

Best practice guidance

Malnutrition



Identification and management of patients with malnutrition

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The economic burden of malnutrition

Malnutrition is a major clinical and economic burden, affecting people of all ages, all medical and social care disciplines, and all care settings.

It is estimated that malnutrition accounts for 15% of the total public health and social care expenditure (in 2012, this equated to about £19.6 billion in England, and £23.5 billion in the UK), with healthcare accounting for about three and a half times more than social care, and hospital inpatients about eight times more than outpatients.¹ The cost of malnutrition is higher in older adults (>65 years; 52%) than in younger adults (42%) and children (6%).¹ The annual cost of managing a constantly malnourished adult is three and a half times greater than that of managing a non-malnourished adult, because of increased resource use (for example more hospitalisation, more GP visits and, care home residency).¹

Systematic review evidence indicates that nutritional support involving standard oral nutritional supplements (ONS) in hospitals reduces mortality, disease complications, and length of hospital stay, with associated cost-savings and/or cost-effectiveness.² The evidence outside hospital also suggests cost-effectiveness.³ Furthermore, cost impact analyses by NICE⁴ and National Institute for Health Research Southampton/BAPEN¹ involving hospital and community settings suggest that, unlike most treatments, (which cost money), nutritional support saves money. Although there are costs associated with implementing high-quality nutritional care, such as those due to increased screening, assessment, and treatment, these are more than offset by the reduced costs of resource use, such as hospitalisation and GP visits. A recent study of older adults in general practice supported this.⁵

Key points

- Malnutrition exists in all age groups, disease categories, and care settings, but it may be unrecognised and untreated
- Malnutrition adversely affects every system of the body
- An estimated 15% of total public expenditure on health and social care involves malnourished individuals
- It is more costly to leave malnutrition untreated than to treat it
- Strategies to combat the clinical and economic consequences of malnutrition should be joined up within and between care settings.

Epidemiology of malnutrition

The prevalence and distribution of malnutrition have been established using the Malnutrition Universal Screening Tool (MUST).⁶ It is estimated that a degree of malnutrition (medium and high risk) is present in approximately 5% of adults in the general population, 9% of those visiting their general practitioner, 15% of those attending hospital outpatient clinics, 30% of patients admitted to hospital, and 35% of those admitted to care homes.¹ At any given point in time, more than 90% of malnutrition involves people living in the community in their own accommodation.¹ Care homes and sheltered housing together account for almost 8% and hospital inpatients for almost 2%, of people with malnutrition.¹ However, the high turnover of hospitalised patients (17.1 million finished admission episodes⁷ during 2018/19 in England and even higher turnover of hospital outpatients—96.4 million attendees⁸) means that the burden of malnutrition (given the estimated inpatient and outpatient prevalence indicated earlier) is considerable. Furthermore, the high bidirectional flow of malnourished patients between community and hospital emphasises the need for best practice guidance to promote a coordinated system of care both within and between care settings.

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The clinical burden of malnutrition

Multiple adverse effects

Malnutrition adversely affects every system of the body, predisposing patients to and exacerbating many clinical conditions, and delaying recovery from illness.^{1,7} Loss of immune function reduces the body's ability to fight infection. The combination of fatigue and loss of respiratory muscle mass and strength, including reduced cough pressure and expectoration, adds to the risk of chest infections, which in severe cases (including those due to COVID-19) can make artificial ventilation necessary and subsequent weaning difficult. Malnutrition-induced weakness, together with weaker muscular compensation and fatigue, increases the risk of falls and dependency on others, while reducing ability to work. Malnutrition also delays wound healing, predisposes to hypothermia and self-neglect, and adversely affects quality of life. In women, it can cause menstrual irregularities, amenorrhoea, and poor mother–child relationships.⁹

Common patient groups

Malnutrition is typically disease-related, often resulting from the anorexia of disease and/or its treatment, swallowing or absorptive disturbances, and altered nutritional demands.¹⁰ Unsurprisingly, it is common among those recently admitted and discharged from hospital, and also older people, who tend to suffer from multiple diseases. It is also common in certain disease categories: gastrointestinal diseases with obstructive, inflammatory (inflammatory bowel disease), or malabsorptive (for example coeliac disease, Crohn's disease) components; neurological diseases, such as dementia, Parkinson's disease, motor neurone disease and stroke, often in association with swallowing difficulties; respiratory diseases, such as chronic obstructive pulmonary disease (COPD); and various types of cancer and conditions requiring palliative care. Malnutrition is also found in acutely ill hospitalised patients who may go without eating for more than 5 days, and in those at home with social problems, deprivation, poverty, neglect, or difficulty in obtaining, preparing, and/or eating food.⁶

Current guidance on malnutrition

Since malnutrition was recognised as a priority area for quality improvement, much guidance has been published about its detection and management. In England, considerable emphasis is given to the NICE guidance on nutritional support in adults (clinical guideline 32)¹¹ and the related Quality Standard 24 (QS24)⁴ in various settings (hospitals, care homes, and GP surgeries). QS24, which is reviewed annually together with its performance indicators, is not intended to cover every aspect of nutritional care. Its five statements (Box 1) focus on aspects of high-quality care, such as nutritional screening, that link to key points of management pathways.⁴

