookbook, 'How to use oral nutritional supplements', 'When illness reduces your appetite'.
- HSElanD e-learning module on MUST for staff on Share Centre for HSElanD accessed through www.hse.ie
- Service User Version of National Clinical Guideline is accessible at: <https://health.gov.ie/national-patient-safety-office/ncec/national-clinical-guidelines/>
- Education and training resources pertaining to dysphagia, to support national implementation of the International Dysphagia Diet Standardisation Initiative (IDDSI) framework are available on the Share Centre for HSElanD accessed through www.hse.ie

Appendix 11: Monitoring and audit

Background

The Report of the review of nutrition and hydration care in public acute hospitals (HIQA, 2016) highlighted audit as a key area for improvement with regard to nutritional and hydration care for patients admitted to acute hospitals. Parameters recommended include the audit of compliance with nutrition screening for malnutrition risk, recording of patients' weight and survey of patients' satisfaction. The findings of the National Patient Experience Survey (NPES) (HSE, 2018c) highlight the need to improve hospital food and nutrition across all acute hospital services in Ireland. Nutrition screening for malnutrition risk is included as a quality improvement initiative for acute care. The Healthy Ireland Framework (DOH, 2013) also includes monitoring, reporting and evaluation as a key theme to drive achievement of targets.

Monitoring is a systematic process of gathering information and tracking over time and seeks to continuously measure compliance (DOH, 2019). Audit is a means of measuring this compliance. Audit criteria are measurable statements of what should be happening with explicit and quantifiable performance levels (HSE, 2013).

National and local audit criteria are specified (see Table 21 and Table 22). Key Performance Indicators (KPIs) for national use are outlined (Table 24). Essential audit criteria as agreed by the GDG are highlighted for local audits and can be viewed as a minimum set of audit criteria that should be included in local audit mechanisms. The remainder are considered desirable audit criteria for local audit. Table 23 outlines equipment needed for screening for malnutrition risk and the provision of oral nutrition support on hospital wards.

Overview

- Participation in international audits, such as Nutrition Day, is encouraged. Nutrition Day is a worldwide initiative to increase awareness of malnutrition risk in healthcare institutions through an annual one-day cross-sectional audit. Benchmarking practices against other sites, and against previous year results in a single site, may help drive meaningful improvements. For more details see <https://www.nutritionday.org/en/about-nday/what-is-nutritionday/index.html>.
- National oversight of this NCG currently lies with the Chief Clinical Officer. Oversight should incorporate the development and implementation of KPIs, as outlined in this section. National audit criteria (see Table 21) should be included in any future national audits in the area of nutrition and hydration in acute care.
- Local Hospital Nutrition and Hydration Steering Committees are responsible for overseeing local audit. A yearly audit (beginning year 2 of implementation), using the sample self-assessment tool provided (see Appendix 10 for tools and links), is recommended. This should include assessing fidelity to the malnutrition risk screening tool in use, on a sample of 30% of hospital beds – see section 3.6 for more details.
- Malnutrition risk screening rates should be monitored on an ongoing basis at ward level by ward Clinical Nurse Managers. Nurse Managers should report screening rates to Hospital Management on a six-monthly basis.

Table 21. National audit criteria

Recommendation	Potential Audit Criteria
1	<ul style="list-style-type: none"> • Total number of nurses, nursing students and/or other healthcare workers per year, who received education and training on malnutrition screening.
2	<ul style="list-style-type: none"> • Percentage of admitted patients screened for malnutrition within 24 hours of admission. • Percentage of patients re-screened weekly.
3	<ul style="list-style-type: none"> • Percentage fidelity to malnutrition screening tool. • Percentage of patients at risk of malnutrition referred to a dietitian as a result of screening. • Percentage of patients commenced on the appropriate nutrition care pathway before dietetic assessment. • Submission of audit data for inclusion in national data collection, for example, for Nutrition Week.
Communication	<ul style="list-style-type: none"> • Policy on malnutrition screening is accessible for use. • Procedure in place to communicate malnutrition screening audit results to management and staff. • Availability of the Food Nutrition and Hydration Information leaflet for all hospital inpatients. • Inclusion of questions on nutrition screening for malnutrition risk and treatment pathway for malnutrition risk in patient satisfaction surveys. • Anthropometry and most recent malnutrition screening score in discharge letters.

Note: Fidelity refers to the degree to which the malnutrition screening tool is delivered exactly as set out and intended by those who developed it.

Table 22. Local audit criteria (✓ indicates essential audit criteria; remainder are desirable)

Recommendation	Potential Audit Criteria
Nutrition Screening 1	<ul style="list-style-type: none"> ✓ Total number of nursing staff, nursing students and/or other healthcare workers who received education and training on malnutrition screening on an annual basis. • Number of staff trained to be malnutrition screening trainers. • Total number of staff each trainer trains per year. • Percentage of nursing staff who have completed MUST training on HSEland (if MUST is used). ✓ Malnutrition screening training records are accessible for audit.
Nutrition Screening 2	<ul style="list-style-type: none"> ✓ Total number/percentage of patients weighed on admission. • Total number/percentage of patients with height measured on admission. • Inclusion of weight and height recording in hospital admission policy. ✓ Percentage of admitted patients screened for malnutrition risk within 24 hours of admission.