Box 1: NICE quality standard on nutritional support in adults⁴

Quality statements

1. People in care settings are screened for the risk of malnutrition using a validated screening tool
2. People who are malnourished or at risk of malnutrition have a management care plan that aims to meet their nutritional requirements
3. All people who are screened for the risk of malnutrition have their screening results and nutrition support goals (if applicable) documented and communicated in writing within and between settings
4. People managing their own artificial nutrition support and/or their carers are trained to manage their nutrition delivery system and monitor their wellbeing
5. People receiving nutrition support are offered a review of the indications, route, risks, benefits, and goals of nutrition support at planned intervals.

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Nutritional screening

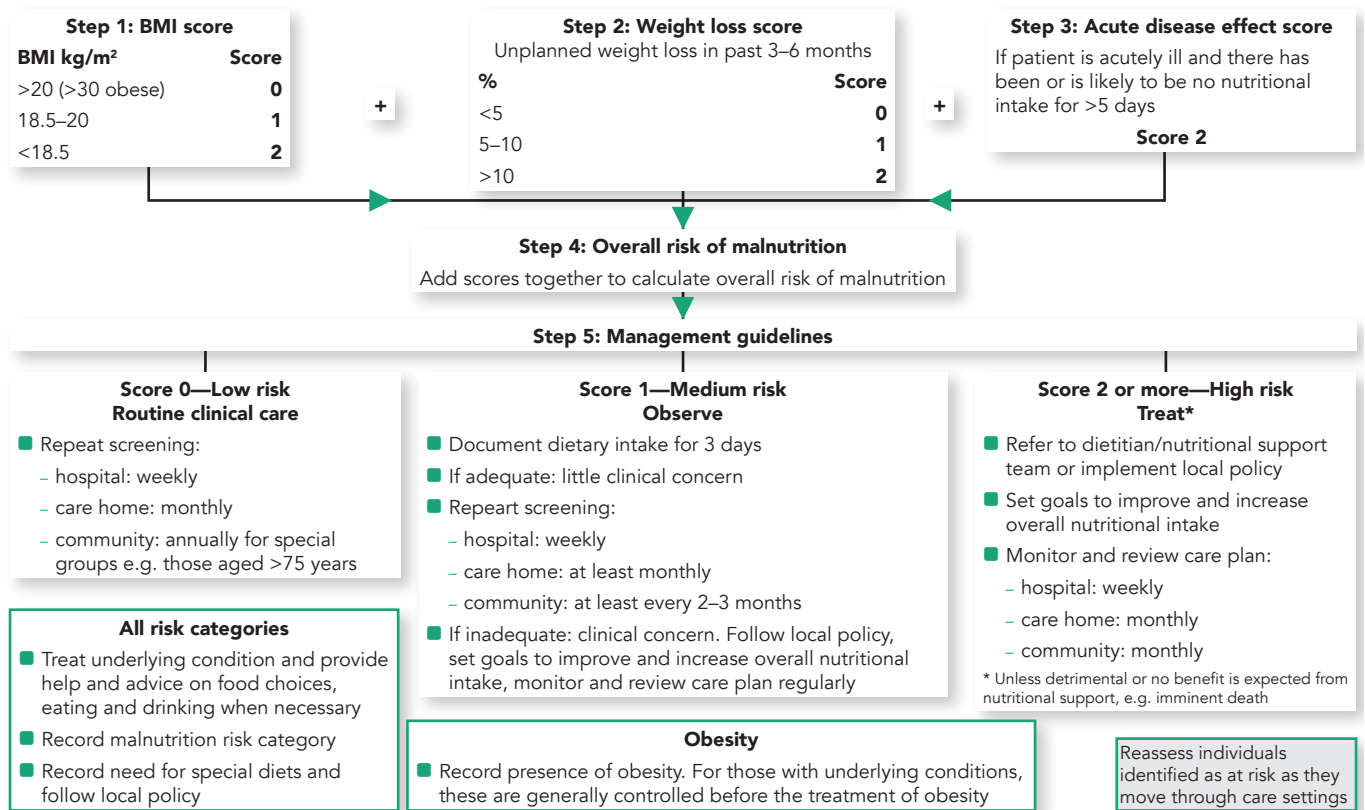
NICE recommends that nutritional screening, the initial step of the management pathway, should be routinely carried out on admission to hospital, care homes, new registrations at GP surgeries, and in all care settings when there is clinical concern (criteria indicated in MUST¹/QS24⁴).⁶ Unfortunately, the guidance is not always followed because the importance of malnutrition is either not recognised or not given a high enough priority, so malnutrition may go unrecognised and untreated.