	<ul style="list-style-type: none"> • Percentage of inpatients identified at risk of malnutrition. • Total number/percentage of patients weighed weekly per ward. ✓ Total number/percentage of patients re-screened weekly per ward. ✓ Anthropometry equipment available on all wards (see Table 23 below). ✓ Procedure in place for maintenance of measuring equipment, including calibration of weighing scale. • Procedure in place for reporting of damaged measuring equipment.
<p>Nutrition Screening 3</p>	<ul style="list-style-type: none"> ✓ Percentage fidelity to malnutrition screening tool. • Time taken to complete malnutrition screen. ✓ Malnutrition screening is documented and signed by nursing staff. ✓ Percentage of patients at risk of malnutrition referred to dietitian as a result of screening. • Number of admitted patients referred to dietitian for risk of malnutrition. • Percentage of patients commenced on each component of nutrition treatment pathway per ward: <ul style="list-style-type: none"> - appropriate menu - oral nutritional supplement provision as per local policy - supervision/feeding assistance at mealtimes - food and fluid record. ✓ Percentage of patients at risk of malnutrition assessed by dietitian during admission. ✓ Median time between dietitian referral and assessment. • Percentage of patients at risk of malnutrition referred to dietitian but discharged before seen. • Proportion of patients at risk of malnutrition diagnosed with malnutrition after nutrition assessment by dietitian.
<p>Oral Nutrition Support 4 to 10</p>	<ul style="list-style-type: none"> ✓ Inpatient care pathway for identification and treatment of malnutrition risk accessible for use. ✓ Education of hospital staff, for example, doctors, nurses, health and social care professionals, healthcare assistants, chefs and food service/catering staff on the prevention and treatment of malnutrition and modified texture diets, for example, formal presentations, annual malnutrition awareness days ✓ Knowledge and skills update for catering staff in the area of food fortification. ✓ Hospital wards have access to: <ul style="list-style-type: none"> - dietetic service for management of patients at risk of malnutrition - speech and language therapy service for management of dysphagia - food fortification, such as Energy Dense diet - high protein/energy menu (per minimum standards for 'Regular Hospital Diet') - oral nutritional supplements (ONS).

	<ul style="list-style-type: none"> ✓ Impact on catering resources, e.g. department statistics, staff feedback to catering manager. • Food waste – see Food Nutrition and Hydration Policy for Adult Patients in the Acute Care Setting (HSE, 2018b) for further guidance. • Oral nutritional supplementation (ONS) waste. • ONS stock rotation system in place. ✓ Discharge planning and discharge letters to GP to include: <ul style="list-style-type: none"> - nutritional status summary including most recent malnutrition screening result - nutrition support details (if applicable) - follow-up arrangements (if positive screening result).
<p>Oral Nutrition Support 11 to 15</p>	<ul style="list-style-type: none"> ✓ Impact on SLT resources, e.g. department statistics, staff feedback to SLT manager. ✓ Impact on requirement for dysphagia equipment – see Table 22 below. ✓ Access to specialist dysphagia equipment such as VFU and FEES. • Systems in place to provide modified texture diets.
<p>Oral Nutrition Support 16 to 17</p>	<ul style="list-style-type: none"> ✓ A hospital fasting policy/procedure/protocol/guideline (PPPG) on fasting times for tests, therapies and procedures is accessible on all wards. ✓ Fasting for tests, therapies and procedures comply with the hospital’s fasting PPPG.
<p>Communication</p>	<ul style="list-style-type: none"> ✓ A process for communication is in place to ensure staff awareness of malnutrition risks. ✓ Availability of Food Nutrition and Hydration Information leaflet for hospital inpatients. ✓ Inclusion of questions on nutrition screening and treatment in patient satisfaction surveys. ✓ Referral pathway between nursing and dietetics is defined. ✓ Percentage of patients satisfied with their nutritional care. ✓ Follow-up plan for those who are discharged prior to dietetic consult/ following dietetic consult. ✓ Hospital PPPG on malnutrition screening is accessible on all wards. ✓ Procedure in place to communicate nutrition screening audit results to management and staff.

Key: MUST - Malnutrition Universal Screening Tool; ONS – oral nutritional supplements; PPPG - policy/ procedure/protocol/guideline; VFU – videofluoroscopy; FEES - Fiberoptic endoscopic evaluation of swallowing.

Note: Fidelity refers to the degree to which the malnutrition screening tool is delivered exactly as set out and intended by those who developed it.

Table 23. Equipment needed for malnutrition screening and provision of oral nutrition support in hospitals

For malnutrition screening	For oral nutrition support in dysphagia
Medically approved weighing equipment: <ul style="list-style-type: none"> - Stand-on scales - Chair scales - Access to hoist or bed weighing scales 	Specialised cups: <ul style="list-style-type: none"> - Kapi-cups / cut-out cups - Dysphagia cups (green mugs) - Provale cups
Height measuring equipment: <ul style="list-style-type: none"> - Stadiometer - Measuring tape (for ulna length, knee height, or mid upper arm circumference) 	Specialised cutlery: <ul style="list-style-type: none"> - Maroon spoons - Weighted or foam cutlery
For oral nutritional supplements	Other: <ul style="list-style-type: none"> - Clothing protectors such as bibs or aprons - Dycem mats - Small and large plate guards - Access to VFU and FEES
Cold storage or refrigeration facilities on wards	

Key: VFU – videofluoroscopy; FEES - Fiberoptic endoscopic evaluation of swallowing.

Note: Access to thickening agent is also needed.

Table 24. National KPIs

KPI number	Key Performance Indicator
KPI 1	Percentage of admitted patients screened for malnutrition within 24 hours of admission, for example: <ul style="list-style-type: none"> • 60% of all admissions year 1 post-implementation • 70% in year 2 • >80% year 3.
KPI 2	Percentage of patients identified at risk of malnutrition commenced on nutrition care pathway (per local PPPG) without delay (on same day) . <ul style="list-style-type: none"> • 100% of those identified at risk.



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