Nutritional screening should involve a validated user-friendly tool that is as accurate and reliable as possible. Furthermore, as nutritional care is a multidisciplinary responsibility, it is desirable to use a screening tool developed by a multidisciplinary group to ensure a balanced approach. MUST, the most commonly used tool in the UK, is considered by NICE to fulfil these requirements.⁴

The three MUST criteria (Figure 1) reflect a person's journey from the past (weight loss) to the present (current weight status; body mass index) and future (likely to have [or has recently had] no nutritional intake for >5 days; acute disease effect in hospitalised people). Scores for these criteria are established and then added up to obtain an overall malnutrition risk category that is linked to a care plan (low risk, routine care; medium risk, observe; high risk, treat).⁶

Another desirable characteristic fulfilled by MUST is its application to all care settings for all types of patients, even those who are unconscious or cannot have their weight and/or height measured (equality and diversity considerations in QS24). This allows continuity of care for all types of patient within NICE and between care settings, as well as easier implementation and evaluation of policies, inspections, and audits. Tools developed

Figure 1: Managing adult malnutrition according to risk category using the Malnutrition Universal Screening Tool (MUST)¹² (Adapted from the British Association for Parenteral and Enteral Nutrition [BAPEN]).



for use in only one care setting (or only a specific condition[s] or adult age group[s]) obviously have more restricted applications, and the criteria for malnutrition may have to change during a person’s journey between care settings.

Introducing an automated procedure, which minimises calculation errors, a MUST risk category can be established in less than a minute with excellent reliability.¹³ The procedure, undertaken either by staff or patients themselves (self-screening involves following instructions from the machine’s speaker), can produce results that are immediately printed or transmitted to a computer or electronic medical records. Other helpful MUST resources include the MUST toolkit¹⁴ and calculator,¹⁵ and the self-screening website¹⁶ supported by BAPEN and the Royal College of General Practitioners (Box 2).

Box 2: Useful resources for MUST screening^{14–16}

- > The MUST toolkit: www.bapen.org.uk/screening-and-must/must/must-toolkit
- > The MUST calculator: www.bapen.org.uk/screening-and-must/must-calculator
- > Self-screening website: www.malnutritionselfscreening.org/self-screening.html

Malnutrition screening within the Commissioning for Quality and Innovation (CQUIN) payment framework

Nutritional screening of adult care home residents and NHS-funded community hospitals in England has been incentivised by the CQUIN payment framework.¹⁷ Commissioners are able to link a proportion of the provider’s income to nutritional screening, but this quality improvement goal (April 2020–March 2021) requires use of a ‘validated tool, such as MUST’, and ‘evidence that all actions or goals within the management care plan being acted upon’ (QS24 statements 1 and 2).⁴

Linking results of nutritional screening to care plans

Nutritional screening must be linked to a management pathway, as emphasised by the MUST framework and QS24 statement 2 (Box 1).⁴ The care plan includes use of diet and ONS,^{4,8} which are key features of various management pathways, including a community pathway developed and supported by multiple national organisations (for example nursing, dietetic, pharmacy, GPs), with an endorsement by NICE.¹² However, in the community, several CCGs have restricted prescriptions of ONS (sterile supplements containing balanced proportions of a wide range of macro- and micronutrients, classified as ‘foods for special medical purposes’) to malnourished subjects in an attempt to save money without compromising nutritional care.¹⁸

To understand this controversial decision, which appears to have been made without adequate reflection on long-term outcomes, it is necessary to consider at least four issues.

First, prescriptions (of ONS or vitamins and minerals) to malnourished subjects should not be confused with the prescription of vitamins or minerals (many of which are classified as ‘foods’ and not medicines) to generally healthy, non-malnourished people. There is a specific exemption in the guidance from NHS clinical commissioners that ‘*vitamins and minerals should not be routinely prescribed in primary care due to limited evidence of clinical effectiveness*’ to enable their prescription for patients with malnutrition.¹⁹

Second, there appears to be a misapprehension that ONS replace food intake. In practice, ONS are generally added to food, when dietary intake alone is insufficient to meet nutritional needs. Furthermore, ONS generally have little if any significant effect on suppressing oral food intake,^{10,20,21} which means that ONS add to, rather than replace, food intake.

Third, there is considerable evidence, including Grade A evidence from NICE, that additional intake from ONS is clinically effective and cost-effective.^{1–4,11} Diet alone or diet with food fortification can also be used to treat malnutrition, although evidence of clinical and economic benefits is scant.

Fourth, most of the extra prescription costs for using ONS to treat malnutrition fall on GPs, whereas most of the economic benefits fall on hospitals (mainly related to reduced hospitalisation).^{1,4} Joined-up thinking about clinical and economic issues in multiple care settings, including the higher cost of ONS in the community to compensate for the much lower cost in hospitals, is important in decision making.

Documentation and review

Documentation/communication (Box 1; Statement 3) and review of malnourished people (Box 1; Statement 5) are clearly important aspects of the management of all types of patient, including those receiving artificial nutritional support (Box 1; Statement 4).⁴

Conclusion

Unrecognised and/or untreated malnutrition has detrimental effects on individuals, care services, and society. To combat the problem effectively, it is necessary to apply consistent criteria and joined-up strategies across all care settings. The available quality improvement guidance aims to facilitate high-quality care in all care settings and an operational infrastructure to deliver such care.

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